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List of abbreviations

AHS	Grammar school (for lower and upper secondary education)
CLIL	Content and Language Integrated Learning
EE	Extramural English
EEL	Extramural English listening activities
EEM	Extramural English multimodal activities
EER	Extramural English reading activities
EES	Extramural English speaking activities
EEW	Extramural English writing activities
EFL	English as a Foreign Language
ESL	English as a Second Language
HAS	Vocational business middle school (Handelsschule)
HS, NMS	School for lower secondary education (Hauptschule, Neue Mittelschule)
L1	First Language
L2	Second Language
MMORPG	Massively Multiplayer Online Role-Playing Game
SES	Socio-economic status
SLA	Second Language Acquisition
VLS	Vocabulary Learning Strategies

In statistical testing

CI	Confidence interval
m	Mean or median (as indicated)
N	Sample size
p	p-value, level of statistical significance
r	Relationship index, correlation coefficient, effect size for Mann Whitney U test
ρ	Spearman's rho, correlation coefficient for a Spearman's rank order correlation
Z	Z statistic

1 Introduction

> "[S]chool is but one source of contact with English –
> and at least for some groups not the most important one."
>
> (Hasebrink et al. 2007: 115)

For many decades, foreign language acquisition has been restricted to educational contexts, but in recent years, learners have had access to a variety of English sources outside school as a result of a changing linguistic landscape, not only in Austria but in Europe in general. English has been gaining more and more importance as the language of communication between speakers of different languages (Berns, Claes, et al. 2007: 34; Sundqvist 2009: 27) and globalization and technical advancements have led to a spread of English in numerous domains of society including science, economy but also aspects of private life. A large majority of texts on the Internet are, for instance, in English (Sundqvist 2009: 29), in many countries TV programmes are broadcast in the original English soundtrack (Koolstra & Beentjes 1999: 52; Berns & de Bot 2005: 200), English songs dominate the radio (Berns, Claes, et al. 2007: 34; Grau 2009: 162) and some popular computer games are only available in English (Sundqvist & Sylvén 2012: 190).

This omnipresence of English, especially in the lives of young people, means that students are likely to encounter English in their daily lives outside the classroom, as Hasebrink et al. (2007) indicate in the quote above. Studies have reported positive effects of these out-of-school contacts with English on linguistic competences with vocabulary being particularly prone to incidental acquisition (Berns, de Bot, et al. 2007; Sundqvist 2009; Kuppens 2010). Schwarz (2012: 1) observes that learning the thousands of words needed for communication seems an "insuperable challenge", which is why it appears plausible that vocabulary is mainly acquired incidentally. Considering that students' time to develop the necessary lexis for successful language use is limited at school, it is of paramount interest to investigate the nature of vocabulary acquisition that occurs outside the classroom.

Although considerable research has been devoted to this subject matter in other countries (cf. e.g. Berns 2007a; Sundqvist 2009), little information is available for Austria. Hence, Marlene Schwarz (in progress) is currently working on her PhD study

to bridge this research gap, which is complemented by the present study. The purpose of this thesis is to collect empirical data on Viennese students' contact with English outside school and investigate possible correlations with their vocabulary knowledge. Several reasons have motivated this research project:

First, teenagers are among the top users of media in Austria (ORF Markt- und Medienforschung 2008, 2015), but to date it is not clear, how much of their media use is in English. Although Austrian TV channels are mostly in German, the default language of many other media types is English. Consequently, Austrian teenagers are presumably exposed to English outside school. As a result, English vocabulary acquisition may occur as a side effect of free time activities.

Second, as mentioned above, there is a lack of empirical data on incidental vocabulary acquisition in Austria. Since Austria's linguistic landscape differs from other countries regarding the languages used in the media, as will be explained later, findings from other European studies might not necessarily apply to Austria and thus further research is required.

Third, class time is limited and as a future teacher it is in my personal interest to create a positive and effective learning environment for students by complementing the learning that takes place at school with the learning in out-of-school contexts. In order to achieve a better connection between different learning settings, information on the nature of informal learning in the students' free time is crucial. Hence, this research is of vital interest not only to researchers, but also to teachers and learners.

Eventually, incidental vocabulary acquisition appears to be a phenomenon widely accepted by researchers and teachers, but simultaneously, little progress on a closer conjunction between in-school and out-of-school learning is observable (Grau 2009). Assuming that learners acquire vocabulary incidentally in their free time, this potential should be exploited. Thus, the present study will not only provide insights on the extent of incidental vocabulary acquisition in Austrian learners of English, but potentially yields valuable information for vocabulary teaching in EFL contexts.

For the purpose of examining incidental vocabulary acquisition, empirical data were collected in three vocational business middle schools (HAS) in Vienna. With the help of a questionnaire and two vocabulary tests, detailed information on the linguistic landscape that shapes Viennese students' lives and their vocabulary knowledge was

gathered. Data on students' contact with English outside school provided in the questionnaire was related to results from the vocabulary tests to determine possible correlations between the learners' contact with English and their vocabulary sizes. However, contact with English in the free time is probably not the only factor that influences vocabulary acquisition (cf. e.g.Gu & Johnson 1996; Grau 2009; Sundqvist 2009; Uuskoski 2011). For this reason, other variables' relations with vocabulary knowledge were examined as well. Factors under investigation were gender, attitudes towards English, linguistic background, socio-economic status, language proficiency and the application of vocabulary learning strategies (for a detailed presentation of the research questions see section 5.1).

The thesis is composed of three main parts: a literature review, the presentation of the empirical data and the interpretation of results. Chapter 2 discusses literature on Second Language Acquisition. Initially, central terms are defined before the role of consciousness and intention in learning will be addressed and different learning theories presented. After dealing with Second Language Acquisition in general, the third chapter focuses on vocabulary acquisition in particular, as this is the main topic of the present study. Following a brief discussion of the importance of vocabulary in language learning and definitions of the terms 'word' and 'vocabulary knowledge', attention will be given to the locus of vocabulary acquisition. In other words, spaces where learners in second language settings can acquire new lexical items will be examined, a question that is central to the present study, as one of the main assumptions is that a large part of vocabulary is actually learnt outside school. Finally, factors that influence vocabulary acquisition will be discussed. Chapter 4 concludes the literature review by providing an overview of the research on vocabulary acquisition outside school conducted so far. This chapter consists of an introduction of the term 'Extramural English' (Sundqvist 2009), a description of the role of English in Europe and Austria, and Austrian teenagers' media use. Subsequently, international studies on the relation between vocabulary knowledge and contact with English outside school will be presented, as they not only inspired the present research project, but also form the theoretical basis for the interpretation of results.

The second part of this thesis presents the methods that were applied in the empirical research (chapter 5) and the obtained results (chapter 6). Information on Viennese

students' English media use will be provided and related to their vocabulary knowledge. In addition, other factors that might influence vocabulary acquisition will be examined.

Finally, chapter 7 interprets the results in the light of previous research conducted on vocabulary acquisition outside school, before the main insights of this study will be summarized and implications for teaching and the study's limitation will be addressed in chapter 8.

2 Second Language Acquisition

Although this study focuses on vocabulary acquisition, some concepts from the wider field of 'Second Language Acquisition' (SLA) will be introduced. As vocabulary acquisition is embedded in SLA, these concepts form the basis for the present investigation and therefore need to be defined first. In the second section the role of consciousness in learning is discussed before relevant learning theories will be presented.

2.1 Terminology

The presence of a large variety of terms in SLA theory indicates the complexity of this research area of SLA. In addition, some authors use the same term to express different meanings, which creates the need to clarify how the terms will be used in this thesis.

Already the title of this chapter, 'Second Language Acquisition', is not as straightforward as it might appear. It is widely agreed that SLA is a branch of applied linguistics, but the term is used to refer to different fields: For some authors, SLA refers to "the learning of another language (second, third, foreign) after the acquisition of one's mother tongue is complete. That is, it labels the object of inquiry" (R. Ellis & Barkhuizen 2005: 3). Sometimes, however, the term SLA is used to refer to the study of how second languages are learnt. In this sense, it labels the field of inquiry itself. In order to avoid confusion, in this thesis the term 'SLA' refers to the latter meaning and the term 'L2 acquisition' refers to the learning of second languages.

In SLA (e.g. Berns 1990; Sundqvist 2009; Bahrani & Sim 2012), two terms are used to label the languages being learnt in addition to one's first language (L1): 'second language' and 'foreign language'. The choice of one term over the other depends on the context, in which a language is learnt (Bussmann et al. 1996: 168; Crystal 1997: 214). A language is called 'second language' if it is learnt in a country, where it has official status or is the dominant language in the community. An example would be English that is learnt by migrants in the US, the UK or Australia. A 'foreign language', on the other hand, is learnt in countries where it generally is not used in everyday communication, in other words, where it is mostly restricted to educational

settings. Thus, one significant difference between the two terms is that second language learners usually have more opportunities for input and output in the target language than foreign language learners (Gass 1990: 34). Researchers, however, agree that the border between English as a foreign and second language settings are no longer clear-cut due to the increasing presence of English in society (Berns 2007b; Sundqvist 2009: 10). A few years ago, Austria would have fallen into the foreign language category but with the increasing expansion of English media, one could argue that foreign and second language contexts are no longer dichotomous but form a continuum and that Austria, like other European countries, is moving along this continuum in the direction of a second language setting. This argument will be further elaborated in the third chapter. Since the borders between the two concepts are blurring, the term 'L2 acquisition' will be used to refer to the learning of any language other than the first language regardless of the context in which it is learnt (Mitchell & Myles 2004: 5-6; R. Ellis & Barkhuizen 2005: 3; Sundqvist 2009: 10-11). This also means that L2 acquisition is not restricted to the learning of the second language, but also refers to the learning of a third or fourth language. Considering that 22% of students in Austria and 47% of the Viennese students already know two languages before entering school (BMBF 2015), English would then be their third language. Still, because of the reasons mentioned above, it will be referred to as second language. Moreover, Mitchell and Myles (2004: 6) explain that basically the same learning processes are involved in second and foreign language acquisition and therefore foreign language acquisition should be included in the more general term of second language acquisition, a practice adopted by other researchers (Huckin & Coady 1999; Sundqvist 2009; Bahrani et al. 2014) as well. In line with this perspective, the English that is learnt in Austria will be called *English as a second language* (ESL) rather than *English as a foreign language* (EFL), as the latter would imply that English was limited to the classroom (Sundqvist 2009: 10-11), which is no longer the case in Austria as will be argued in Chapter 3.

Next, the terms 'acquisition' and 'learning' need to be defined. In the discussion above they are used interchangeably, although some researchers, first and foremost Krashen (1981), argue that they refer to different types of learning. Krashen (1981: 1-3) defines subconscious, implicit processes as acquisition and conscious, explicit ones as learning. Krashen himself, however, admits that this distinction is difficult to

validate scientifically, which is why many researchers (e.g. N. C. Ellis 1997; Horst et al. 1998; Sundqvist 2009) opt for an interchangeable use. Also in this thesis, the terms 'acquisition' and 'learning' will be used interchangeably.

Krashen's theory shows that consciousness plays an important role in language learning. Depending on whether they believe the learners to be aware of the learning process or not, linguists have developed different theories on how languages are learnt.

2.2 Consciousness and intention in language learning

When investigating vocabulary acquisition, one not only aims to discover what learners know but also how they came to know it. For this reason, researchers apply learning theories to hypothesize about the underlying learning mechanisms that have led to vocabulary knowledge. Learning theories are often differentiated according to the degree of awareness they attribute to the learning process. Here consciousness comes into play. Before some of the most relevant learning theories will be presented in the following, the role of consciousness in learning needs to be addressed.

McLaughlin (1990) criticises the application of the dichotomous pair 'conscious – unconscious' in research, as to him the terms are not precise enough. He argues that it is difficult to determine scientifically whether a certain process is conscious or not, which consequently leads scientists to solely rely on the participants' feelings and impressions. Thus, he suggests abandoning these terms in favour of the more testable distinction 'controlled – automatized'. However, this distinction seems to be problematic in the context of the current study for two reasons: Firstly, McLaughlin refers to the learning of syntactical rules and skills rather than lexical items and since learning processes might differ depending on the learning target, this distinction may not apply to vocabulary learning. Secondly, he believes that learners adopt controlled processes in the initial stages of learning, which then form the basis for automatic processes. In other words, he appears to suggest that learners always move from control to automatisation. As the studies presented in chapter 3 will prove, this is not necessarily the case with vocabulary acquisition. While traditional ways of learning vocabulary (e.g. word lists) might follow this sequence, learning that occurs as a by-product of activities carried out in the students' free time is likely to reveal different

characteristics. For these reasons, the terms ‘controlled’ and ‘automatized’ seem to be of little use here. Although this study is not primarily concerned with the distinction of conscious versus unconscious learning, these concepts, albeit imprecise, will be used since they form the basis for the following categorization of learning processes.

Many researchers (e.g. N. C. Ellis 1997; Hulstijn 2005; N. C. Ellis 2010; Truscott 2015; Ender 2016) distinguish between intentional, incidental, explicit and implicit learning. Despite the fact that ‘consciousness’ is a vague term, it is central to the description of learning processes and aims. Incidental learning and intentional learning are generally regarded as two opposing terms (Ender 2016: 537). Intentional learning, as the name suggests, has learning as its central purpose. Contrary to this, incidental learning occurs as a “by-product of a meaning-focused communicative activity, such as reading or listening, and interaction” (Huckin & Coady 1999: 185), where understanding the text or communication is the main purpose. Incidental learning tends to be confused with implicit learning, but they differ in terms of consciousness: While incidental learning is unintentional, implicit learning is both unintentional and unconscious and results from exposure to words in meaningful contexts. In this sense, implicit learning can be described as one type of incidental learning. The other conscious type is explicit learning, where learners pay selective attention to certain words or aspects of that word and apply strategies to determine its meaning. Table 1, which was adapted from Ender (2016: 538) illustrates the relationship between these categories.

Table 1 Intersection between incidental/intentional and implicit/explicit processes

	+ Intention to learn	**- Intention to learn**
+ Conscious processing	explicit intentional vocabulary acquisition	explicit incidental vocabulary acquisition
- Conscious processing		implicit incidental vocabulary acquisition

As table 1 shows, intentional learning is always explicit, because if students consciously want to learn a word, they inevitably focus on it and use learning strategies to remember it. Incidental learning, on the other hand, can be explicit or implicit. If incidental learning is explicit, learners consciously try to discover the

meaning of a word in order to understand the text, but have no intention to retain the form-meaning combination in the long-term memory. In other words, they want to know the meaning of the word without attempting to remember it. In the case of implicit incidental vocabulary acquisition, learning takes place unconsciously and unintentionally.

Thus, unless learners consume English media with the intention of learning vocabulary, vocabulary acquisition in the students' free time is predominantly incidental, since the main purpose of recreational activities is usually entertainment; lexical gains are side-effects (Milton 2009: 219). The following examples should clarify the difference between explicit and implicit incidental learning in non-educational settings: A learner watches a TV series in English and encounters an unknown word that seems to be important for text comprehension. If he/she decides to look it up in a dictionary, we speak of explicit learning. It is still incidental, because the learner's main purposes are text comprehension and entertainment rather than learning the word. If the learner, however, infers the meaning from context unconsciously, it is considered implicit learning. In this case, the learner has neither the awareness of learning nor the intention to do so.

Although numerous researchers have found instances of incidental vocabulary acquisition through English media use in non-educational settings (e.g. d'Ydewalle & Pavakanun 1997; Horst et al. 1998; Koolstra & Beentjes 1999; Kuppens 2010), there appears to be no consensus on its efficiency. Some assign great importance to incidental learning: Paribakht and Wesche (1999: 196) report that their research "supports the conclusion that most vocabulary learning occurs naturally when learners attempt to understand new words they hear or read in context". However, they concede that it is not necessarily the most efficient and fastest way. Nation (2013: 211) agrees that only a few lexical items can be learnt from reading a text, but those can add up to substantial amounts through extensive reading. He thus concludes that "[i]ncidental learning from context is the most important of all the sources of vocabulary learning" (Nation 2013: 348). Sound evidence for incidental vocabulary learning was provided by d'Ydewalle and Pavakanun (1997). Their study investigated English vocabulary acquisition from watching TV in the Dutch-speaking area of Belgium, where TV programmes use a combination of English audio tracks and Dutch subtitles. Their participants were children who had not received formal

instruction in English at the time of the experiment. Thus, it can be assumed that they focussed most of their attention on the subtitles in their first language in order to understand the story. Nevertheless, the results showed that the children could understand and speak basic English, which supports the assumption that they acquired English incidentally without paying conscious attention to the audio input.

Others doubt the efficacy of incidental learning, especially for beginners, and suggest that at least the first 1,000-2,000 most frequent words in English should be learnt explicitly (Milton 2008; N. Schmitt 2010). This position is supported by Horst, Cobb and Meara's (1998: 220) study, which found that "extensive reading is not a very effective way for learners who have a mean vocabulary size of around 3000 words to expand their lexicons". Horst et al.'s study will be an important reference point for this study as it also investigates vocabulary acquisition of low-level learners. Despite the fact that the subjects in the current study have learnt English for at least five years, their English level is relatively low (A1-A2 according to the CEFR (Council of Europe 2001; BMBF 2014)) and they might not have the vocabulary size demanded by Horst et al. and Milton. Hence, it will be interesting to determine whether the proposed threshold holds true for the population of this survey.

To sum up, diverse opinions seem to exist on the role of consciousness in learning, which, however, does not pose a problem to this study. As vocabulary learning outside school in general is investigated, all forms of learning that take place in the learners' free time are included. In other words, both vocabulary acquisition as an unintentional by-product of leisure activities as well as explicit learning activities in the learners' free time will be considered, aiming to provide a holistic picture of the learning that occurs outside the classroom.

2.3 Learning theories

For a long time, second languages were believed to be acquired similarly to first languages and as a result theories from first language acquisition were simply applied to second language research. In the 1980s, however, a paradigm shift occurred and specific SLA theories emerged (cf. Read 2004: 146; Broady 2008: 259; Klapper 2008: 173). One of the pioneers in this field was Stephen Krashen, who developed his *Theory of SLA* in 1982, which can, according to Krashen, explain the characteristics

of SLA. Although it has been legitimately criticised, his hypotheses formed the basis of numerous learning theories of the 20th and 21st century, the most relevant of which will be discussed in this section. As the present thesis is concerned with vocabulary, the following overview focuses on vocabulary acquisition.

A major aspect of language learning is input. Krashen's (1982) *Comprehensible Input Hypothesis* argues that learners only need extensive input in the L2 in order to acquire it. While there is a consensus that exposure to input in the target language is a prerequisite for L2 acquisition (R. Ellis 1994; Bahrani et al. 2014), researchers disagree with the linearity Krashen attributes to the acquisition process. According to him (Krashen 1982), more input inevitably leads to better language proficiency, while conscious learning and production do not. This belief is refuted by McLaughlin (1990: 626), who counters that unattended information will not necessarily be incorporated in the long-term memory. Moreover, several experiments found the quality of input equally if not more important than the quantity (Bahrani & Sim 2012; Bahrani et al. 2014; Lai et al. 2015). In addition, input is not sufficient; learners also need to be willing to engage with it (Reinders & Wattana 2010: 7). Ideally, input should be slightly above the learner's current proficiency level (Krashen 1982), but comprehension must not be impeded because in an out-of-school context, it is the learners' main motivation for attending to a text (N. C. Ellis 1997: 6). Despite the importance of input, it is not sufficient for learning a language and output is equally essential.

Several learning theories highlight the crucial role of output: One of these hypotheses is the *Comprehensible Output Hypothesis* developed by Swain (Swain 1985) which underlines that language learning requires both comprehensible input and output, as output facilitates the identification of differences between the target language and the learner language, which is the learner's developing second language. This, in turn, enables the learner to choose and attend to relevant input (Reinders & Wattana 2010: 6). Furthermore, output creates opportunities for practice and automatisation of the newly acquired language. Long (1981) further develops this idea in his *Interaction Hypothesis*, which states that "[v]ocabulary knowledge, to be of real use, must become integrated into discourse" (Gu & Johnson 1996: 669). According to this hypothesis, the negotiation of meaning inherent in interactions may lead to negative feedback, that is, the correction of the learner's mistakes, which enables the learner to

notice contrasts between the first and second language. Better understanding of the target language subsequently results in L2 development, especially in the areas of vocabulary, morphology and syntax (Reinders & Wattana 2010: 6).

However, non-linguistic factors like anxiety might pose an obstacle for interaction. Krashen (1982) terms this phenomenon the 'affective filter', which refers to the influence of non-linguistic variables on the learning process. More precisely, feelings like motivation, anxiety and self-confidence either facilitate or prevent acquisition and therefore act as an affective filter. Studies have shown that the usage of English media, both inside and outside the classroom, increases learners' motivation and self-confidence and decreases their anxiety (Abbott 2002; Reinders & Wattana 2010; Sockett 2013; Richards 2015), thus positively affecting their learning. Doyle and Parrish (2012) found that learners are generally more afraid of losing face in oral interactions and consequently favour passive activities (e.g. watching movies, listening to music) over social ones (e.g. conversations with foreigners). As will be seen later (chapter 4), online computer games and chats in English might provide a solution to this problem as the anonymity on the Internet reduces anxiety and creates stress-free learning environments.

Other linguists agree that a combination of input and output is indeed a prerequisite for but no assurance of language learning. According to Schmitt and Schmitt (1995) and Laufer and Hulstijn (2001) the degree of engagement in activities is a crucial variable in the learning process. They have developed two hypotheses, which are compatible on many levels and will therefore be discussed jointly. Schmitt and Schmitt (1995) call theirs the *Depth of Processing Hypothesis,* while Hulstijn and Laufer (2001) label theirs the *Involvement Load Hypothesis*. Opposed to Krashen's notion, the four linguists believe that input does not necessarily result in intake. Rather, higher cognitive processing increases the chance of retention (Ender 2016). Involvement is maximised when learners need to understand the word in order to understand the text, take active measures to discover the meaning and critically reflect their findings (Laufer & Hulstijn 2001: 543ff).

The notions of depth of processing and involvement load are significant for this study as different media types require different types of processing and media types that demand more active engagement generally lead to more vocabulary intake, as the following studies show. Results from Paribakht and Wesche's (1997) investigation of

reading show that those participants whose extensive reading was complemented by exercises displayed higher vocabulary gains than the control group who was tested after reading only. Laufer and Hulstijn's (2001: 539) study delivered comparable findings which led to the conclusion that the "amount of retention was related to amount of task-induced involvement". Ranalli (2008) found similar results with a different medium, namely computer games. Participants who had access to and made use of supplementary material (e.g. dictionary, exercises) in addition to playing a game displayed higher vocabulary gains than their peers. While all of these studies investigated different learning outcomes depending on the provision of supplementary pedagogical tasks, there are also studies that examine whether media types that require more cognitive engagement per se (i.e. without the use of additional tasks) are more effective tools for vocabulary acquisition than others (cf. chapter 4). Computer games, for example, may require players to understand written and oral input and produce written and oral output, while films and music only provide input. Hence, it can be assumed that computer games induce more cognitive involvement and therefore more learning than films and music, an assumption which is supported by empirical data (cf. chapter 4). In conclusion, according to the *Depth of Processing* and the *Involvement Load Hypotheses* the degree of attention given to a word determines the chances to retain it.

A core issue in these two hypotheses is the awareness of the new item, which forms the basis of Schmidt's (1990) *Noticing Hypothesis*. According to the *Noticing Hypothesis*, vocabulary acquisition requires "conscious processing at the semantic and conceptual levels. The form of a word has to be deliberately noticed and connected to meaning" (Milton 2009: 219). This perspective is supported by Mondira and Wit-de Boer (Mondira & Wit-de Boer 1991) who argue that the meaning of a word only enters long-term memory if its derivation is connected with a certain degree of cognitive effort. In other words, if the meaning is too obvious from context, learners do not spend enough time on the word's form and consequently will fail to recall it in the future. This suggests that "at least some attention to and awareness of elements of the surface structure of utterances in the input is necessary for learning to take place" (Hulstijn 2005: 134). This view is widely shared: Paribakht and Wesche

(1999: 198) consider noticing the first of five stages of the learning process[1]. Schmitt (1990, cited in Reinders & Wattana 2010: 6) asserts that noticing enables learners to transform input into intake, which, however, is not to be equalled with long-term retention. In line with the *Interaction Hypothesis*, he further argues that interaction facilitates noticing and hence forms the basis of language learning. Despite Schmidt's argument for awareness in language learning being convincing, studies have provided evidence for learning without conscious attention (cf. chapter 4, e.g. d'Ydewalle & Pavakanun 1997)

Although this is only a selection of some of the prevailing language learning theories, it clearly shows that language learning is a complex matter that can hardly be explained by a single theory. Based on the learning theories presented above, certain conclusions on vocabulary learning through extramural English can be drawn. Activities that display the following characteristics are likely to enhance the chances of learning:

- language comprehension is a key factor for task fulfilment
- high cognitive involvement
- combination of input and output

While the aforementioned theories provide the basis for this study and the interpretation of the results, the focus is on one specific aspect of language learning: vocabulary acquisition, which will be introduced in the next chapter.

[1] These five stages from initial encounter to the incorporation into the language system are the noticing of new language data, the assignment of meaning to form, intake, the (partial) integration of the intake into the learner's L2 system and output. For more information see Nation (2001: 232).

3 Vocabulary acquisition

For a long time, vocabulary acquisition has been treated as a subsidiary area of language teaching. Little effort was made to teach vocabulary, as it was believed that learners, like children and their L1, will acquire it naturally (Meara 1980), ignoring the fact that second languages are learnt under different circumstances. In the 1990s and 2000s, however, a growing interest in vocabulary acquisition became apparent and researchers wanted to find out more about the underlying mechanisms of vocabulary acquisition (Read 2004: 146). This chapter will address questions on the importance of vocabulary within the concept of language proficiency, what it means to know a word, factors that influence and strategies that facilitate vocabulary acquisition.

3.1 The importance of vocabulary

"Without grammar very little can be conveyed, but without vocabulary nothing can be conveyed."

(Wilkins 1972: 111)

This statement by Wilkins emphasises that lexical knowledge is a central component of language use (see also Beglar & Nation 2014: 172). Vocabulary is not only important in itself, but also contributes positively to other L2 skills (N. Schmitt 2010). In fact, one of the most comprehensive explorations reports high correlations between vocabulary size and general language proficiency (Alderson 2005)[2]: correlations of 0.61-0.65 for listening, 0.50-0.75 for reading, 0.70-.79 for writing and 0.64 for grammar. In total, vocabulary knowledge was found to account for 37-62% of the variance in language proficiency scores. Consequently, learners with larger vocabularies tend to perform better on various language activities than learners with smaller vocabularies (N. Schmitt 2010: 188; Meara & Miralpeix 2017: 114). Due to the high interest in reading in the early years of vocabulary research, a large quantity of data is available in this area: Laufer and Sim (1985) showed that vocabulary knowledge is "more important than subject or syntactic knowledge for understanding

[2] In this research project during the development of the DIALANG test, a diagnosis system for foreign language proficiency, scores from vocabulary tests were compared with results from the other language sections of the DIALANG test.

a text", as learners seem to derive the message mostly from the words, while syntax and topic knowledge are widely ignored. Based on studies by Anderson and Freebody (1981), Kameenui et al. (1982) and Stahl (1983), Laufer (1997: 20) concludes that vocabulary is the strongest influencing factor in reading comprehension, which is why an increase in vocabulary can improve reading skills. Although this claim indicates a simplistic understanding of text meaning, as it mainly focuses on understanding the individual words a text is composed of, vocabulary undoubtedly plays a major role in reading.

So far, the term 'vocabulary' has been used without a clear definition of the concept. All learners of foreign languages probably have associations with the term and it is widely used in non-scientific areas. However, when looking at scientific texts, it becomes evident that vocabulary is more complicated than what common sense might suggest. Vocabulary sizes reported in studies differ greatly, because researchers use different definitions of a 'word' and vocabulary tests are constructed on different concepts of vocabulary knowledge, which has to be considered when interpreting the results. As this study conducts two tests, the most common definitions of vocabulary knowledge will be presented and compared in the following.

3.2 Defining vocabulary knowledge

Before discussing what knowing a word can entail, it is essential to define the term 'word' itself. In research literature, this is widely referred to as the 'unit of counting', because the determination of vocabulary size in (productive) vocabulary tests often commences with the counting of words produced by the participants. The most common definitions of a word are (Daller et al. 2007a; N. Schmitt 2010):

- Tokens: A test that uses tokens counts every word form in a test, that is, the number of running words. This means that repetitions of the same word are counted as separate items.
- Types: Tests based on types count different words, that is they count repetitions of the same word only once. However, it is often difficult to draw the line between one word and another, especially if they are closely related. *Climb* and *climbs*, for example, are counted as different types, although it could be argued

that a learner who knows the meaning of *climb*, probably also knows the meaning of *climbs*. This leads to the next unit of counting.

- Lemmas: A lemma includes a headword and its inflected and reduced forms. Usually, words of a lemma belong to the same word class. Thus, *climb, climbs* and *climbed* would belong to the same lemma, but *climber* not, because it is a noun. There are two arguments for the use of lemmas as units of counting: Firstly, words are probably stored and processed as lemmas in the mind and therefore results are a good representation of the learner's mental lexicon. More precisely, the base form (e.g. *climber*, *climb*) is stored and the inflections (*climbers*, *climbs*) are added online when needed. Secondly, lemmas take the effort that is needed to acquire a word (cf. 'learning burden' in section 2.7) into account. If a learner knows the base form and the inflectional system of a language, it is not difficult to learn or understand an inflected form. Problems with lemmas concern irregular forms[3] and the choice of headwords (base form vs. most frequent form) (N. Schmitt 2010: 189). The productive vocabulary test that will be used in this study is based on the idea of lemmas (cf. chapter 5).
- Word families: Word families consist of the base form, inflected forms and closely related, derived forms. Hence, semantically related word forms like *climb, climbs, climbed, climbing, climber, climbers* and *climbable* belong to the same word family. There is evidence that items from one word family are cognitively processed together (N. Schmitt 2010: 190). On these grounds, it would be sensible to use word families as the unit of counting. However, it is not always easy to decide which word forms belong to a word family and there are, according to N. Schmitt (2010: 190), no computer programmes that can count word families. Thus, the decision of counting a word as part of a family or not depends on the researcher, which reduces the comparability of results. Besides, some word families might seem sensible for one learner, but not for another and less proficient learners are likely to know only the most transparent members of a family (Nation 2013: 11). N. Schmitt (2010) further points out that word families do play a role in receptive knowledge, but are less representative of productive

[3] Following the rule, inflections of a word belong to the same lemma as the headword. This would mean that the past participle of the verb *be* is part of the same lemma. *Was/were*, however, is not obviously related to *be* and therefore the argument that words of the same lemma do not have to be learnt once the headword and the inflectional system is known is not applicable in the case of irregular forms.

knowledge. That is, if one form of a word family is known, other forms of the same family can probably be recognized, but not necessarily used.

If a study applies several tests with different units of counting, results are less comparable. Therefore, units of counting need to be considered when interpreting results, because tests that use word families will inherently produce lower numbers than tests based on lemmas and so forth. However, in the present study, the results from the two tests cannot be directly compared anyway, since one allows estimates of the participants' vocabulary sizes while the other enables within-sample rankings (cf. chapters 5 and 7). Thus, participants' vocabulary knowledge will be analysed on the basis of the ranks they achieved in the two tests and therefore, units of counting have less impact on the results.

Now that different meanings of the term 'word' were discussed, the question of what it means to know a word can be approached. This study investigates vocabulary gains in out-of-school contexts, which are measured in terms of vocabulary knowledge. There are several concepts of what it means to know a word and the selection of the testing material depends on the concept of vocabulary knowledge that should be studied. For this reason, different concepts will be presented in the following and their relevance to this study will be discussed. Milton and Fitzpatrick (2014) categorise the concepts into three approaches: component, developmental and metaphorical approaches. Developmental and metaphorical approaches are less relevant to the present study and will therefore not be discussed here. For more information, consult Milton and Fitzpatrick (2014), Daller et al. (2007b) and Milton (2009).

Component approaches, as the name suggests, list different aspects of vocabulary knowledge. The following three component approaches are most relevant to this study:

Receptive vs. productive knowledge: Learners can possess receptive and productive knowledge of a word, the former of which is often called 'passive' knowledge and means that a word can be recognised and the latter means that a word can be used in written or spoken output and is therefore also referred to as 'active' knowledge. Some researchers (e.g. Laufer 1998; Hedge 2000) suggest that this dichotomy is too simplistic and should be replaced by a continuum, on which learners move from receptive to more productive knowledge. Supporting this view, Milton (2009: 146)

describes the relationship between receptive and productive knowledge as follows: "[R]eceptive and productive lexicons are generally thought to be inter-related; the growth of one goes hand in hand with the growth of the other."

Studies have shown that receptive vocabulary tends to exceed productive vocabulary. According to Milton (2009: 117ff), this has two reasons: Firstly, learners can only build a productive vocabulary once they have already acquired an extensive receptive one. Secondly, being able to use a word requires the ability to recognize its form and connect it to meaning, hence, receptive knowledge. Consequently, some words of a learner's receptive vocabulary will be ready for use, while others are only available receptively yet. How well a word is known depends to a large extent on its frequency in a language: In order to develop productive knowledge, learners need multiple encounters with a word in different situations and consequently more frequent words are likely to be learnt earlier (Koolstra & Beentjes 1999; Milton 2009: 122). In addition, Nation (2013: 50-53) provides several reasons why receptive knowledge is acquired more easily than productive: First, in order to use a word successfully, learners need to know more aspects of a word, including spelling, pronunciation, syntactic restrictions and collocations. Second, learners, especially those in foreign language settings, receive more practice in receptive use, while opportunities for production are restricted. Third, a newly acquired word has initially only one link to the L1 (translation), while the L1 word has many competing associations for a single meaning, for example collocates, synonyms and opposites. Hence, instead of using the new L2 word, it is often easier to use another better-known L2 word that has similar or opposite meaning. In Nation's (2013: 52) words, "productive recall is more difficult than receptive because there are many competing paths to choose from, and the ones within the L1 system are likely to be stronger." This hypothesis is closely linked to his fourth reason, namely motivation. Learners may be less motivated to use a new word if they can express the same meaning through better-known words.

There is no agreement on the proportion of receptive knowledge that is also known productively, which leads to a wide span of 40% to 80% (Milton 2009: 117-123). What seems to be certain, however, is that the gap between receptive and productive knowledge widens as proficiency increases and frequency levels decrease (Laufer 1998; Nation 2013: 533-534). Although the exact relationship between receptive and

productive knowledge is still an issue of debate, these terms are widely used in other concepts as well.

Breadth vs. depth: Anderson and Freebody (1981) contrast vocabulary breadth, the number of known words, and vocabulary depth, the aspects of a word a learner knows including knowledge about the word's morphological structure, its syntactic constraints, different meanings and collocations. According to Milton (2009: 71) and N. Schmitt (2010: 19) vocabulary breadth increases regularly and gradually. It needs to be mentioned that breadth and depth both have a receptive and a productive component: The number of words that can be recognized is likely to exceed the number of words that can be used. In other words, receptive vocabulary breadth tends to be larger than productive vocabulary breadth. The same holds true for vocabulary depth. This study focuses on vocabulary breadth and aims to determine the number of words Viennese learners of English know receptively and productively.

Form – meaning – use: The latest and most comprehensive description of vocabulary knowledge was compiled by Nation (2013: 49), who distinguishes between knowledge of form, meaning and use. Each of these three categories is again divided into certain aspects that can be known receptively or productively, as table 2 shows.

Table 2 What is involved in knowing a word, from Nation (2013: 49), (R = receptive, P = productive)

Form	spoken	R	What does the word sound like?
		P	How is the word pronounced?
	written	R	What does the word look like?
		P	How is the word written and spelled?
	word parts	R	What parts are recognisable in the word?
		P	What parts are needed to express meaning?
Meaning	form and meaning	R	What meaning does this word form signal?
		P	What word form can be used to express this meaning?
	concepts and referents	R	What is included in the concept?
		P	What items can the concept refer to?
	associations	R	What other words does this word make us think of?
		P	What other words could we use instead of this one?
Use	grammatical functions	R	In what patterns does the word occur?
		P	In what patterns must we use this word?
	collocations	R	What words or types of word occur with this one?
		P	What words or types of words must we use with this one?
	constraints on use	R	Where, when and how often would we meet this word?
		P	Where, when and how often can we use this word?

Since this study investigates vocabulary knowledge of learners at a low proficiency level, they cannot be expected to have such detailed knowledge about English words as described in Nation's list. In the present study, aspects of form and meaning will be more relevant than those of use. For the receptive test, learners need to recognise the written form and connect it to meaning. If learners know a word from oral input (e.g. music/ TV), the ability to relate written to spoken form is also important, as the test is in a written format. For the productive tests, knowing the meaning of the cue words, the spelling of words, and having receptive and productive associations will be essential.

As indicated in the table, learners have to learn the written and spoken form of a word. Especially in English, where there is no clear mapping of sounds and spelling (Nation 2013: 70), knowing the pronunciation of a word does not necessarily entail

the ability to spell it correctly. In other words, learners appear to have separate lexicons for orthographic and phonological knowledge. It was found that these two vocabularies do not develop simultaneously. In fact, beginners tend to have larger phonological lexica, while intermediate and advanced learners have a larger orthographic vocabulary (Milton & Hopkins 2006; Milton 2009: 95; Milton et al. 2014: 22).

To conclude, the two tests on which this empirical research is based investigate receptive and productive vocabulary breadth. In more detail, the following components of Nation's (2013) list will be analysed: receptive and productive knowledge of written form, form-meaning links and associations. Further details on the testing materials can be found in section 5.3.

3.3 Locus of vocabulary acquisition

Research appears to yield inconsistent results on where most vocabulary is learnt. Some hold the opinion that vocabulary is primarily learnt incidentally (R. Ellis 1994; Paribakht & Wesche 1999: 196) and is therefore not bound to a specific space, while others believe that most vocabulary cannot be acquired incidentally, at least not without having a good basis of core vocabulary (Hasebrink et al. 1997; Milton 2009). Hence, Milton (2009: 193) argues that direct instruction in the classroom presents the principal source of input for many learners. Although Harris and Snow (2004) criticize that formal vocabulary instruction through textbooks and teachers is not efficient, there is evidence that more than 50% of the vocabulary presented to learners in the classroom is learnt and studies report that "learners acquire 6.5 to 8 new words per contact hour" (Milton 2009: 206). Assuming that learners have an average of three English lessons per week, this number would add up to an annual vocabulary gain of 800 to 1000 words. Of course, the learning process in the classroom is not that linear and influenced by factors like the quality of classroom learning environment (Milton 2009: 217), which makes this estimation rather unrealistic. Nevertheless, input in the classroom plays a central role in language learning and helps to build the basis learners need for incidental language acquisition to occur outside school.

A different picture emerges from Kuppen's (2010) study on incidental acquisition from media exposure. Results suggest that children can acquire English vocabulary

solely from watching TV without any prior instruction. However, learning outcomes are basic in terms of the number of words that were learnt and empirical evidence from other studies is scarce. Most studies on incidental learning outside the classroom (cf. 4.4), including the present one, investigate vocabulary acquisition of learners who have had several years of English at school. As already mentioned, once learners have built a solid core vocabulary through direct instruction at school, incidental learning outside the classroom is probably responsible for most vocabulary gains. Here, reciprocal correlations were found between the time students spend with English outside school and their vocabulary breadth (cf. chapter 4). In other words, it can be assumed that English activities not only increase vocabulary knowledge but that students who already have larger vocabularies from school are also more likely to engage with English media in their free time. Furthermore, they seem to benefit more from the English input than their peers with smaller vocabularies, which is supported by the following theory.

3.4 The threshold theory

The threshold refers to the number of words learners need for text comprehension, more precisely, the number of words required to understand about 95-98% of a text's words (Laufer 1997; Hsueh-Chao & Nation 2000; Nation 2001, 2013). It is, however, challenging to calculate this number, especially as researchers use different units of counting (cf. 3.2) in their calculations. What seems to be clear is that the number is influenced by variables such as text type (e.g. informal conversation, academic texts), purpose (e.g. reading for gist or pleasure), text length and the medium (spoken vs. written). Generally, more words are needed for the comprehension of written texts, because spoken texts display a higher density of the most frequent words (Milton 2009: 54). Therefore, Nation (2006) estimates that 6,000-7,000 word families lead to a text coverage of 98% in oral communication, while the same text coverage is achieved by 8,000-9,000 word families in written texts. Although a few hundred words would already allow for a text coverage of 80%[4] (Adolphs & Schmitt 2003), this is not enough for text comprehension. 80% might seem high at first glance, but it means that one out of five words in a text is unknown, which equals two to three

[4] The reason for this is that function words and the most frequent content words constitute a large part of texts.

words per line. From this perspective, it seems plausible that learners need to understand more than 80% of a text. A text coverage of 98% would result in two unknown words per 100 words in written texts or two to three unknown words per minute in spoken texts (Nation 2013: 161) and generally results in good text comprehension. The fact that other researchers (Laufer 1989; Adolphs & Schmitt 2003) come up with lower thresholds indicates that these are only estimates. However, there is agreement on the fact that learners need to have a substantial vocabulary in order to understand spoken and written texts, which is in turn a prerequisite for incidental vocabulary acquisition, because learners need to know most of the surrounding words to guess the meaning of an unknown word (Huckin & Coady 1999: 184). As a consequence, the teaching of the most frequent words should be a priority in class as it enables learners to build on their existing knowledge outside the classroom (Llach & Espinosa 2014: 68).

To sum up, learners need, on average, an aural receptive vocabulary size of 6,000-7,000 word families and a written receptive vocabulary size of 8,000-9,000 word families for 98% text coverage. This would imply that the participants of this study, who are at the language proficiency level of A1-A2 and therefore likely to have smaller vocabularies, would not be able to benefit from incidental vocabulary acquisition. However, it needs to be considered that most media types have characteristics that facilitate comprehension, first and foremost repetition of lexical items and visual aids like facial expressions, gestures and subtitles (Milton 2009: 55). Consequently, also lower-proficiency learners may display vocabulary gains from the engagement with English media.

3.5 Factors influencing vocabulary acquisition

All second language learners seem to share the same experience: Some words appear to be learnt more easily than others. This “amount of effort required to learn” (Nation 2013: 44) a word, the learning burden, is influenced by certain linguistic and non-linguistic factors. The following word properties facilitate acquisition (Nation 2001: 22-42; Milton 2009: 37): a word’s similarity to its L1 equivalent, word length, word class, the concreteness of the referent and regular spelling patterns. Milton (2009: 36) argues that similarities in L1 and L2 can facilitate learning. In other words, cognates are acquired more easily because the L1 knowledge is automatically activated.

However, similarities can also cause misinterpretations in the case of so-called 'false friends'[5] (Laufer 1997: 25). Another factor that is debatable concerns word length. The argument that shorter words are generally easier to learn is challenged by researchers who counter that longer words often consist of "several familiar morphemes which enables learners to recognize it more easily and, presumably, to memorise it" (Milton 2009: 37). Furthermore, nouns tend to be acquired more easily than verbs, which are again easier than adjectives (Milton 2009: 37). This relates to the degree of abstractness: Concrete words are learnt with less effort than abstract ones.

While all of these intrinsic word properties influence the learning burden, input factors are also important, the most significant one being frequency (Milton 2007: 51; 2009: 23-25). Words can be categorised into different levels according to how frequent they occur in spoken and written texts, as table 3 shows:

Table 3 Word frequency levels

Level 1	most frequent 1,000 words
Level 2	second most frequent 1,000 words
Level 3	third most frequent 1,000 words

This list can be continued up to high levels. Nation (2013: 9-13) categorises words into four groups: high frequency words, academic words, technical words and low frequency words. High frequency words contain approximately 2,000 word families, including function words and the most common content words. An average text consists to 80% of high frequency words and thus the knowledge of these 2,000 word families is highly useful to learners because they cover a large proportion of spoken and written texts across all topic areas and registers (cf. 3.3). Academic words are characteristic of academic texts across all fields and constitute about 9% of running words in academic texts. Technical words, on the other hand, belong to a specific subject area, where they account for 5% of a text's words but are less frequent in other subject areas. With several thousand word families, low frequency words are the largest group, but they only amount to 6% text coverage, which is why not too much teaching time should be spent on them. Rather, learners should be taught strategies to

[5] In German, for example, the word *sensibel* means *sensitive*, which is why German-speaking English learners tend to have problems with the English words *sensitive* and *sensible*. The English *sensible* is thus a false friend, because it tempts learners to believe that they know the word due to an L1 word that is similar in form but different in meaning.

deal with unknown low-frequency words when encountering them, especially in non-educational contexts (cf. 3.6). It was found that learners who frequently use English media in their free time are likely to display a number of low frequency words which would not be expected at their proficiency level (Arnold 2009; Sundqvist 2009; Kuppens 2010). Word frequencies not only determine the learnability of a word, but also the moment of acquisition. The more frequent a word is, the earlier it tends to be learnt, because learners are more likely to acquire words that they encounter more often[6]. According to Meara (1992: 4), a typical learner displays a descending knowledge of words according to their frequency, from 90% of level 1 words to 10% of level 5 words. Of course, what learners encounter not only depends on the words' frequencies but the selection of vocabulary in textbooks (Milton 2009: 26) and media in non-educational settings.

Besides frequency, the cognitive effort put into learning a word influences a word's learning burden, which relates back to Schmitt's (1995) *Depth of Processing Hypothesis* and Hulstijn and Laufer's (2001) *Involvement Load Hypothesis* (cf. 2.3). A higher degree of attention paid to a word's form and meaning enhances the chances of retention. Furthermore, the textual context significantly contributes to a word's learnability. Firstly, the availability of contextual cues enables the learner to guess the meaning of an unknown word. Secondly, if the understanding of a word is essential for the understanding of the text, it is more likely to be learnt (Horst et al. 1998: 218; Ender 2016: 541).

In addition to these input variables, the learners themselves influence the success of learning. If learners have an existing L2 knowledge they can build on and background knowledge of the topic they can activate, learning new words is easier. Also the motivation to learn a word is essential and especially relevant to the current study, as learners who are intrinsically motivated to understand a word (e.g. because they need it in order to complete a challenge in a computer game) will be more likely to learn it than those for whom the word is not crucial. Last but not least, a learner's procedural knowledge, that is, the "strategies and procedures employed by learners to process L2 data for acquisition and use" (R. Ellis 1999: 55), influence the learning burden, which is the topic of the last section of this chapter.

[6] Some researchers (Huckin & Coady 1999; N. Schmitt 2010; Vidal 2011) have argued that learners need to have at least five to sixteen exposures in ordert o learn a word, whereas others claim that already single encounters can lead to acquisition (Horst et al. 1998; Rott 1999).

3.6 Vocabulary learning strategies

This section introduces the most common vocabulary strategies applied in extramural learning and their success rates. When learners encounter a new word, the decision of how to react is often made unconsciously and in a spilt second. Experienced language users can quickly assess whether the specific word is essential for text comprehension or not. As mentioned above (cf. section 3.5), this necessity to understand a word is one of the strongest motivations for learning and, according to Paribakht and Wesche (1999: 199), it is an even more reliable predictor for acquisition than a word's frequency in the text. If the word is considered dispensable, it is often ignored. In fact, Paribakht and Wesche (1999) report that over 50% of the unknown words in their study were ignored by the participants. Other investigations (Fraser 1999; Ender 2016) found lower but still significant percentages of participants who ignored unknown words. The rate at which ignoring can be applied, depends on the context: If the context provides enough information, single words do not impede comprehension and can therefore be ignored. Strictly speaking, ignoring is not a learning strategy but a lexical processing strategy (Fraser 1999). Nevertheless, ignoring a word does not render learning impossible. Ender (2016) showed that the retention rate after ignoring was 11%, which is a small but notable evidence for implicit learning.

If a word is essential for text comprehension, learners can apply other strategies, including inference and consultation of a dictionary and they can ask teachers and classmates. Inference refers to the guessing of a word's meaning from contextual or linguistic clues. According to Paribakht and Wesche (1999), Fraser (1999) and Abbott (2002), it is the most common strategy and results in high retention rates. When using contextual cues, learners activate their background knowledge on the topic and analyse the word's position in the text. This kind of guessing thus presumes that most of the surrounding words are known, which relates back to the discussion of text coverage in section 3.4. Consequently, learners with larger vocabularies can apply guessing from context more often and more successfully (Nation 2013: 352). However, if the context is too rich, in other words, if it provides too many clues, learners might guess the meaning correctly but might not necessarily remember it (Nation 2013: 357), since cognitive activation is low (cf. *Depth of Processing Hypothesis*, section 2.3). When using linguistic cues, learners can either draw on knowledge of the second language itself (intralingual) or knowledge of their L1 or

other L2s (interlingual). As part of this strategy, learners can also use their metalinguistic knowledge and analyse segments of a word. In general, linguistically informed guesses are more likely to lead to learning than guessing from context. Nation (2013: 358) lists the types of linguistic inferences according to their success in descending order: finding an L1 equivalent, finding an L2 synonym and finding an L2 definition. This suggests that links between the new word and a learner's first language are stronger than links between the new word and other words in the L2 lexicon, as far as form-meaning links are concerned.

The third type of strategy, consulting a dictionary or another person, is the most explicit one. Typically, learners first try to apply the other strategies (ignoring and inferring) before looking up a word in a dictionary or asking somebody (e.g. Paribakht & Wesche 1999; Ender 2016). This is especially true for out-of-school contexts, where vocabulary learning is not the main purpose but rather a side effect of various recreational activities. Compared to inferencing, dictionary use is often said to be less effective because it requires less analytical effort (Ender 2016: 549). On the other hand, form-meaning links retrieved from dictionaries are usually correct, which is not always the case with inferences (Nation 2013: 365-366).

Numerous studies have tried to determine the frequency and success of vocabulary learning strategies. However, this appears to be a challenging endeavour for several reasons. Firstly, these strategies, with the exception of consulting a dictionary, occur in the learner's mind and are therefore not directly observable. As a result, they have to be made visible, which is often achieved through think-aloud protocols (Nation 2013; Ender 2016), where learners are asked to voice their thoughts while completing a task. This, however, is an intervention in the cognitive process, which inevitably changes the situation and makes the learners more aware of the strategies they apply. Thus, it can be argued that the learners' attention is drawn to the strategies and, as a consequence, they might be less likely to ignore unknown words. Hence, it is debatable whether results from these studies are representative of natural learning processes. Another possibility is to ask learners about strategies in questionnaires. However, Nation (2013: 337) advises caution with self-report questionnaires as they do not always yield reliable information. Despite these problematic aspects, information on learning strategies are still valuable, because they provide useful information on the strategies' popularity and success rates. Based on these insights,

teachers and researchers can advise learners on which strategies to use, because learners who have a large repertoire of strategies at their disposal have more control over their own learning process (Nation 2013: 332-333). This ability to learn without a teacher or dictionary is especially important in out-of-school learning. Therefore, results from three studies investigating vocabulary learning strategies are presented in table 4.

Table 4 Frequencies and success rates of learning strategies

Strategy	Frequency	Success
Ignoring	38% (Ender 2016) 50% (Paribakht & Wesche 1999) 27% (Fraser 1999)[7]	11% (Ender 2016)
Inferencing	10% (Ender 2016) 40% (Paribakht & Wesche 1999) 44% (Fraser 1999)	57% (Ender 2016) 30% (Fraser 1999)
Dictionary use	39% (Ender 2016) 29% (Fraser 1999)	27% (Ender 2016) 31% (Fraser 1999)
Inferencing + dictionary	13% (Ender 2016)	47% (Ender 2016) 50% (Fraser 1999)

As table 4 shows, different studies have yielded different results, potentially because of variation in the research design. However, some patterns emerge:

- In general, a high percentage of unknown words were ignored. This number is likely to be even higher in natural settings, as the participants' attention was drawn to vocabulary during research. Although only 11% of the words that were ignored were known in post-tests, this number is surprisingly high considering that learners claimed that they had paid little or no attention to them during the task.
- Except for Ender's study, inferencing was applied in over 40% of all unknown words and has led to high retention rates.
- Dictionaries were consulted frequently, which is probably due to the research setting and not representative of 'normal' learning processes. However, in Ender's (2016) and Paribakht and Wesche's (1999) studies inferencing appeared more successful than dictionary use, which relates to Schmitt and Schmitt's

[7] Fraser differentiates between words that are noticed and consciously ignored (24%) and words that receive no attention at all (3%).

(1995) *Depth of Processing Hypothesis* and Hulstijn and Laufer's (2001) *Involvement Load Hypothesis* (cf. 2.3).

- A combination of two strategies is likely to yield better results than the application of single strategies. This is supported by Nation (2013) and Huckin and Coady (1999: 186), who report that better learners apply a wider variety of strategies.

On average, 27% (Ender 2016: 549) and 28% (Fraser 1999: 236) of the initially unknown words were known in the delayed post-tests one week after the reading session. Nation (2013: 355-356) reports on studies that found lower retention rates of 5-10%. Since these studies were not available for closer examination, reasons for this discrepancy can only be guessed. Possible explanations would be that due to the think-aloud protocols in the studies described above, the participants focussed consciously on vocabulary and that a delay of one week is not long enough to test long-term retention.

To sum up, the following situations can occur when encountering an unknown word:

- The word is not noticed at all.
- The word is noticed but considered unimportant and therefore ignored.
- The word is noticed, considered important and guessed incorrectly.
- The word is noticed, considered important and guessed (partially) correctly.
- Then it can either be learnt or not.

The chances of learning a word are raised by the number of occurrences in the text, the proximity of recurrence, the number of different contexts in which a word occurs, the number and explicitness of relevant clues and the density of unknown words (Nation 2013: 361-364).

As Nation (2013: 348) asserts, guessing from context is the most important vocabulary learning strategy, especially in out-of-school contexts where learners cannot rely on the help of teachers or classmates. In order to give learners more control over their learning and equip them with the necessary skills, strategy training should be incorporated in teaching.

4 Extramural English

While the learning of English as a second language was long restricted to educational institutions, this is no longer the case. In terms of space, there are now two dimensions of L2 acquisition: inside and outside the classroom (Richards 2015: 5) and the assumption that learners can benefit from contact with English outside the classroom is central to this study. So far, the terms 'out-of-class learning', 'out-of-school learning' and 'learning outside the classroom' have been used to refer to this kind of language development, but they often carry the connotation of incidental, unplanned learning. Learning in out-of-school contexts, however, may also be intentional. In other words, learners can consciously decide to engage in English activities in order to improve their language proficiency. Thus, a broader term is needed to encompass all learning that can occur outside school. In section 4.1, a suitable term will be introduced. The next part discusses the role English plays in Europe and Austria today. As this study investigates vocabulary gains from contact with English media, section 4.3 presents data on Austrian teenagers' media use before reviewing international studies carried out in the field of vocabulary learning through extramural English in section 4.4. Concluding remarks on this chapter are provided in section 4.5

4.1 Definition

In 2009, Pia Sundqvist (2009) introduced the term 'Extramural English' (EE), which literally means 'English outside the walls' and refers to the English learners encounter beyond the classroom walls. While other terms like the ones mentioned above often exclude intentional learning (Sundqvist 2009: 25-26), 'Extramural English' refers to all kinds of learning that occur in the students' free time and therefore functions as an "umbrella term" (Sundqvist 2009: 26). In this sense, learning can either be actively induced through activities or occur as a side-product:

> In extramural English, no degree of deliberate intention to acquire English is necessary on the part of the learner, even though deliberate intention is by no means excluded from the concept. But what is important is that the learner comes in contact with or is involved in English outside the walls of the English classroom. This contact or involvement may be due to the learner's deliberate (thus conscious) intent to create situations for learning

> English, but it may equally well be due to any other reason the learner may have. (Sundqvist 2009: 25)

Based on a model by Benson (2011), learning activities outside the classroom can be characterized according to four dimensions: location, formality, pedagogy and locus of control. In the case of EE, the location is outside the school and thus extracurricular activities offered by the school are excluded from this research project. Furthermore, most of the relevant learning situations are informal and self-instructed or non-instructed[8]. Concerning the locus of control, learners themselves are responsible for their learning activities and therefore the learning is either self-directed or non-directed.

4.2 The role of English in Europe and Austria

Since the 1950s, English has increasingly gained importance in Europe due to globalization and the media (Berns & de Bot 2005: 193). It developed from a foreign language to the global lingua franca (Berns 2007b: 1), the most frequently used language of communication between speakers of different L1s. Additionally, it has not only gained importance in the areas of politics, business, science and education, but also in the private sphere, especially in the case of the media. English is the most commonly taught language in all European countries (Berns, Claes, et al. 2007: 15) and was introduced into the Austrian curriculum for lower secondary education in 1985 and for upper secondary education in 1989 (Österreichisches Sprachen-Kompetenz-Zentrum 2001: 5). In 1995, English also entered primary education in the form of a school piloting project and became compulsory three years later. Further evidence for the awareness of the growing importance of English is the introduction of CLIL (Content and Language Integrated Learning) and bilingual lessons in 1991. Thus, English became more and more incorporated into the Austrian curriculum and since 1998/1999 a foreign language, in most schools English, has been compulsory from grade 1 onwards (Dalton-Puffer et al. 2011: 183). This means that when leaving school, most Austrian students have learnt English for at least nine years.

[8] In self-instructed learning, learners make use of structured materials, while non-instructed learning is naturalistic and occurs as a side-product of other activities.

However, school is no longer the only space where learners encounter English. In fact, for some learners, English lessons in school might play a minor role compared to the amount of English input they receive in their free time (Hasebrink et al. 2007: 117). Thus, the following section focuses on aspects of EE that are most relevant to the age group of this study. Berns (2007b: 3) observes that "[t]he global distribution of American popular culture through film, television, and music with English as a medium illustrates the close connection between the areas of English language and media." Therefore, Grau (2009: 160) concludes, teenagers today have "more varied and unique contact with their target language than past generations".

Unfortunately, little data is available for Austria, but Hilgendorf (2007: 135) found that a growing number of German teenagers come in contact with English on a daily basis, mostly through English music on the radio. Considering the cultural and linguistic parallels between Germany and Austria and the fact that the majority of music on European radios is in English (Berns & de Bot 2005: 194; Hilgendorf 2007: 140), similar results could be expected in Austria. Furthermore, English is the dominant language on the Internet (Sundqvist 2009) and in many smaller countries such as Belgium, the Netherlands and Denmark also on TV (Berns, Claes, et al. 2007: 32). Since English has gained a lot of presence in countries were it used to be a foreign language, it is now argued that the "[c]lear distinctions between English as a Foreign Language and as a Second Language have become blurred with the globalization of English" (Berns & de Bot 2005: 212).

4.3 Media use of Austrian teenagers

Research on media use in Austria is scarce. The only comprehensive set of data, to the best of my knowledge, is provided by the *ORF (ORF Markt- und Medienforschung 2015)*, the Austrian national public service broadcaster. Every year, data about the time Austrians spend on different media types is published. The latest complete set of data is from 2015 and investigated media use by Austrian citizens aged 12 years or older (ORF Markt- und Medienforschung 2015). Over the last years, a steadily rising trend in watching television has been observed, reaching a new record in 2015: The broadcaster registered more than 4.5 million viewers per day, which equalled 62.4% of the entire population. On average, the viewers spend 269 minutes per day in front of the television. Radio stations displayed a daily coverage of 77.2% of people older

than 10. While most types of media showed a rising curve, gaming consoles seemed to be losing popularity. The proportion of households with gaming consoles increased until 2013, but has been decreasing ever since, dropping to 40% in 2015. This might be explained by the fact that people now have increasing access to a wide range of online games through the Internet. 87% of all households have a computer or laptop. Compared to 1996, this figure has more than doubled. While only 4% of the population had access to the Internet 11 years ago, 83% were connected to the World Wide Web at home in 2015. A large proportion (67%) use the Internet (almost) daily and only 5% never use it. Considering the target population of this study, the 14-19 year olds show disproportionally high numbers: Although they only account for 8% of the total population, they constitute 11% of frequent users. Unfortunately, this is the only explicit data provided for this age group, which is why an older study needs to be drawn on. In 2008, the ORF conducted a large-scale investigation on Austrian teenagers' media access and use (ORF Markt- und Medienforschung 2008), whose results refer to the age group of 12-19-year olds. Access to the different media types[9] was as follows: TV 99%, DVD-Player 95%, radio 98%, MP3-Player 79%, computer 98%, Laptop 43%, Internet 93% and mobile phone 98%. Half of the young generation watched TV on a daily basis, a figure that had been slowly decreasing since 2000. This could possibly be related to other options of watching films and series, for instance through online streaming. Three out of four teenagers listened to the radio daily; however, with 104 minutes they were below the Austrian average. All 12-19-year olds used the computer, 93% at least several times a week, which was more than in all other age groups. Similar results were found for the use of the Internet: 98% accessed the Internet in general and 95% several times a week, which rendered this population group the most frequent users of the Internet.

To sum up, young people have access to a wide range of media types and are frequent users. However, this data provides no information on which languages they encounter through media use. Austrian TV tends to be dubbed, which means that little English input can be expected from watching television. However, a large proportion of songs on the radio have English lyrics (Schwarz 2012: 86-87) and the Internet offers ample opportunities for EE. The present study, together with a larger study conducted by Schwarz (in progress), aims to compensate for this lack of language-specific data in

[9] at least one per household

Austria and provides some insights on the proportion of English students encounter when using different media types (cf. chapters 6 & 7).

4.4 Extramural English and language proficiency

The fact that young learners of English are surrounded by the target language in their free time influences the learning process. According to Drotner (2008: 10), digital media transforms the way we conceptualize and practice informal learning and Berns and de Bot (2005: 205) argue that more contact with English through media leads to higher proficiencies. In fact, they consider access to be more important in the learning process than other variables like language background and attitudes towards English. In order to exploit this potential, numerous international studies aimed to investigate the relationship between EE and language proficiencies. As different media types proved to shape learning in different ways, the studies will be presented according to media type in the following. Since only one such study was conducted in Austria (Schwarz 2012; 2013, cf. 4.4.2), the international studies serve as an overview of the current scientific knowledge and as a point of reference for the interpretation of the results from this study in chapter 7.

4.4.1 Multiple media types

With growing interest in EE, numerous studies have investigated teenagers' contact with English outside school, where mass media play a crucial role. Grau (2009) conducted an empirical study on EE with more than 900 students attending German secondary schools. Results show that most contact time occurred through listening and reading, but students hardly engaged in activities that required production. The study provides a list of media types according to exposure time in descending order: music, TV/ films, computer games, texts on the Internet and Internet communication (e-mail, chat). The average participant listened to music several times a week, but hardly ever focused on lyrics. Significant gender differences were observable in the categories TV and computer games: While girls spent more time watching English language TV and films, boys preferred playing computer games. Similar results concerning gender differences were found in other studies (cf. 4.4.5).

The largest European study conducted on English media use so far is 'In the presence of English' by Berns, de Bot, et al. (2007). In their longitudinal study, they questioned over 2,200 teenagers from Germany, France, the Netherlands and the Dutch-speaking part of Belgium and found that music on the radio provided most English input across all countries. German participants indicated that they listened to the radio for 28.1 hours per week on average. This number does include the proportion of songs with non-English lyrics, which is, however, negligible compared to the large share of English songs on European radios (Hasebrink et al. 2007: 113). Participants seemed to pay little attention to the lyrics and therefore vocabulary uptake from music consumption was expected to be limited. Interestingly, less time was spent on listening to music in the other countries. While music consumed in all groups had mostly English lyrics, the other media types were linguistically more heterogeneous. This phenomenon was especially observable in international TV programmes, which tend to be dubbed in large linguistic communities such as Germany and France, but subtitled or captioned in smaller countries like the Netherlands and Belgium due to financial reasons (cf. 4.4.4). Therefore, Dutch and Belgian participants received more English input through television than their French and German peers. In fact, 94% of the Dutch and 80% of the Belgian students stated to watch English language TV programmes and films, while the numbers for the German and French participants were considerably lower (43% and 24% respectively) (de Bot et al. 2007: 60). The second most important resource of English were computers (Hasebrink et al. 2007: 113) followed by the English teacher, which illustrates that the classroom is no longer responsible for the majority of contact time with English. Computers appeared to be responsible for less contact time with English than the other media types. In order to investigate correlations between EE and language proficiency, a receptive vocabulary test (*V_YesNo* by Meara 2015a) was conducted. Results show that participants from Belgium and the Netherlands scored significantly higher than those from France and Germany (de Bot et al. 2007: 67-69). The higher proficiency in the Dutch-speaking regions is explained by the earlier onset of English lessons at school, more English classes and subtitled TV programmes and films. Despite the different linguistic circumstances, the participants on average believed that 65.2% of the learning occurred at school and 23.2% through the media, which illustrates that school was still regarded as the most important source by all groups. To conclude, this study

confirmed the hypothesis that English is no longer restricted to educational settings, but omnipresent in the lives of young people in Europe.

Sundqvist (2009), who coined the term EE, conducted a study on EE in Sweden. While no straightforward correlation could be found between EE and oral proficiency, EE proved to have considerable influence on vocabulary. The group spending most time on EE activities displayed the following habits: On average, they had 29 hours of contact with EE per week, of which they played computer games for 12 hours and spent six hours each on music and TV. This is, of course, beyond the sample mean of 18.4 hours, but even the lowest group had 13 weekly hours of exposure to EE. The two vocabulary tests showed positive correlations between EE and vocabulary knowledge for the whole sample, especially for the male group. Boys scored significantly higher than girls on the receptive vocabulary test, which shows that they had acquired more receptive vocabulary than girls. Since they attended the same schools and therefore the same English lessons, reasons for this discrepancy in scores must lie somewhere else. This outcome is opposed to results from national tests and English grades, where girls generally do better (Sundqvist 2009: 20). According to Sundqvist (2009: 196) "35% of the variance in the boys' vocabulary scores can be explained by the relationship between EE and vocabulary rather than by chance or by some other cause(s)." In particular, boys spent significantly more time on playing computer games, an activity that heavily relies on language skills as it combines aural, visual and written input and often requires oral and written output. Additionally, boys also spent more time surfing the Internet, which is the second most beneficial EE activity for vocabulary learning according to Sundqvist (2009: 156), who ranks EE activities in relation to vocabulary as follows: playing video games, surfing the Internet, watching TV, reading, listening to music, watching films. Thus, in line with the *Interaction Hypothesis* and the *Depth of Processing Hypothesis* (cf. 2.3), learners benefit more from activities in which they have to interact and are more cognitively involved, which could explain the higher scores on the vocabulary tests in the male sample. The author therefore concludes that activities that require learners to be more productive (e.g. playing computer games, communication on the Internet) probably lead to a higher increase in language proficiency than passive activities (e.g. reading, listening to music, watching TV). Even more, Sundqvist (2009) considers EE to be

the only explanation for higher proficiency after investigating background variables such as the parents' educational background and travels abroad.

More evidence for the positive impact of EE on language proficiency was provided by Housen et al. (2001, cited in Kuppens 2010: 68). Their investigation on French and English language proficiencies of Flemish Dutch-speaking students found that the participants were better in English, although they had had significantly more French lessons. Considering that no differences existed in teaching methods and the curriculum, the researchers concluded that the students must have acquired large proportions of English from "extracurricular supply" (Kuppens 2010: 68).

Sockett (2013) investigated processes involved in media-related language learning in France. As the participants were asked to write learning blogs about their online informal learning of English for three months, this is a self-reporting study, which means that the results need to be treated with caution. Furthermore the sample size of 9 female EFL university students is small and hence not representative. However, because of the small sample size, the study could provide valuable insights into individual learning processes. According to the data, 60% of the French university students downloaded English films and series regularly and 30% engaged in social networking in English. Generally, the participants reported focussing on meaning rather than form in free time activities. The authors found the following aspects particularly beneficial for language learning: First, the anonymity on the Internet decreases the fear of making mistakes. Second, negotiation of meaning often occurs in real-time chats and is also central to multiplayer online role-playing games, where players have to understand the intentions of other players. Due to the international community, English is frequently used as the language of communication in these games. Some words and expressions need to be understood in order to play and win English computer games and this motivation facilitates language learning. Often standard expressions provided through the game occur repeatedly and are therefore more easily incorporated into the players' repertoires. The visual clues further support vocabulary acquisition through inference from context. Thus, in these games, learners use English for the game's sake and not for purposes of language learning. When watching English TV series, technical vocabulary often poses a challenge in the beginning, but the longer learners watch, the more technical terms they acquire and the more they can accept that they do not need to understand every word for gist

comprehension. Through TV, learners are exposed to a variety of dialects, registers, informal language and slang, which tends to be neglected in English lessons. Thus, English from films and series can complement 'school English' and prepare students for a wide range of conversations. In contrast to films, series have the advantage that vocabulary tends to reoccur, which facilitates acquisition.

The last study on multiple media types was conducted by Lai et al. (2015) in China. Results showed that quality of language input appears to be more important than quantity. Furthermore, form-focused and meaning-focused activities should be balanced. As learning in Chinese schools tends to focus on form, it is sensible to compliment it by EE activities. According to the study, 10% of the variation in the learners' English grades could be explained by the variety of meaning-focused activities outside school. In combination with the use of diverse technology, meaning-focused activities account for up to "20% of the variation in participants' confidence in learning English and 30% of the variation in participants' enjoyment in learning English" (Lai et al. 2015: 292).

4.4.2 Music

Music constitutes one of the most accessible sources of English across all European countries since a majority of music on the radio has English lyrics. In Germany, 95-100% of the songs on radios aiming at young audiences are in English (Berns, Claes, et al. 2007: 34) and also in Austria young people seem to prefer English music over music in other languages (Schwarz 2012: 86-87). This frequent exposure to English and characteristics of songs can lead to vocabulary acquisition. As Milton (2008: 227) argues, lexical items are repeated more often in songs than in the classroom. In addition, "rhythm can make the words memorable" (Salcedo 2010: 19), because it connects the two hemispheres in the brain. The right hemisphere processes music and the left hemisphere words, thus music creates an "ideal learning situation" (Salcedo 2010: 21) through the simultaneous activation of both hemispheres. Often, people experience the 'Song Stuck In My Head Phenomenon', which means that the song, and therefore also the vocabulary, is repeated without intentional effort, possibly having a profound effect on vocabulary acquisition (Salcedo 2010: 23).

The only study on EE in Austria so far investigated the influence of English language songs on students' vocabulary knowledge. Schwarz (2012); (Schwarz 2013). conducted an experiment which consisted of a vocabulary test using the Vocabulary Knowledge Scale by Paribakht and Wesche (1997) and a questionnaire. A majority of the participants aged 13 to 15 listened to music almost daily and over 90% reported that most songs they listened to were in English. Although only 47.3% attached some importance to the lyrics, over 80% stated that they understood at least individual words. Inference from context was the most common strategy, which was applied when words appeared to be important for the over-all content and when words occurred frequently. The target words of the vocabulary test were words from the then current pop charts in Austria that did not occur in the coursebooks. Hence, students who knew the target words could be assumed to have acquired them outside the classroom. The same vocabulary test was conducted twice, in the first round without and in the second round with musical stimuli. During the second administration, short sequences of the songs, in which the target words occurred, where played to the participants. Higher results on the second test suggest that the songs activated vocabulary knowledge students were not aware of in the first trial. In general, neither the frequency of listening to English language music nor the application of strategies seemed to influence vocabulary knowledge, but those students who stated to actively engage with lyrics had higher scores than their peers, which is supported by the *Depth of Processing Hypothesis* (cf. 2.3). Based on these results, Schwarz (2012: 135) concludes that "intermediate Austrian students do in fact acquire vocabulary knowledge incidentally from pop songs outside school."

Many other studies on the effects of music in second language acquisition focussed on the beneficial use of music in the classroom and are therefore not that relevant to this study. Nevertheless, some of the insights gained from these studies are valuable and will be briefly presented: Schön et al. (2008) compared the learning results of three groups who used music to a varying degree in order to learn six nonsense words. The study showed that participants of the music group had a higher chance of acquisition than the control group (64% vs. 48%). The motivational and structuring properties of music were listed as possible reasons. This is also supported by Abbott (2002: 10) who further argues that "patterns produced through rhyme are known to aid memory and enhance language learning. […] Thus, songs presumably enhance and stimulate

memory because dual coding leads to deeper processing and better retention." A study by Milton (2008: 231-232) found that frequency played an important role in vocabulary uptake through English language songs. While frequency does not necessarily influence the initial learning of words, it facilitates their memorization. Even after three months, words with more than three occurrences in a song had a 100% retention rate, while those that were repeated less often were more prone to attrition. Furthermore, language in pop songs tends to be "associated with the level of 11-year-old native English speakers" (Li & Brand 2009: 75), which makes them especially accessible for learners.

To sum up, English language music facilitates vocabulary learning, despite the fact that learners usually do not focus their attention on lyrics. In addition, music increases students' motivation and the repetitive nature of songs supports memorization.

4.4.3 Books and articles

Reading and vocabulary are interconnected: A large vocabulary knowledge facilitates reading and at the same time reading can lead to vocabulary growth (Nation 2013: 204). This reciprocal relationship made reading a particularly interesting matter to study in the field of vocabulary acquisition. The long-standing interest has created a substantial corpus of data, only a proportion of which can be presented in the following. The studies were selected according to their recency and their relevance to this thesis.

Horst et al. (1998) investigated incidental vocabulary learning from extensive reading in Omar. The pre-tests and post-tests showed that the students had a mean gain of about five words which equals 22% of the unknown words. Horst et al. (1998: 218-219) explain the relatively small gains through the fact that participants with small vocabularies do not have enough text coverage to infer meaning from context (cf. 3.4). Thus, the researchers conclude that extensive reading might enrich existing vocabulary knowledge, but is not very effective in acquiring new words.

Paribakht and Wesche conducted two studies on vocabulary learning through reading. Their earlier study (1997) compared two groups, both reading the same texts but the second group's reading was additionally complemented with vocabulary activities. Although the second group scored higher, all participants displayed significant

vocabulary gains, which supports the theory that substantial amounts of vocabulary can be learnt through reading. Paribakht and Wesche's (1999) later study tried to detect whether the theory that most words (especially the less frequent ones) are learnt incidentally through reading, which is true for L1, is transferrable to SLA. Think-aloud protocols revealed that over half of the unknown words were ignored. The study provided evidence for some vocabulary gains but the participants uttered doubts on the efficacy of reading for vocabulary learning.

Rott (1999) investigated the effects of frequency on acquisition when reading a text. Results showed that already two encounters induced vocabulary growth and words that were encountered six times or more had very good chances of being learnt. While only half of the participants could improve productive knowledge, considerable effects were observed on receptive knowledge, even in the post-test four weeks after the reading.

In her study on CLIL (Content and Language Integrated Learning), Sylvén (2004) found that CLIL had a positive effect on vocabulary knowledge, but extensive reading outside the classroom was by far the most important factor. According to her study, 59% of the male and 39% of the female participants read English in their free time. It has to be mentioned that Sylvén used a very open definition of reading that not only included reading books, newspapers and magazines, but also reading that occurs while playing computer games. This suggests, that encouraging students to read outside school is more successful than increasing contact time at school through CLIL lessons, at least as far as vocabulary is concerned.

To sum up, only a few words are usually learnt incidentally from a text, but through extensive reading these small gains can add up to considerable vocabulary growth. Unsurprisingly, reading was found to have more effects on receptive than on productive vocabulary

4.4.4 TV and films

Large proportions of films and TV series that are aired in Europe are produced in the US and are thus originally in English. According to Berns, Claes, et al. (2007: 31) the US claimed 70% of the European film market in 1996; however, larger countries like France and Germany tend to dub international films. Although Austria does not fall

into the category of a large country, it shares the official language of Germany and can therefore use the same dubbed versions; consequently Austrian TV is in German. Smaller linguistic communities, on the other hand, usually choose subtitling over dubbing because of financial reasons[10]. This means that people from larger linguistic communities are less likely to come into contact with English via TV, while citizens of smaller linguistic communities watch English language programmes regularly (Berns, Claes, et al. 2007: 33).

Watching English TV programmes not only provides learners with L2 input, but also increases motivation. While English language films and series are not aired on public TV channels in Austria, learners now have access via online streaming services. One advantage of English language programmes is that learners can choose whether they want to use subtitles or not. Furthermore, they receive multimodal input (visual, aural) facilitating comprehension. In addition, films present a range of dialects and registers, which can be a valuable complement to the rather formal language in the classroom (Richards 2015: 18-19). Considering this collection of beneficial characteristics, English language TV programmes have become a point of interest in SLA research. In the following, some international studies on vocabulary acquisition from English language audiovisual media will be presented.

Milton (2009: 228) describes the nature of films as being different from music and books because information is not only conveyed through language but also through images and music. This and the fact that films include sequences without speech means that vocabulary load is less dense in films compared to songs and books. Furthermore, the dual coding assists retention. On the other hand, an overload of context through images might render the comprehension of individual words or phrases unnecessary and thus be counterproductive for language acquisition.

[10] According to Koolstra et al. (2002: 345), dubbing is 10-15 times more expensive than subtitling.

In order to find out how many words can be acquired in one hour, Milton (2008) conducted a study in Greece using DVDs with English soundtracks and Greek subtitles[11]. The film was selected by the participant and lasted for 100 minutes. The viewers had the chance to pause and rewind if comprehension problems occurred. Four weekly sessions were conducted, each of which lasted for approximately 180 minutes, which shows that the participant frequently paused the film. This indicates a focus on vocabulary on the part of the viewer, which would probably not be the case in naturalistic viewing where more focus is put on the over-all comprehension of the story. The awareness of being tested on vocabulary after each session might have motivated the participant's behaviour. For the vocabulary test, the researchers selected 100 unknown target words from the film. Results show that the subject built an increasing knowledge of the target words from one viewing to the next. In total, about 40 words per viewing were acquired, which equals 16 words per hour. From these results, Milton (2009: 229) concludes that "[l]earners can learn very large amounts of vocabulary from informal tasks they enjoy doing – provided vocabulary learning is a focus of the activity." In natural settings, however, learners are unlikely to watch the same film repeatedly over four weeks and pause as frequently. Therefore, the results of this study cannot be transferred to extramural media consumption. In addition, the study had only one participant, which means that no generalizations can be drawn from it. In Milton's conclusion, it is apparent that focus on language is, in his opinion, a determining factor for vocabulary acquisition. However, the following studies provide evidence that acquisition can also occur incidentally while watching films or TV.

Kuppen's (2010) study, which has already been mentioned in section 3.3, is special in the sense that the participants had not received any formal education in English at the time of the investigation. The study was conducted with 374 primary school students in the Flemish part of Belgium, where TV is subtitled. A combination of a questionnaire on English-language media use, attitudes towards English and self-

[11] Although the term 'subtitle' is frequently used in every-day speech, the distinction between subtitles and captions is often not made. For linguistic research, it is however, important to point out the difference: Subtitles are a translation of the script into the viewer's first language or another language. Thus, the languages of the soundtrack and the subtitles are not the same. In captions, on the other hand, the script is "in the target language (e.g. English) [and] allows learners to visualize what they hear" (Richards 2015: 17). Linguistically, subtitles are thus interlingual and captions intralingual.

assessment of English proficiency and two oral vocabulary tests yielded the following results: English-language music was the most popular media type, followed by English TV and computer games. A third of the sample had the feeling to learn a lot of English through the media, while only 5% believed that English-language media had no effect on their language proficiency. These opinions are confirmed by results that showed that children who frequently watched English movies and TV scored significantly higher on both vocabulary tests.

Another study on young learners was conducted by Koolstra and Beentjes (1999) in the Netherlands, where about 50% of the children's viewing time is in subtitled English. In order to discover "at what age Dutch children are able to distinguish spoken English words" (Koolstra & Beentjes 1999: 54), they tested children before (grade 4) and after (grade 6) the onset of English instruction at school in grade 5. The participants were divided into three groups: Group A watched a 15-minutes documentary with English soundtracks and Dutch subtitles, groups B watched the same documentary without subtitles, and group C watched a Dutch documentary and thus functioned as control group. Participants from groups A and B displayed vocabulary gains, but members of group A scored considerably higher. A possible explanation might be that "recognition of words on the basis of a two-channel input (listening and reading) is easier than on the basis of a one-channel input (listening)" (Koolstra & Beentjes 1999: 58). The results from the vocabulary tests were complemented by a question on viewing habits at home, on the basis of which a positive correlation between the frequency of watching subtitled TV programmes and English vocabulary breadth could be found (Koolstra & Beentjes 1999: 59). The researchers argue, against Milton's belief, that children do not acquire vocabulary while watching TV because they want to learn new words, but because they want to understand the story and need to infer meaning from context in order to do so. Although the observed effects were small, the researchers assume that higher gains can be expected in natural settings, where children can choose the programmes themselves and are therefore probably more motivated. Furthermore, the material used in the study was a short clip and extensive viewing at home would probably have stronger effects (Koolstra & Beentjes 1999: 59). Considering that half of the participants had not learnt English at school yet, these gains, however small, are nevertheless remarkable and challenge the threshold theory (cf. 3.4).

Similar results were found by Lekkai (2014) who investigated the acquisition of Italian words from watching TV programmes in Greece. For her 9 to 12-year-old participants the research project represented the first contact with Italian. The testees were again divided into three groups and watched either a 15-minute children's programme in Italian (with or without Greek subtitles) or a programme in Greek. The film was shown twice, followed by two vocabulary tests. As in Koolstra's and Beentjes' (1999) study, participants from the subtitle group achieved the highest results, followed by the group without subtitles. Lekkai (2014: 82) points out the advantages of subtitles as another source of input. When watching subtitled films, learners can draw their information from images, the soundtrack and subtitles, which facilitates language acquisition.

For a long time, use of the L1 was rejected in second language learning and teaching, because it was believed to prevent acquisition. This also means that subtitles were dismissed as distraction from the second language (Danan et al. 2004: 68). Research, however, has provided evidence for the positive influence of subtitles on vocabulary acquisition, as the studies mentioned above show. Danan et al. (2004: 72) argue that subtitles lead to better retention and recall, because the simultaneous presence of aural and visual input increases depth of processing. When viewers make an effort to find translational equivalents, the two verbal systems are linked and viewers consequently have more paths for retrieval at their disposal. The argument that subtitles might distract from the L2 input is overruled by scientific evidence: Eye-movement research has revealed that subtitles are read automatically without impeding the processing of aural input (d'Ydewalle & Pavakanun 1997; Koolstra & Beentjes 1999). Furthermore, viewers can process the written input faster than the aural, which means that subtitles actually increase the efficacy of information processing (Koolstra et al. 2002: 335). Although subtitles are not always useful, for example in the case of poor readers or young learners (Koolstra & Beentjes 1999: 52), they can improve the reading skills and vocabulary knowledge in the first language, as a later study (Koolstra et al. 2002: 340) revealed: The average viewer in the Netherlands watches TV for 20 hours per week. Considering that about 40% of all programmes are subtitled and subtitles are present during 75% of the time, this would results in five to six reading hours per week and is therefore likely to improve general reading skills. The same study investigated people's attitudes towards subtitled TV and found that more than a third

of the adults and 25% of primary school children in the Netherlands were convinced that their second language skills improved through watching TV. In fact, children had the feeling that they learnt more English from TV than at school. From their Dutch study, Koolstra and Beentjes (1999) conclude that the high frequency of subtitled television viewing influenced performance results to a higher degree than age and thus years of formal instruction in English. To conclude, the studies mentioned above have shown that subtitles do not impede, but in fact support SLA.

Further advantages and disadvantages of captioning and subtitling were analysed by Danan et al. (2004). Since subtitles have already been discussed in detail, only captions will be discussed here. Captions are beneficial, because they can raise motivation and attention and lower the affective filter (cf. 2.3), which helps learners process the aural input. According to Danan et al. (2004: 75), "captioning allows learners to relax, grow more confident in their ability to understand, and direct their mental energy to actual learning". Learners are not only better at recognizing words, but also at remembering them when receiving written and spoken input simultaneously. Supported by captions, students can even "perform beyond their proficiency level" (Danan et al. 2004: 69). However, the researchers concede that captions alone are not sufficient. Learners also need the ability to apply strategies. Furthermore, especially for beginners, captions are only useful, if they are adapted to their level, because they "cannot sufficiently compensate for the fast rate of speech and the difficult vocabulary level" (Danan et al. 2004: 71). To sum up, provided that learners have a certain proficiency level, captions lead to more active viewing and the application of learning strategies, which facilitates incidental vocabulary acquisition.

Not only the presence of subtitles and captions can influence the success of vocabulary acquisition, but also the type of TV programme. Bahrani and Tam (2012) compared the effects of films, news and cartoons on low-level English learners. After having exposed three groups of participants to the three media types over a period of four months, they found that cartoons were the only media type that could significantly improve the language skills. In a follow-up study with English majors in Malaysia, Bahrani et al. (2014) analysed the participants' exposure to their favourite media types in relation to their language proficiency. Results showed that low-level learners preferred cartoons, while upper-intermediate learners spent most time watching the news. When comparing the scores from the pre-test and the post-test,

significant vocabulary improvements could only be observed with upper-intermediate learners. The low-level learners could enhance their listening skills through watching cartoons, which seems to confirm the results from Bahrani and Tam's (2012) study, namely that this media type was most beneficial to low-level learners. The researchers conclude that news is a more effective tool for language acquisition because the language is less modified. While this assumption is debatable in itself, Bahrani et al. (2014) also appear to ignore the effects of the proficiency levels: In line with the threshold theory, it is possible that the low-level learners did not have enough vocabulary available to infer meaning to new words regardless of the media type they watched. From these two studies, the following conclusion can be drawn: The less proficient learners are, the more visual support (in the form of pictures or subtitles) they need for vocabulary acquisition to occur. News and TV series were found to have stronger influences on vocabulary acquisition than films, because vocabulary is regularly recycled due to the (more or less) consistent topic areas (Bahrani et al. 2014).

As these studies have shown, watching English-language films and TV programmes can lead to considerable vocabulary growth, especially when subtitles are used. However, most of these studies did not apply delayed post-tests and therefore only provided insights on short-term effects. Hence, more research is needed to investigate long-term impacts of English audiovisual media on vocabulary knowledge. Considering that Austrian TV programmes are in German, access to English-language programmes were limited until recently, when online streaming services have made a wide range of English films and series available. One aim of the present study is to determine whether teenagers in Austria make use of this opportunity and whether beneficial effects can be observed.

4.4.5 Computer games

Compared to the media types discussed so far, computer games[12] lead to more active participation in the activity and encourage more interaction (Reinders & Wattana 2010: 6; Sundqvist & Sylvén 2012: 191). While music, books, magazines and TV only provide input, computer games often require players to produce output as well,

[12] In this thesis, the terms computer games and video games will be used interchangeably to refer to games played on computers, gaming consoles and portable devices.

which means that depth of processing is generally high and more skills are trained. Playing computer games involves many cognitive processes, among others reading on and off screen (e.g. computer magazines) and processing auditory information (Buckingham 2008: 27). Furthermore, players can learn through experience rather than direct external instruction and develop learning strategies. Computer games also reduce the risk of loosing face and therefore lower the affective filter (cf. 2.3), which means that learners are less intimidated to use the L2 (Gee 2012: xii). In addition, language is presented in context, that is, embedded in a story and supported by visual and aural cues, which gives deeper meanings to the words. One reason why computer games seem to function particularly well as language-learning tools is that both gaming and language learning are problem-solving activities. Furthermore, language skills can only become 'real skills' and not just test passing skills, if "[l]earners need to use the language or literacy skills they are learning to carry out communicative or cognitive goals, actions and functions that are consequential to them" (Gee 2012: xiii) - and computer games can provide opportunities to do so. Studies on the influence of computer games on language proficiency are rare (Reinders & Wattana 2010: 6), but a few will be presented in the following.

Despite the existence of computer games especially designed for pedagogical purposes, the following studies all investigate effects of commercial games, because they are usually better developed, more appealing (Reinders & Wattana 2010: 9) and therefore more likely to be used by learners in their free time. As mentioned by Sundqvist (2009: 191), two games that enjoy great popularity among teenagers are *The Sims* (Electronic Arts 2000) and *World of Warcraft* (*WoW*) (Blizzard Entertainment 2004). Consequentially, many of the following studies used these games in their investigations. For better understanding of the kind of language that can be learnt from these two computer games, they will be briefly described: *The Sims* is a life simulation video game, in which the players can build homes and create characters whose lives they can control. In this regard, the game features vocabulary from the fields of furniture, personality traits, clothes, every-day activities and professional life. Vocabulary is presented in written form and players do not need to produce language, but only click on the items. Thus, the only language skill involved in playing *The Sims* is reading and therefore receptive vocabulary can be developed. However, it needs to be mentioned that *The Sims* is available in numerous languages,

which is why many learners might prefer to play in their L1 instead of English. *World of Warcraft* is a massively multiplayer online role-playing game (MMORPG), which is set in a fantasy universe. Typical for MMORPGs, players control a character avatar and have to complete quests, fight monsters and interact with other players. In contrast to *The Sims*, this interaction means that players not only receive input, but also produce written or spoken output. Thus, all four skills (reading, listening, speaking and writing) are practiced. Since many international players participate in the game, the default language is English.

Ranalli (2008), for example, explored whether *The Sims* could be pedagogically modified for language learning purposes. The realistic animation and the impressive interactivities create "context-rich, cognitively engaging virtual environments for language learning" (Ranalli 2008: 441). According to a study by Miller and Hegelheimer (2006) reported in the same article, the computer game in combination with supplementary material led to a significant increase in vocabulary knowledge. Inspired by this research project, Ranalli decided to do a follow-up study on vocabulary gains, because the game offers numerous opportunities to get to know words for every-day objects, actions and situations. However, the English language input in *The Sims* is only written, not spoken. The nine participants (intermediate ESL learners at university) were divided into three groups with varying degree of access to supplementary material. Out of the 5000 occurring items, 30 low-frequency words that appeared more than once and were therefore likely to be encountered by all participants were selected. The knowledge of the target words was tested in a pre-test, and ten items were tested after the second, third and fourth gaming session. The post-test included the same items as the pre-test but in different order and question types. The participants displayed an average increase of 14%, which equals 4.22 out of 30 words. However, this number was significantly higher, the more supplementary material the participants used. A reflection after the sessions revealed that participants enjoyed playing the game and admitted that they learnt new vocabulary to some extent, but where sceptical of using *The Sims* as a means of language learning in general (Ranalli 2008: 451). This shows that learners have not yet realized the potential inherent in computer games in regard to language learning and still favour traditional direct instructions. Computer games, however, should not be considered opponents to language learning at school but complementing learning devices that

raise not only exposure time but also students' motivation to learn a language. The low retention rates in this study might be connected to the lack of conversational opportunities in *The Sims* and the author indicates that other game types might be more beneficial for the development of oral language skills.

Game types that encourage interaction are multiplayer online games, where many international players meet and communicate in online virtual worlds (Sundqvist & Sylvén 2012: 189). With over 12 million players worldwide, the most famous representative of this game type is probably *World of Warcraft*. Due to its internationality, the default language of *WoW* is English and players, whether native speakers or ESL learners, need to communicate in English in order to cooperate and achieve their goals. *WoW* activates all four skills, as players produce language in spoken and written form and receive oral and written input from other players or the game itself. Compared to *The Sims*, thus, the language of *WoW* is more demanding and more central to success. In the study, the participants were questioned on their EE habits and playing computer games ranked first on the list of favourite EE activities, however gaming time ranged from 0 to 22.7 hours per week (Sundqvist & Sylvén 2012: 198). While boys and girls spent roughly the same amount of time on other EE activities, a clear gender difference is observable in computer games: On average, boys played 4.4 hours per week, girls only 1.1 hours, which is a statistically significant difference. In addition, boys play different types of games: *WoW*, *Call of Duty* and *Counter Strike* were most popular with boys, whereas girls preferred *The Sims*. Results on the vocabulary tests showed positive correlations between the amount of time spent on playing computer games and the scores. Although girls generally outperform boys in language tests, boys had higher results in this study, which could be explained by the longer gaming hours and the more communicative game types (Sundqvist & Sylvén 2012: 204). In terms of game types, the researchers found a proficiency and gender threshold: Weak learners and girls are less likely to play multiplayer online games. To sum up, gaming has positive effects on L2 vocabulary acquisition, both in terms of receptive and productive vocabulary knowledge.

Uuskoski (2011) investigates the relationship between English grades and gaming in Finland. Considering that 98% of Finnish 10-12-year-olds play computer games (Uuskoski 2011: 6), it is worth exploring learning potentials. The study questioned

almost 500 upper-secondary students in Finland on their gaming habits and related the results to their English grades. Students who had higher grades reported playing more computer games in their free time and, similar to Sundqvist and Sylvén's study, multiplayer online games achieved the best results. A majority of students who played computer games regularly felt that it had improved their English skills, especially their vocabulary knowledge (Uuskoski 2011: 56). Again, boys had better results than girls, which coincided with more gaming and engagement in other EE activities. Interestingly, "[t]he higher grades of gamers could not be explained by gamers being in general more academically successful or interested in languages, having higher socio-economic status or having connections to English-speaking countries or people. […] Playing video games was, however, found to be the single best predictor of good English grades when all other variables were held constant" (Uuskoski 2011: 56).

Another survey focussing on multiplayer online games was conducted by Reinders and Wattana (2010). The title of their study, "Learn English or die", already points to the central role language plays in successful gaming. To analyse the effects of multiplayer online games on the quantity and quality of L2 interaction, 16 Thai university students with elementary to intermediate English proficiencies played a modified version of *Ragnarok* (Gravity Co. 2002) in English. The researchers decided to modify the game in order to adapt it to the learners' proficiency level. Thus, results need to be interpreted with care because modified games might not yield the same learning outcomes as unmodified games. As in *WoW*, *Ragnarok* requires the players to communicate in order to achieve goals, which was one of the main reasons for choosing the game. Transcripts of the participants' produced discourses and questionnaires revealed that students were less inhibited to communicate compared to normal classes, which led to significantly more L2 output (Benson 2011: 13-14). Although no development in the quality of interaction could be observed, the quantity increased over the three sessions. The researchers interpreted the stagnation in accuracy and complexity as the result of the learners' inability to attend to meaning and form at the same time. The voice chat was perceived as more demanding, because it requires real-time communication, which is why many participants opted for the text-based chat. For the same reason, more formal and complex discourse occurred in written interaction. Half of the participants reported that their communication skills had improved and students who had more confidence regarding their language skills

initiated more conversations. Despite the small sample size and the use of self-reporting methods, which limits reliability, the study showed that gaming increases students' motivation, lowers anxiety and raises the willingness to communicate in the L2 (Reinders & Wattana 2010: 25).

To sum up, computer games have positive effects on language learning for the following reasons:

- The affective filter is low.
- Motivation is high.
- Exposure time is increased.
- Language is used for the game's sake.
- Vocabulary is encountered repeatedly and in context.
- Especially multiplayer online games are linguistically demanding and support the development of all four language skills.

Results show that computer games, compared to other media types, require more cognitive involvement and learners who spend more time on gaming tend to have larger receptive and productive vocabularies.

4.4.6 The internet

The Internet is the "fastest-growing communication tool known to the world" (Berns, Claes, et al. 2007: 34) and therefore reaches a large audience worldwide. As already mentioned in section 4.3, 83% of Austrians have access to the Internet; in teenagers the proportion is even higher (93%). Considering that approximately 50% of the online content is in English (Berns, Claes, et al. 2007: 34), Austrian teenagers are likely to encounter English while surfing the Internet. Learners not only stream films and series online, but also play multiplayer online games and use English in chat rooms or social media (Richards 2015: 8-13).

Sockett (2013) collected data on the online informal learning of English in France and found that the learners are generally aware of vocabulary gains. In addition, learners had the feeling that they could also improve their listening and fluency skills through listening[13] and online chats. Six out of ten French university students download English films and series regularly and 30% engage in social networking in English

[13] The types of listening activities the participants engaged in are not specified.

(Sockett 2013: 48-49). Since the private nature of informal learning outside school renders data collection difficult, the researchers opted for self-reporting methods in the form of learning blogs. For three months, the nine participants were asked to write blogs about their online informal learning of English. They should not only write down the amount of time they spent on different media types, but also the skills and knowledge they gained from doing these online activities. However, it needs to be considered that methods such as learning blogs guide learners' attention towards their learning processes and thus deprive them of their incidental nature, which might in turn influence the learning outcomes. The results show that learners pay attention to meaning rather than form in online EE activities, which is partly due to the time restraints of some activities. When engaging in real-time chats, learners have no time to think about the exact wording. They also mentioned that focussing on form would reduce the pleasure. Little focus on form might result in misunderstandings due to unclear or incorrect wording, which must be compensated for. Hence, negotiation of meaning through questions and paraphrasing is a central aspect of online chatting. Furthermore, the participants could learn from each other's knowledge and adapt certain expressions, because in dialogues the "answer [often] includes a modified version of the question content" (Sockett 2013: 57). In addition, interaction with other learners raised awareness for possible L1 influences or interferences. Once, these differences were noticed, learners could "reassess existing categories and question their perception of patterns" (Sockett 2013: 60). Besides, the anonymity in online interactions reduced stress on part of the learners and raised confidence, which in turn promoted communication and led to a "greater quantity of target language production than classroom-based communication" (Richards 2015: 8).

4.5 Conclusion

To conclude, this chapter introduces the term 'Extramural English', which Sundqvist (2009: 25-26) defines as the sum of all English activities outside the classroom. Learning that occurs through EE can be intentional or incidental and is often linked to media use, as the media provide a rich source of English for second language learners worldwide. This is why, after a short section on the role of English in Europe and media access and use in Austria, international studies on the relationship between EE and language proficiency were presented. In general, a positive correlation between

the amount of EE and vocabulary knowledge could be established: Students who spend more time on English media in their free time tend to have larger vocabularies than their peers. This phenomenon cannot only be explained through increased exposure time to English, but is also influenced by other positive aspects of English language media. First of all, learners are less afraid of making mistakes in EE activities, which creates a relaxed learning environment. In other words, the affective filter is low. Second, students choose the media types themselves and are therefore highly motivated. Third, in some activities, especially playing computer games and online chatting, language is a prerequisite to fulfilling a task, which further raises motivation. Another advantage is that vocabulary tends to be frequently repeated facilitating memorization and recall.

5 Methodology

This study was conducted as part of a large-scale survey that ascertains the influence of Extramural English on Viennese students' vocabulary knowledge. While Marlene Schwarz (2016a, in progress) conducts her dissertation project in Viennese grammar schools (Gymnasien, AHS), the study presented in this thesis surveyed Viennese vocational business middle school students (Handelsschulen, HAS). Though this study is smaller in scale as far as participants and number of instruments are concerned, the main methods are used in both research projects to ensure comparability of results. This chapter presents the research design and the selection of participants and materials.

5.1 Research design

Considering the complexity involved in vocabulary knowledge, a multi-method approach was chosen in order to gather more comprehensive information. Cohen et al. (2007: 141) succinctly describe human behaviour as complex and conclude that "one method can never represent the world of experience completely neutrally." Hence, the use of multiple methods not only creates a more complete but also a more accurate picture of the study matter. Since no method is free from weaknesses, the mixed-method approach utilizes the strengths of one method to counterbalance the weaknesses of the other (Dörnyei 2007: 45). While quantitative approaches enable the researcher to collect data of a large sample, they often lack depth. On the other hand, qualitative research studies a small number of subjects closely, but due to the small sample size it is difficult to make generalizations about the whole population. Thus, the advantage of a mixed-methods approach lies in the potential of adding depth to the quantitatively collected data, which forms the basis for a more refined analysis. The triangulation of data collection employed in this survey combines qualitative and quantitative approaches in the form of a questionnaire and two vocabulary tests. The research methods can be divided into three main parts: a descriptive analysis of the questionnaire data, an inferential analysis of the test results and a qualitative analysis of the productive test results.

On basis of these data, the study investigates the following research questions:

- RQ1a: What kinds of English media do Austrian 16-year-old HAS students report consuming in their free time?
- RQ1b: How much time do they report spending on English language media consumption outside school?
- RQ2: What is the relationship between the amount and type of English media the participants use and their receptive vocabulary breadth?
- RQ3: What is the relationship between the amount and type of English media the participants use and their productive English vocabulary breadth?
- RQ4: Are there gender differences in English media consumption and what effect do these have on vocabulary knowledge?
- RQ5: Does the number of languages learnt before English have an effect on vocabulary size?
- RQ6: What is the relationship between learners' socio-economic status and their vocabulary size?
- RQ7: Does language proficiency affect the amount and type of EE activities learners engage in?
- RQ8a: Is there a relation between the application of vocabulary learning strategies and vocabulary size?
- RQ8b: Do learners who apply many vocabulary learning strategies significantly differ in their vocabulary size from those who do not?
- RQ9a: Do learners with positive attitudes engage more actively with the language through the application of VLS?
- RQ9b: Are attitudes towards English related to the number of EE activities learners engage in?
- RQ9c: Is there a relationship between learners' attitudes towards English and their vocabulary sizes?

The first two research questions (1a and 1b) aim at describing the linguistic landscape that shape Austrian students' lives. Determining the extent and type of contact with English outside school is a prerequisite for answering the other research questions. Questions 2 and 3 combine results from the questionnaire and the vocabulary tests to determine possible correlations between the learners' contact with English and their vocabulary sizes. However, contact with English in the free time is probably not the only factor that influences vocabulary acquisition (cf. e.g.Gu & Johnson 1996; Grau 2009; Sundqvist 2009; Uuskoski 2011). For this reason, other variables' relations with vocabulary knowledge were examined as well in research questions 4 to 9c. Factors under investigation were gender, attitudes towards English, linguistic background,

socio-economic status, language proficiency and the application of vocabulary learning strategies. Finally, data from the productive vocabulary test were analysed qualitatively to investigate which word fields had probably been acquired outside school.

In terms of research design, this study can be described as a 'ex post facto research' (cf. Cohen et al. 2007: 264), where possible causes for an observed condition are searched for back in time . In this case, the effects of EE on vocabulary knowledge are examined retrospectively and possible causal links between them are established. This kind of research design is often employed in situations where the dependent variable cannot be controlled or manipulated by the researcher, which renders the ex post facto research particularly suitable for educational settings (Cohen et al. 2007: 268). In the case of this study, the main independent variable EE is per se restricted to out-of-school contexts and could thus not be influenced. Furthermore, extramural vocabulary acquisition is a continuing process that needs months and years to build and thus renders it inappropriate for investigation in an experiment in the traditional sense. Another point that distinguishes this research design from a traditional experiment is the lack of a control group. A typical experimental design divides the participants into two groups, one of which is exposed to a certain stimulus or treatment and one that is not and hence acts as a control group (Dörnyei 2007: 116). In this study, there is no control group because it is impossible to deprive participants from all English language influences outside school in retrospect.

In line with the ex post facto research design, the starting point for the investigation presented in this thesis were the results from the vocabulary tests (dependent variables) that facilitated an estimation of the participants' vocabulary size. In a next step, information from the questionnaire was drawn upon to examine which factors might have influenced the students' vocabulary size (independent variables).

To conclude, the present study is a survey of Viennese vocational business middle school (HAS) students' extramural vocabulary acquisition that combines quantitative and qualitative research methods. Information gathered in a questionnaire and two vocabulary tests provides insights on possible links between students' personal background, their contact with English outside school and their vocabulary breadth.

5.2 Participants

Seven English groups from three vocational business middle schools (HAS) in Vienna participated in the study. The total sample size was 142 students, which was however significantly reduced due to missing consent or absence during data collection. Unfortunately, a large proportion of the participants (N=57) had to be excluded because they did not want to participate or failed to hand in their consent. In addition, two students who were willing to participate were not present during one of the data collection sessions, which means that only partial data is available and can therefore not be used in the analysis. This reduces the actual sample size to 83, which is small for quantitative research but not unrealistic for educational research and the time constraints that are entailed in a diploma thesis. Cohen et al. (2007) argue that the minimum number of cases for each variable should be no less than 30, which is satisfied in all but two[14] statistical tests presented in chapter 6. Thus, the sample size is appropriate for this type of research. Nevertheless, results should be treated with caution and are to be regarded as indications that would need further investigation with larger samples rather than generalizations about the whole population due to the limited sample size.

The selection of schools and issues of sampling were strongly influenced by legal and practical considerations. First of all, Viennese vocational business middle schools (HAS) were contacted and informed about the study and its purposes. After the headmasters had granted access to their schools, official consent from the City School Board of Vienna had to be sought, which was given in November 2016. Subsequently, seven teachers kindly offered two of their English lessons for the data collection. Before the research started, I visited all classes and informed them about the study and its purposes. Since most students were younger than 18 years, they had to bring their parents' consent in order to participate in the study. The participants were guaranteed anonymity, confidentiality and the chance to withdraw from the research project at any time until the end of December when data analysis started.

[14] An exception is the Mann-Whintey U test that investigates gender differences in the scores on the *V_YesNo*. Here, 10 test results from male participant had to be discarded as unreliable, which lowers the sample size in the male subgroup to 23. Another exception are the investigations of the influence of linguistic background on vocabulary size. Since there are only nine monolinguals in the sample, this group is theoretically too small for statistical tests. This problem could have only been solved through resampling, which, however, was not possible under the legal requirements and time constraints of this study. Therefore, statistical tests will be performed with the limitations entailed in small sample sizes in mind.

Due to these legal and practical restrictions, random sampling was not possible. In random samples, all members of a population must have equal chances of being selected. Since approval from the headmasters and the School Board was a prerequisite for conducting the study, not all Viennese HAS students were equally likely to be chosen. As a consequence, cluster sampling was applied, which is often the case in educational settings (Cohen et al. 2007: 112) and means that only a certain number of schools are selected. Although this increases the risk of bias (schools and students in different districts might, for instance, display other characteristics), it seemed to be the best option for this small-scale educational research project. Within the schools, convenience sampling occurred, which means that "members of the target population are selected if they meet certain practical criteria" (Dörnyei 2007: 98). In the present study, criteria were the grade, the teachers' agreement to allow time for the data collection and the students' willingness to participate. The combination of cluster and convenience sampling limits generalizability, which needs to be considered in the data analysis (Cohen et al. 2007: 114).

The students who participated in the study attended the second year of vocational business middle schools (HAS) in Vienna, which is equivalent to the 10th grade in the Austrian school system. In this school, students receive vocational training in addition to general education. They graduate in grade 11 with a final exam, but without a general qualification for university entrance, which can only be reached after 12 to 13 years of education in Austria. Vocational business middle schools (HAS) were chosen because vocational schools are widely underrepresented in educational research (Dalton-Puffer et al. 2011) and data from this study will be an informative addition to the data collected by Schwarz (Schwarz in progress) in grammar schools. In order to render comparability between the two studies possible, the same grade was chosen. The participants' age ranged from 15 to 18 years. The sample group consisted of slightly more females (N=47) than males (N=33) with three participants providing no information on gender.

At the time of the data collection, the students had been learning English for more than nine years, which equals approximately 800 English lesson (BMB 2005; BMBF 2014; BMB 2016). According to the curriculum, the students should have reached level A2 as defined in the *Common European Framework of Reference* (Council of Europe 2001) and in some competences, which are, however, not specified, level B1.

As the participants of this study still have one more year until graduation, they assumedly were close to level A2 at the time of data collection and can thus be classified as elementary users.

As far as linguistic background is concerned, the participants displayed great variety, as was expected in this school type in Vienna. According to a report from 2015 published by the Austrian Ministry of Education (BMBF 2015), 22% of students in Austria and 48% of students in Vienna are non-German native speakers. In vocational (HAS) middle schools, 37% of Austrian students do not speak German as their first language; with 63% this proportion is even larger in Vienna. In the present sample, 60% of the participants mentioned German as their L1, 13% Serbian and 6% Turkish. These languages were followed by Croatian and Albanian with three native speakers each. However, linguistic background was addressed in several items of the questionnaire and sometimes participants gave inconsistent answers. For instance, English was often mentioned as one of their languages in the first item asking for the languages they spoke in their free time but not in a later question that asked participants to list all languages they speak with family and friends outside school. In this more specific question it became apparent that the participants generally used fewer languages than they stated in the first question. Therefore, the first question will be regarded as a display of general language competence, while the second question provides information on which languages are actually used. In total, 34 languages were listed, which indicates the diverse linguistic repertoire represented in the sample. Only 9 of the 83 participants are monolinguals; the majority speaks at least two languages regularly at home. Three participants reported speaking mainly English with their parents and as a consequence need to be treated cautiously in the data analysis, as they might learn English vocabulary from interactions with their family members besides English language media. They will be investigated in more detail in chapter 6.

5.3 Materials

Three instruments were used for data collection: a questionnaire, a receptive and a productive vocabulary test. In this section, the most important characteristics of these materials, the rational behind them and the information that can be gained from them

will be presented. All the instruments were piloted by Marlene Schwarz in 2016 and adopted where necessary.

The questionnaire (see appendix) was developed by Schwarz (personal communication October 2016) for her on-going research project and was kindly made available for use in this study. It consists of seven main parts, each of which gathers information on a different topic: The first section identifies participants' access to electronic devices and the Internet and asks them about their general free time activities. The next part contains 76 items on extramural contact with different English-language media types and two questions about the languages students use outside school. Furthermore, participants are questioned about their reasons for using English in their free time. Section 3 collects data about attitudes towards English and section 4 concerns the linguistic environment. In section 5, students are asked whether they use different strategies when seeing or hearing an unknown English word in their free time. Section 6 comprises questions about the participants' linguistic background and the final section gathers demographic data and information on their socio-economic background. For the present study one question about the participants' schoolbooks in lower secondary education was added because in contrast to Schwarz' (in progress) sample, the students in this sample attended different schools in lower secondary and therefore it was unknown which books they had used. The importance of this question will be explained in section 4.5. In order to minimize the effects of inconsistent responses, multiple items were written for each content area which ensures that "no individual item carries an excessive load" (Dörnyei 2007: 104). Most items were either multiple-choice questions or used rating scales. The advantages of these question types are that they facilitate the analysis of large sets of data and the comparison of participants (Cohen et al. 2007: 321). On the other hand, they restrict participants' possibilities to answer, which is why some open questions were included where it was felt that information could have hardly been gathered in the closed format. Information from the questionnaire provides answers to research questions 1a and 1b (cf. chapter 1) and is also essential for all other research questions as it collects information on the participants' contact with EE, attitudes towards English, as well as their demographic, linguistic and socio-economic background.

In addition to gathering data on students' contact with English outside school, it was decided to investigate their vocabulary size because it can be "a good indication of

language proficiency" (Miralpeix & Meara 2014: 36). Miralpeix and Meara report on studies that have shown positive correlations between scores on vocabulary tests and proficiency levels in writing, reading, listening and general language proficiency. As vocabulary knowledge is not directly accessible, researchers need to develop instruments that allow participants to demonstrate their knowledge (Milton 2007: 47). Researchers are advised to use more than one vocabulary test since vocabulary knowledge is a complex matter to capture and one measure will hardly provide a holistic impression of lexical knowledge (Milton 2009: 115; Sundqvist 2009: 64; N. Schmitt 2010: 152). In particular, both receptive and productive knowledge should be tested and researchers recommend using already existing tests as they are proven reliable and valid and make the results more comparable to other studies where these tests were applied (Milton 2009: 115; N. Schmitt 2010: 152-153, 184). For these reasons, it was decided to use Meara's and Fitzpatrick's (2000) productive vocabulary test *Lex30* and Meara's (2015b) receptive vocabulary test *V_YesNo*. Both tests are based on the assumption that less proficient learners are less likely to know or use low frequency words (cf. 3.5). Hence, if learners produce or recognize a large number of low frequency words in these tests, they are assumed to have a large vocabulary size. High frequency words are not inherently easier to learn than low frequency words but learners encounter them repeatedly and are therefore more likely to learn them (Dörnyei 2007: 25; Milton 2009: 131; N. Schmitt 2010: 161). Though this assumption seems plausible in an L1 context, the process of learning English in other settings might be different. Learners might not necessarily encounter the words that are most frequently used by native speakers but those that are selected by coursebooks. However, studies have shown that coursebooks often contain a high proportion of low-frequency words, which affects the usefulness of frequency-based tests (Milton 2007: 49). To counteract this issue, the newest version of the *Lex30*, which is used in this study, is no longer based on lists from the British National Corpus (*The British National Corpus, version 3 (BNC XML Edition)* 2007) but on *JACET 8000* (Ishikawa et al. 2003), which was developed in a second language context and is therefore more suitable for SL learners.

Although a large proportion of EE input is oral (e.g. music, films and series without subtitles), the vocabulary tests used in this study test written receptive and productive knowledge, because written tests have several advantages over oral tests: First, the

number of available tests on phonological vocabulary knowledge is limited (Milton 2009: 102). Second, compared to written languages, there is more variation in pronunciation, which makes the decision on what to present in a test difficult. While differences in spelling are limited, there are lots of different accents and an unfamiliar accent might pose unpredictable problems to the participants. Results might be distorted when participants do not recognize words they actually know in a different accent. The same problem is caused when oral tests use citation word forms, but highly frequent words are often weak in spoken language. For these reasons and reasons of practicality, it was decided to apply written tests in the present study.

Both vocabulary tests are discrete, which means that they test and measure the same construct, and selective as the test designers chose the words and context-independent (Read & Chapelle 2001: 4-6). Especially the presentation of words without context, although criticized as unnatural by some (Laufer et al. 2004: 204), entails many advantages that will be mentioned in the following descriptions of the tests.

Meara's (2015b) *V_YesNo* is a test of written receptive vocabulary knowledge in a checklist format. It consists of 200 words, half of which are real words and half are pseudowords[15] that were included as an adjustment for guessing. Since testees are asked to tick whether they know a word or not without having to demonstrate their knowledge through translations or similar tasks, imagined words were introduced to control for guessing. In other words, when pseudowords are ticked, the score is adjusted downwards. In this format, four types of responses are possible, which are shown in table 5. Points are awarded for hits and deducted for false alarms (for more details see section 5.5).

[15] Huibregtse et al. (2002: 227) define pseudowords as "words that fulfil the phonological constraints of the language but do not bear meaning."

Table 5 Possible answers in *V_YesNo*

	Real word	**Pseudoword**
Yes	hit	false alarm
No	miss	correct rejection

The words are taken from different frequency bands and presented without context (Milton 2009: 72). Presenting the words without context means that a large number of words can be tested quickly (Miralpeix & Meara 2014: 33) and participants cannot infer meaning from context. In fact, N. Schmitt (1999) found that learners had more correct responses when words were presented in context than when the same words were presented in isolation, indicating that tests that provide contexts facilitate and encourage guessing. Another advantage of the *V_YesNo* test is that it can be applied to all levels of learners as it tests the most basic level of vocabulary knowledge (passive word recognition) and especially beginners will not have acquired "more advanced types of word knowledge" (N. Schmitt 2010: 154) yet. Furthermore, the *V_YesNo* test is easy and quick to administer, was found reliable and valid (Beglar & Nation 2014: 173; Miralpeix & Meara 2014) and is widely applied in linguistic research. Despite all these advantages over other tests of receptive vocabulary knowledge, this particular test format also bears some risks. When real words are ticked correctly, researchers do not know whether the participants really knew what the word meant or merely recognised it. In addition, word knowledge is not a dichotomy of knowing or not knowing but a continuum (cf. 3.2). The test, however, does not provide any categories in between (Eyckmans et al. 2007: 62). The problem that some learners overestimate their knowledge in checklist-tests is tackled by the introduction of pseudowords as already mentioned above. In other words, the *V_YesNo* measures two variables simultaneously, vocabulary size and the testees' estimation of their vocabulary knowledge (Eyckmans et al. 2007: 75). In general, however, the advantages seem to outweigh the disadvantages, which is why the test was chosen for this research.

In order to receive a more accurate estimation of the participants' vocabulary size, another measure of word knowledge was applied. *Lex30* is an instrument developed by Meara and Fitzpatrick (2000) to test written productive vocabulary breadth. Traditionally there were two main types of productive vocabulary tests: Either the

participants were asked to produce texts to a given topic or they had to fill in the correct words into sentences (e.g. the *Controlled Productive Vocabulary Test* by Laufer and Nation, 1999). Both formats are problematic because the topics of the texts predetermine the words that the testees produce and therefore these kind of tests are no good estimates of overall vocabulary knowledge (Daller et al. 2007a: 12; Fitzpatrick & Clenton 2010: 539). Furthermore, free productive vocabulary tests elicit mainly frequent words and long texts would be needed to generate enough low-frequency words, which is impractical in quantitative studies (Meara 2009a: 34-35). To a lesser extent, this problem is also inherent to controlled productive vocabulary tests, because a large number of items would be needed to get a reasonable estimation of any participant's vocabulary size. Furthermore, this second type of test indirectly also tests receptive skills, because testees need to comprehend the sentence or definition that is given in order to find the correct word (Beglar & Nation 2014: 176-177).

In contrast to these tests, *Lex30* uses a word association task to elicit vocabulary. This not only increases participants' freedom in production but also the proportion of low-frequency words. Testees are presented with 30 stimulus words, that are taken from the first 1,000 most frequent words[16] themselves but tend to elicit a large variety of infrequent words[17] (Beglar & Nation 2014: 175). This has three advantages: First, most cue words should be known by all levels of proficiency, which means that the test can be used with a wide range of learners. Second, this limits the influence of receptive skills on the results (Fitzpatrick 2007: 119). Third, the participants produce lexically dense lists of words (Meara 2009b: 131-132). Other advantages are that the test is easy and fast to administer (testees are allowed a maximum of 15 minutes). As the test was proven valid and reliable (Fitzpatrick & Meara 2004), it is widely adopted. Despite all these advantages, Fitzpatrick and Meara (2004: 72) point out that the test only examines recall of words, so the production of a word in *Lex30* means that it is known in a 'recall' sense, but it gives "no indication of whether or not a subject can also 'use' it". In other words, the test does not demand participants to use

16 Earlier versions were based on Nation's (1984) word lists, the latest version, which is used in this study, is based on the JACET list (Ishikawa et al. 2003) .

17 Results from native speakers compared with the *Edinburgh Associative Thesaurus* (Kiss et al. 1973 cited in Meara 2009a: 37) showed that "at least half of the most common responses given by native speakers were not included in Nation's 1000 word list" and that there was less than 25% overlap in the most common responses among all participants.

the word in context, so it provides no information on whether learners know about syntactic and semantic constraints, cognates and other information they would need in order to use the word accurately. In addition, the word lists are based on adult language, which "potentially undermines the theoretical validity of using this test with young learners" (Fitzpatrick & Clenton 2010: 548). However, it can be argued that the cue words provide enough possibilities for answers regardless of the age of the participants.

For each stimulus word, participants can produce up to four words, which adds up to a maximum of 120 words. Every word from the most frequent 1,000 words (*JACET*) scores 0 points, all others 1. This means that theoretically, a maximum score of 120 can be reached. In reality, however, scores are significantly lower. According to Beglar and Nation (2014), the average native speaker produces around 90 words and scores 60 points. Most language learners have lower scores (10-40 points), which shows that the test distinguishes well between L1 and L2 speakers[18] (Fitzpatrick & Meara 2004: 66; Fitzpatrick & Clenton 2010: 539-543; Alejo González & Piquer Píriz 2016: 46). It has to be pointed out that *Lex30* does not deliver an estimated vocabulary size unlike the *V_YesNo* in the sense that a number is calculated, but a result that indicates the number of infrequent word associations the testees gave. In other words, participants with many infrequent answers score higher than those with less, which ranks learners according to their vocabulary knowledge assuming that infrequent words are an indication of a large vocabulary (cf. 3.5). Thus, Lex30 allows ranking the participants within a study and comparison across studies.

5.4 Data collection

I conducted all the data collection personally in December 2016, except for one school where four groups were tested simultaneously and hence I could not be present in all the groups. In this school, teachers had been given clear guidelines on how to conduct the survey in advance and I visited every class to answer questions and

[18] Despite the fact that most people are no longer monolinguals but bi- or multilinguals (Edwards 1994: 33ff.), the articles above only talk about the results of L1 versus L2 speakers, which seems to disregard the linguistic plurality present in today's societies. However, considering all the variables that influence test results and the numerous decisions that have to be taken during the research process, this seems to be a further decision to facilitate the interpretation of results.

ensure that the intended procedure was followed. Data collection took two lessons per group and details on the procedure will be described in the following.

As the students had already been informed about the study in advance, I just summarized the study's purpose and structure briefly and provided them with the opportunity to ask questions. In the first lesson, participants were asked to complete the questionnaire, which took them 35 to 45 minutes. In the second lesson, participants' vocabulary knowledge was tested. At the beginning of the lesson, it was stressed that these were not vocabulary tests in the traditional sense, as they would not be marked. This was important to ensure that the participants gave honest answers and did not feel pressured. First, the productive vocabulary test (*Lex30*) was distributed and the instructions were read out loud. The instructions of both tests were written in German to ensure that participants had a clear understanding of what they were supposed to do and an example was provided. Students could ask questions and I stated explicitly that there were no right or wrong answers in this test. Once everybody had understood the task, students had 15 minutes to complete it. After a short break, students received the second test (*V_Yes/No*) and we went through the instructions together. It was repeatedly pointed out that this test included several non-existent words and that students should be careful not to tick them as known. Furthermore, they were told that they should not worry if they did not know all the words, partly because they did not exist, partly because some were taken from low frequency lists and are thus unlikely to be known at this proficiency level. Participants were allowed 15 minutes for this test[19].

5.5 Data preparation and scoring

This section describes the process of the preparation of data from the three instruments for statistical and qualitative analyses. In particular, information on the scoring of the vocabulary tests will be provided.

[19] Those who finished earlier were asked to fill in a translation task and a reflection (see appendix). Results from the translation task did not affect the test scores but the prospect of having to provide translations to some of the words might have encouraged participants to answer more honestly and was therefore believed to increase reliability of the results. The reflection should provide the researcher with information about the students' mood during the data collection and their opinions about the tests as these aspects might influence the motivation and consequently also the test results. However, also this information was not used during the scoring process.

To ensure anonymity, the participants labelled their questionnaire and the two tests with a code only they knew. For reasons of clarity, these codes were recoded after the data from all participants who had to be excluded for reasons mentioned in section 5.2. were removed.

In order to receive extensive information about the participants, items in the questionnaire use various answer formats. These formats needed to be recoded by assigning a code number to each answer before they could be entered into SPSS (SPSS Inc. 2016) and used for analysis. Open questions posed a challenge for recoding because of the wide range of answers provided. For those items, where most participants gave similar answers, codes were generated. Other data from open questions were analysed qualitatively. Some variables were combined to form new variables. For instance, all daily EE activities were added up to yield the new variable "Total_EE_activities_daily", which was then used for statistical tests. Not only EE contact but also students' socio-economic background could have an influence on their vocabulary knowledge (cf. Sundqvist 2009; Uuskoski 2011).

Examination of a possible relationship required a variable that expressed socio-economic background. It was decided to use the *International socio-economic index (ISEI) of occupational status for the international standard classification of occupation 2008* (International Labour Organization 2012, ISCO-08) as it is widely applied in social sciences (e.g. PISA, Austrian 'Bildungsstandards') and therefore ensures comparability with other studies. ISCO requires detailed information about the parents' occupations, employers, tasks and responsibilities and provides a list that assigns a hierarchical code to every occupation. Although the information was gathered in four items, sometimes it was not possible to decide on a code because the required information was not provided. Students repeatedly reported problems with the question concerning their parents' educational levels when parents were schooled in other countries where educational levels are not comparable to the Austrian system. In total, 18% of the values about the parents' educational level were missing. On the basis of the information provided, the highest educational level of the parents (HISCED) was calculated. In addition, information provided on occupations was often not specific enough so that codes were either assigned to the best of my knowledge or the data had to be classified as inapplicable. In the end, the HISEI (*Highest International Socio- Economic Index of occupational status*) could be

calculated for every subject: If occupations of both parents were known, the hierarchically higher code was used; if only one occupation was known, this code was used. Subsequently, the social status was computed as the mean of HISCO, HISCED and the number of books at home[20]. Detailed information on how to code the occupations and compute the variables can be found in Pham et al. (2014), International Labour Organization (2012) and Ganzeboom (2010).

For the receptive *V_YesNo* test by Meara (2015b), scoring instructions presented in Meara and Miralpeix (2017: 116-130) were followed and all the calculations were done in Excel. The data was split into six blocks of 20 words, each of which contained 10 real and 10 non-existent words. For each block, the number of YES responses to real words or hits (H) and the number of YES responses to imaginary words or false alarms (F) were computed. The authors suggest using a correction factor (A) that penalises false alarms differentially, depending on the number of hits a testee produces (for further details see Meara and Miralpeix, 2017). Since the 100 real words in the test are sampled from a corpus of 10,000 words, the receptive vocabulary size can be estimated with the following equation:

$$V_{size} = H \cdot 100 \cdot A$$

Vocabulary scores can range from 0 to 10,000. Here is an overview of scores that is to be expected at the respective proficiency levels (Meara & Miralpeix 2017: 118):

Table 6 Estimation of vocabulary size

Level of proficiency	Score
Beginners[21]	< 1500
Intermediate-level learners	2500 - 4500
Learners with good level of competence	4500 - 7500
Learners with very high level of competence	7500 - 9000
Educated native speakers and very fluent learners	> 9000

[20] The number of books at home is regarded as an additional indication of the parents' educational level and their socio-economic background and used to compute a socio-economic status variable (Pham et al. 2014cf.).

[21] The authors (Meara & Miralpeix 2017: 118) warn that the test is not reliable at this level.

When preparing the data, it became evident that testees had varying confidence in their vocabulary knowledge, a phenomenon that was also observed in other studies (Daller et al. 2007a: 19; Eyckmans et al. 2007; Stubbe 2012). While some were quite cautious and reported to know very few words and hence had few hits and false alarms, others had a high number of hits but also a high number of false alarms, which suggests that they overestimated their vocabulary knowledge. According to Miralpeix and Meara (2014: 33), "high false-alarm rates or large numbers of errors compromise the validity of the results", which is why data was regarded as unreliable, if the number of false alarms exceeded 20. In total, 16 tests had to be excluded for this reason, which leaves 67 *V_YesNo* tests for analysis. The remaining scores were imported into the SPSS file and used for analysis.

Data from the productive vocabulary test (*Lex30*) was entered manually into Excel. All lexical items produced by one participant were entered into a workbook named with the participant's code. The first sheet was called 'raw' and contained the raw data, i.e. all words produced by the participant including misspellings and proper nouns. These words were then colour-coded. German words or unrecognizable misspellings were marked red, proper nouns, names, numbers and acronyms green and inflected forms and British variants[22] blue. Multiword units were marked yellow and items that contained cue words pink. The next step was to clean the data. For this, the colour-coded lists were copied to a new sheet within the same workbook called 'alphabetical. Here, the words were sorted according to alphabet. All British variants were changed into American spelling, misspellings were corrected and German or unrecognizable words deleted. Inflected forms were lemmatised according to the criteria established by Bauer and Nation (1993) and Meara and Fitzpatrick (2000). In multiword units only the least frequent word (according to JACET) was kept. Subsequently, the list was copied into a new sheet called 'final' where all duplicates were removed. This list was then saved as a txt-file named with the participant's code and imported into the programme *AntWordProfiler*[23] (Anthony 2014) where it was

[22] JACET uses American spelling and being the reference list against which the data would be compared later, all British variants had to be changed into the American form first.

[23] *AntWordProfiler* is a free software that determines word frequencies in word lists. In this study the software was first used to find and remove duplicates in the schoolbook lists. Subsequently, it was also employed to compare the lists of items produced in the tests with the schoolbook lists, because it can quickly find all the words that occurred in the test as well as the schoolbooks and therefore scored 0 points. In other words, *AntWordProfiler* was a useful tool to determine the items the students had probably acquired in their free time.

compared against the JACET list containing the most frequent 1,000 words. All items that occurred in both the participant's and the JACET list were considered low frequency and scored 0 points, all other types received 1 point. These points were added up to form the JACET score, which does, however, not reflect partial word knowledge that becomes apparent in spelling mistakes. Therefore, an adjusted score was calculated by deducting 0.5 points for every misspelled word. Both the JACET score and the adjusted score were entered into the SPSS file, but only the adjusted score was used for analysis.

Since this research project is especially interested in vocabulary acquisition outside school, a method had to be developed to determine the percentage of responses the participants had probably acquired outside school. For this purpose, the items produced by the testees were compared to vocabulary lists from schoolbooks as schoolbooks were considered to provide the most comprehensive and accessible list of vocabulary learnt at school. Information on which English coursebooks the students had used in lower secondary education was gathered in the questionnaire. It became apparent that most schools had either used the *More!* (Gerngroß et al. 2009) or *The New You & Me* (Gerngroß 2005) series. Only three students mentioned other books and due to the extensive time and effort involved in lemmatising schoolbook lists, it was decided to only use *More!* and *You & Me* for the comparison. Since the majority of students reported *More!* as their former schoolbook, the data of all participants who provided no or non-applicable information to the schoolbook question was compared against *More!*. Both series offer different books for grades 7 and 8 depending on whether students attended a grammar school or a lower secondary school (HS or NMS). Most students of a vocational business middle school (HAS) have not been to a grammar school before[24], which is why the basic coursebooks intended for the lower secondary school were used for the analysis. All words from one schoolbook were entered into an Excel workbook, each unit receiving an individual sheet. Then the items were colour-coded in the same way as the words

[24] In 2015/16, 4066 students in Vienna attended a HAS (Statistik Austria 2016a: 23). Unfortunately, no detailed numbers are available for the individual grades, but considering that vocational business middle schools (HAS) have three grades, each of which is assumed to have similar number of students, approximately 1355 students attended grade 9 in a Viennese HAS. The proportion of students who have completed their lower secondary education in an AHS is relatively low at 2.7%, while 53.2% have attended an HS and 11.6% an NMS (Statistik Austria 2016b). These numbers are mere estimations since student numbers for the first grade HAS are unknown, but they clearly indicate that students who attended an AHS before the HAS are a minority.

produced in the *Lex30* test. Once all duplicates had been removed and all changes had been made according to the criteria described above, the unit lists were saved as individual txt-files. The first unit of the first book from each series were checked against duplicates in *AntWordProfiler*. Subsequently, the second unit was compared against the first and all duplicates were removed. Then the third unit was compared against the first two units and so on. This process was repeated until all duplicates were removed from the units of the first-year book of the *More!* and *The new You & Me* series. The final unit lists were combined to one list named after the book series and the grade before being checked for duplicates again. Then the units of the second book were compared against the first book and so on. Finally, four word lists for each series had been established, which were then compared against the alphabetical lists provided at the end of the schoolbooks that contained more words than the units. The missing words were added to the lists. The same was done with the schoolbooks used in the vocational business middle schools (HAS). These were *Focus on modern Careers* (Clarke et al. 2014) and *Just go for it* (Kislinger-Lanzendorfer et al. 2012). Here, the teachers were asked which unit they were currently teaching and depending on the answer, word lists of the complete first year and of the respective units from the second year were compiled. All relevant combinations of schoolbooks were established and saved as txt-files. The word lists from all participants were compared against the respective schoolbook lists. In the end, all words that were not included in the schoolbook lists were entered in a new Excel workbook called 'Complete EE list'. This list will be qualitatively analysed.

6 Data analysis and results

In this chapter, data gathered in the questionnaire and vocabulary tests will be presented and analysed. The first section provides information on the time the participants spend with English outside the classroom and the types of English media they use. For this purpose, descriptive statistics were applied. As the name suggests, this part is concerned with the description and presentation of data (Cohen et al. 2007: 503-504), which includes the provision of frequencies, median values[25], minimum and maximum scores and other statistical parameters without making any predictions or assumptions.

In the following sections, data from the questionnaire and the vocabulary tests will be combined to ascertain possible relations between vocabulary size and various other factors through inferential statistics. In contrast to descriptive statistics, the aim of inferential statistics is to make predictions and inferences based on the data. In the present study, this is achieved through difference testing and correlations (Cohen et al. 2007: 504). Since most of the data is ordinal, non-parametric tests have to be applied. The correlation test used in this study will be the *Spearman's rank order correlation*[26]. Instead of the parametric t-test, *Mann-Whitney U tests* will be conducted to examine group differences.

For inferential statistics, every research question will be divided into several hypotheses (H_1). These hypotheses will, strictly speaking, not be examined. Instead, the opposite, the so-called null hypotheses (H_0), will be tested (Larson-Hall 2016: 42). In the case of correlations, the null hypothesis assumes that there are no relationships between the two variables. With tests of group differences, the assumption is that no statistically significant differences exist between the groups. Depending on the results of the test, the null hypothesis is either supported or rejected, in which case the alternative hypothesis (H_1) is accepted. For all statistical tests the following

[25] In the case of non-parametric ordinal data, median values should be presented instead of the otherwise more common means (Cohen et al. 2007: 592).

[26] Although *Laerd Statistics* recommend using Spearman's rank-order correlation only if data distribution is monotonic, this is no necessary prerequisite for conducting the test (*Laerd Statistics*) and is not mentioned in any of the statistics books consulted for this study (Cohen et al. 2007; Dörnyei 2007; Larson-Hall 2016). Since a graphical inspection showed that most data was monotonic and the Spearman's rank-order correlation is the most widely used non-parametric correlation test, it was chosen for the present study instead of other tests of correlation (e.g. *Kendall's tau-b test*) to facilitate comparisons to other studies. Calculations were, however, also conducted for Kendall's tau and can be provided on request.

information will be provided: the correlation coefficient for correlations, the significance levels, the effect size, the confidence interval and an a posteriori power analysis.

The correlation coefficient indicates the strength and direction of the relationship (Cohen et al. 2007: 535) and can attain any value between -1 and 1. A coefficient of 0 means that there is no relation between the variables and the closer the value is to +/- 1, the stronger the correlation. A negative coefficient indicates a negative relation, while a positive coefficient indicates a positive relation. This information alone, however, is not enough, because the correlation coefficient does not reveal whether the relation is statistically significant.

Traditionally, the p-value is reported as an indication of statistical significance. In most cases, the alpha level is set at 0.05, which means that a result is regarded as statistically significant if $p < 0.05$ (Cohen et al. 2007: 515-517). In other words, there is a less than 5% chance of receiving the results if there were no correlation or group difference in reality. The problem with p-values is that they depend on group sizes and the coefficient, which is why it "has come to be seen as an unacceptable index of effect" (Cohen et al. 2007: 520).

A "much more valuable" (Larson-Hall 2016: 114) indication of significance is the effect size, as it is independent of the sample size. An effect size shows whether the difference or relation that was found is important or negligible. Cohen et al. (2007) suggest the following criteria for r, which will be used in the present analysis:

$0 \leq r \leq 0.1$	small effect size
$0.1 \leq r \leq 0.3$	modest effect size
$0.3 \leq r \leq 0.5$	moderate effect size
$0.5 \leq r \leq 0.8$	strong effect size
$0.8 \leq r \leq 1$	very strong effect size

The correlation coefficient is an effect size in itself. In tests for group differences, the effect size is calculated using the formula $r = \frac{Z}{\sqrt{N}}$ (Larson-Hall 2016: 378), where Z refers to the z-score of the Mann-Whitney U test and N to the number of participants.

In addition to the effect size, the 95% confidence interval (CI) should be reported, as it provides more information than the p-value. The CI "gives the range of values that

the mean difference [or the correlation] would take if the study were replicated 100 times" (Larson-Hall 2016: 57). If the CI goes through 0, there is no correlation or group difference, information that could also be attained through the p-value. The CI, however, additionally shows how precise or reliable the statistic is with a narrow CI indicating high reliability and precision.

Last but not least, a power analysis will be conducted. Power is the "probability of detecting a statistical result when there are in fact differences between groups or relationships between variables" (Larson-Hall 2016: 104). Power analysis is usually conducted before starting research because it helps to determine an appropriate sample size. However, in this study no prior power analyses were used, which is why posteriori power analyses were conducted in the free statistical programme *R* (R Development Core Team 2011) to see whether the tests had enough power to find real differences or correlations. The optimal level of power is at 0.8 or higher (Larson-Hall 2016: 105), which means that the probability of finding a real effect or difference is at least 80%. This is, however, rarely achieved in research and therefore a power level of 0.5 is regarded as acceptable (Larson-Hall 2016: 105). With the help of this statistical information, it will be decided whether the null hypotheses should be accepted or rejected in favour of the alternative hypotheses. Before conducting the main analyses, several preparatory steps need to be taken. In particular, participants who might distort the results because of their linguistic background need to be more closely examined.

English native speakers might have a larger vocabulary per se, which is why they have to be investigated separately before including them in the general analysis. In the sample, there were three supposed English native speakers who stated to speak English with one or both of their parents. One of them was born in Tanzania (SA4_P05), where English is an official language, so it seems plausible that the main language of communication at home is indeed English. This participant reports speaking English with both parents, siblings and friends. The score on the *Lex30* (32.5) was above average (23.6) but still clearly below the maximum of 47. Due to a high number of false alarms, the *V_YesNo* was regarded as unreliable. In addition, the last grade at school was a 4 ('sufficient'), all of which indicates that this participant does not perform distinctively better due to his L1 and therefore does not need to be treated separately in the analysis. The other two participants (SA1_P14 and SA3_P06)

were born in Serbia and Austria. SA1_P14 reported to speak Serbian, German and English with family and friends. Due to the country of birth, however, it is questionable whether English is indeed a first language or whether English words are just present in everyday communication as an effect of borrowing. The participant's last grade was a 3 ('satisfactory') and the scores on the *V_YesNo* (2180) and the *Lex30* (10.5) were both below the average. Thus, also this participant can be included in the general analysis. The last participant (SA3_P06) speaks mainly Bengali with her parents and additionally English with her mother. German and English are used with siblings and friends. The last grade was a 1 and the scores on the *V_YesNo* (4993) and the *Lex30* (41) were high. With these scores, participant SA3_P06 ranked 7th on both the receptive and the productive vocabulary test, which means that the participant is above average but still not distinctly more proficient than the others and will thus not be treated separately. In addition, none of the participants lived in an English speaking country and thus all 83 participants were included in the main analysis.

6.0 Access to media and the internet

Before media use can be analysed, it first needs to be established whether students have regular access to different media types and the internet at home. Information provided in the first part of the questionnaire led to the following results: The majority of participants (95.2%) had access to the internet at home, while 2.4% each could not access the internet or did not give any response. All participants except for one (97.6%) surfed the internet daily. On average, they spent 7.5 hours per day on the internet with a minimum of 0.5 hours and a maximum of 24 hours. The reported maximum of 24 hours is, however, impossible considering that the participants spent several hours at school and sleeping. Thus, after discarding all participants who reported more than 12 hours of daily internet use, the average drops to 5.5 hours, which seems to be a more realistic number. All participants owned a smartphone and 80.7% had their own computer. Only one participant reported having no computer at home and 34 out of 83 participants owned an mp3-player. All participants had a TV at home and 47% had a radio. The questionnaire also collected information on other media types, but they will not be discussed here since they appeared to be of less

relevance to this sample. To sum up, the majority of students have access to a wide range of media types in their free time.

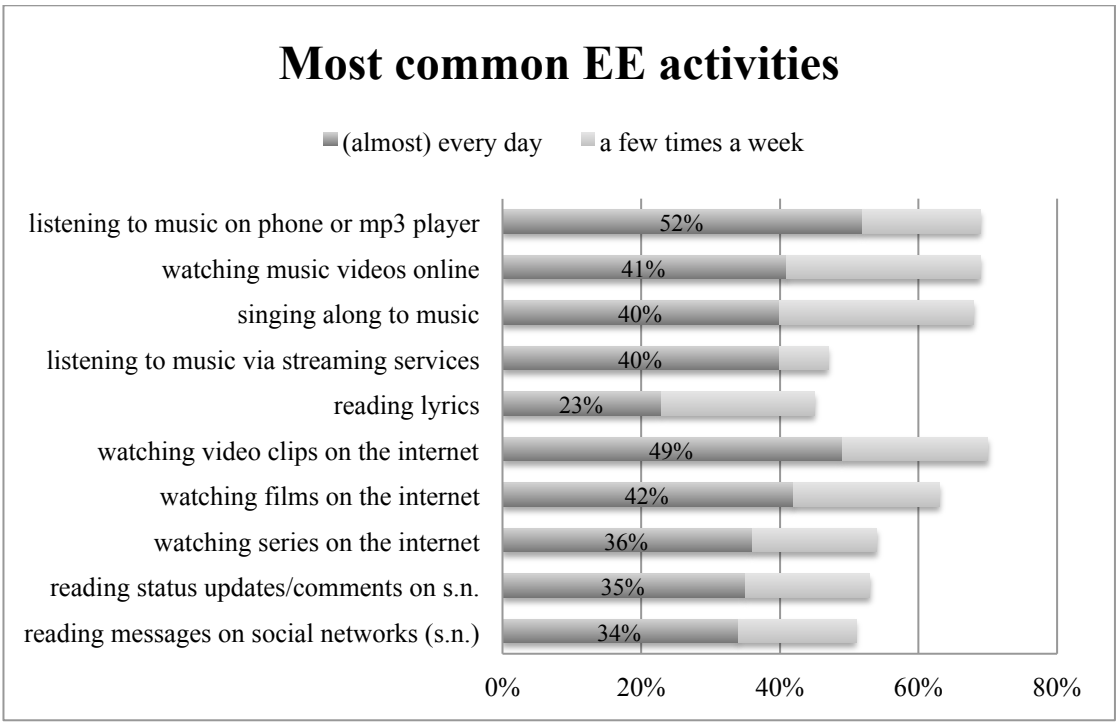
6.1 Types and amount of EE contact

In this section, results from the questionnaire concerning EE habits of the participants will be presented and the following research questions discussed:

- RQ1a: What kinds of English media do 16-year-old Austrian HAS students report consuming in their free time?
- RQ1b: How much time do they report spending on English language media consumption outside school?

Data in this section will be analysed using descriptive statistics and form the basis for the inferential analyses in the following sections. To examine research question 1a, the number of participants who engage in each EE activities was calculated and the ten most common ones are presented in figure 1. Since the number of missing answers differs for each activity, the results are given in percentages.

Figure 1 Most common EE activities (N=83)



All the activities listed in the table are in English. As can be seen, more than half of the participants listened to English language music on a daily basis and almost 70%

listened to it at least several times a week[27]. In addition, approximately 70% watched English music videos and another 70% liked singing along to music, which means that they also produced English. Almost 50% of the participants used online music podcast for streaming music; almost a quarter reported reading English lyrics on a daily basis and another quarter engaged with lyrics several times a week. This shows that, although reading books and articles was not among the most popular activities[28], students still frequently worked with English texts in their free time. When looking at all the music activities mentioned in the questionnaire, 22 participants (26%) did not listen to music on a daily basis and 16% listened to English language music less than several times a week.

Cumulative percentages show that watching videos on the internet was the most common EE activity, with 49% watching videos daily and another 21% weekly. In total, 62% of the participants engaged in audiovisual activities several times a week and 48% watched films or series in English daily.

Also social media were very popular: More than a third read messages or status updates in English every day and over 50% did so several times a week. This ties in with the point made above that the participants read English texts frequently in their free time, although not in the traditional sense of reading books or articles. Contact with English through social networks was, however, less common than through music and films or series: 16 participants did not read or write English on social media daily and an additional 30 did not engage in any English social network activities weekly, which means that 55% of the sample did not encounter English on social networks regularly.

Another way of defining the most common EE activities is according to the skills that are involved. For this analysis, the activities mentioned in the present questionnaire were combined into five variables, which are EEL (listening), EER (reading), EEW (writing), EES (speaking) and EEM (multimodal)[29]. It has to be mentioned that some EE activities were attributed to two variables. Watching series with subtitles, for instance, is included in the listening and the reading variables.

[27] Since the definition of weekly activities is 'at least several times a week', the number of weekly activities includes the number of daily activities.
[28] 25% read English books or articles weekly and only 6% daily.
[29] Multimodal activities are those that cannot be clearly attributed to a skill, i.e. making English language video clips, playing games on the tablet, smartphone, computer or console and using apps.

When looking at the median values for weekly activities, this was the ranking: On average, the participants engaged in five listening, three reading, two writing, two speaking activities and one multimodal activity. For the daily activities, the ranking was slightly different. Again, listening activities were most common (m=3), followed by reading (m=1) and speaking activities (m=1). Median values for writing and multimodal activities were both 0, which indicates that, on average, the participants did not engage in any writing and multimodal activities on a daily basis. Considering that the multimodal variable includes all of the gaming variables, the low median can be explained by girls not playing computer games daily, which is discussed in more detail below.

To sum up, the three most popular categories were listening to music, watching films and series and communicating on social media. As far as skills are concerned, listening activities were the most common ones, which ties in with the observation above as listening is involved in most of these activities.

Now that the favourite media types have been ascertained, it is also of interest to investigate the time the participants spent with English outside school. Generally, contact with extramural English was high. Only nine female (19%) and three male (9%) participants did not engage in any daily EE activities. The sample median for daily EE activities lay at 5 and the weekly median at 13. The variation was quite large with some students never being in contact with English outside the classroom, while others reported doing up to 27 EE activities daily and an additional 37 per week. In general, all participants reported using more receptive than productive activities. In fact, the average member did not engage in any daily productive activities.

6.2 EE and receptive vocabulary breadth

In this section, the relationship between EE and receptive vocabulary breadth will be investigated. For this purpose, research question 2 was formulated.

- RQ2: What is the relationship between the amount and type of English media the participants use and their receptive English vocabulary breadth?

Before turning to hypothesis testing, the main results of the *V_YesNo* test will be presented. 16 participants were classified as unreliable and therefore excluded from the analysis, which reduces the sample size to 67 (cf. 5.5). The lowest estimated

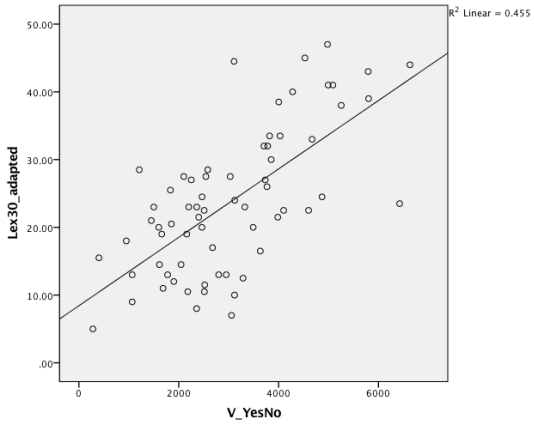
vocabulary size was 280 and the highest 6631. According to Meara and Miralpeix (2017: 118), the first one is at beginners' level and the latter indicates a good level of competence. The median score was 2800 and the mean score was 3041.43, which would both fall into the category of intermediate-level learners. Of the 83 participants in the *V_YesNo* test, 7 belonged to the beginners group and 20 to the group that was not specifically defined by Meara and Miralpeix (2017: 118). This group has an estimated vocabulary size of 1500 to 2500 words and is located between the beginners and the intermediate group. Furthermore, 28 participants were classified as being intermediate and 12 as having a good level of proficiency. None of the participants were allocated to the very high level or native-like groups.

Results from the productive vocabulary test will be reported later.

H2.0: Students who have a large productive vocabulary also have a large receptive vocabulary.

This hypothesis is a preliminary check for further hypothesis testing. Since the present study does not have one measure of vocabulary size but two, it first has to be ascertained that the instruments (*Lex30* and *V_YesNo*) are compatible. In order to examine whether both tests can distinguish learners with low vocabularies from learners with higher vocabularies, a Spearman's rank-order test was conducted.

Figure 2 Correlation of the two vocabulary tests (N=67)



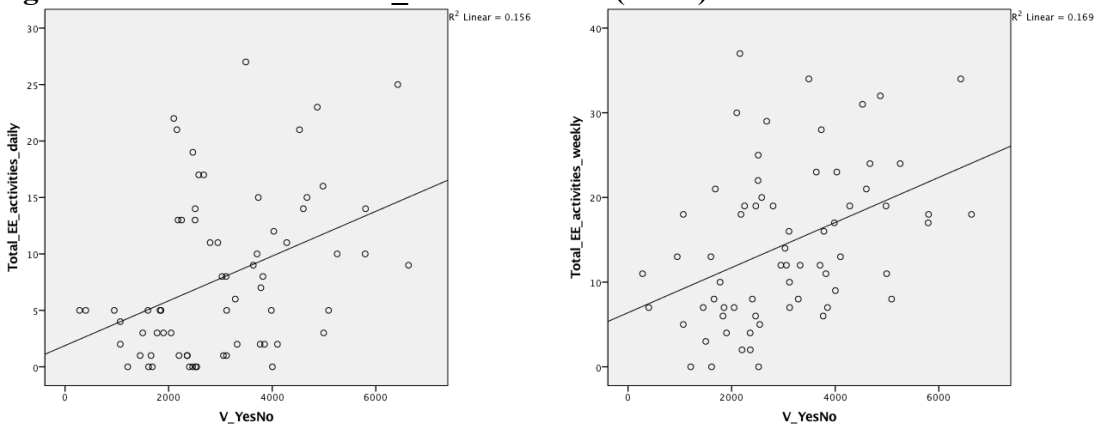
It was shown that the two vocabulary tests are strongly positively related (ρ=0.631, N=67) and that this correlation is significant at the 0.01 level ($p<0.001$). Figure 2 indicates that the regression coefficient fits the data and R^2 Linear is high at 0.455,

which means that the two factors have a large shared variance[30]. Power is high at 0.9999 and the 95% CI is [0.46 , 0.76], which supports the alternative hypothesis that learners with large receptive vocabularies also have large productive vocabularies and vice versa. In addition, it indicates that the instruments used in this study are strongly correlated and hence suitable as a combined measure of vocabulary knowledge.

H2.1: The amount of EE has a positive impact on learners' receptive vocabulary size.

To examine this hypothesis, the following null hypothesis was formulated: There is no relationship between the amount of EE and learners' receptive vocabulary size. A Spearman's rank-order test was run to determine the relationship between the daily EE activities and the scores on the receptive vocabulary test.

Figure 3 Relations between *V_YesNo* and EE (N=67)



As the left graph in figure 3 indicates, the regression line fits the data well, but the R Square Linear of 0.156 shows that only 15.6% of the variance is shared by both variables. There was a moderate positive correlation (ρ=0.398, N=67, p=0.001). The existence of a correlation was also supported by the confidence interval of [0.17, 0.59] and the power level at 0.9239703 was high. Consequently, the null hypothesis is rejected and the alternative hypothesis accepted.

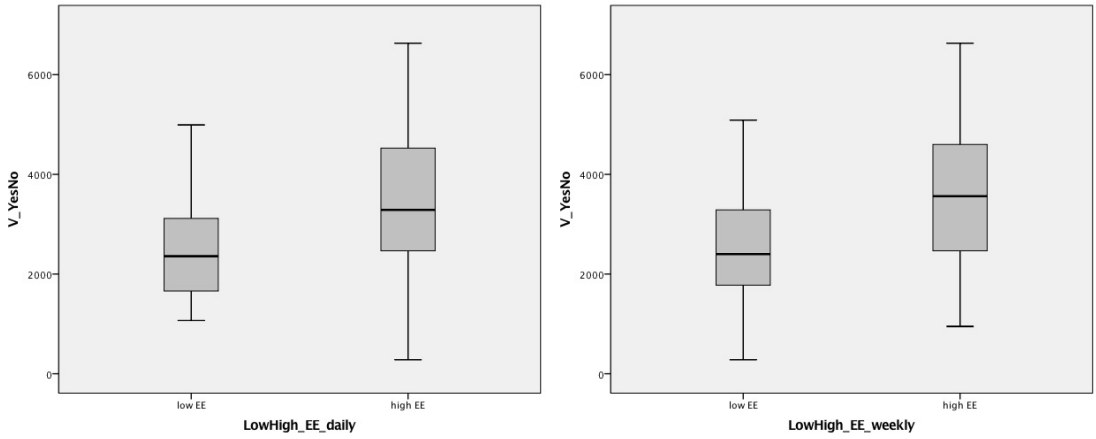
In addition, the relation between weekly EE activities[31] and receptive vocabulary size was investigated. The Spearman's rank-order correlation showed a moderate positive correlation (ρ=0.430, N=67, p<0.001), which was slightly stronger than the

[30] The size of the shared variance (R^2 Linear) can range from -1 to +1 and the "closer this value is to ±1, the more variance the factors share" (Larson-Hall 2016: 153).
[31] The variable 'Weekly activities' includes the number of daily activities.

correlation between daily activities and receptive vocabulary size. The 95% confidence interval was [0.21 , 0.61] and power was 0.9593546.

Since it has been established that contact time with English outside the classroom and vocabulary size are positively correlated, a Mann-Whitney U test of group differences was conducted to examine whether the differences in scores of students with little EE contact and those who consumed English media extensively were statistically significant. For this test, the participants had to be divided into two groups. The groups were split at the median values of the variables 'Total_EE_activities_daily' and 'Total_EE_activities_weekly'. Participants whose values on these variables exceeded the median score were assigned to the 'High EE' group and those whose values were below average belonged to the 'Low EE' group.

Figure 4 *V_ YesNo* scores in low and high EE groups (N=67)



Already when looking at the boxplots in figure 4, one can see that the median scores of the High EE groups (m_{high_daily}=3670, m_{high_weekly}=3562) are above the median scores of the Low EE groups (m_{low_daily}=2200, m_{low_weekly}=2400). Also the minimum and the maximum scores are higher in the weekly High EE group. This is different in the daily observations, where the high EE group displays a larger range and has higher maximum scores but also lower minimum scores than the Low EE group. These observations were confirmed by the results of the Mann-Whitney U test which found that members of the High EE group (weekly) had higher scores than members of the low EE group (p=0.006). The effect size was moderate (r=0.3333[32]), meaning that the amount of EE seemed to have a moderate influence on vocabulary size, and power was high (power=0.8133). The confidence interval was [327 ; 1657], which is

[32] In fact, the effect size was negative (r=-0.3333), but since negative signs can be ignored in effect sizes, all effect sizes will be reported as positive values (Larson-Hall 2016: 153).

quite large and therefore the results lack precision. For daily EE activities, the test also found a significant difference between the groups (r=0.4938, p<.001) with a power of .9917265 and a 95% CI of [733, 1983], which is a striking result. In other words, learners who engage in many EE activities daily were shown to have significantly larger receptive vocabularies than their peers with little EE contact.

Now that the positive impact of EE contact time on receptive vocabulary knowledge has been confirmed, the question arises whether the type of media also affects vocabulary gains, which will be addressed in the next two hypotheses.

H2.2: EE activities that actively engage users have a stronger influence on receptive vocabulary knowledge than passive activities.

To examine this hypothesis, correlations between receptive[33] and productive[34] EE activities and scores on the receptive vocabulary test were calculated. An overview of the results is provided in table 7.

Table 7 Correlations between receptive/productive EE activities and receptive vocabulary size (N=67)

Variables		r	p	power	95% CI
receptive activities weekly	*V_YesNo* scores	0.385**	0.001	0.9047	[0.16, 0.58]
productive activities weekly	*V_YesNo* scores	0.372**	0.002	0.8823	[0.14, 0.57]
receptive activities daily	*V_YesNo* scores	0.357**	0.003	0.8525	[0.12, 0.55]
productive activities daily	*V_YesNo* scores	0.369**	0.002	0.8767	[0.14, 0.56]

**. Correlation is significant at the 0.01 level (2-tailed).

As can be seen, the results for all four correlation tests are very similar. In all cases, the EE activities and the receptive vocabulary size are moderately related with

[33] The variable 'receptive EE activities' includes all listening and reading activities.
[34] The variable 'productive EE activities' is the sum of values on all speaking and writing activities. Thus, multimodal activities were not included in this analysis since they could not be attributed to either receptive or productive activities.

statistical significance and high power. Neither of the CIs includes 0, which supports the assumption that there is a relation between EE activities and vocabulary size. Since the correlation coefficients are very similar, the data suggests that there is no difference in the degree of relation depending on whether the activities are receptive or productive. It needs to be pointed out that correlations do not provide information on the direction of the relation, that is, they do not say whether EE activities influence vocabulary size or vice versa. It would seem logic that the influence is bilateral, meaning that learners who have extensive contact with EE have larger vocabularies and learners who have larger vocabularies are more likely to engage in English activities outside the classroom. This would be an interesting aspect to investigate in further research projects.

H2.3: Activities that facilitate the development of different skills (listening (EEL), reading (EER), writing (EEW), speaking (EES), multimodal (EEM)[35]) show varying strengths of correlations with receptive vocabulary breadth.

According to the *Involvement load* or *Depth of processing hypothesis* (D. Schmitt & Schmitt 1995; Hulstijn & Laufer 2001, cf. chapter 2), the higher the cognitive involvement, the more vocabulary will be acquired, which leads to the hypothesis that activities that engage learners actively (e.g. writing messages on social networks, playing computer games) facilitate larger vocabulary gains than passive ones. This hypothesis was also tested in the present study.

Table 8 shows the results of the conducted correlation tests.

[35] The variable 'multimodal' combines the variables 'games on portable devices', 'games on the computer or console', MMPOG, apps, and 'making videos' because they could not clearly be attributed to a skill.

Table 8 Correlations between receptive vocabulary size and activities according to skills (N=67)

Variables		r	p	power	95% CI
EEL daily	*V_YesNo* scores	0.378**	0.002	0.8930	[0.15 , 0.57]
EEL weekly	*V_YesNo* scores	0.386**	0.001	0.9063	[0.16 , 0.58]
EER daily	*V_YesNo* scores	0.261*	0.033	0.5759	[0.02 , 0.48]
EER weekly	*V_YesNo* scores	0.331**	0.006	0.7909	[0.09 , 0.53]
EEW daily	*V_YesNo* scores	0.334**	0.006	0.7987	[0.10 , 0.53]
EEW weekly	*V_YesNo* scores	0.380**	0.002	0.8964	[0.15 , 0.57]
EES daily	*V_YesNo* scores	0.295*	0.015	0.6873	[0.05 , 0.50]
EES weekly	*V_YesNo* scores	0.270*	0.027	0.6062	[0.03 , 0.48]
EEM daily	*V_YesNo* scores	0.334**	0.006	0.7987	[0.10 , 0.53]
EEM weekly	*V_YesNo* scores	0.363**	0.003	0.8649	[0.13 , 0.56]

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

As can be seen in table 8, most EE activities displayed moderate relations with the scores on the *V_YesNo* test at an adequate power level. Slightly lower correlations were observed in the speaking variables and the daily reading activities. Searching for explanations for this phenomenon, descriptive statistics of the variables were consulted (mean, median, standard deviation), but no apparent reasons could be found. Median values for the weekly and daily speaking activities were equal to median values of other variables, where stronger correlations were observed. The respective means were even higher than those of other variables with stronger correlations.

To conclude, moderate positive correlations were found between the number of EE activities learners engage in and their receptive vocabulary sizes. Investigations about different media types and the related skills did not show any significant differences in relations.

6.3 EE and productive vocabulary breadth

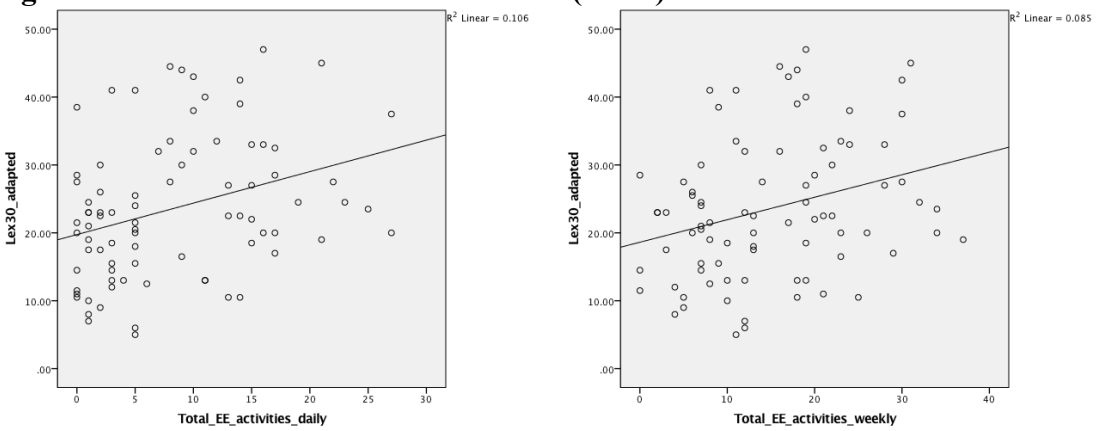
This section investigates the relation between EE activities and the participants' productive vocabulary knowledge:

- RQ3: What is the relationship between the amount and type of English media the participants use and their productive English vocabulary breadth?

Before addressing the individual hypotheses to this research question, general results of the productive vocabulary test will be briefly presented. As already mentioned in section 4.3, *Lex30* is a test of productive vocabulary knowledge. Strictly speaking, results do not allow the computation of an estimated vocabulary size, but a ranking within and between groups. No tests had to be excluded because of reliability issues, which means that all 83 tests could be used for the following analyses. Since the test consists of 30 items with 4 possible answers each, the possible maximum score would be 120 points[36]. The highest score that was achieved among the participants of this study was 47, the lowest 5, which shows that the participants displayed large differences in their productive vocabularies sizes. On average, testees scored 23.6 points. However, standard deviation was quite high at 10.4 points.

H3.1: The amount of EE has a positive impact on learners' productive vocabulary.

Figure 5 Relations between *Lex30* and EE (N=83)



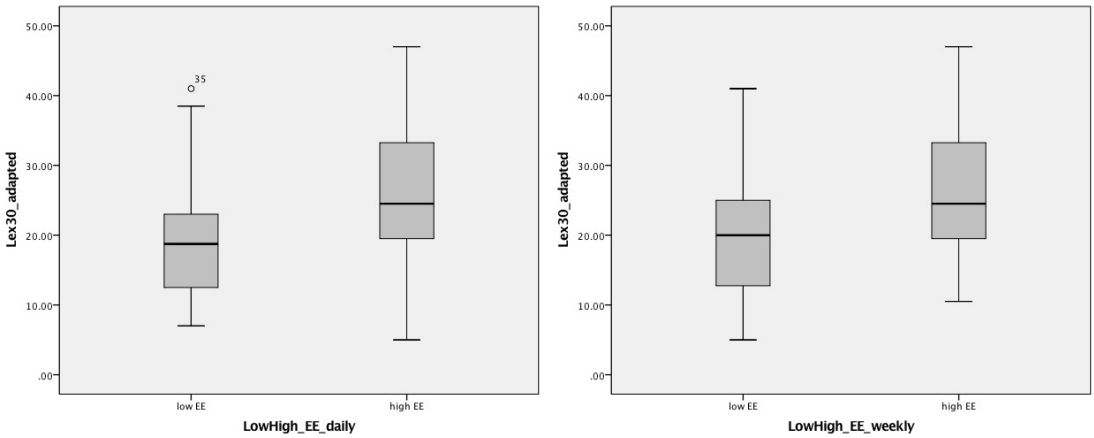
A Spearman's rank-order correlation was run for daily and weekly EE activities and the scores on the productive vocabulary test (*Lex30*). A look at the scatterplots provided in figure 5 shows that regression lines fit the data satisfactorily well. A slightly higher correlation was found for daily (ρ=0.341**, p=0.002, N=83,

[36] The average native speaker scores around 60 points (cf. section 5.3).

power=0.8914, CI=[0.13, 0.52]) than for weekly activities (ρ=0.286**, p=0.009, N=83, power=0.7534687, CI=[0.07, 0.48]).

In addition, a Mann-Whitney U test was conducted to examine differences between 'Low EE' and 'High EE' groups. When investigating group differences, the first step is a visual inspection of the boxplots in figure 6 (Larson-Hall 2016: 246).

Figure 6 *Lex30* scores in Low and High EE groups (N=83)



In both graphs, the median values of the High EE groups are higher than those of the low EE groups. In the right graph, the lowest score was achieved by a member of the Low EE group and the highest by a member of the High EE group, as one would expect. In the left graph, however, the High EE group displays a wide range of scores, including both the maximum and minimum scores and there is an outlier in the Low EE group who was better than expected.

The Mann-Whitney U test for daily EE activities confirmed the assumption that members of the High EE group generally performed better than members of the Low EE group (p=0.003). The effect size was moderate (r=0.3313) and power adequate (0.8679). The 95% CI is [2.00 , 11.00], which does not include 0. The test for weekly EE activities showed similar results (p=0.005, N=83, r=0.309, power=0.8301, CI =[2.50 , 11.50]). Hence, the differences already observed in figure 6 were shown to be statistically significant in the Mann-Whitney U tests.

H3.2: EE activities that actively engage users have a stronger correlation with productive vocabulary knowledge than passive activities.

As already explained under hypothesis H2.2, the theory is that learners benefit more from activities in which they not only consume but also produce English language.

Spearman's rank order correlations between productive and receptive activities and *Lex30* scores delivered the following results:

Table 9 Correlations between receptive/productive EE activities and productive vocabulary size (N=83)

Variables		r	p	power	95% CI
receptive activities weekly	*Lex30* scores	0.249*	0.023	0.6281	[0.03 , 0.44]
productive activities weekly	*Lex30* scores	0.294**	0.007	0.7776	[0.08 , 0.48]
receptive activities daily	*Lex30* scores	0.273**	0.013	0.7118	[0.06 , 0.46]
productive activities daily	*Lex30* scores	0.387**	0.00	0.9565	[0.18 , 0.56]

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 9 shows that the strongest correlation exists between daily productive activities (including EEM) and productive vocabulary knowledge. Both daily and weekly productive activities are more strongly correlated with productive vocabulary than receptive activities. Thus, hypothesis H3.2 can be accepted. It is, however, not proven that this difference is statistically significant.

When compared to the correlations with receptive vocabulary, all correlations with the exception of daily productive activities are smaller. Thus, learners seem to acquire more passive vocabulary from their contact with English outside the classroom than active vocabulary. However, test effects need to be taken into account, thus no definite conclusions can be made and further investigation would be warranted. Correlations between daily productive EE activities and productive vocabulary knowledge are slightly stronger (ρ=0.387) than with receptive vocabulary knowledge (ρ=0.369).

H3.3: Activities that facilitate the development of different skills (listening (EEL), reading (EER), writing (EEW), speaking (EES) and multimodal (EEM)) show varying strengths of correlations with productive vocabulary breadth.

Table 10 Correlations between receptive vocabulary knowledge and activities according to skills (N=83)

Variables		r	p	power	95% CI
EEL daily	*Lex30* scores	0.252*	0.022	0.6390	[0.04 , 0.45]
EEL weekly	*Lex30* scores	0.193	0.080	0.4197	[-0.03 , 0.4]
EER daily	*Lex30* scores	0.261*	0.033	0.6709	[0.04 , 0.45]
EER weekly	*Lex30* scores	0.269*	0.014	0.6984	[0.05 , 0.46]
EEW daily	*Lex30* scores	0.283*	0.010	0.7441	[0.07 , 0.47]
EEW weekly	*Lex30* scores	0.247*	0.024	0.6209	[0.03 , 0.44]
EES daily	*Lex30* scores	0.330**	0.002	0.8692	[0.12 , 0.51]
EES weekly	*Lex30* scores	0.274*	0.012	0.7151	[0.06 , 0.46]
EEM daily	*Lex30* scores	0.324*	0.003	0.8560	[0.11 , 0.51]
EEM weekly	*Lex30* scores	0.249*	0.023	0.6281	[0.03 , 0.48]

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Except for reading, all activities display stronger correlations when done daily as opposed to weekly, which indicates that the regularity with which an activity is done plays an important role in vocabulary acquisition. The strongest relations were found with daily multimodal and speaking activities both sharing a productive element. Weekly listening activities are the only category that is not related to productive vocabulary knowledge on a statistically significant level, which is indicated by the high p-value ($p>0.05$) and a confidence interval that goes through 0. Although some tests have a power level lower than .8, all of them (except for EEL weekly) lie above 0.5, which is the lowest acceptable level according to Larson-Hall (2016: 105). A power level of 0.6, however, indicates a 40% chance that statistically significant relations that exist in reality were not found in the test. In other words, it is possible that relations between the individual activities and productive vocabulary size are in fact larger than they were found in the test. Despite slight variations in correlational strengths, these differences do not seem large enough to support the hypothesis that some activities show stronger correlations with productive vocabulary knowledge

than others. It is, however, still possible that some activities are more successful tools for vocabulary acquisition than others (Sundqvist 2009: 156) and that larger differences could not be found due to sample characteristics and size. Thus, further research and in-depth studies would be needed on this topic.

Compared to the correlations under hypothesis H2.3, most relations between types of EE media and productive vocabulary knowledge were again smaller. Relations are (almost) equal in the variables EER daily and EES weekly, which indicates that these activities are equally strongly related to receptive and productive vocabulary knowledge. One exception might be the daily speaking activities, which are more strongly correlated with productive (ρ=0.330) than receptive vocabulary breadth (ρ=0.295). However, it has to be pointed out that this comparison is merely an observation and does not indicate whether this difference is statistically significant.

To conclude, this section showed that learners who engage in more EE activities have larger productive vocabularies. While the participants seem to benefit more from productive activities, no clear differences could be found as far as different skills were concerned.

Besides EE, there are also other variables that might influence vocabulary acquisition. For some of these variables, information was gathered in the questionnaire and statistical tests were conducted to investigate correlations and group differences. The results will be presented in the following sections.

6.4 Gender differences

As described in chapter 4, other studies have shown that girls and boys display different preferences concerning media types (Sundqvist 2009; Sundqvist & Sylvén 2012) and that boys, in general, engage in more EE activities (Grau 2009). Furthermore, boys often performed better on vocabulary tests, although girls had better English grades at school (Sundqvist 2009; Uuskoski 2011). Inspired by these findings, this section investigates gender differences in the type and amount of EE, grades and vocabulary size.

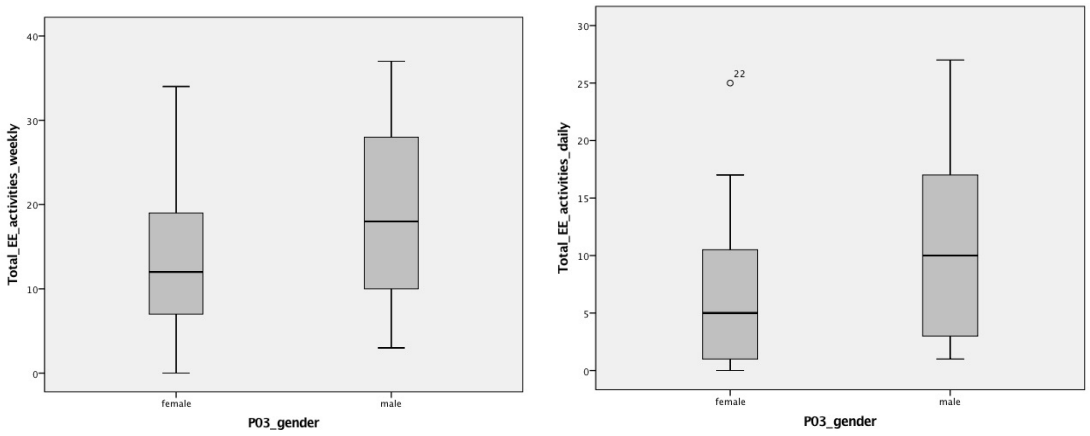
- RQ4: Are there gender differences in English media consumption and what are the effects on vocabulary knowledge?

H4.1: Girls and boys display different habits of media usage, both in the amount and the type of media they consume.

As far as weekly and daily activities are concerned, the median for boys lay distinctly above that for girls (cf. figure 7). Also the minimum and the maximum scores on both variables were higher in the male group. In both groups, the variance was large. There was only one outlier, a girl who reported 25 daily EE activities, lying significantly above her group's average. In addition, all data, except data from the male group for the variable 'weekly activities', was positively skewed, which means that most members of the group were positioned on the lower end of the scale.

On average, female participants reported 5 daily and 12 weekly and male participants 10 daily and 18 weekly activities. Most male participants did at least one EE activity per day and at least three per week, while girls displayed only half as many daily activities.

Figure 7 Data distribution on weekly EE activities according to gender (N=80)



To see whether gender differences in the amount of EE are statistically significant, two Mann-Whitney U tests were run (N=80[37]). The first test investigated differences in daily activities and showed that boys engaged in significantly more activities than girls (p=0.003, N=80). Effect size was moderate (r=0.3376) and power adequate (0.8769). A 95% confidence interval of [0.12 , 0.52] supports the assumption that boys and girls significantly differ in their daily use of English media. As far as weekly activities were concerned, boys again ranked significantly higher than girls (p=0.019,

[37] The sample size for all gender-related tests is 80, since three participants did not state their gender.

N=80, r=0.2625, power=0.6577, CI=[1.00 , 10.00]), although the difference was slightly smaller than with daily activities.

Similar to other studies (Grau 2009; Uuskoski 2011; Sundqvist & Sylvén 2012), gender differences became particularly apparent when looking at preferences for media types.

Figure 8 Gender differences in media preferences (N=80)

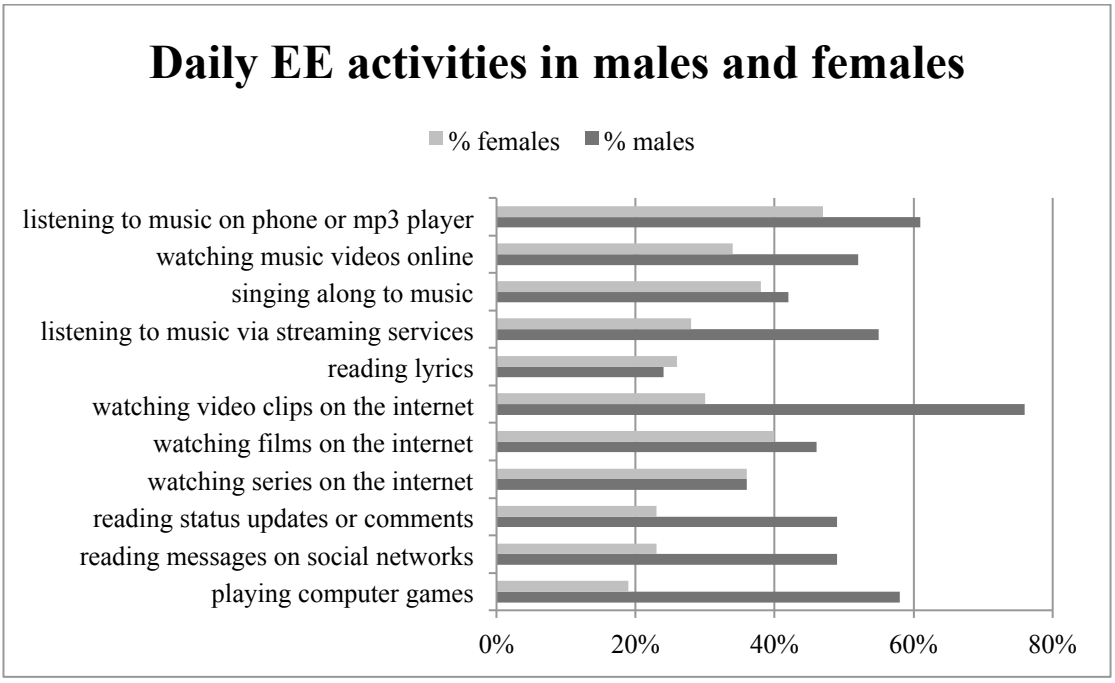
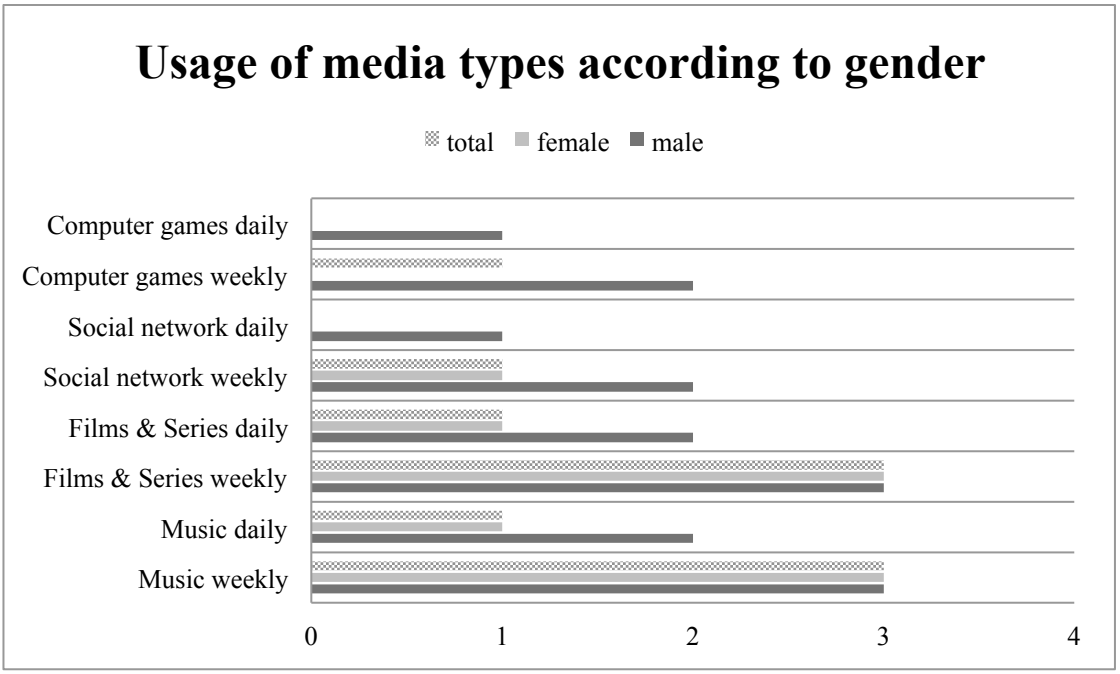


Figure 8 shows that the three most common daily EE activities in the female group were listening to music on the phone or the mp3-player, watching films on the internet and singing along to music. Male participants preferred watching video clips on the internet, listening to music on the phone or the mp3-player and listening to music via streaming. The male participants listened to music via streaming twice as often as their female peers and watched video clips online three times as often. Similar to other studies (Grau 2009; Uuskoski 2011; Sundqvist & Sylvén 2012), the gender gap was especially visible with computer games: 70% of the male participants played computer games several times a week, 58% of whom played every day. With girls, this proportion is significantly smaller. Only 38% played on a weekly basis and only 19% played computer games daily.

A gender difference was also apparent when looking at specific media types, as presented in figure 9. In all media types (except for 'Music weekly' and 'Films & Series weekly'), boys reported having more contact with EE than girls. The largest

discrepancy could be observed with computer games, where female participants played on average less than several times a week (median=0), while boys played computer games once a day and twice a week[38]. On average, the girls in the sample did not use English on social networks[39] every day and reported engaging in only one kind of social media activity weekly. The male participants, on the other hand, displayed one daily and two weekly activities on social media. In general, boys often lay above the sample median.

Figure 9 Usage of media types according to gender (N=80)



In conclusion, both gender groups mentioned music, films and series, and social networks as their favourite media types. An apparent gender difference could be observed in the amount of time the participants spent playing computer games. While three in five boys played computer games on a daily basis, only one in five girls did so. These results are in line with other studies (cf. chapter 4) where male participants also reported more contact time with EE. Whether these gender differences are statistically significant was examined through several Mann-Whitney U tests.

Mann-Whitney U tests (N=80) were conducted for the three most common media types and computer games, where other studies found significant gender differences (Grau 2009; Sundqvist 2009; Uuskoski 2011). The first numbers that will be

[38] The category 'computer games' is computed as the sum of the three variables 'playing games on the tablet, smartphone, ipod', 'playing games on the computer or console' and 'playing games online'.
[39] The variables 'read English messages', 'write English messages', 'read English status updates or comments' and 'write status updates or comments' constitute the category 'Social network'.

presented always refer to tests on daily and the latter on weekly activities. On average, boys listened to more English language music than girls, but this difference was not statistically significant (p=0.082, r=0.0869, power=0.0665, 95% CI=[-0.14 , 0.3]; p=0.437, r=0.1944, power=0.4068, 95% CI=[-0.03 , 0.4]). The power levels of both tests were low, which means that chances of finding differences were low. In other words, it is not unlikely that gender differences do exist, but they were not detected in these tests.

When looking at films and series, it was striking that 12 girls (25%) did not watch English films or series at least several times a week. This proportion was lower in the male group (6%). Only half of the female participants reported watching English films and series daily, while almost 80% of the male participants did so. Nevertheless, the gender difference was not statistically significant (p=.076, r=.1987, power=.4221, CI=[-0.03, 0.4]; p=.518, r=.0723, power=.0967, CI=[-0.15, 0.29]). Again, power was low, which means that differences could still exist.

The male participants were also more active in social networks. On average, they used English in one social media activity every day and an additional one several times per week. Girls did not use English in social networks daily and engaged in only one English activity per week. In contrast to the media types presented so far, this difference in social media use was statistically significant (p=.02, r=.2598, power=.6481, CI=[0.04, 0.46]). This time, effect size was modest and power was acceptable with the 95% CI confirming the findings. Boys also used English significantly more on social media in the course of a week (p=.011, r=.2830, power=0.7280, CI= [0.06, 0.48]).

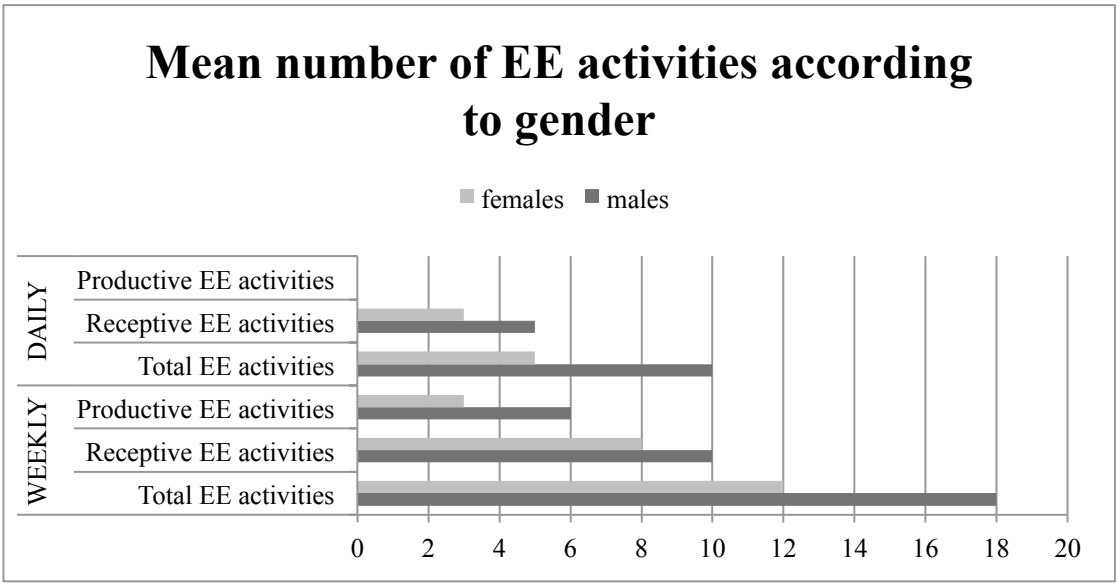
As far as computer games are concerned, boys played significantly more, both daily (p<.01, r=.4516, power=.9927, CI=[0.25, 0.61]) and weekly (p<.01, r=.4118, power=.9756, CI=[0.21, 0.58]).

To sum up, statistically significant differences could only be found for social media activities and computer games. In both cases, boys engaged in more EE activities than girls.

H4.2: Boys tend to engage in more active EE activities.

The study shows that boys generally not only engaged in more EE activities, but also in more productive ones (cf. figure 10).

Figure 10 Median number of EE activities according to gender (N=80)



Both groups listened to music and watched films and series equally often over a week, but daily consumption was higher among males. The average girl did not use or read English in social networks on a daily basis and did not play English computer games, while the average male participant did both. Tests for group differences showed that boys engaged in significantly more productive EE activities than girls (N=80, p=0.001, r=0.3596, power=0.9179, CI= [0.15, 0.54]; N=80, p=0.009, r=0.2907, power=0.7525, CI= [0.07 , 0.48]).

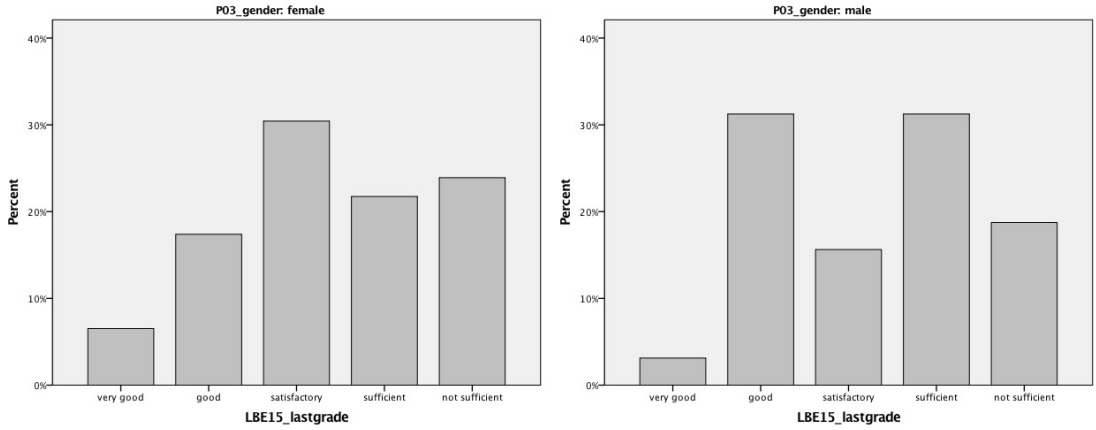
Compared to this, the two gender groups were more compliant on receptive activities: On average, boys engaged in 5 daily and 10 weekly and girls in 4 daily and 5 weekly activities. While the difference for daily receptive activities was statistically significant (N=80, p=0.028, r=0.2452, power=0.5947, CI=[-4.00 , -3.10]), the one for weekly receptive activities was not (N=80, p=0.143, r=0.1637, power=0.3030, CI=[-4.00 , 1.00]).

H4.3: Girls tend to have better grades than boys.

Unfortunately, no statistics on English grades in Austria in general, and in vocational business middle schools (HAS) in particular could be found, but other international

studies (Sundqvist 2009; Uuskoski 2011) have reported that girls tend to have better English grades at school, while boys often perform better on vocabulary tests, which could be explained by their higher level of EE (cf. chapter 4). Whether this is also true for the present sample will be ascertained in this and the next hypothesis. A graphic overview of the English grades at the end of last school year (July 2016) is provided in figure 11. Two participants did not report their last grades, which reduces the sample size to 78 (46 females, 32 males).

Figure 11 Last English grades of male and female participants (N=78)



As figure 11 shows, all grades were covered in both groups. It becomes apparent that the proportion of girls who received a 5 (= 'not sufficient')[40] (23.4%) was larger than the proportion of boys (18.2%). At the same time, there were more boys who got a 4 (= 'sufficient') than girls. Since school grades are ordinal, the medians will be consulted to find out whether the hypothesis seems plausible. On average, both genders had a 3. Furthermore, also the mean grades were similar (m_{girls}=3.39, m_{boys}=boys 3.31) and the difference was not statistically significant (p=0.742, r=0.0373, power=0.0618, CI=[-0.19 , 0.26]).

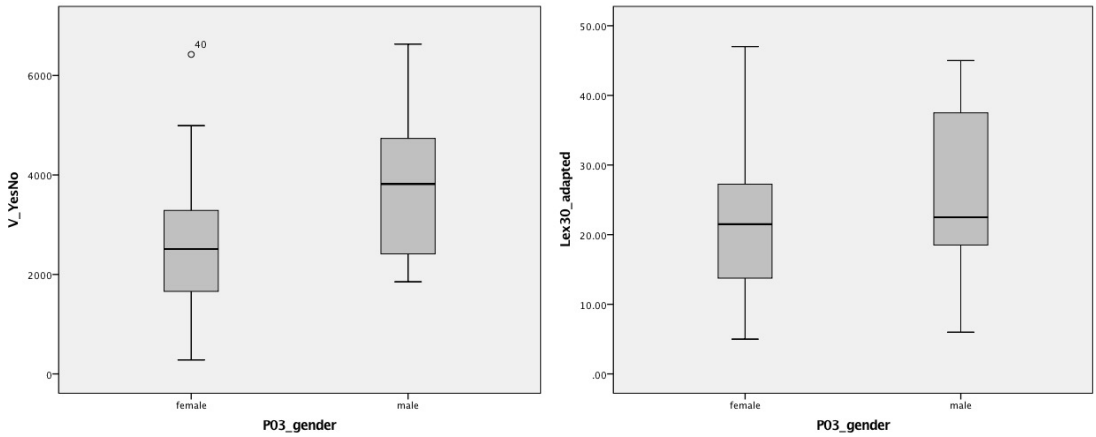
H4.4: Boys tend to have higher scores on receptive and productive vocabulary tests.

From looking at figure 12, it becomes apparent that male participants had higher mean scores on the *V_YesNo* than girls (m_{boys}=3766.35, m_{girls}=2577.54). Median scores on the productive levels test, on the other hand, were quite equal with girls displaying a wider variation in scores (m_{boys}=22.5, m_{girls}=21.5). However, scores of the male group are negatively skewed and data of the female group positively skewed,

[40] In the Austrian school system, grades from 1 to 5 are awarded with performances declining from 1 to 5.

which indicates that most boys scored higher than girls on this test as well. Whether these differences are statistically significant was ascertained in two Mann-Whitney U tests.

Figure 12 Scores on *V_YesNo* and *Lex30* by gender (N=64, N=80)



The test for *V_YesNo* showed that boys had significantly larger receptive vocabularies than girls (p=0.002, r=0.3804, power=0.8746, CI=[0.17 , 0.56]). Differences in scores on Lex30 were not statistically significant (p=0.155, r=0.1591, power=0.2887, CI=[-0.07 , 0.37]), which was already expected from looking at the boxplot in figure 12.

To sum up, this section presented gender differences in EE use and examined whether these were statistically significant. It was found that boys indeed engaged in significantly more daily and weekly EE activities, especially as far as productive activities are concerned. Furthermore, gender differences in the use of the three most popular media types and computer games were tested. The results showed that there were no statistically significant differences in listening to music and watching films and series. However, boys used and encountered significantly more English on social media and played more English computer games. The phenomenon that girls have better English grades while boys tend to perform better on vocabulary tests found in other studies (Sundqvist 2009; Uuskoski 2011) was only partially confirmed in the present study. Boys and girls did not differ significantly as far as grades were concerned and differences observed in the *Lex30* scores were not statistically significant either. However, male participants reached significantly higher scores on the receptive vocabulary test when compared to the female group.

6.5 Multilingualism and vocabulary size

This section investigates the relation between students' linguistic background and their English vocabularies:

- RQ5: Does the number of languages learnt before English have an effect on vocabulary size?

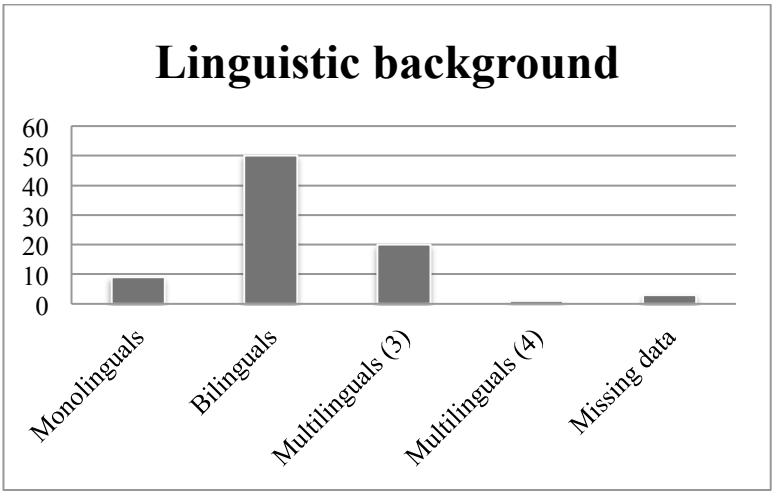
The assumption is that more experienced language learners are more efficient in learning new languages due to an increased metacognitive awareness (De Angelis et al. 2015: 1). In regards to vocabulary acquisition they might have the advantage that cognates in one of their languages facilitate storing and remembering new items. In addition, they are more used to encountering unknown words and might have developed more strategies to cope with them. These assumptions motivated the following hypothesis:

H5.1: Multilingual learners have larger vocabularies than their monolingual peers.

First, some information about the participants' linguistic backgrounds will be provided; for further details consult section 5.2. Out of 83 participants, 9 reported being monolinguals, 50 were bilinguals, 20 used three and one person four languages when communicating with family and friends[41] (cf. figure 13). Three participants did not provide enough information to determine their linguistic background. With 10%, monolinguals form a minority group in this sample, while the remaining 90% speak at least two languages outside school.

[41] Although two questions in the questionnaire explicitly addressed the issue of how many languages were spoken outside school (items 2c and 2d), the number of languages was determined by adding up the languages participants reported speaking with their parents, siblings, relatives and friends outside school (items 6a, 6b and 6c). This was done, because data in the latter items seemed more reliable, as learners reported speaking more languages outside school in the first questions than when asked to specify their language use under question 6.

Figure 13 Linguistic background (N=65)



A Mann-Whitney U test was run to examine differences between monolinguals and multilinguals. No positive influence of multilingualism on English vocabulary could be found in this sample. On the contrary, participants who reported speaking only a single language with their parents and friends had the highest mean scores and median values on the receptive vocabulary test. Differences between the groups were, however, small and therefore not statistically significant (p=0.248, N=65, r=0.1434, power=0.1021, CI=[-0.11 , 0.38]). When looking at descriptive statistics, the bilingual participants had the lowest results, followed by participants speaking more than two languages. The same ranking of the groups was observed on the *Lex30* test: monolinguals ranked highest, followed by multilinguals and bilinguals. This time, group differences were statistically significant with monolinguals performing better than multilinguals (p=0.02, N=80, r=0.2597, power=0.323582, CI=[0.04 , 0.46]). However, in both tests, the groups were not equally large (monolinguals constituted only 9% in the *V_YesNo* and 11% in the *Lex30*), which is why the results have to be treated with caution. Nevertheless, the results indicate that the hypothesis of bilinguals having larger vocabularies than monolinguals was not supported in the present study. In other words, no positive effects of multilingualism on vocabulary breadth were observable in this sample.

6.6 Socio-economic status and vocabulary size

- RQ6: What is the relationship between learners' socio-economic status (SES) and their vocabulary size?

Information on how the variables 'soc_status' was computed can be found in chapter 5. Important information for determining the SES is the parents' professional background. In this sample, the HISEI, the highest occupational status of the parents, was on average 39.31. However, individual variation was high with a minimum of 13.87 and a maximum of 80.46. The lowest possible value of HISEI is 11.56 and the highest 88.96 (Pham et al. 2014: 4), which shows that this sample covers almost the whole spectrum. Together with the number of books at home and the parents' educational level (HISCED), the HISEI was combined to form a variable for socio-economic status (cf. 5.5). Due to missing data, the SES could, however, only be determined for 62 out of the 83 participants. Basically, a higher value of the variable 'soc_status' indicates a higher SES. Values in the present sample ranged between 6.29 and 30.82 with a median at 14.0167. A weak positive correlation (ρ=0.018) was found between the SES and scores on the receptive vocabulary test, however it was not statistically significant (p=0.902, N=49, power=0.0514, CI=[-0.27 , 0.03]). However, the power of this test was very low and relations might have been found with a larger sample. A stronger relation existed between the SES and productive vocabulary knowledge (ρ=0.273, p=0.032, N=62, power=0.5818, CI=[0.02 , 0.49]).

6.7 Language proficiency and EE

While sections 6.1 and 6.2 showed that learners who engage in more EE activities have larger vocabularies, it might also be the case that more proficient learners engage in more EE activities, because they understand more and can thus enjoy English activities more. Thus, the following research question will be discussed in this section:

- RQ7: What is the relation between language proficiency and the amount and type of EE activities learners engage in?

H7.1: More proficient learners engage in more EE activities per day.

The level of proficiency was measured using the grades from the last school year. As four participants did not state their last grade, the sample size was 79. In fact, a weak negative relation (ρ=-0.083) was observed between the grades and the number of daily EE activities, however, power was very low (0.1126) and also the CI ([-0.3 , 0.14]) suggests that this effect is negligible.

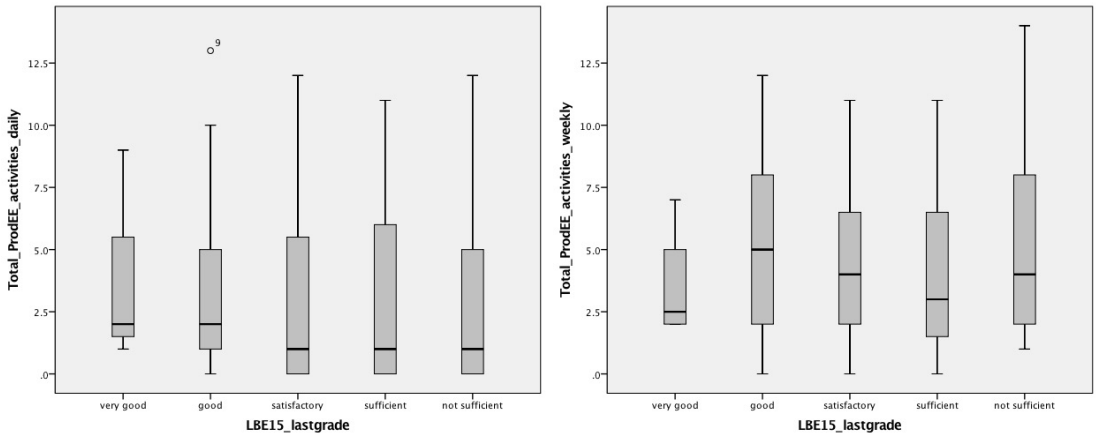
H7.2: More proficient learners engage in more EE activities per week.

The Spearman's rank-order correlation found similar results for the relation between grades and the number of weekly EE activities (ρ=-0.044, power=0.0670, CI= [-0.27 , 0.18]). Thus, the level of proficiency does not seem to influence the number of EE activities learners of this sample engaged in.

H7.3: More proficient learners engage in more active EE activities than less proficient learners.

Since productive activities require a better command of the language (cf. section 2.4.2), it might be assumed that high-proficiency learners are more likely to engage in productive EE activities. This, however, was not the case in the present sample. As figure 14 shows, the highest median values for daily productive activities were reached by the groups who received 'very good' or 'good', but the median values of the other groups are not significantly lower. For weekly productive activities, the second best group again had the highest median, but the best group had the lowest. In addition the maximum of weekly productive activities was reported by a member of the lowest proficiency group.

Figure 14 Relations between proficiency and productive EE activities (N=79)



Further evidence against the hypothesis was provided by two correlation tests: No significant correlations were found, neither for daily (ρ=-0.067, N=79, power=0.0903, CI=[-0.29 , 0.16]) nor weekly activities (ρ=-0.002, N=79, power=0.0498, CI=[-0.23 , 0.22]). Thus, as far as grades are used as measurement, there is no apparent relation between proficiency and the amount of productive EE activities. Another measure of proficiency that was included in the questionnaire was the participants' self-assessment of the four skills[42]. However, for reasons of practicality, it was decided to restrict the analysis to the grades.

6.8 Vocabulary learning strategies and vocabulary size

Another factor that might influence vocabulary size is the use of strategies when encountering unknown words.

- RQ8a: Is there a relation between the application of vocabulary learning strategies and vocabulary size?

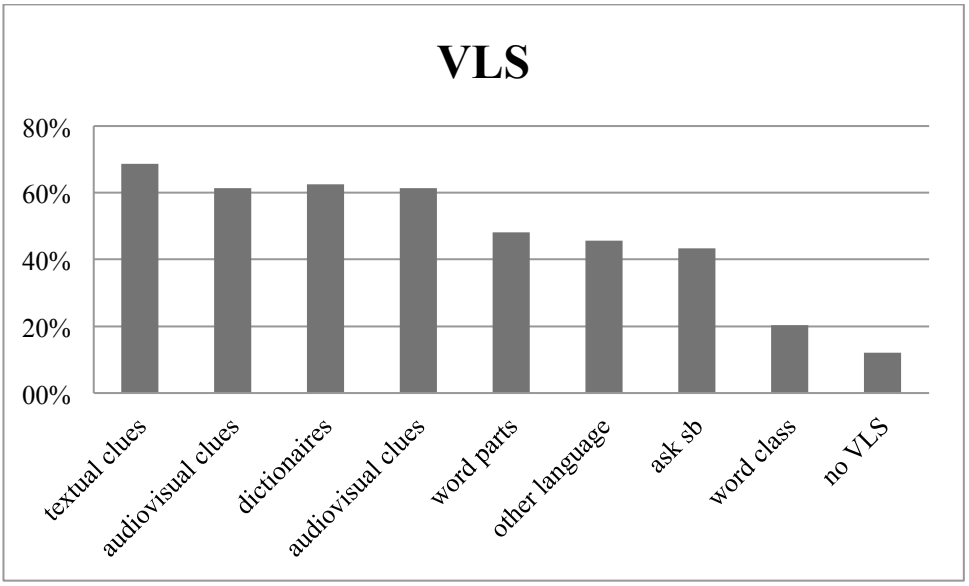
Since not all participants provided answers to all items on vocabulary learning strategies (VLS), the proportion of learners who applied certain strategies will be presented in percentages[43]. First, participants were asked whether they paid attention to unknown words in their free time. The majority (84.4%) reported that they

[42] Interestingly, the participants' self-assessments of their language proficiency often departed considerably from their English grades, which indicates that their self-perception is not necessarily congruent with their teachers' grading. This does, however, not mean that their self-assessment is less accurate: While the participants assessed their language proficiency on the basis of 'can-do' statements from the German version of the CEFR, the GERS (Europarat 2001: 36), grading at school includes more components, which might partly explain why the two measurements lead to different results.
[43] The proportions are cumulative percentages for the answers 'applies fully' and 'applies partially'.

focussed on unknown words when they seemed important for understanding the content. While 63.9% stated to process unknown words consciously, 66.3% reported having no interest in unknown words in their free time. To sum up, it can be said that the participants mostly paid conscious attention to unknown words when they were essential for gist comprehension, but the majority did not focus on vocabulary in leisure activities.

The second question concerned the strategies learners applied once an unknown word had gained attention. The results are visualized in figure 15. The most popular VLS was inferring meaning from context. 68.7% of the participants reported guessing the meaning from the text and 61.4% used audiovisual clues for guessing. Six in ten participants consulted dictionaries and almost 50% looked for known word parts. Since most learners of the sample were multilingual, 45.7% used their knowledge of other languages to infer meaning. A slightly smaller proportion (43.3%) asked other people for the meaning, a fifth drew on information from the word class the word belongs to and 12% do nothing when encountering new words. Thus, most students apply strategies for understanding unknown words. In the majority of cases, meaning was guessed from context. However, a large proportion of participants also used dictionaries.

Figure 15 Most popular vocabulary learning strategies



Finding the meaning of a word through various strategies does not necessarily lead to memorization (Nation 2013: 355). Thus, the participants were asked whether they took further steps to remember the words on the long term. Merely half of the

participants (53%) check their hypothesis after guessing the meaning and 54.2% try to memorize the word, mostly through repeating it orally or writing it down. Since the study was not an experiment in which certain words were encountered and tested afterwards, this study format does not allow checking how successful these measures were. However, a correlation test was conducted to see whether students who apply multiple strategies tend to have larger vocabularies and vice versa.

H8.1: There is a positive correlation between the use of strategies and receptive vocabulary size.

In order to run the test, the individual strategy items had to be combined to one variable called 'VLS_total'. This combined variable includes all the items from 5b (cf. questionnaire in appendix) except for the item 'I don't do anything' and values for this variable could range between 7 and 28, as the participants had to choose from answers with values 1 ('(almost)never') to 4 ('very often') for each of the 7 items. Learners who (almost) never apply any strategies were located on the lower end, while a score of 28 meant that they make use of many different strategies. Ten participants reported to often refrain from doing anything when encountering an unknown word. Two participants reached the minimum value of 7 on the 'VLS_total' variable, indicating that they almost never applied any VLS. The maximum in this sample was 25. On average, participants scored 18. A Spearman's rank-order test showed a moderate positive relation between receptive vocabulary size and VLS (ρ=0.378, p=0.004, N=57, power=0.8377, CI=[0.12 , 0.59]).

H8.2: There is a positive correlation between the use of strategies and productive vocabulary size.

No statistically significant correlation was found between the application of strategies and productive vocabulary knowledge (ρ=0.141, p=0.24, N=71, power=0.2176, CI=[-0.1 , 0.37]).

Now that relations have been investigated, tests of group differences will be conducted to examine whether learners who use many strategies have larger vocabularies than their peers.

- RQ8b: Do learners who apply many vocabulary learning strategies significantly differ in their vocabulary size from those who do not?

H8.3: There is a statistically significant difference between the two groups.

For this test, the sample was split at the median of the VLS variable, which resulted in a 'Low VLS' ($N_{V_YesNo=}$29, N_{Lex30}=35) and a 'High VLS' group (N_{V_YesNo}=28, N_{Lex30}=36). According to the Mann-Whitney U test, there was a statistically significant group difference on the *V_YesNo* (p=0.028, r=0.2918, N=57, power= 0.6189, CI=[0.03 , 0.52]), but not on the *Lex30* (p=0.554, r=0.07, N=71, power=0.0901, CI=[-0.17 , 0.3]. These results are plausible considering that all vocabulary learning strategies in the questionnaire focus on comprehension. However, power for the second test was low, which means that differences might exist but could not be found in this test.

6.9 Attitudes towards English

It seems plausible to assume that attitudes towards English affect learners' motivation to engage in English activities outside the classroom. More specifically, positive attitudes might increase motivation to use English in extramural settings. Evidence for this assumption was provided by Berns (2007a), Sundqvist (2009) and Kuppens (2010) who reported that learners with positive attitudes towards English were generally more likely to engage in EE activities. Whether this is also the case in the present study will be part of the following investigation.

- RQ9a: Do learners with positive attitudes engage more actively with the language through the application of VLS?

First of all, indices of attitudes had to be established. For each item, participants had to indicate their agreement on a scale from 1 to 4, 1 signalling no agreement and 4 total agreement. Since the attitudes section in the questionnaire consists of several items, a Cronbach's alpha was conducted as "a measure of internal consistency among the items" (Cohen et al. 2007: 148). In the present study, the attitudes section includes 21 items, which belong to five topics[44]: the relevance of English for the future, the relation between English and German, the importance of English for young

[44] Each topic consisted of four items except for 'youth', which consisted of five items.

people, English as a language for international communication and the role of English in Austria. The correlation of each item with the sum of the other three to four relevant items was examined with the help of Cronbach's alpha (Cohen et al. 2007: 506). Cronbach's alpha can range between 0 and 1 and a low Cronbach's alpha indicates that "the items have very little in common" (Dörnyei 2007: 206-207). For short scales with 3 to 4 items as they are used in this study, Cronbach's alpha should not fall below 0.60 (Dörnyei 2007: 207).

Cronbach's alpha[45] on the future items revealed that internal consistency was higher after deleting item 3 (Cronbach's α=0.679). Calculating Cronbach's Alpha with the remaining three items showed that an even higher internal consistency could be achieved through the deletion of item 1. However, two items were not considered a reliable measure of attitudes (Dörnyei 2007: 207), which is why it was decided to keep at least three items for each topic. Subsequently, the mean value of the remaining items was computed in a new variable. This procedure was repeated for the other four topic areas. Table 11 shows Cronbach's alpha and the number of remaining items for each topic.

Table 11 Inter-item correlations for attitude items (N=83)

Topic	Cornbach's alpha	Number of remaining items	Deleted item
Future	0.679	3	F3_recoded
German	0.609	4	
Youth	0.621	4	Y2
International	0.575	3	I1
Austria	0.411	3	A2_recoded

As becomes evident in table 11, the items in the categories 'International' and 'Austria' have a Cronbach's alpha lower than the demanded 0.6. However, having a weak indication of attitudes is still preferable to having no indication on these topics at all, which is why they will be used in the following analysis despite the low Cronbach's alpha values.

[45] The adjusted values of the 'Cronbach's alpha based on standardized items' will be provided.

H9.1: Learners with positive attitudes towards English frequently apply VLS.

This hypothesis indicated that positive attitudes might increase learners' willingness to actively engage with English vocabulary in their free time. Spearman's rank-order correlations with the mean values of the remaining items and VLS were conducted. The results showed that positive attitudes concerning the international importance of English seemed to be the best predictor of the application of VLS (ρ=0.3*, p=0.011, N=71, power = 0.7285, CI=[0.07 , 0.5]), followed by the preference of English over German as the 'cooler' language (ρ=0.283*, p=0.017, N=71, power = 0.6751, CI=[0.05 , 0.49]) and the relevance of English for young people (ρ=0.273*, p=0.021, N=71, power = 0.6421, CI=[0.04 , 0.48]). Learners who considered English useful in Austria were also more likely to apply VLS (ρ=0.236*, p=0.047, N=71, power = 0.5142, CI=[0 , 0.45]), whereas the importance of English for the future, for instance for job prospects, was not found statistically significant (ρ=0.125, p=0.299, N=71, power = 0.1806, CI=[-0.12 , 0.35]). However, power on the last test was very low, indicating that stronger correlations might be found with larger samples.

- RQ9b: Are attitudes towards English related to the number of EE activities learners engage in?

H9.2: Attitudes towards English are positively related to the number of EE activities learners engage in.

Attitudes towards English might also affect EE in the sense that learners who have positive attitudes are more likely to engage in English activities in their free time. This was again investigated through Spearman's rank-order tests using the means calculated on the basis of the Cronbach's alpha results (cf. table 11).

For both the number of weekly and daily EE activities, English' international status (ρ=0.377**, p=0.0, N=83, power = 0.9458, CI=[0.17 , 0.55]) and its importance as a youth language (ρ=0.369**, p=0.001, N=83, power = 0.9360361, CI=[0.16 , 0.54]) displayed the strongest correlations.

For weekly activities, the positive aspects of English for the learners' future seemed to be influential as well (ρ=0.218*, p=0.047, N=83, power = 0.5128, CI=[0 , 0.42]). English being more prestigious than German (ρ=0.211, p=0.056, N=83, power =

0.4865, CI=[-0.01 , 0.41]) and its role in Austria (ρ=0.176, p=0.111, N=83, power = 0.3591, CI=[-0.04 , 0.38]) had no apparent influence on the number of EE activities learners engaged in.

For daily activities, the third deciding factor was the image of English as a cool and modern language as compared to German (ρ=0.218*, p=0.048, N=83, power = 0.5128, CI=[0 , 0.42]). No statistically significant correlations were found for the variables 'Future' (ρ=0.141, p=0.203, N=83, power = 0.2475, CI=[-0.08 , 0.35]) and 'Austria' (ρ=0.135, p=0.223, N=83, power = 0.2306, CI=[-0.09 , 0.34]).

Due to the small power of some of these tests, larger samples might yield stronger results.

Attitudes might not only influence the time learners spend on English activities outside school but also their language proficiency. In general, attitudes are regarded as essential factors in language learning (cf. chapter 2) and it is assumed that learners who are intrinsically motivated to learn a language, will be more successful, which leads to the next research question:

- RQ9c: Is there a relationship between learners' attitudes towards English and their vocabulary sizes?

H9.3: Learners who have more positive attitudes towards English have larger vocabularies.

In this section, the relations between learners' attitudes towards English and their vocabulary sizes will be investigated. It is assumed that learners who have positive attitudes are likely to have larger vocabularies. However, it has to be kept in mind that this might be an indirect effect of learners with positive attitudes engaging in more EE activities and applying more VLS as observed under H9.1 and H9.2. To investigate possible correlations, Spearman's rank-order tests were conducted.

The only factor that was found statistically significant for receptive vocabulary knowledge was English' reputation as an international language (ρ=0.378**, p=0.002, N=67, power=0.8930, CI=[0.15 , 0.57]). For productive vocabulary knowledge, positive correlations could be verified for all factors but one. The international importance of English was the strongest factor (ρ=0.428**, p=0.0, N=83,

power=0.9844, CI=[0.23 , 0.59]), followed by the relevance of English for the participants' future (ρ=0.298**, p=0.006, N=83, power=0.7891, CI=[0.08 , 0.49]), its higher status compared to German (ρ=0.288**, p=0.008, N=83, power=0.7596, CI=[0.07 , 0.48]) and its status in youth culture (ρ=0.249*, p=0.023, N=83, power=0.6281, CI=[0.03 , 0.44]).

6.10 Qualitative analysis of words produced in *Lex30*

Data from the productive vocabulary test was not only analysed quantitatively but also qualitatively. Assuming that learners acquire a part of their vocabulary outside school, the hypothesis is that these items can be attributed to certain semantic fields that are common in popular media. In total, the participants produced 5277 tokens[46] and 4391 types[47]. The data preparation for this analysis, which is described in section 4.5, resulted in a list of 286 types that were neither proper nouns nor included in the vocabulary lists from the schoolbooks. Although it is possible that some of these words were taught at school despite being absent from the books, this cannot be validated, which is why it is assumed that all of them were acquired through EE activities. In table 12, some of the words are sorted into sematic fields that frequently occur in popular mass media. It needs to be pointed out that these categories are based on the researcher's intuition and other categories might be found. For this reason, the complete list of all the items provided in the *Lex30* that did not occur in the schoolbooks is provided in the appendix.

[46] This number refers to the total number of items produced in the test and thus includes unrecognisable, German and cue words as well as proper nouns.
[47] This number was calculated after excluding all unrecognisable, German or cue words and deleting repetitions.

Table 12 EE vocabulary according to semantic fields

Semantic field	Examples
Violence & warfare	aggressive, assault, bullet, corpse, defence[48], exposed, harassment, homeless, hooligan, inquiry, jab, killer, loyal, mafia, mobbing, offensive, psycho, punch, stronghold, sword, terrorism, veteran
Colloquial and offensive language	ass, asshole, bum, butt, crap, dick, dumb, moron, shit, slut, whore
Drugs & science	alcohol, antidote, chemic, chemical, chemistry, cocaine, conscious, element, heroin, laboratory, marijuana, meth, pharmacy, physics, plasma, toxic, weed
Magic & fantasy	destiny, faith, fate, monster, supernatural, wizard, zombie
Sports	defence, rebound, wrestle, MMA[49], yoga
Fashion	accessory, bra, brace, glove
Medicine	anorexia, carbohydrate, caries, conscious, diarrhoea, disease, flu, obese, obesity, rabid
Computer technology	controller, genre, software

Table 12 presents a selection of common semantic fields in popular media: Vocabulary of violence and warfare frequently occur in digital games (e.g. *WoW, Call of Duty*), colloquial language is common in many popular series. The semantic field of drugs and science may point towards TV series like 'Breaking Bad' and magic and fantasy is a common EE word field in games, books, TV series and films. Sports vocabulary might be encountered in broadcasts of international sports events or in computer games and the words from fashion and health might occur in youth magazines, TV series of videos. The English computer technology vocabulary from the table above is generally used in German as well. The assumption that learners encounter these sematic fields in their free time is supported by some of the proper

[48] The word *defence* could not be attributed to a single semantic field, which is why it occurs twice in this categorization.
[49] Mixed Martial Arts

nouns they produced in the *Lex30*. These were excluded in the scoring procedure, but provide valuable information for the qualitative analysis. The participants listed films, TV series and books (*Harry Potter*, *Big Bang Theory, The Simpsons, The Walking Dead*), computer games (*Minecraft, Skyrim, GTA*) and the names of famous musicians (*50 cent, Eminem, Tupac*). Furthermore, words like *YouTube*, *Twitter, X-box* and *Goolge* were mentioned, which suggests that English words trigger associations with the media.

7 Discussion of results

The present chapter will interpret the main results presented in the previous chapter in the light of other studies[50] and literature on vocabulary acquisition in non-educational contexts.

As a preliminary to the main research question on the relation between EE and vocabulary size, it had to be ascertained whether Austrian 16-year-old HAS students encounter English in their free time. The study revealed that the majority (89.2%) comes into contact with English outside the classroom every day and only three students do not engage in any EE activities on a weekly basis. The most popular activity is listening to English language music, followed by watching films and series and interacting on social networks. Similar rankings were found by Grau (2009) and Kuppens (2010), whose participants listed music, films and series, and computer games as the most common sources of English outside school. Engagement with the three most popular media types in the present study will be discussed in the following and compared to results from other studies. When drawing comparisons to other studies, it has to be considered that often they used different testing materials or focussed on certain aspects of learning or media use, while the present study is more general in nature. Thus, in some cases the discussion should not be regarded as a direct comparison of results but rather as embedding the insights gained in this study in the wider research conducted in Europe.

Data showed that 74% of the participants listen to English language music daily and 84% weekly. In another Austrian study on the influence of pop songs on vocabulary knowledge (Schwarz 2012, cf. chapter 3), 65% of the students listened to music daily, showing that the number in the present study was slightly higher. Also de Bot et al. (2007), Grau (2009) and Kuppens (2010) confirmed that learners' main contact with English was through listening to music. An obvious reason for this similarity across all studies is that English language music constitutes a large part of radio broadcasts in Europe (Berns, Claes, et al. 2007: 34; Grau 2009: 162), whereas other media types including television are linguistically less homogenous (cf. chapter 3). While learners in Bern's et al. (2007a) study mainly listened to music on the radio, participants in this study rather used their phones and mp3-player, thus enjoying greater freedom in

[50] All of these studies were discussed in chapter 4.

the selection of songs. Although they might listen to many different languages, the large proportion of participants that reported listening to English language music daily suggests that it is still the most common languages for popular music.

The second most common media types are films and series in English. Six out of eight participants receive English audiovisual input daily and eight out of ten weekly. In other studies (d'Ydewalle & Pavakanun 1997; Koolstra & Beentjes 1999; Kuppens 2010), positive effects of watching English films and series on vocabulary size were observed. Although the lexical impact of films and series was not investigated individually in the present study, it can be assumed that learners benefit from watching English-language films and series on the basis of results from the other studies mentioned above. In fact, Sundqvist (2009) found that vocabulary gains were higher from watching TV than from listening to music. A possible reason for this is that learners receive oral as well as visual information, which helps them to make sense of the language content, while many do not actively focus on the language when listening to music (de Bot et al. 2007: 59). Even though 69% of the participants in the present study consider lyrics very or rather important, only 45% reported actively engaging with the song text through reading or translating the lyrics on a regular basis. Thus, while music can be enjoyed without paying attention to the language, understanding the content is essential to films and series, which is why many learners' cognitive activation is likely to be higher when watching TV or films in English. Considering that music, films and series are the most popular sources for English outside school, learners receive a large amount of oral input.

In contrast, on social networks, the third most popular media type, learners do not only engage with English receptively but also productively. Almost half of the participants in the present study encounter English on social networks daily and over 60% read or use English online several times a week. In Grau's (2009) research, communication on the Internet only ranked fourth behind playing computer games. This might be the case because media and the Internet are rapidly changing spheres and therefore new opportunities might have developed in the last seven to eight years leading to new preferences. According to a study conducted by Sylvén (2004) in Sweden, reading[51] was the most important factor in predicting vocabulary knowledge

[51] Besides reading messages and status updates online, Sylvén's category also included the reading of books, articles, subtitles and texts in computer games.

and 59% of the male and 39% of the female participants read English in their free time. In the present study, learners hardly read English books or articles outside school, which is why online interaction, in combination with subtitles, can be considered the main opportunities for developing reading skills outside the classroom. Additionally, learners can also practice their writing skills when communicating online.

In general, the participants were found to engage in more receptive than productive activities, which might explain the fact that correlations between EE activities and receptive vocabulary were stronger than those between EE activities and productive vocabulary (cf. section 6.3).

As far as contact time with EE is concerned, comparisons with other studies are difficult because each study uses different calculations. In the present study, the number of EE activities per day, week, month etc. were counted, however, it is not known, how many minutes or hours the participants engaged in each activity. Similarly, Grau (2009) counted the number of so-called 'episodes' without defining the duration of such an episode. Sundqvist (2009), on the other hand, provided information on weekly or daily hours of EE contact. Nevertheless, contact time ascertained in different studies will be presented here to provide a general impression of the time learners in Europe spend with English outside the classroom. On average, the participants of the present study reported 5 daily and 13 weekly EE activities, though variation was large: Some learners did not get in contact with English outside the classroom, while others engaged in up to 27 daily activities. In Sundqvist's (2009) study, a typical member of the low EE group spent 13 hours a week on mostly passive EE activities. In the high EE group, the average contact time was 29 weekly hours. One explanation why even low EE participants from Sweden display extensive EE exposure in their free time might be the fact that English TV programmes are usually not dubbed in Sweden (Sundqvist 2009: 28). Thus, when watching TV frequently, Swedish teenagers will inevitably get into contact with English, while all films and series on Austrian TV are in German. A study on German teenagers (Grau 2009) showed that on average, the participants displayed 1.62 episodes of English per week. Unfortunately, it is not specified in the article, what this number relates to. Since once a week equals 1 and several times a week equals 4, 1.62 is situated somewhere in between. This number seems quite low compared to the present study and the

research conducted by Sundqvist (2009). However, Grau (2009: 165) excludes less intensive contact like "mere channel surfing, browsing, or scanning of texts", which are included in the other studies. To sum up, the results of the present study are in line with findings from other research projects ascertaining that European teenagers spend a significant amount of time with English in their free time. Interestingly, 61% of the participants still had the feeling that they encountered more English at school than in their free time. For the last school years, they have had three English lessons à 50 minutes per week, which equals 2.5 weekly hours. Although it is not known how long the individual EE activities last, 13 weekly activities possibly add up to more than 150 minutes. Similar attitudes were found by Hasebrink et al. (2007), where the participants believed that 65.2% of the learning occurred at school and 23.2% through the media, although they displayed extensive contact with English in their free time. This shows that school is still regarded as the most important source of English and that learners are not aware of the fact that their exposure time to English might be larger outside school. This is probably strongly connected to the participants' definition of learning. In other words, they might often not be aware of the learning that occurs in their free time.

While almost all participants encounter English outside the classroom, boys tend do so more frequently than girls, which is just one of several gender differences found in the study, some of which will be discussed in the following. On average male participants reported twice as many daily and 1.5 as many weekly activities as female ones. With 10 daily and 18 weekly activities, the male participants lie significantly above the sample average. The gender groups not only differed in contact time, but also displayed different preferences of media types. Girls generally favoured receptive activities like listening to music and watching films, which were also popular among the boys. Additionally, however, the male participants also engaged in significantly more productive activities, first and foremost communication on social networks and computer games. These gender-specific differences were also observed by Grau (2009), who found that girls watched more TV and films, while boys played more computer games. In Sundqvist's (2009) study, both gender groups spent roughly the same amount of time on all media types except for computer games. Boys played not only more (4.4 hours per week compared to 1.1 hours per week), but also different types of games. Interactive games like *World of Warcraft*, *Call of Duty* and *Counter*

Strike were most popular with boys, whereas girls preferred *The Sims*. Thus, Sundqvist (2009: 2) concludes that the boys' increased involvement in computer games had a greater impact on their vocabulary and led to better test results. According to Sundqvist (2009: 196), the two most influential activities for vocabulary were those, for which boys and girls displayed different habits, namely computer games and surfing the internet. Also Uuskoski (2011) found that boys had better results because they played more computer games.

Since male and female groups display the largest discrepancies in their gaming habits in the present as well as other studies, computer games will be discussed in more detail. As already mentioned in chapter 4, computer games are regarded as particularly effective vocabulary learning tools, because they demand the active engagement of the players (cf. *Involvement Load Hypothesis*, chapter 2). Compared to music or films, learners do not only need to comprehend the input, but regularly meet opportunities to produce English output. The type and extent of language they produce depends on the computer game, but often all four skills are activated, especially in multiplayer-online games where players frequently use English to communicate with international players. In contrast to English lessons, the focus is not on language development per se but on succeeding in the game, for which language is a key component. Due to the extensive exposure and repetition of specific vocabulary, it might be expected that gamers know words from particular semantic fields including warfare and fantasy, because they are common topics in computer games. However, learners who played computer games also frequently scored higher on vocabulary tests administered in the present and other studies (Sylvén 2004; Sundqvist 2009; Uuskoski 2011) that test general vocabulary knowledge. Thus, gamers do not only develop genre-specific vocabulary but tend to have larger vocabularies in general. In this study, almost 60% of the male participants reported playing English computer games daily and 70% weekly. In contrast, only 19% of the girls played computer games daily and 38% weekly. As in Sundqvist's (2009) study, statistically significant gender differences concerning the amount of EE could only be found for computer games and social media.

In addition to varying media type preferences and amount of exposure, boys and girls were often shown to differ in terms of grades, which are widely regarded as expressions of language proficiency (cf. Sundqvist 2009; Uuskoski 2011). The

assumption that girls generally have better grades in English was, however, not confirmed in the present study, but in line with other studies (cf. chapter 4) male participants scored higher on the receptive vocabulary test. Gender-specific differences on the productive vocabulary test were not statistically significant, which may be related to the fact that EE seems to have more influence on receptive vocabulary. Consequently boys' high engagement with EE might have less effect on their productive vocabulary size. It could not be determined, whether certain media types are responsible for this difference in vocabulary size or whether the more extensive contact time with EE is the crucial factor, since boys reported more EE activities across all media types. Another influencing factor might be the male participant's larger engagement with productive EE activities compared to their female peers. Further research would be needed to examine the extent to which vocabulary size is influenced by each of these factors.

Since the main aim of this research project was to investigate the effects of EE, the next paragraphs will discuss the relations between EE activities and vocabulary knowledge (cf. sections 6.2 and 6.3). According to the results from the receptive vocabulary test, students in the sample ranged between the beginners and the advanced proficiency level. The median score was situated at the intermediate level, which was expected for this age group. In fact, the level A2 that should be reached by students attending this school type, refers to "elementary" level according to the CEFR (Council of Europe 2001). However, Meara and Miralpeix (2017: 118) do not seem to have based their categorization (cf. section 5.5) on the CEFR because the intermediate level is their second lowest proficiency level, while in the CEFR it refers to the third lowest level (B1). In addition, Milton (2009: 187) argues that "[l]earners of EFL will probably need to know 2500 or more of the most frequent 5000 words to move from CEFR A2 to B1", which means that learners of levels A1 and A2 would fall into Meara's and Miralpeix' first two categories. Consequently, it can be assumed that the average score of 2800 achieved by the participants is appropriate for or even slightly higher than the expected language level.

When relating EE to vocabulary knowledge, the participants who engaged in many EE activities were found to have larger receptive vocabularies. No significant differences could be attested between the effects of receptive and productive EE activities on receptive vocabulary knowledge. When analysing the media types

according to the skills they activate, most were moderately related with receptive vocabulary size. However, correlations for daily reading and daily and weekly speaking activities were lower without any evident reasons.

On the productive vocabulary test, the participants displayed a wide range of scores (5-47) with an average score of 23.6. Since *Lex30* does not allow calculations of vocabulary size, the results need to be interpreted in relation to results in other studies. According to Meara (2009b: 136), 60 points is a good score for native speakers. Although this is a valuable reference point, it makes more sense to compare the results of the present study with other studies investigating non-native speakers of English. In their investigation of vocabulary knowledge of Spanish primary school children, Jiménez Catalá and Moreno Espinosa (2005: 39) found a mean score of 11.31 with an SD of 6.34. In another study, intermediate to advanced Chinese university students in preparatory English classes reached a mean score of 27 with an SD of 11.99 (Fitzpatrick 2007: 124). Walters (2012: 176ff) investigated Turkish learners of English at university level who were categorized into three groups according to their varying experiences with English. The sample mean was 40.48, with high beginning leaners scoring 27.23 points on average, intermediate learners 36.72 and advanced learners 55.84. Thus, participants in the present study on average scored higher than the primary school students in Jiménez Catalá's and Moreno Espinosa's study, which seems plausible due to their longer experience with English. At the same time, the testees' average scores were lower than the ones in Walters' study (2012) who investigated university students of English. The mean scores in the present study were only slightly lower than the mean scores in Fitzpatrick's (2007) study, since the participants in both studies were intermediate learners of English. Thus, it can be assumed that the results observed in the present study are a realistic estimation of Austrian learners' vocabulary knowledge at the respective age and educational level.

Learners who have extensive contact with EE scored significantly better than those who do not, which supports the assumption that more EE leads to larger vocabularies. Correlations were slightly stronger for productive activities, which is logical considering that active practice is needed for vocabulary to become productively available (cf. chapter 3). However, correlations for *Lex30* were generally smaller than with the receptive vocabulary test, indicating that learners can mostly increase their

receptive vocabulary knowledge through EE activities. This phenomenon is supported in chapter 3 where receptive recognition of a word is described as the most basic vocabulary knowledge. For words to pass from passive to active knowledge, repeated encounters and practice are required. In addition, daily activities seemed to have stronger impacts as measured by the effect sizes than weekly activities, suggesting that regular practice is crucial for the development of productive vocabulary. Consequently, daily multimodal and spoken activities were found to have the strongest effect on productive vocabulary knowledge.

Besides EE, some other factors that might influence vocabulary knowledge were investigated. Except for vocabulary learning strategies and attitudes, no statistically significant correlations could be found. Similarly, almost none of the background variables in Sundqvist's (2009) study seemed to affect vocabulary knowledge, which is why she regards EE to be the only factor in her study that could explain differences in vocabulary size. In the present study, this is somehow different. In addition to EE, relations between vocabulary knowledge and the following variables were examined: learners' attitudes towards English, their linguistic background, socio-economic status, language proficiency and vocabulary learning strategies.

In general, learners with positive attitudes towards English engaged in more EE activities, during which they were also more likely to apply VLS. For VLS, the international importance of English as a global language and its positive connotations as a modern language compared to German were the most influential factors. Moreover, participants who considered English especially relevant for young people and useful in Austria reported using VLS more frequently. The future, however, was no deciding factor for the application of VLS, which indicates that learners engage with English outside schools because they enjoy it rather than for reasons of better prospects in their future. Thus, the hypothesis that positive attitudes increase the learners' willingness to engage with unknown vocabulary in their free time is supported.

In addition, learners who regarded English as an indispensable tool for international communication and as a central aspect of youth culture reported more daily and weekly EE activities. Interestingly, the third most important factors for daily and weekly activities were not the same: While the relevance of English for the future appeared to be influential in the number of weekly activities, the preference of

English over German had more impact on daily activities. However, power on both tests was rather low (0.5128) and the confidence intervals included 0, which suggests that both factors' statistical significance is low. To validate their influence on contact time with EE, larger scales would need to be tested with larger samples.

Besides the application of VLS and the number of EE activities, participants with positive attitudes also had better scores on the vocabulary tests, which might, however, be an indirect effect of their increased contact time with English and their active engagement with the vocabulary. Interestingly, attitudes seemed to have more effect on productive vocabulary, which seems plausible considering that learners with positive attitudes applied more VLS, which again increases the chances of words becoming available productively (cf. chapter 2 *Involvement Load Hypothesis*). Positive influences on productive vocabulary could be established for the variables 'International', 'Future', 'German' and 'Youth'. Thus, learners who believed that English was not only important for international communication but also for their future and attributed a positive status to English compared to German and as a key feature of youth culture, had larger receptive vocabularies. The only factor that was found statistically significant for receptive vocabulary knowledge was the international importance of English.

The expected relation between multilingualism and vocabulary size was not confirmed. On the contrary, monolinguals were the highest scoring group on both tests, but the differences between groups were not significant. Furthermore, the proportion of monolinguals in the sample was small, which means that no significant results could be expected. However, the monolingual participants might differ from the multilingual ones in terms of SES. In other words, the families of multilinguals learners frequently have a migration background, as the information provided in the questionnaire shows, and might consequently have a lower socio-economic status. This in turn might impact vocabulary learning. Thus, from the analysis described in section 5.6 it is not clear whether the differences in vocabulary size are due to the linguistic or the socio-economic background. Hence, the influence of multilingualism on vocabulary knowledge would need further investigation with a more balanced sample. Socio-economic background does not seem to play a significant role in this study, which was also supported by Sundqvist's (2009) findings. This is an interesting observation as it indicates that EE could be seen as a 'social equalizer'.

Besides EE, the application of VLS seems to be the best predictor of vocabulary size. Learners who made frequent use of a variety of strategies were likely to have larger receptive vocabularies, but no correlations were found for productive vocabularies, which might be due to the fact that all the strategies investigated in the questionnaire focussed on comprehension. Over 80% of the participants said that they paid attention to unknown words during EE activities when it seemed important for understanding the content, but at the same time 66% had no interest in consciously learning new words in their free time. Only 12% did not apply any strategies. The most popular strategies were guessing the meaning from context (textual or audiovisual) and consulting dictionaries. Additionally, learners frequently asked other people or tried to infer meaning from linguistic clues. However, only half of the participants checked whether their guesses were correct or tried to memorize the new word. Thus, guessing the meaning does not necessarily imply that the correct meaning was inferred (cf. Schwarz 2012: 105ff) and even if it was, it is still a long way from being memorized (Nation 2013: 355): Studies by Nagy et al. (1987) and Shu et al. (1995) have shown that in only 5-10% of the cases, the meaning of a word is not only guessed but also remembered. Nevertheless, the results suggest that learners who actively try to understand a word are more likely to remember it, which ties in with the *Involvement Load Hypothesis* presented in chapter 2. Similar results were reported by Gu and Johnson (1996) who examined the influence of VLS on general language proficiency and found that cognitive strategies like contextual guessing, dictionary use and note-taking correlated positively with overall language proficiency. Also Schwarz (2012) ascertained that learners who actively engaged with lyrics and applied VLS to find the meaning of unknown words, were more likely to remember them. This is also supported by linguistic theory: Gu and Johnson (1996) explain that most successful learners have a wide range of strategies at their disposal, which gives them more control over their own learning process and renders learning without a teacher or textbook possible. A major advantage in EE activities is that learners themselves can decide which words are of importance, that is, they are intrinsically motivated to learn them. As already mentioned in chapter 3, guessing from context is the most important VLS and, as the present study shows, also the most common one.

After examining the relations between vocabulary, EE and other independent variables, words produced in the *Lex30* test were qualitatively analysed (cf. section

6.10). Since this study is particularly interested in out-of-school learning, the aim of this part of the analysis was to determine which words learners acquired in their free time. Not only did they produce words that did not occur in their schoolbooks; a large proportion of these items could be attributed to frequent themes in the media. In total, 5277 tokens and 4391 types were produced. After all the words included in the coursebooks were excluded, 524 tokens and 286 types remained, which means that 10% of the tokens that were produced were not covered in the textbooks. The type-token ratio suggests that many items occurred more than once, which indicates that EE is a common source of vocabulary for many participants. The semantic fields found by the researcher include violence and warfare, colloquial or offensive language, drugs and science, magic and fantasy, sports, fashion, health and general gaming vocabulary. In addition to specific vocabulary, *Lex30* also triggered associations with apps and webpages, where they were found to encounter English, and participants mentioned names of series, musicians and computer games (cf. section 6.10). To sum up, the results indicate that learners associate the English language with the media and therefore it can be concluded that extramural English plays a significant role in the development of their vocabularies.

8 Conclusion

The purpose of this thesis was to gather information on Viennese students' contact with English outside the classroom and its effects on vocabulary knowledge. Other European studies have shown that students who frequently engage with English in their free time tend to have larger vocabularies. However, little data was available for Austria, which motivated this research project. This chapter summarizes the main insights gained from this study and the implications for teaching before discussing some of its limitations. Finally, some suggestions for future research will be provided.

8.1 Summary of results

Central to the empirical research were questions concerning the amount and type of EE contact students had and whether increased contact time positively influenced vocabulary size. In addition, relations between vocabulary knowledge and other variables like socio-economic and linguistic background were investigated. Data was collected with the help of a questionnaire and two vocabulary tests (*V_YesNo* by Meara (2015b) and *Lex30* by Meara and Fitzpatrick (2000)).

The results showed that all 83 participants had access to English media in their free time and frequently listened to music, watched films or series in English and encountered English in online communication. The majority came into contact with English every day, but individual variation was large: While some participants did not display any regular EE activities, others reported engaging in up to 27 activities daily and in general, boys had more contact with extramural English than girls. Gender differences could not only be observed regarding contact time, but also in the preferences for certain media types. Although both genders were equally likely to listen to music and watch English films, boys used significantly more English on social media and played more English computer games.

After establishing the amount and type of contact with English outside the classroom, relations with vocabulary knowledge were examined. Similar to other studies (Berns 2007a; Sundqvist 2009; Lai et al. 2015), positive relations between EE activities and vocabulary breadth could be observed, which supports the hypothesis that learners who frequently engage with English in their free time have larger vocabularies.

In addition to EE, learners' attitudes towards English and their application of vocabulary learning strategies correlated with vocabulary size, while the expected correlations were not found with the variables 'linguistic background' and 'socio-economic status'. This does, however, not imply that no correlations exist. Especially for the linguistic background, the unbalanced sample of 9 monolinguals and 74 multilinguals might have been problematic in the statistical tests, which is why further testing with a more balanced sample would be interesting.

A qualitative analysis of the answers in the productive vocabulary test yielded valuable insights: 10% of all produced tokens did not occur in the coursebooks, which suggests that they were acquired outside school. This assumption is further supported by the fact that participants frequently listed names of films, series and famous singers indicating that English vocabulary is closely associated with popular media. Furthermore, a large proportion of the 'extramural tokens' could be attributed to semantic fields common in the media, including warfare, colloquial language, drugs and fantasy. Thus, it can be concluded that English media functions as a valuable source of vocabulary for Viennese learners of English.

8.2 Implications for teaching

Considering the positive effects of extramural English on vocabulary that were established in the present and other studies, teachers and students should strive to make the most of it. This does not mean incorporating EE activities into lessons, which would, by definition, contradict the phenomenon of 'extramural'. However, it is important that teachers are aware of the impact of extramural English on students' language skills. Only then can they advise them better on how to improve their English outside the classroom (Sundqvist 2009: 205). Research has shown that, although students frequently are in contact with English in their free time, the 'Englishes' encountered in the private and the educational spheres are widely kept apart (Grau 2009: 170), disregarding potential positive effects of closer collaborations. Interviews found that students perceived the English they learnt at school as being different from the English they encountered in their free time regarding accent, speed and register (Grau 2009: 169-170) and more than half of the participants in Grau's study would have welcomed a stronger connection between

their contact with English outside and inside the classroom. There are several ways to achieve that, some of which will be presented in the following:

The first aim should be to increase students' motivation for EE activities (Grau 2009; Kuppens 2010; Sundqvist & Sylvén 2012). Based on the positive results of EE on vocabulary knowledge found in this and other studies, students should be encourage to frequently engage with English in their free time, for instance through watching English series or films. Although most teenagers might be familiar with streaming websites that offer English material, it is advisable to provide some suggestions on where to find English films or series. Furthermore, teachers can inform students that productive activities were found to have stronger effects than receptive ones. Thus, all students, but especially girls, should be encouraged to do more active EE activities like playing computer games and communicating on social networks.

Second, the link between EE and the English classroom can be strengthened by incorporating the students' interests into the lessons. Teachers can, for instance, set specific writing tasks or let students give presentations on their favourite themes, films, music or computer games. This conveys the feeling that the students' interests are valued and simultaneously provides peers with ideas of activities they could engage in. Another task that is specifically focussed on vocabulary could be the compilation of an EE vocabulary log. For instance, everyday, another student collects 10 unknown words from a song, film etc. and presents them at school the next day. This way, the students' interests not only receive space and time in the classroom, but learners are also equipped with vocabulary that frequently occurs in popular media.

Incorporating English media into teaching is, however, time-consuming and teachers who cannot or do not want to make time for such activities should at least prepare learners for extramural contact with English through teaching them vocabulary learning strategies (cf. section 3.6). Learners who are able to apply VLS for coping with unknown words were found to acquire more vocabulary outside the classroom (Fraser 1999; Sundqvist 2009; Schwarz 2012, present study). In other words, VLS increase learner autonomy. Research has shown that comprehension improved significantly when learners had been taught cognitive skills (Danan et al. 2004: 74). Cognitive strategies include making predictions on visual cues or background knowledge of a topic, guessing meaning with the help of known words or cognates, noting down new words or using dictionaries. Cognitive strategies have been proven

successful tools in vocabulary acquisition (Horst et al. 1998; Fraser 1999; Paribakht & Wesche 1999; Hulstijn & Laufer 2001; Sundqvist 2009), which is why teachers should incorporate them into their teaching.

To sum up, motivating learners to engage in as many English activities as possible can best exhaust the potentials of extramural English. Particularly productive activities extend students' vocabularies and VLS could be taught to increase learner autonomy.

8.3 Limitations and outlook

Although this study has provided valuable insights into extramural vocabulary acquisition of Austrian teenagers, it also has several limitations that need to be considered. As with many master theses, the sample was rather small, which means that the interpretations of the results only apply to the sample and no generalizations about the whole population can be made. Furthermore, the small sample size limits the power of some of the statistical tests that were conducted as indicated in chapter 5. Thus, more significant results might be found when repeating the same tests with larger samples.

In addition, only basic statistical tests were run due to the large number of variables that were examined. These included correlations and tests of group differences. For future research, it would also be interesting to conduct other statistical tests like regression analyses to determine different variables' degrees of influence on vocabulary size. Correlation tests can only establish relations between two variables but fail to determine directionality of influence. For instance, in chapter 6 it was found that receptive vocabulary size and EE were positively correlated. It was, however, not determined whether this influence is directional or bilateral. In other words, it would be interesting to investigate whether learners with larger vocabularies engage in more EE activities or vice versa. It would be plausible to assume that the influence is bilateral, but this would require further research. Moreover, the results seem to suggest that productive activities are more beneficial than receptive ones and that regularity plays a crucial role. However, these assumptions are merely based on slightly stronger correlations and would need to be verified through further testing.

Furthermore, an experiment usually compares a control group with a group who has received treatment. However, due to the nature of the phenomenon under investigation, no control group could be used, as there were no participants who did not encounter any English in their free time. Thus, participants were split into two groups according to their contact time with EE. However, there was no clear cut-off point that separates the two groups since the participants formed a continuum as far as exposure to EE is concerned due to the convenience sampling. Although practically difficult, it would be interesting to sample learners who have very little or very extensive EE contact and compare those groups, which would probably yield more significant group differences and valuable insights.

Another limitation concerns the material that was used. Most of the data analysis relies partially on self-reported data from the questionnaire, which might distort the results, since the provided information is subjective and cannot be verified by the researcher (Nation 2013: 337). However, large-scale studies render it impossible for the researcher to apply other methods of data collection (e.g. observations) on topics like EE due to time constraints and rights to privacy. For these reasons, questionnaires are, despite their limitations, widely applied in linguistic research (Cohen et al. 2007: 317; Dörnyei 2007: 101).

The questionnaire enabled the collection of a large amount of data, but the limited scope of this master's thesis restricted the amount of information that could be presented. Consequently, some aspects of information gathered in the questionnaire could not be included in this thesis and only the ones most relevant to the research questions were discussed. Closer investigations could, for instance, have been made about the participants' attitudes and vocabulary learning strategies. While only numerical data was used when examining these aspects, information from the questionnaire could also have been analysed qualitatively. In addition, future research on attitudes should encompass more items with potentially larger scales and samples to make the results and their interpretations more sound and reliable.

Further research is needed to balance some of these limitations, for instance by raising the sample size to facilitate generalizations on a larger population. As already mentioned above, more statistical tests could be conducted on the basis of the data collected in this study to render more refined interpretations possible. The present thesis aimed to provide a comprehensive picture of a wide range of factors that

potentially influence vocabulary acquisition. Hence, research focussing on individual aspects could facilitate in-depth investigations and yield interesting results. For many of these suggestions, the reader is referred to the work of Marlene Schwarz (in progress) that will go beyond the scope of the present study in analysing the effects of EE on Viennese students' vocabulary knowledge.

To conclude, this study has shown that the time Viennese vocational business middle school (HAS) students spent with English outside school was positively related to vocabulary knowledge. In other words, learners who reported a high number of EE activities scored higher on both vocabulary tests and productive activities were found to be particularly beneficial. In addition, learners' attitudes towards English and their willingness to apply vocabulary learning strategies increase the chances of extramural vocabulary acquisition.

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Appendix

Englisch in der Freizeit

universität wien

Liebe Schülerin, lieber Schüler!
Dieser Fragebogen ist der erste Teil der Studie zu Englisch in der Freizeit. Die Beantwortung dauert ca. 40 Minuten.

Zur Erinnerung: Deine Antworten sind **anonym** und werden streng vertraulich behandelt. Es ist kein Test, also beantworte die Fragen bitte **alleine, spontan und ehrlich** – es gibt keinerlei falsche Antworten! Mich interessiert, was **du** wirklich machst und denkst.

Damit ich deinen Fragebogen den anderen Teilen der Studie zuordnen kann, bitte ich dich hier deinen persönlichen Code gut leserlich in BLOCKBUCHSTABEN einzufüllen:

Mein Code:
☐☐ 2. und 3. Buchstabe deines Vornamens
☐ der letzte Buchstabe des Vornamens deiner Mutter
☐☐ Geburtsmonat (z.B. 03 für März)

Hinweise zum Ausfüllen des Fragebogens:

Bei den meisten Fragen musst du dich nur für eine Antwortmöglichkeit entscheiden und …

….ein Kästchen ankreuzen

Hast du Geschwister? ☒ Ja ☐ Nein

…die zutreffende Zahl ankreuzen

	Fast nie	Selten	Oft	Sehr oft
Wie oft isst du Erdbeeren?	1	☒ 2	3	4

Bei allen Fragen, die mit ➡ gekennzeichnet sind, kannst du eine Antwort in eigenen Worten geben.

Bitte schreib leserlich!

Wie findest du Clowns? ➡ *Ich finde Clowns total witzig.*

➢ Falls du etwas falsch angekreuzt oder hingeschrieben hast, streich es bitte klar durch!

➢ Bei manchen Fragen stehen genauere Hinweise in *kursiv* angegeben. Bitte **lies genau**, was du machen sollst.

Falls du Fragen hast, wende dich bitte einfach an mich!
Danke für deine Bereitschaft, nun legen wir los!

1a. Wie viele der folgenden Dinge habt ihr zu Hause?	**0**	**1**	**2**	**3 oder mehr**
Handys	☐	☐	☐	☐
Fernseher	☐	☐	☐	☐
Computer (Laptops, Netbooks und Standcomputer)	☐	☐	☐	☐

1b. Welche von diesen Geräten kannst du zu Hause benutzen?
➢ *Bitte kreuze **alle** Geräte an, die du zu Hause benutzen kannst!*

☐ Tablet/iPad	☐ Spielekonsole (z.B. Wii, Playstation)
☐ Radio/Hi-Fi Anlage	☐ DVD-Player (oder Blu-ray Player)
☐ Mp3-Player (iPod oder andere)	☐ E-Book-Reader (z.B. Kindle)

1c. Hast du …	**Ja**	**Nein**
ein eigenes Smartphone?	☐	☐
einen eigenen Computer oder Laptop?	☐	☐
einen eigenen Mp3-Player (iPod oder andere)?	☐	☐
ein eigenes Zimmer?	☐	☐

1

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1d. Gibt es bei dir zu Hause einen Internetzugang? ☐ Ja ☐ Nein

1e. Auf welchen Geräten benutzt du normalerweise das Internet?

1. ➡ _____ 2. ➡ _____ 3. ➡ _____

1f. Benutzt du das Internet täglich? ☐ Ja ☐ Nein

⇨ wenn **ja**, wie viele Stunden pro Tag? Ca. _____ Stunden

1g. Welche fünf Webseiten besuchst du am häufigsten?

1. ➡ _____ 2. ➡ _____ 3. ➡ _____

4. ➡ _____ 5. ➡ _____

1h. Wie oft machst du diese Tätigkeiten in deiner Freizeit allgemein?	**(Fast) nie**	**Ein paar Mal pro Jahr**	**Ein paar Mal pro Monat**	**Ein paar Mal pro Woche**	**(Fast) täglich**
Musik hören	1	2	3	4	5
Radio hören	1	2	3	4	5
Fernsehen	1	2	3	4	5
Filme oder Serien auf DVD ansehen	1	2	3	4	5
Filme oder Serien im Internet ansehen	1	2	3	4	5
soziale Netzwerke benutzen (z.B. Facebook, Instagram,…)	1	2	3	4	5
Videos im Internet sehen	1	2	3	4	5
Spiele alleine spielen (am Computer, Spielekonsolen oder online)	1	2	3	4	5
Spiele mit anderen gemeinsam spielen (z.B. Multiplayer Online Games)	1	2	3	4	5
Spiele am Handy oder Tablet spielen	1	2	3	4	5
Zeitungen oder Zeitschriften lesen (auch online)	1	2	3	4	5
Bücher oder E-Books lesen	1	2	3	4	5
Hörbücher hören	1	2	3	4	5
FreundInnen treffen	1	2	3	4	5
Sport machen	1	2	3	4	5
Musik machen (singen oder ein Instrument spielen)	1	2	3	4	5
auf Konzerte gehen	1	2	3	4	5
ins Kino gehen	1	2	3	4	5
ins Theater gehen	1	2	3	4	5
andere Aktivitäten, nämlich: ➡ _____	1	2	3	4	5

1i. Denk bitte an deinen ganz normalen Alltag in Österreich: Wo begegnet dir Englisch am meisten?

➢*Bitte zähle deine Top 3 auf und beginne mit dem wichtigsten!*

1. ➡ _____

2. ➡ _____

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3. ➡ _____

2. Englische Freizeitaktivitäten

Mich interessiert, was du **in deiner Freizeit** (=außerhalb des Schulunterrichts) **auf Englisch** machst.
➢ *Es geht hier nur um Kontakte mit Englisch in deiner Freizeit, die du nicht für den Schulunterricht machen musst (also keine Hausübungen, Referatsvorbereitungen, Leseaufgaben …)*!

2a. Wie oft machst du diese Tätigkeiten in deiner Freizeit auf Englisch? ➢ *Fülle bitte auch die offenen Fragen aus!*	**(Fast) nie**	**Ein paar Mal pro Jahr**	**Ein paar Mal pro Monat**	**Ein paar Mal pro Woche**	**(Fast) täglich**
englischsprachige Musik					
…am Handy/mp3-Player hören	1	2	3	4	5
…auf CD oder im Radio hören	1	2	3	4	5
…auf Spotify oder anderen Musikdiensten hören	1	2	3	4	5
…Musikvideos im Internet ansehen	1	2	3	4	5
…mitsingen	1	2	3	4	5
…selbst singen (auch Karaoke)	1	2	3	4	5
…auf Konzerten hören	1	2	3	4	5
englischsprachige Songtexte					
…lesen	1	2	3	4	5
…übersetzen oder Übersetzungen lesen	1	2	3	4	5
…schreiben	1	2	3	4	5
englischsprachige Filme					
…im Fernsehen ansehen	1	2	3	4	5
…auf DVD / Blu-ray ansehen **mit** Untertiteln	1	2	3	4	5
…auf DVD / Blu-ray ansehen **ohne** Untertitel	1	2	3	4	5
…im Internet ansehen (z.B. Youtube, Netflix, …) **mit** Untertiteln	1	2	3	4	5
…im Internet ansehen (z.B. Youtube, Netflix, …) **ohne** Untertitel	1	2	3	4	5
…im Kino ansehen	1	2	3	4	5
englischsprachige Serien					
…im Fernsehen ansehen	1	2	3	4	5
…auf DVD / Blu-ray ansehen **mit** Untertiteln	1	2	3	4	5
…auf DVD / Blu-ray ansehen **ohne** Untertitel	1	2	3	4	5
…im Internet ansehen (z.B. Youtube, Netflix, …) **mit** Untertiteln	1	2	3	4	5
…im Internet ansehen (z.B. Youtube, Netflix, …) **ohne** Untertitel	1	2	3	4	5

⇨ In welcher Sprache sind die Untertitel bei Filmen und Serien meistens?

➡ _____

englischsprachige Sendungen (z.B. Dokus, Reportagen etc.)					
…im Fernsehen ansehen	1	2	3	4	5
…im Radio anhören	1	2	3	4	5
…im Internet ansehen	1	2	3	4	5
englischsprachige Videoclips (z.B. Youtube,…)					
…im Internet ansehen	1	2	3	4	5
…selbst machen	1	2	3	4	5
englischsprachige Spiele					
…am Tablet, Handy, iPod spielen	1	2	3	4	5
…am Computer oder auf Spielekonsolen spielen	1	2	3	4	5
…mit anderen über Internet spielen (Multiplayer Online Games)	1	2	3	4	5
⇨ **Wenn ich mit anderen im Internet spiele,** ➢ *Lass diese Frage aus, wenn du nicht im Internet spielst!*					
…chatte ich auf Englisch in In-Game Chats	1	2	3	4	5
…spreche ich Englisch über TeamSpeak, Mumble oder ähnliche Dienste	1	2	3	4	5
englischsprachige Bücher					

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…in Papierform lesen	1	2	3	4	5
…digital (z.B. E-Reader wie Kindle) lesen	1	2	3	4	5
…als Hörbuch anhören	1	2	3	4	5
Zur Erinnerung: ***Denk bitte nur an deine Freizeit!*** *(keine Hausübungen, Schulausflüge, …)*	**(Fast) nie**	**Ein paar Mal pro Jahr**	**Ein paar Mal pro Monat**	**Ein paar Mal pro Woche**	**(Fast) täglich**
englischsprachige Artikel (z.B. Zeitung, Zeitschriften, Nachrichtenportale etc.)					
…in Papierform lesen	1	2	3	4	5
…im Internet lesen	1	2	3	4	5
englischsprachige Informationstexte (z.B. Anleitungen, Rezepte etc.)					
…in Papierform lesen	1	2	3	4	5
…im Internet lesen (auch z.B. Wikipedia etc.)	1	2	3	4	5
englischsprachige Geschichten / Fan-Fictions					
…lesen	1	2	3	4	5
…schreiben	1	2	3	4	5
englischsprachige Comics / Mangas					
…lesen	1	2	3	4	5
…schreiben	1	2	3	4	5
englischsprachige Blogs / Foreneinträge (z.B. zu Spielen)					
…lesen	1	2	3	4	5
…schreiben	1	2	3	4	5
Suchmaschinen (z.B. Google) auf Englisch benutzen	1	2	3	4	5
englischsprachige Apps am Handy benutzen	1	2	3	4	5

⇨ welche Apps?

➡ _____

englischsprachige E-Mails					
…lesen	1	2	3	4	5
…schreiben	1	2	3	4	5
in sozialen Netzwerken (z.B. Facebook, Twitter, Instagram)					
…englischsprachige Nachrichten lesen	1	2	3	4	5
…englischsprachige Nachrichten schreiben	1	2	3	4	5
…Statusmeldungen / Kommentare auf Englisch lesen	1	2	3	4	5
…Statusmeldungen / Kommentare (auch zu Fotos) auf Englisch schreiben	1	2	3	4	5
englischsprachige SMS / WhatsApp Nachrichten					
…lesen	1	2	3	4	5
…schreiben	1	2	3	4	5
auf Englisch chatten	1	2	3	4	5

⇨ mit wem schreibst du englische Nachrichten oder chattest du? *(Bitte keine Namen!)*

➡ _____

Listen oder Notizen auf Englisch schreiben	1	2	3	4	5
Tagebuch auf Englisch schreiben	1	2	3	4	5
Englisch sprechen					
…via Skype oder ähnliche Internetdienste	1	2	3	4	5
…am Telefon	1	2	3	4	5
…persönlich	1	2	3	4	5

⇨ Mit wem sprichst du Englisch?

➡ _____

auf Englisch denken / mit dir selbst reden	1	2	3	4	5
englische Wörter in anderen Sprachen verwenden	1	2	3	4	5
englische Theaterstücke					
…ansehen	1	2	3	4	5

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…selbst spielen	1	2	3	4	5
Ich mache noch andere Aktivitäten auf Englisch, nämlich: ➡ _____	1	2	3	4	5

2b. *Bitte gib hier TITEL oder genauere BESCHREIBUNGEN an!*

a) Hast du einen englischsprachigen Lieblingsfilm (oder mehrere)? ☐ Ja ☐ Nein

⇨ Wenn **ja**, welchen? ➡ _____

b) Hast du eine englischsprachige Lieblingsserie (oder mehrere)? ☐ Ja ☐ Nein

⇨ Wenn **ja**, welche? ➡ _____

c) Hast du ein englischsprachiges Lieblingscomputerspiel (oder mehrere)? ☐ Ja ☐ Nein

⇨ Wenn **ja**, welches? ➡ _____

d) Hast du ein englischsprachiges Lieblingsbuch (oder mehrere)? ☐ Ja ☐ Nein

⇨ Wenn **ja**, welches? ➡ _____

e) Liest du etwas Bestimmtes auf Englisch (z.B. Zeitschrift, Blog,…)? *Bitte beschreibe es!* ☐ Ja ☐ Nein

⇨ Wenn **ja**, was? ➡ _____

f) Siehst du dir etwas Bestimmtes auf English im Internet an (z.B. Vlog,…)? *Bitte beschreibe es!* ☐ Ja ☐ Nein

⇨ Wenn **ja**, was? ➡ _____

g) Bei englischsprachiger Musik sind die Songtexte für mich…

☐ Gar nicht wichtig ☐ Nicht so wichtig ☐ Eher wichtig ☐ Sehr wichtig

2c. Welche Sprachen verwendest du in deiner FREIZEIT (Freunde, Familie, Aktivitäten,…)**?**

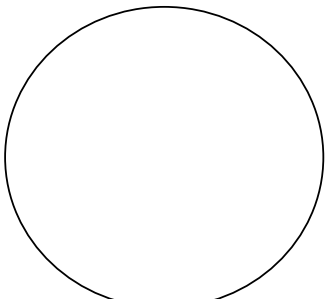
1. ➡ _____ 2. ➡ _____

3. ➡ _____ 4. ➡ _____

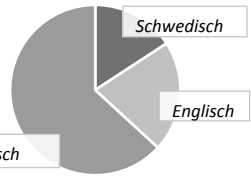
2d. Denk bitte an <u>alle</u> Sprachen, die du in deiner FREIZEIT (also außerhalb des Unterrichts) verwendest
Wie viel Zeit verbringst du mit deinen Sprachen im Vergleich? (**Ohne HÜs, Lernen und Nachhilfe!**)

➢ *Teile den Kreis in Teile und schreibe dazu, für welche Sprache die Teile stehen!*

Dein Kreis:



Beispiel 1:
Für einen Jugendlichen in Finnland könnte der Kreis zum Beispiel so aussehen:



Beispiel 2:
Für ein 4-jähriges Kind in Griechenland könnte der Kreis zum Beispiel so aussehen:

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2e. Warum verwendest du Englisch in deiner Freizeit?	**Trifft gar nicht zu**	**Trifft eher nicht zu**	**Trifft eher zu**	**Trifft völlig zu**
Vieles gibt es (zumindest vorübergehend) nur auf Englisch.	1	2	3	4
Ich brauche Englisch für internationale Kontakte und Freundschaften.	1	2	3	4
Ich möchte meine Englischkenntnisse verbessern.	1	2	3	4
Es interessiert mich, wie Dinge im Original sind (z.B. Filme, Bücher).	1	2	3	4
Vieles klingt auf Englisch besser.	1	2	3	4
Ich habe einfach Lust, Englisch zu verwenden	1	2	3	4
Ich habe andere Gründe, nämlich: ➡ _____				

3. Meinungen zu Englisch **Hier sind einige Meinungen von Leuten zur Sprache Englisch. Wie sehr stimmst du diesen Ideen zu?**	**Stimme gar nicht zu**	**Stimme eher nicht zu**	**Stimme eher zu**	**Stimme völlig zu**
Englisch ist für das Leben nach der Schule wichtig.	1	2	3	4
Wenn man viel reist, muss man Englisch können.	1	2	3	4
Englisch bereichert die deutsche Sprache.	1	2	3	4
Man kann auch ohne Englischkenntnisse international sein.	1	2	3	4
Englisch ist auch innerhalb von Österreich wichtig.	1	2	3	4
Im täglichen Leben von Jugendlichen hat Englisch in der Freizeit eine größere Bedeutung als in dem von Erwachsenen.	1	2	3	4
Englisch zu können ist für das Leben in Zukunft sehr wichtig.	1	2	3	4
Englischkenntnisse werden in Österreich überbewertet.	1	2	3	4
Englisch ist moderner als Deutsch.	1	2	3	4
Für die Generation 50+ ist Englisch nicht so wichtig wie für junge Leute.	1	2	3	4
Englisch zu beherrschen ist für eine gute Zukunft nicht nötig.	1	2	3	4
Es ist wichtig für Jugendliche, Englisch zu lernen.	1	2	3	4
Mit Englisch kann man sich überall verständlich machen.	1	2	3	4
Englisch ist für das Leben außerhalb der Schule wichtig.	1	2	3	4
Englisch stellt eine Bedrohung für die deutsche Sprache dar.	1	2	3	4
Gute Englischkenntnisse sind heutzutage in Österreich enorm wichtig.	1	2	3	4
Man kann sich auch ohne Englisch gut mit Leuten aus anderen Ländern verständigen.	1	2	3	4
Es ist wichtig Englisch zu können, um später einen guten Job zu bekommen.	1	2	3	4
Jugendliche können auch ohne Englisch gut zurechtkommen.	1	2	3	4
Englisch klingt schöner als Deutsch.	1	2	3	4
Für das Leben in Österreich braucht man kein Englisch.	1	2	3	4

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4. Sprachliche Umgebung

4a. Wo siehst du oder hörst du Englisch im Alltag?	**(Fast) nie**	**Selten**	**Oft**	**Sehr oft**	**Da bin ich nie**
auf der Straße	1	2	3	4	0
an öffentlichen Plätzen (z.B. Bahnhof, Parks, etc.)	1	2	3	4	0
in öffentlichen Verkehrsmitteln	1	2	3	4	0
in öffentlichen Ämtern, Banken etc.	1	2	3	4	0
in Geschäften oder Einkaufszentren	1	2	3	4	0
in Cafés, Restaurants etc.	1	2	3	4	0
an Orten, wo ich meine Hobbys ausübe (Fitnessstudio, Musikschule,..)	1	2	3	4	0
zu Hause	1	2	3	4	0

4b. Bitte denke jetzt an alle Situationen in denen du Englisch verwendest, also es sprichst, liest, hörst, oder schreibst. Denk auch an alle „unwichtigen" Situationen, z.B. wenn du nur ein paar Wörter verwendest.

Wo verwendest du Englisch mehr? ☐ Im Schulunterricht ☐ in meiner Freizeit

5. Strategien für neue englische Wörter

5a. Wie oft achtest du auf neue englische Wörter, wenn sie dir in der Freizeit begegnen?

	Trifft gar nicht zu	**Trifft eher nicht zu**	**Trifft eher zu**	**Trifft völlig zu**
Ich achte auf neue englische Wörter, wenn sie für den Inhalt wichtig sind.	1	2	3	4
Ich achte in englischen Medien bewusst auf Wörter, die ich nicht kenne.	1	2	3	4
Mich interessieren neue englische Wörter nicht – Hauptsache, ich verstehe um was es geht.	1	2	3	4
Mir fallen neue englische Wörter auf, obwohl ich nicht bewusst darauf achte.	1	2	3	4
Neue englische Wörter interessieren mich in meiner Freizeit nicht.	1	2	3	4

5b.Was machst du, wenn dir in deiner Freizeit ein englisches Wort begegnet, das du nicht kennst?

	(Fast) nie	**Selten**	**Oft**	**Sehr oft**
Ich überlege mir, welche Art von Wort das ist (Verb, Hauptwort…).	1	2	3	4
Ich suche in einem Wort nach Wortteilen, die ich kenne.	1	2	3	4
Ich überlege, ob es in anderen Sprachen, die ich kann, ein ähnliches Wort gibt.	1	2	3	4
Wenn es in einem Film oder einer Serie vorkommt, versuche ich die Bedeutung mit Hilfe des Bildes (und der Handlung) zu erraten.	1	2	3	4
Wenn es in einem Text vorkommt, versuche ich die Bedeutung aus dem Zusammenhang zu erraten.	1	2	3	4
Ich schaue in einem Wörterbuch nach (auch online oder am Handy).				
Ich frage jemanden (Eltern, Geschwister, Freunde,…) was das Wort bedeutet.	1	2	3	4
Ich mache gar nichts.	1	2	3	4
Ich mache etwas anderes: ➡ _____	1	2	3	4

5c. Wenn du eine Vermutung hast, was ein neues englisches Wort bedeutet, machst du dann noch etwas, um diese Vermutung zu überprüfen? ☐ Ja ☐ Nein

⇨ *Wenn* **ja**, *beschreibe bitte kurz was du machst*!

➡ _____

_____

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5d. Machst du etwas Bestimmtes, um dir neue englische Wörter zu merken? ☐ Ja ☐ Nein

⇨ *Wenn* **ja**, *beschreibe bitte kurz was du machst*!

➡

_____

_____

_____

6. Sprachlicher Hintergrund

- *In einigen Fragen kommen die Begriffe „**englischsprachiges Land**" und „**nicht-englischsprachiges Land**" vor.*
  Mit „englischsprachigen Ländern" sind Staaten gemeint, in denen Englisch eine offizielle Sprache ist (z.B. Großbritannien, USA, Australien, …).
  Mit „nicht-englischsprachigen Ländern" sind Staaten gemeint, in denen Englisch keine offizielle Sprache ist, das bedeutet aber natürlich nicht, dass man dort nicht Englisch sprechen kann.

6a. Welche Sprache sprichst du … ➢ *Wenn eine Frage nicht auf dich zutrifft, lass die Zeile daneben einfach leer!*	⬇ *Bitte trag hier die Sprachen ein!*
…mit deiner Mutter?	
…mit deinem Vater?	
…mit deinen Geschwistern?	
… mit anderen Menschen, die bei dir zu Hause wohnen? (z.B. Großeltern, Partner/in von Mutter oder Vater)	
…meistens mit deinen besten Freunden?	
Welche Sprache sprechen deine Eltern miteinander?	

6b. Gibt es Menschen, mit denen du (außerhalb des Unterrichts) regelmäßig Englisch sprichst? ☐ Ja ☐ Nein

⇨ Wenn **ja**, mit wem? ➡ _____

6c. Wann hast du begonnen Englisch zu lernen? Mit ca. ____ Jahren.

6d. Lernst du in der Schule neben Englisch noch (eine) andere Fremdsprache(n)? ☐ Ja ☐ Nein

⇨ Wenn **ja**, welche? ➡ _____

6e. Warst du auf Sprachcamps oder internationalen Feriencamps, auf denen Englisch gesprochen wurde? ☐ Ja ☐ Nein

⇨ Wenn **ja**, wie oft und wie lange? ➡ _____

6f. Wie oft warst du schon in englischsprachigen Ländern auf Urlaub?

☐ noch nie ☐ 1- bis 3-mal ☐ 4- bis 6-mal ☐ mehr als 6-mal

⇨ Und zwar in:

➡ _____

6g. Wie viel Englisch hast du auf vergangenen Urlauben in nicht-englischsprachigen Ländern verwendet?

☐ sehr wenig ☐ ziemlich wenig ☐ ziemlich viel ☐ sehr viel

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6h. Hast du jemals mehr als 3 Monate in einem Land gewohnt, wo du dich auf Englisch verständigt hast? (auch nicht-englischsprachige Länder!) ☐ Ja ☐ Nein

⇨ Wenn **ja**, wo und wie lange (in Monaten)?

1. In ➡ _____ für ca. _____ Monate
2. In ➡ _____ für ca. _____ Monate
3. In ➡ _____ für ca. _____ Monate

6i. Wie schätzt du deine Englischkenntnisse ein?

➢ *Kreuze für jede der vier Fertigkeiten die Beschreibung an, die am besten auf dich zutrifft. Bitte kreuze immer nur eine Möglichkeit an.*

LESEN auf Englisch	Ich kann kurze, eher einfache Texte verstehen und Informationen z.B. in Speisekarten, Fahrplänen oder Werbeanzeigen finden. Ich kann auch persönliche Nachrichten von einem Freund verstehen.	☐
	Ich kann Informationen in Briefen, Werbebroschüren oder Gebrauchsanweisungen verstehen, und ich verstehe auch die Hauptaussagen von Artikeln oder Sachtexten über Themen, die mich interessieren.	☐
	Ich kann Artikel und Sachtexte zu vielen verschiedenen Themen verstehen, auch wenn ich mich mit dem Thema nicht gut auskenne. Ich kann auch Kurzgeschichten und Romane verstehen.	☐
HÖREN auf Englisch	Ich kann kurze Gespräche zu persönlichen Informationen z.B. über Hobbies und Berufe gut verstehen. Ich kann auch den Wetterbericht oder Wegbeschreibungen verstehen.	☐
	Ich kann Gespräche über Themen, die mich interessieren, gut verstehen. Ich kann auch in Fernseh- und Radiosendungen oder Filmen die wichtigsten Punkte verstehen.	☐
	Ich kann längeren Vorträgen, Berichten oder Interviews gut folgen, auch wenn ich das Thema nicht gut kenne. Ich kann die Fernsehnachrichten, Radiosendungen oder Filme gut verstehen.	☐
SCHREIBEN auf Englisch	Ich kann kurze, eher einfache Texte schreiben, ich kann z.B. ein Formular ausfüllen, eine kurze persönliche Nachricht verfassen oder eine Einladung schreiben.	☐
	Ich kann zusammenhängende Texte schreiben über Themen, die mich interessieren. Ich kann längere Nachrichten an Freunde verfassen und ich kann Ereignisse und Gefühle z.B. in einer Geschichte beschreiben.	☐
	Ich kann übersichtliche, detaillierte Texte über viele verschiedene Themen schreiben. Ich kann z.B. meine Meinung zu einer Neuigkeit ausdrücken oder Argumente für und gegen etwas in einem Artikel präsentieren.	☐
SPRECHEN auf Englisch	Ich kann in Alltagssituationen gut kommunizieren, z.B. Einkaufen gehen, Essen bestellen oder einen Weg beschreiben. Ich kann auch einiges über mich selbst erzählen und einfache Gespräche führen.	☐
	Ich kann mich auf Reisen in anderen Ländern gut verständigen. Ich kann auch Gespräche über Themen führen, die mich interessieren, über persönliche Erfahrungen berichten und meine Meinung äußern und begründen.	☐
	Ich kann mich zu vielen verschiedenen Themen ziemlich flüssig unterhalten und in Diskussionen meine Meinung klar darlegen und vertreten. Ich kann auch Präsentationen geben und z.B. die Vor- und Nachteile eines Themas erläutern.	☐

6j. Welche Jahresnote hattest du letztes Schuljahr im Fach Englisch?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

6k. Mit welcher Note denkst du, dass du dieses Schuljahr im Fach Englisch abschließen wirst?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

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6l. Welches Englischbuch hattest du in der NMS/ Unterstufe?

☐ English to go ☐ Smart
☐ MORE ☐ Your turn
☐ Red Line ☐ New Highlight
☐ You & Me ☐ ein anderes, nämlich: ➡ _____

7. Du und deine Familie

Du hast es fast geschafft! Bitte beantworte zum Schluss nur noch einige Fragen, damit ich die Ergebnisse besser auswerten kann.
➢ *Wenn eine Frage nicht auf dich oder deine Eltern zutrifft, lass die Zeile einfach leer!*

7a. dein Geschlecht: weiblich ☐ männlich

7b. dein Geburtsjahr: _ _ _ _ und dein Geburtsland: _____

7c. Was ist die höchste Ausbildung, die deine Eltern abgeschlossen haben?	**Mutter**	**Vater**
Er / Sie hat keine Ausbildung abgeschlossen.	☐	☐
Pflichtschule (Volksschule + Hauptschule oder Unterstufe)	☐	☐
Berufsschule / Lehre	☐	☐
Lehre mit Meisterprüfung	☐	☐
Höhere Schule ohne Matura (z.B. Fachschule, Handelsschule, Krankenpflegeschule,..)	☐	☐
Allgemeinbildende Höhere Schule mit Matura (AHS)	☐	☐
Berufsbildende Höhere Schule mit Matura (BHS, z.B. HAK, HTL, HTBLA, auch Kollegs bzw. Aufbaulehrgänge)	☐	☐
Fachhochschule, Pädagogische Akademie oder Universitätsstudium mit BA oder vergleichbarem Abschluss	☐	☐
Fachhochschule oder Universitätsstudium mit Mag., MA oder Dipl.-Ing.	☐	☐
Universitätsstudium mit Dr.	☐	☐
Ich weiß es nicht.	☐	☐

7d. Welchen Beruf übt deine Mutter aus? ➡ _____

7e. Wo arbeitet sie und was macht sie in ihrem Beruf normalerweise?

➡ _____

7f. Welchen Beruf übt dein Vater aus? ➡ _____

7g. Wo arbeitet er und was macht er in seinem Beruf normalerweise?

➡ _____

7h. Wie viele Bücher gibt es bei dir zu Hause?
Auf einen Meter Bücherregal passen ungefähr 40 Bücher.
➢ *Schätze bitte die Anzahl aller Bücher (egal in welcher Sprache sie sind), aber zähle Zeitschriften, Zeitungen und deine Schulbücher nicht mit.*

☐ zwischen 0 und 10 Bücher ☐ zwischen 101 und 200 Bücher
☐ zwischen 11 und 50 Bücher ☐ zwischen 201 und 500 Bücher
☐ zwischen 50 und 100 Bücher ☐ mehr als 500 Bücher

DANKE für deine Mitarbeit!

10

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English everywhere

Yes/No Aufgaben

Liebe Schülerin, lieber Schüler!

Damit ich diesen Teil den anderen Teilen der Studie zuordnen kann, bitte ich dich hier deinen persönlichen Code gut leserlich in BLOCKBUCHSTABEN einzufüllen:

Mein Code:	☐☐ 2. und 3. Buchstabe deines Vornamens
	☐ der letzte Buchstabe des Vornamens deiner Mutter
	☐☐ Geburtsmonat (z.B. 03 für März)

Hinweise zum Ausfüllen:

In dieser Überprüfung des Wortschatzes wirst du auf den nächsten Seiten Listen von Wörtern sehen.

*Bitte lies die Aufgaben **aufmerksam und genau** durch und kreuz für jedes Wort **Yes** oder **No** an:*

⇨ Wenn du weißt, was das Wort heißt, kreuze **Yes** an.
⇨ Wenn du nicht weißt, was das Wort heißt, kreuze **No** an.

Achtung:
Du musst vorsichtig sein, **zur Kontrolle sind Wörter eingebaut, die es im Englischen gar nicht gibt!**
Du bekommst Punkte abgezogen, wenn du so bei so einem erfundenen Wort **YES** ankreuzt!
Außerdem wird bei einigen Wörter später noch überprüft, ob du die Bedeutung tatsächlich kennst.

Hier ist ein Beispiel:

Block A		
which	☐ Yes	☐ No
industry	☐ Yes	☐ No

Block B		
siddy	☐ Yes	☐ No
doll	☐ Yes	☐ No

Hast du noch Fragen?

Ich weiß, was das Wort heißt:

Block A		Block B	
acute	☐ Yes ☐ No	bibby	☐ Yes ☐ No
podiast	☐ Yes ☐ No	liverick	☐ Yes ☐ No
malicious	☐ Yes ☐ No	flautism	☐ Yes ☐ No
fair	☐ Yes ☐ No	greenaway	☐ Yes ☐ No
adjoin	☐ Yes ☐ No	appreciate	☐ Yes ☐ No
makeshift	☐ Yes ☐ No	wood	☐ Yes ☐ No
grudgingly	☐ Yes ☐ No	rumour	☐ Yes ☐ No
intimant	☐ Yes ☐ No	allaway	☐ Yes ☐ No
elphick	☐ Yes ☐ No	snape	☐ Yes ☐ No
exemptation	☐ Yes ☐ No	bayonet	☐ Yes ☐ No
rudge	☐ Yes ☐ No	barmion	☐ Yes ☐ No
misrequite	☐ Yes ☐ No	sedgebeer	☐ Yes ☐ No
copper	☐ Yes ☐ No	boobier	☐ Yes ☐ No
todd	☐ Yes ☐ No	sincere	☐ Yes ☐ No
corn	☐ Yes ☐ No	undergraduate	☐ Yes ☐ No
greer	☐ Yes ☐ No	application	☐ Yes ☐ No
harridism	☐ Yes ☐ No	detailoring	☐ Yes ☐ No
tranquil	☐ Yes ☐ No	scamper	☐ Yes ☐ No
leucan	☐ Yes ☐ No	calves	☐ Yes ☐ No
costliness	☐ Yes ☐ No	stimulation	☐ Yes ☐ No
sleek	☐ Yes ☐ No	peebles	☐ Yes ☐ No
dressy	☐ Yes ☐ No	givewith	☐ Yes ☐ No
elegance	☐ Yes ☐ No	invest	☐ Yes ☐ No
carotic	☐ Yes ☐ No	integrality	☐ Yes ☐ No
insinuate	☐ Yes ☐ No	surman	☐ Yes ☐ No
opie	☐ Yes ☐ No	nonagrate	☐ Yes ☐ No
breakwith	☐ Yes ☐ No	candish	☐ Yes ☐ No
watler	☐ Yes ☐ No	harass	☐ Yes ☐ No
spalding	☐ Yes ☐ No	purchaser	☐ Yes ☐ No
strappery	☐ Yes ☐ No	redemption	☐ Yes ☐ No
concerned	☐ Yes ☐ No	decisively	☐ Yes ☐ No
pegler	☐ Yes ☐ No	vergial	☐ Yes ☐ No
analyse	☐ Yes ☐ No	convolition	☐ Yes ☐ No
shady	☐ Yes ☐ No	displace	☐ Yes ☐ No
daintiness	☐ Yes ☐ No	plagorate	☐ Yes ☐ No
fly	☐ Yes ☐ No	alternate	☐ Yes ☐ No
asbestial	☐ Yes ☐ No	ottery	☐ Yes ☐ No
engineer	☐ Yes ☐ No	frown	☐ Yes ☐ No
keir	☐ Yes ☐ No	fresh	☐ Yes ☐ No
arbus	☐ Yes ☐ No	sample	☐ Yes ☐ No

2

Ich weiß, was das Wort heißt:

Block C	
advise	☐ Yes ☐ No
munch	☐ Yes ☐ No
reticence	☐ Yes ☐ No
honesty	☐ Yes ☐ No
couth	☐ Yes ☐ No
fearle	☐ Yes ☐ No
innoculism	☐ Yes ☐ No
expand	☐ Yes ☐ No
numb	☐ Yes ☐ No
ethical	☐ Yes ☐ No
gummer	☐ Yes ☐ No
resignate	☐ Yes ☐ No
cardination	☐ Yes ☐ No
pickard	☐ Yes ☐ No
verge	☐ Yes ☐ No
cranicle	☐ Yes ☐ No
gammonary	☐ Yes ☐ No
precocious	☐ Yes ☐ No
bought	☐ Yes ☐ No
ashill	☐ Yes ☐ No
swan	☐ Yes ☐ No
trill	☐ Yes ☐ No
derelict	☐ Yes ☐ No
ampled	☐ Yes ☐ No
acklon	☐ Yes ☐ No
ban	☐ Yes ☐ No
charlett	☐ Yes ☐ No
voluminary	☐ Yes ☐ No
rave	☐ Yes ☐ No
diversal	☐ Yes ☐ No
precious	☐ Yes ☐ No
postscript	☐ Yes ☐ No
castle	☐ Yes ☐ No
fastidious	☐ Yes ☐ No
safe	☐ Yes ☐ No
wookey	☐ Yes ☐ No
varney	☐ Yes ☐ No
maltass	☐ Yes ☐ No
murray	☐ Yes ☐ No
piccolotomy	☐ Yes ☐ No

Block D	
cartledge	☐ Yes ☐ No
obstinate	☐ Yes ☐ No
congulate	☐ Yes ☐ No
ostensibly	☐ Yes ☐ No
mastiphitis	☐ Yes ☐ No
refusal	☐ Yes ☐ No
steadily	☐ Yes ☐ No
scobie	☐ Yes ☐ No
prosaic	☐ Yes ☐ No
furrow	☐ Yes ☐ No
inhabitant	☐ Yes ☐ No
amiel	☐ Yes ☐ No
brind	☐ Yes ☐ No
elaborate	☐ Yes ☐ No
lone	☐ Yes ☐ No
morphew	☐ Yes ☐ No
guest	☐ Yes ☐ No
sprudd	☐ Yes ☐ No
incorpulent	☐ Yes ☐ No
haime	☐ Yes ☐ No
randle	☐ Yes ☐ No
albucolic	☐ Yes ☐ No
sanitary	☐ Yes ☐ No
menace	☐ Yes ☐ No
mourant	☐ Yes ☐ No
bluster	☐ Yes ☐ No
kearle	☐ Yes ☐ No
tomb	☐ Yes ☐ No
youde	☐ Yes ☐ No
asslam	☐ Yes ☐ No
scroll	☐ Yes ☐ No
lose	☐ Yes ☐ No
custom	☐ Yes ☐ No
tilt	☐ Yes ☐ No
seclunar	☐ Yes ☐ No
drab	☐ Yes ☐ No
gammage	☐ Yes ☐ No
powling	☐ Yes ☐ No
modesty	☐ Yes ☐ No
eventualise	☐ Yes ☐ No

Ich weiß, was das Wort heißt:

Block E	
practicate	☐ Yes ☐ No
motivise	☐ Yes ☐ No
pilbean	☐ Yes ☐ No
lucky	☐ Yes ☐ No
self-respect	☐ Yes ☐ No
raisin	☐ Yes ☐ No
compress	☐ Yes ☐ No
pocock	☐ Yes ☐ No
windle	☐ Yes ☐ No
churchlow	☐ Yes ☐ No
embarrassment	☐ Yes ☐ No
whereabouts	☐ Yes ☐ No
intuned	☐ Yes ☐ No
department	☐ Yes ☐ No
condick	☐ Yes ☐ No
shareholder	☐ Yes ☐ No
stephonise	☐ Yes ☐ No
interfere	☐ Yes ☐ No
scenery	☐ Yes ☐ No
mealing	☐ Yes ☐ No
discuss	☐ Yes ☐ No
tuber	☐ Yes ☐ No
thrift	☐ Yes ☐ No
orphan	☐ Yes ☐ No
squeak	☐ Yes ☐ No
fountain	☐ Yes ☐ No
hypodemical	☐ Yes ☐ No
possumate	☐ Yes ☐ No
cunnion	☐ Yes ☐ No
atribus	☐ Yes ☐ No
cordonise	☐ Yes ☐ No
pod	☐ Yes ☐ No
whaley	☐ Yes ☐ No
germ	☐ Yes ☐ No
mainwaring	☐ Yes ☐ No
floralate	☐ Yes ☐ No
cundy	☐ Yes ☐ No
remove	☐ Yes ☐ No
quote	☐ Yes ☐ No
cynist	☐ Yes ☐ No

4

Produktiver Wortschatz

Wortassoziationen

Liebe Schülerin, lieber Schüler!

Damit ich diesen Teil den anderen Teilen der Studie zuordnen kann, bitte ich dich hier deinen persönlichen Code gut leserlich in BLOCKBUCHSTABEN einzufüllen:

Mein Code:	☐☐ 2. und 3. Buchstabe deines Vornamens ☐ der letzte Buchstabe des Vornamens deiner Mutter ☐☐ Geburtsmonat (z.B. 03 für März)

Hinweise zum Ausfüllen:

In dieser Überprüfung des Wortschatzes wirst du eine Liste mit 30 englischen Wörtern sehen.
*Schreibe neben jedes Wort, **die ersten anderen englischen Wörter, die dir dazu einfallen.***
*Schreibe so viele auf, wie dir einfallen, wenn möglich **vier Wörter** (neben jedem Wort sind vier leer Kästchen).*

Es ist egal, welche Verbindung es zwischen dem ersten Wort und deinen Wörtern gibt, schreib einfach auf Englisch auf, was dir dazu einfällt!
Zum Beispiel hat jemand für das Wort "animal" diese Wörter aufgeschrieben:

animal	*elephant*	*farm*	*wild*	*feed*

Denk nicht zu lange nach, du hast insgesamt nur 15 Minuten Zeit!

Hast du noch Fragen?

Schreibe neben jedes Wort, die ersten anderen englischen Wörter, die dir dazu einfallen.

1. **attack**				
2. **board**				
3. **close**				
4. **cloth**				
5. **dig**				
6. **dirty**				
7. **disease**				
8. **experience**				
9. **fruit**				
10. **furniture**				

Schreibe neben jedes Wort, die ersten anderen englischen Wörter, die dir dazu einfallen.

11. **habit**				
12. **hold**				
13. **hope**				
14. **kick**				
15. **map**				
16. **obey**				
17. **pot**				
18. **potato**				
19. **real**				
20. **rest**				

Schreibe neben jedes Wort, die ersten anderen englischen Wörter, die dir dazu einfallen.

21. **rice**				
22. **science**				
23. **seat**				
24. **spell**				
25. **substance**				
26. **stupid**				
27. **television**				
28. **tooth**				
29. **trade**				
30. **window**				

EE vocabulary word list

These is a comprehensive list of all the words produced by the testees in the Lex30 that do not occur in the schoolbook word lists (proper nouns excluded).

accessory
adjustable
aggressive
airplane
alcohol
anorexia
antidote
anxiety
ass
assault
asshole
avocado
backseat
ban
bealt
beanbag
bible
bingo
biology
blackboard
blueberry
boxing
bra
brace
brain
brash
breadcrumb
breadth
bullet
bum
bungee
burry
butt
cacao
carbohydrate
caries
cart
caugh
cellphone
chalk
channel
cheeseburger
chemic
chemical
chemistry
china
cleaner
closed
closet
cocaine
concourse
conscious
construction
controller
core
corn
corpse
crap
creme
crispy
crystal
cucumber
dab
dag
defence
defense
deliscious
despair
destiny
diarrhea
dick
digger
dirt
disease
disgusting
documentary
documentation
done
donkey
doorknob
drey
dumb
dump
economics
element
exit
expansive
exposed
fairtrade
faith
fake
fate
fighter
fist
flu
frame
frie
frost
fuck
genre
global
glove
grace
gravitation
grewsome
habitat
hamburger
handball
happiness
harassment
harvest
heroin
hi
hobby
homeless
hooligan
hopeful
hoverboard
howl
humanity
icetea
inquiry
internet
jab
jackpot
jeans
jogging
ketchup
kickbox
killer
kohlrabi
labor
laboratory
lap
laptop
leftover
lettuce
lier
lifestyle
locker

logical
longboard
loose
loyal
lumo
mafia
mandarin
marijuana
mars
mash
melon
meme
mental
metal
meth
MMA
mobbing
monster
mop
moped
moron
mosque
motivated
mound
muslim
navigation
nonfiction
normal
obese
obesity
offensive
okay
ore
orientation
pants
paperbin
paprica
pause
pee
pharmacy
physics
pillow
pineapple
plasma
poker
popcorn
pronounce
propaganda
psycho
puff
pug
pullover
puma
punch
rabid
rainbow
raspberry
realness
rebound
rely
remote
ressource
restroom
romance
rot
routine
salami
salt
sand
saw
scope
seatbelt
serial
server
sex
shampoo
shield
shiny
shit
shocking
shot
shovel
silence
sirup
sitcom
sleepy
slime
slimy
slum
slut
sneaker
snowfall
socket
software
sour
spa
spaghetti
spellcheck
spelling
stark
stomachache
stormy
straw
stronghold
style
suck
supernatural
sushi
sweat
sword
system
terrorism
terrorist
tolerance
tongue
tool
tourist
toxic
trading
transparent
tray
tunnel
understandable
underwear
verb
verbal
veteran
villa
waffle
wallboard
wardrobe
waterboard
watermelon
wedge
weed
wellness
whiteboard
whitener
whore
winner
wizard
worksheet
wrestle
yoga
yummi
zombie

Abstract

With globalisation and the emerge of technology, Europe's linguistic landscape has undergone considerable change. English has not only become the language of international communication but is also the most common language in the media. Compared to past decades, learners of English in foreign language contexts are now more likely to encounter English in their daily lives. In other words, English is no longer restricted to the classroom and many researchers have investigated the influence of this omnipresence of English on learners' language proficiency. Out-of-school contact with English was found to especially enhance vocabulary acquisition. While a number of international studies on extramural vocabulary acquisition through English media exist, research on this topic in Austria is scarce. Thus, the present study provides information on Austrian learners' contact with English outside school and investigates its effect on vocabulary knowledge.

The study presented in this thesis examined 83 10th-graders of Viennese vocational business middle schools (HAS). A questionnaire collected detailed information on the students' free time habits, their linguistic and socio-economic background, their attitudes towards English and strategies they applied when encountering unknown words. Data from the questionnaire was related to the scores on a receptive and a productive vocabulary test and results confirmed the observations made in other studies that learners who frequently engaged in English activities outside school were more likely to have larger vocabularies.

Gender differences could not only be observed in the amount of time learners spent on EE activities, but also the types of activities they engaged in. The male participants reported a higher number of EE activities and also more active ones. In addition, boys scored significantly better on the receptive vocabulary test, whereas differences on the productive test were not statistically significant. Together with other results from the study, this suggests that learners can especially improve their receptive vocabulary knowledge through EE activities.

Besides the engagement with EE, positive attitudes towards English and the application of vocabulary learning strategies were found to facilitate vocabulary acquisition.

Zusammenfassung

Durch die Globalisierung und Fortschritte in der Technologie unterlag Europas sprachliche Landschaft in den letzten Jahrzehnten stetigem Wandel. Englisch wurde nicht nur zur wichtigsten Sprache internationaler Kommunikation, sondern ist weltweit auch die verbreitetste Sprache in den Medien. Dadurch haben Lernende heute vermehrt Zugang zu englischen Ressourcen als noch vor einigen Jahrzehnten und es kann davon ausgegangen werden, dass der Kontakt mit Englisch nicht länger auf die Schule beschränkt ist. Dieses Phänomen der außerschulischen Beschäftigung mit Englisch hat das Interesse vieler internationaler Wissenschaftler geweckt, die den Einfluss von englischen Medien auf die Sprachkompetenz der Lernenden untersucht haben. In Österreich gibt es bisher jedoch kaum Forschung zu diesem Thema. Diese Arbeit gibt daher einen Überblick über den Kontakt mit Englisch in der Freizeit und untersucht den daraus entstehenden Einfluss auf das Vokabellernen.

In der vorliegenden Studie wurden 83 SchülerInnen der 10. Schulstufe von Wiener Handelsschulen (HAS) befragt. Mit Hilfe eines Fragebogens wurden Informationen über die Freizeitgewohnheiten der TeilnehmerInnen, deren sprachlichen und sozioökonomischen Hintergrund, deren Einstellungen gegenüber Englisch und Vokabelstrategien erhoben. Diese Daten wurden anschließend in Zusammenhang mit Ergebnissen von zwei Vokabeltests gesetzt. Beobachtungen aus anderen Studien wurden bestätigt: Lernende, die außerhalb der Schule viel Kontakt mit Englisch haben, besitzen häufig ein größeres Vokabular.

Genderspezifische Unterschiede traten nicht nur im Ausmaß des Kontakts mit Englisch in der Freizeit auf, sondern auch in der Art der Freizeitbeschäftigungen. Die männlichen Teilnehmer gaben an, häufiger englische Medien zu nutzen und bevorzugten außerdem produktive Beschäftigungen. Darüberhinaus erzielten sie deutlich bessere Ergebnisse auf dem rezeptiven Test, wohingegen keine signifikanten Unterschiede auf dem produktiven Test nachgewiesen werden konnten. In Kombination mit anderen Ergebnissen der Studie unterstützt dies die Annahme, dass Lernende vor allem ihr rezeptives Vokabular durch englischsprachige Aktivitäten in der Freizeit ausbauen können.

Des Weiteren wirken sich positive Einstellungen gegenüber Englisch und die Anwendung von Vokabellernstrategien positiv auf die Größe des Vokabulars aus.