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The English Receptive Vocabulary Knowledge of Flemish Secondary School Children prior to Formal Instruction across Three Types of Education

Masterproef voorgelegd tot het behalen van de graad van
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Abstract

Aims: The primary aim of this study is to analyse and compare the English receptive vocabulary knowledge of Flemish secondary school children in A stream ASO, A stream TSO, and B stream education prior to formal instruction. A second objective is to examine whether gender, socioeconomic status (SES), and various types of language contact affect these students' English vocabulary acquisition, and if so, to what extent they do.

Methods and procedures: This study included 110 Flemish Dutch-speaking children aged between 12;2 and 14;2 years. These children were all in the first year of secondary education and had never formally been taught English before. They were recruited from five different schools located in Flanders, and received either A stream ASO (25 students), A stream TSO (59 students), or B stream education (26 students). Information on the students' socioeconomic status and contact with English was elicited by means of two separate questionnaires. In addition, the Peabody Picture Vocabulary Test (PPVT-IIII) was used to measure the informants' English receptive vocabulary levels.

Results and conclusions: There were no meaningful differences in the receptive vocabulary knowledge of ASO, TSO, and B stream students, although the boys' receptive lexical skills were significantly better than those of the girls. Contrary to gender, socioeconomic status was not an influential factor. As for language contact, occasional instruction of English, reading English books and magazines, playing English (video) games, and watching subtitled English television programmes and films all proved to have a positive effect on the students' lexical acquisition of English. Based on these findings, it was concluded that the English receptive vocabulary development of ASO, TSO, and B stream secondary school children from various socioeconomic backgrounds is affected by their exposure to English in an equally positive manner, although that of boys even more so than that of girls.

Table of contents

26.511 words

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1. Introduction

There is little doubt that English has become one of the most dominant languages in present society. Whether it be as a native or a second language (L2), English is nowadays spoken all over the world. Learning English at school may therefore be of great importance to younger generations. In Flanders, English is at the earliest instructed from the first year of secondary education onwards. Nevertheless, given the wide spread of English in general, it is hard to believe that Flemish students enter the classroom without any prior knowledge of English at all. In a globalized and digitalized world, they may spontaneously acquire the language by means of surfing on the internet, watching English television programmes, or even by playing English video games.

Previous research has already confirmed that these different types of language contact strongly determine the ways in which second languages are learned. Moreover, it has been repeatedly proven that also cognitive, societal, and psychological factors play an essential role in both child and adult second language acquisition. There is however not much known about their effects on the L2 development of young adolescents living in Flanders.

As an extension of previous research, this study aims at examining the differences in the English receptive vocabulary knowledge of Flemish secondary school children in A stream ASO, A stream TSO, and B stream education prior to formal instruction, and seeks to explore to what extent gender, socioeconomic status (SES), and various types of language contact influence these children's lexical acquisition of English. It is hypothesized that the ASO, TSO, and B stream students included in this study will all have a different English receptive vocabulary knowledge. In addition, the girls are assumed to have a more advanced lexical knowledge than the boys. Furthermore, it is believed that the students' socioeconomic status and their exposure to English will be proven to significantly affect their English vocabulary development.

The theoretical framework on which these hypotheses are based is outlined in the second chapter of this dissertation. The first part of this chapter deals with the position of English in the world and in Flanders. Theoretical definitions and SLA hypotheses are presented in the second part. Several factors influencing second language learning will be discussed here as well. The third part will focus on second language vocabulary, and elaborate on the most important theoretical notions related to L2 vocabulary knowledge and acquisition. Finally, the fourth section will review three recent studies on the English knowledge of Flemish secondary school children prior to instruction.

In the third chapter, the methodology of this study, as well as the variables used for statistical analyses are described. The results of these analyses and a discussion of the findings are presented in the two following chapters. Ultimately, this dissertation closes with a general conclusion and some suggestions for further research.

2. Second Language Acquisition

This chapter offers an overview of the main linguistic theories and literature on the topic of this dissertation. In a first part, the importance of English in the world as well as in Flanders will be briefly discussed. This is then followed by a more elaborate review of frequently used concepts in the domain of Second Language Acquisition (SLA). In this section, theoretical notions and the many possible influences on second language learning are explained. The third part of this chapter narrows its focus on second language vocabulary, as it is of major importance in this research paper. Finally, the fourth part will review three studies which are comparable to the present one.

2.1 The importance of English

2.1.1 English in the world

It has been widely acknowledged that English is a dominant language all across the globe. The emergence of English as a world language already started during the last decades of the sixteenth century, but only in the last forty years this process has been accelerating (Crystal 2003: 92, 110). Jenkins (2003: 2) comments that

> [w]hereas the English language was spoken in the mid-sixteenth century only by a relatively small group of mother-tongue speakers born and bred within the shores of the British Isles, it is now spoken in almost every country of the world, with its majority speakers being those for whom it is not a first language.

According to Crystal (2003: 106), this worldwide presence of English thus "makes the application of the term 'world language' a reality."

There are, however, various other denominations for English. It is most often described as a *global language*. Crystal (2003: 106) remarks that the current status of English as a global language originates in both the British colonialism of the nineteenth century and the economic globalization which took place one century later. Due to these societal and economic changes, English has increasingly been used "between speakers from different countries who do not have English as a mother tongue" (Mesthrie & Bhatt 2008: 11). In this respect, English may also be considered an *international language*. Nevertheless, McArthur (2004: 3) argues that the terms *world English*, *global English*, and *international English* should not be used interchangeably, because they

> each [have] a history and perspective of [their] own. … The first has been used to mean both standard English and all English; the second refers to the multinational use of English (notably in language teaching); and the third both implies vast use and links the language (often negatively) with socio-economic globalization. Since all three are likely to go on being used, they may need to be handled with care.

In addition to this threefold distinction, English may also be described as a lingua franca (ELF). As defined by Groom (2012: 50), English as a lingua franca is the English used for communication "between speakers who have different first languages." Jenkins (2007: 4) describes EFL in similar terms, but particularly emphasizes that it is "not primarily a local or contact language *within* national groups but *between* them."

Whether it be defined as a global or an international language, English clearly is an important means of communication in almost every part of the world. This global expansion of English has been visualized by several theoretical models. The most influential model was established by Kachru (1986). He distinguished three categories of World Englishes according to three concentric circles: the Inner Circle, the Outer Circle, and the Expanding

Circle. Each of these circles reflects the spread, the acquisition, and the current use of English (Jenkins 2003: 15; see figure 1).

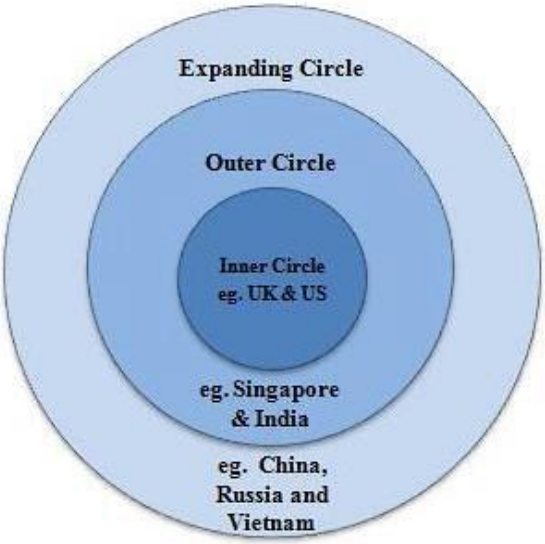

Figure 1. The three concentric circles of World Englishes after Kachru (Source: https://doanbangoc.wordpress.com/2011/07/26/world-englishes/)

The Inner Circle consists of the countries where English is historically the primary language. These are the USA, Canada, the UK, Ireland, Australia, and New Zealand (Crystal 2003: 107; Jenkins 2003: 14). Across these countries, there are about 320 to 380 million native speakers of English (Crystal 2003: 107). The Outer Circle involves the countries where English was introduced during colonialism by Inner Circle speakers. In India, Bangladesh, Singapore, and many other territories, English is now used as a second language (ESL) in educational, legislative, and administrative institutions (Kachru 1986: 19). As Crystal (2003: 107) indicates, approximately 300 to 500 million people use English as a second language. Thirdly, the Expanding circle comprises those countries which did not come in contact with English through colonization and have not assigned a special status to the language, such as China, Russia, or Greece. In these parts of the world, English is only used as a Foreign Language (EFL) for international purposes. It is estimated that 500 to 1000 million EFL speakers belong to the Expanding Circle, but this number might already be dated given the rapid world expansion of English (Crystal 2003: 107).

A more recent model has been proposed by Schneider (2003). In contrast to Kachru (1986), he argues that the different varieties of English have all been shaped through similar processes of language contact with either indigenous languages or other types of English

dialects in the period of colonization. This goes against Kachru's idea that only ESL was developed during colonialist times. Moreover, Schneider (2003) stresses that not only historical but also sociolinguistic factors such as identity construction and social class play an important role in the global spread of English (Schneider 2003 in Mesthrie & Bhatt 2008: 31-36).

It should finally be remarked that these models, as well as others, have been criticized for not being consistent when categorizing the many varieties of English. With respect to Kachru (1986), for example, the ongoing language changes caused by migration and social mobility may blur the boundaries of the Inner and Outer Circles (Yano 2001: 119-130). Moreover, it is important to keep in mind that new varieties of English may develop over time, and that these models could therefore never be fully representative of the distribution of World Englishes.

2.1.2 English in Flanders

The three official languages of Belgium are Dutch, French, and German. Dutch is mainly spoken in northern Flanders, French in southern Wallonia, and German in the East close to the German border. In the capital Brussels, both Dutch and French are used in official institutions, with French being statistically considered the most important of the two (Ginsburgh & Weber 2007: 36). It is however a common misperception that all Belgians are bilingual. As explained by Goethals (1997: 105-106), French is considered a foreign language in Flanders as much as Dutch is in Wallonia. Although the Flemish may regularly come in contact with French words or phrases through television, radio, or advertising, "this does not mean much more than a familiar presence and an opportunity to come into contact with it. It is not a functional part of daily communication" (Goethals 1997: 105-106).

Being a global language, English has also found its way to Flanders. In the Flemish community, English is used and instructed as a foreign language. Consequently, it belongs to the Expanding Circle of Kachru's model (1986) mentioned above. Xu and Van de Poel (2011: 274) even argue that "in Flanders English has … transcended its traditional role as a foreign language and is closely tied up with the global phenomenon of English as a lingua franca or international language." This is also confirmed by Van Parijs (2007: 4), who remarks that English has gradually gained more importance than Dutch and French as non-native languages.

It is however not surprising that English is highly valued in Flanders. As Goethals (1997: 107) explains, "[t]he relatively little importance of Dutch worldwide and the presence of other languages reinforce the general feeling of a need for several different foreign languages." It is particularly this need which motivates the Flemish to learn foreign languages such as French and English (Goethals 1997: 107). The importance of English for the Flemish population is indeed reflected in the Eurobarometer report of 2006. In stark contrast with the rather poor knowledge of English in Wallonia, about half of the Flemish population claimed to know the language well or very well (Eurobarometer report 2006 in Van Parijs 2007: 6). However, as commented by Berns, de Bot, and Hasebrink (2007: 40), this might raise the question of whether the Dutch language will ever be threatened by English or not.

Flemings come into contact with English in various ways, ranging from television programmes and films to popular music, English books and magazines, and computer- and video games. As mentioned by Berns et al. (2007: 30), English songs tend to be very popular among the Flemish population. Moreover, the titles of these songs, as well as those of English television programmes, are generally considered quite prestigious. Berns et al. (2007: 31) elaborate on this by remarking that Flanders can access various English television channels, as for example CNN, BBC, or National Geographic. Thus, Flemings may easily be exposed to

English when watching television. Furthermore, also the internet may provide contact with the English language (Berns et al. 2007: 34). In the second part of this chapter, the influences of these different forms of language contact will be discussed in more detail.

2.2 Second language acquisition

2.2.1 Defining second language acquisition

Second Language Acquisition (SLA) refers to both the acquisition of second languages and the field of study which focuses on this learning process. Although the discipline of SLA has only been expanding over the last forty years, different insights have been reached so far. This might especially be due to the interdisciplinary character of SLA research. As explained by Behney, Gass, and Plonsky (2013: xx),

> scholars have approached the field from a wide range of backgrounds: sociology, psychology, education, and linguistics, to name a few. … The advantage is that, through the multiplicity of perspectives, we are able to see a richer picture of acquisition, a picture that appears to be more representative of the phenomenon of acquisition, in that learning a second language undoubtedly involves factors relating to sociology, psychology, education, and linguistics.

The broad scope of second language acquisition is also underlined by Doughty and Long (2003). They argue that SLA "encompasses basic and applied work on the acquisition and loss of second (third, etc.) languages and dialects by children and adults, learning naturalistically and/or with the aid of formal instruction, as individuals or in groups, in foreign, second language, and lingua franca settings" (Doughty & Long 2003: 3). To them, SLA research may be considered a branch within the domain of cognitive science (Doughty &

Long 2003: 4).

In order to offer a better insight into current SLA research, the first part of this chapter will present various definitions and theories concerning the learning of second languages. More specifically, the following terms will be addressed: first language, second language, foreign language, acquisition, learning, implicit and explicit learning, instructed and non-instructed learning, and incidental and intentional learning.

2.2.1.1 First, second, and foreign language acquisition

Since this research paper particularly focuses on second language learning, it is necessary to first discuss the distinction between first, second, and foreign language acquisition. However, this distinction is not always easily made. Today most people are multilingual, so that it is hard to determine which of their acquired languages is the first, second, or foreign language (de Bot, Lowie, and Verspoor 2005: 5-7).

Researchers simply consider one's first language (or L1) the one which was learned first. It is also known as the mother tongue, or native language, and is usually acquired during childhood (Behney et al. 2013: 4). In contrast, the term *second language* (abbreviated as L2) refers to any language learned after the first one, regardless of whether it is the second, the third, or the fourth in the order of acquisition (Behney et al. 2013: 4; Ellis 2008: 5-6). Moreover, second languages may be learned both during and after childhood. However, whereas the native language "is generally fully and fluently acquired", the learning of second languages "has a much more variable outcome" (Hummel 2014: 22).

Second language acquisition can then further be distinguished from foreign language acquisition. The former involves "the learning of a nonnative language in the environment in which that language is spoken …" (Behney et al. 2013: 5). Most researchers agree that second

language acquisition usually occurs in classroom contexts, but some stress that second languages can also be learned outside of such instructional settings (de Bot et al. 2005: 7). By all means, "[t]he important point is that learning in a second language environment takes place with considerable access to speakers of the language being learned" (Behney et al. 2013: 5). For example, Flemish inhabitants learning French are to be viewed as second language learners because they may frequently enter in contact with the French speakers in the country. On the other hand, foreign languages are acquired "in a setting in which the language to be learned is not the language spoken in the local community" (de Bot et al. 2005: 7). As with second language acquisition, foreign languages are mostly learned through formal language instruction (de Bot et al. 2005: 7; Ellis 2008: 6). In fact, outside of such contexts, there is only a limited contact with speakers of the language being acquired (Behney et al. 2013: 5). In this respect, Flemish students learning English are to be regarded as foreign language learners.

2.2.1.2 Acquisition and learning

Another distinction to be made is that between acquisition and learning. Although these concepts are closely related to one another, they involve "two distinct and independent ways of developing competence in a second language" (Krashen 1982: 10).

Krashen (1982) defines acquisition as "the product of a 'subconscious' process, very similar to the one children use in learning their first language" (de Bot et al. 2005: 7). It is therefore also described as the natural "picking up" of a language. Learning, on the other hand, implies a conscious process of developing linguistic competence (Ellis 2008: 7). More specifically, it refers to the "'knowing about' a language, known to most people as 'grammar', or 'rules'" (Krashen 1982: 10). de Bot et al. (2005: 8) similarly explain that whereas

"acquisition is seen as a natural process of growth of knowledge and skills in a language without a level of meta-knowledge about the language, … learning is seen as an artificial process in which the 'rules' of a language are focused on." As Ellis (2008: 246) points out, learning also "results in metalinguistic knowledge." It should be no surprise then that learning is commonly associated with formal language instruction.

Some second language researchers believe that children acquire language, whereas adults only learn it (Krashen 1982: 10). In his Acquisition-Learning Hypothesis, Krashen (1982) goes against this assumption and argues that, since the ability to pick up languages does not disappear after puberty, adults are both language learners and language acquirers. However, "[t]his does not mean that adults will always be able to achieve native-like levels in a second language. It does mean that adults can access the same natural 'language acquisition device' that children use" (Krashen 1982: 10). Furthermore, Krashen (1982) posits that "'learnt' knowledge is completely separate and cannot be converted into 'acquired' knowledge" (Ellis 2008: 420). This perspective on language learning is also referred to as the "non-interface position". More specifically, this position holds that "'acquired knowledge' can *only* be developed when the learner's attention is focused on message conveyance, and that neither practice nor error correction enables 'learnt knowledge' to become 'acquired'" (Ellis 2008: 420).

The dichotomy between acquisition and learning can also be related to Krashen's Monitor Hypothesis (1982). It is the first and most central theory of the five hypotheses which comprise his Monitor Model (Behney et al. 2013: 129-130; Ellis 2008: 420). From what has been explained above, it has become clear that Krashen (1982) understands acquisition and learning as two fundamentally different processes in language development. With the Monitor Hypothesis he states that conscious learning can only function as a Monitor, that is, an editor of utterances generated by the acquired language system (Krashen 1982: 15-16; see figure 2).

As explained by Krashen and Terrell (1983: 18), "[w]e use acquisition when we initiate sentences in second languages, and bring in learning only as a kind of after-thought to make alterations and corrections." The Monitor can thus only be used to adapt utterances after they have been produced by the acquired system. As such,

> [o]ur fluency in production is … hypothesized to come from what we have 'picked up', what we have acquired, in natural communicative situations. Our 'formal knowledge' of a second language, the rules we learned in class and from texts, is not responsible for fluency, but only has the function of checking and making repairs on the output of the acquired system. (Krashen & Terrell 1983: 30)

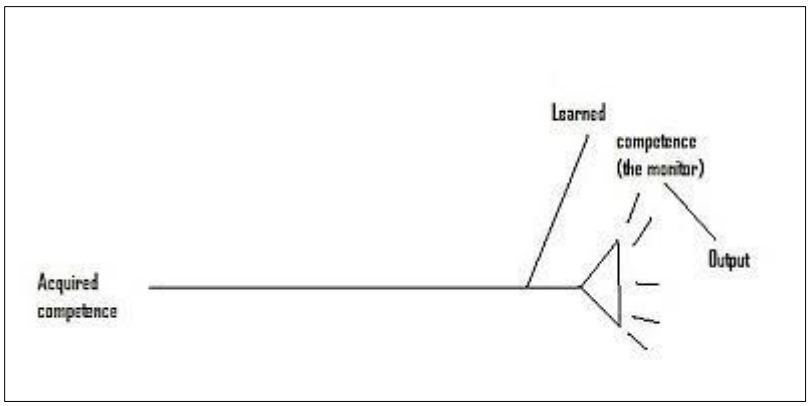

Figure 2. Krashen's Monitor Hypothesis (Source: http://aibloomsenglishdidactics.blogspot.be/2010/02/stephen-krashen-1941.html)

According to Krashen (1982), there are three conditions which must be met in order to use the Monitor successfully, "although he claim[s] that, whereas these are *necessary* conditions, they are not necessarily *sufficient*, because the Monitor may not be activated, even when all three conditions have been satisfied" (Behney et al. 2013: 130). The first of these requirements is that language learners need enough time to "consciously think about and use the rules available to them in their learned system" (Behney et al. 2013: 130). Secondly, they must focus on the form or the correctness of their speech utterances. Speakers must not only pay attention to what they are saying, but also to how something can be said (Krashen 1982:

16). The third condition then is that learners have to know the rules of the learned language system so as to be able to apply them (Behney et al. 2013: 130).

Even though Krashen's Monitor Hypothesis has been quite influential, it has been criticized by researchers like McLaughlin (1987), Smith (1981), and Gregg (1984) for its vagueness and lack of supporting theoretical and empirical evidence (all in Ellis 2008: 421). Some therefore argue that Krashen (1982) never truly ascertained that language learners have a Monitor device at all (Hummel 2014: 72).

2.2.1.3 Implicit and explicit learning

The definitions of implicit and explicit learning are closely related to the notion of consciousness introduced above. Implicit language learning is defined by Ellis (2008: 7) as "learning that takes place without either intentionality or awareness." It is a subconscious process of language learning, because the learners do not realize that their language knowledge is being developed. By consequence, the investigation of implicit language learning is rather problematical. DeKeyser and Juffs (2005: 441) remark that "[n]obody doubts that implicitly acquired procedural knowledge would be useful; the main question is to what extent it exists." Ellis (2008: 7) proposes to investigate implicit learning by analysing the amount of newly acquired grammatical rules or vocabulary in learners after exposing them to input data. However, he stresses that researchers have not yet reached a consensus on whether or not language can truly be learned without any degree of awareness (Ellis 2008: 7).

In contrast, explicit learning "is necessarily a conscious process and is likely to be intentional" (Ellis 2008: 7). There are in fact two types of explicit learning which can be distinguished. On the one hand, languages may be developed through selective learning, that is, by looking for information and testing hypotheses. On the other hand, learners may acquire

language through the formal instruction of rules (Ellis 1994 in de Bot et al. 2005: 9).

However, DeKeyser and Juffs (2005: 440) stress that "[t]he acquisition of explicit knowledge can take many forms. The most prototypical is through instruction in metalinguistic rules, but many other ways exist of making learners aware of linguistic structure." Since explicit learning is consciously done, researchers have much more insight in this process and can therefore explore it much more easily. As mentioned by Ellis (2008: 7), language learners may explicitly be invited to apply a certain rule on the data provided, or, by means of reversal, be asked to look for a specific rule on the basis of those data.

2.2.1.4 Instructed and non-instructed learning

Second languages may be learned either naturally or through instruction. Non-instructed or naturalistic learning refers to the learning of languages "through communication that takes place in naturally occurring social situations" (Ellis 2008: 6). de Bot et al. (2005: 12) point out that in these naturalistic settings "people have to pick up the language from what they hear and see in their environment." As opposed to this naturalistic way of learning, instructed learning implies the learning of languages through "study with the help of 'guidance' from reference books or classroom instruction" (Ellis 2008: 6). However, de Bot et al. (2005: 12) add that although the learner's "main source of contact and input is the institute or school, … he may also 'pick up' some of the language through reading on his own." Similarly, most researchers seem to stress that in most contexts language may be acquired through a combination of naturalistic and non-instructed learning.

2.2.1.5 Incidental and intentional learning

The distinction between incidental and intentional learning can be explained with respect to the concepts of instructed and non-instructed learning. Hulstijn (2003: 349) defines incidental learning as the process "involving the 'picking up' of words and structures, simply by engaging in a variety of communicative activities, in particular reading and listening activities, during which the learner's attention is focused on the meaning rather than on the form of language." Moreover, this type of learning usually takes place within natural and uncontrolled settings (Klein 1986 in Ellis 2008: 6). Intentional learning, on the other hand, refers to the "learning … that occurs when the learner consciously sets out to learn it" (Ellis 2008: 967). It tends to occur in a decontextualized environment and is therefore most often linked with formal instruction settings (de Bot et al. 2005: 10). The relation between intentional learning and language instruction has been discussed more specifically in Behney et al. (2013) and de Bot et al. (2005).

Furthermore, Schmidt (1990) argues that the difference between these two forms of learning "is [particularly] related to whether noticing is required and, if so, whether such noticing is automatic or requires attention" (de Bot et al. 2005: 10). He points out that incidental learning is a subconscious process which does not need to be noticed by the learner, whereas intentional learning primarily is a conscious process the learner is usually aware of (Schmidt 1990 in de Bot et al. 2005: 10-11). In line with the above statement, he also stresses that "incidental learning is certainly possible when task demands focus attention on relevant features of the input" (Schmidt 1990 as cited in de Bot et al. 2005: 10-11). The learner "may pay attention only to a message as a whole rather than to any particular forms of the language with which the message is expressed" and by consequence incidentally learn something from the message without developing any particular knowledge of its language forms (de Bot et al. 2005: 11).

In current research, both types of language learning have been the focus of interest. However, Ellis (2008: 447) remarks that there is a paucity of studies on the incidental and intentional learning of L2 grammar because researchers have mainly focused on second language vocabulary acquisition instead. He further adds that most of these researchers have shown that vocabulary learning tends to be "an incidental affair" (Ellis 2008: 447). The concept of incidental vocabulary learning will be returned to later in this chapter.

2.2.2 Factors influencing second language acquisition

Second language acquisition is a dynamic process which can be influenced by many factors. In what follows, the particular effects of age, gender, social class, input and intake, language contact, affect, anxiety, motivation and attitude, and intelligence and aptitude will be discussed in more detail.

2.2.2.1 Age

It has been widely acknowledged that age plays an essential role in second language acquisition. Most researchers believe that "children are better language learners than adults, in the sense that young children typically can gain mastery of an L2, whereas adults cannot" (Behney et al. 2013: 434). As Macnamara (1973) points out, "young children in suitable environments pick up a second language with little trouble, whereas adults seem to struggle ineffectively with a new language" (Macnamara 1973 as cited in Singleton & Ryan 2004: 2).

The most influential theory on age effects in second language acquisition is Lenneberg's Critical Period Hypothesis (1967). This hypothesis "states that there is a limited developmental period during which it is possible to acquire a language, be it L1 or L2, to

normal, nativelike levels. Once this window of opportunity is passed, however, the ability to learn language declines" (Birdsong 2014: 1). In other words, when learners reach a certain age, language acquisition will gradually become more difficult. Lenneberg (1967) claimed that the critical period for language acquisition starts during infancy around the age of two and ends with puberty around the age of twelve (Lenneberg 1967 in Singleton & Ryan 2004: 33). However not all researchers are convinced that the critical period already ends before puberty is reached (Hummel 2014: 172).

An alternative hypothesis on the role of age in second language learning is the Sensitive Period Hypothesis. This theory posits that language acquisition starts with the onset of a critical period, but is "more gradual in offset, and [allows] for more variations in end-state attainment …" (Birdsong 2014: 2). Behney et al. (2013: 435) similarly explain that this hypothesis "predicts sensitivity, but not absolute drop-offs, such that a learning decline might be gradual."

Regardless of the ongoing debate on the boundaries of a critical period, "[t]here is abundant evidence that individuals generally do not achieve a native-like accent in an L2 unless they are exposed to it at an early age" (Behney et al. 2013: 436). Most studies have examined the effects of age differences on phonology and pronunciation (Hummel 2014: 175). In addition, it has been demonstrated that age influences L2 grammar acquisition. Patkowski (1980) hypothesized that the grammars of second languages can only be mastered if learners start to acquire these before the age of 15. In order to test this theory, he examined the syntactic proficiency levels of English in 67 non-native and 15 native Americans. The informants had started learning the language at various ages, but had all lived in America for at least five years. Patkowski (1980) "found that learners who had entered the United States before the age of 15 were … more syntactically proficient than learners who had entered after 15" (Ellis 2008: 23). Thus, he showed that adult language learners had not acquired the

language as well as their younger counterparts (Patkowski 1980 in Ellis 2008: 22-23).

However, several researchers have shown that adult language learners may still attain nativelike proficiency after the critical period has ended (Birdsong 1992; White and Genesee 1996; Bongaerts 1999; all in de Bot et al. 2005: 67). Lightbown and Spada (2006: 69) also point out that "there are countless anecdotes about older learners (adolescents and adults) who achieve excellence in the second language." It may therefore be concluded that determining the boundaries of a critical period is rather complex.

Although there is no doubt that "something like a critical period, or at least a sensitive period" does exists, it must be stressed that there are additional factors which are closely related to age that explain the variety of outcomes in second language acquisition (Behney et al. 2013: 440). In general, four categories can be distinguished. First, neurological reasons explain why older learners tend to show more difficulties when learning a second language than young children (Behney et al. 2013: 441). In his Critical Period Hypothesis, Lenneberg (1967) assumed that the critical period ends together with the lateralization process of the brain. Once this process is ended, the acquisition of new languages becomes increasingly more difficult (Lenneberg 1967 in de Bot et al. 2005: 67). Furthermore, cognitive factors also account for differences between child and adult learners. As suggested by Lightbown and Spada (2006: 68), "older learners may depend on more general learning abilities – the same ones they might use to learn other kinds of skills or information." They simply have "greater cognitive abilities than children" and may by consequence learn languages at faster rates (Behney et al. 2013: 441). This has been corroborated in a study by Snow and Hoefnagel-Höhle (1978) (Hummel 2014: 176). In addition, language acquisition can be influenced by the amount of language contact and input learners experience. Finally, age differences are also related to socio-psychological factors. Contrary to children, adult learners may deal with more shame and anxiety when acquiring a second language (Lightbown & Spada 2006: 68).

2.2.2.2 Gender

According to Romaine (2003: 428), to date there has been little interest in the investigation of gender effects on second language acquisition, "although gender has been of increasing concern within sociolinguistics." Most researchers agree that women tend to be better second language learners than men because women "are likely to be more open to new linguistic forms in the L2 input and … will be more likely to rid themselves of interlanguage forms that deviate from target-language norms" (Ellis 2008: 313). There are several studies which have supported this hypothesis. Nyikos (1990) showed that males did worse than females in a German memorization vocabulary task. Boyle (1987) examined the English proficiency of Chinese university students and found that women outperformed men in every respect. Similarly, Burstall (1975) demonstrated that girls in a large sample of English primary school children generally learned French better than boys (all in Ellis 2008: 313).

However, some researchers have argued that the dominance of this female learning success in second language acquisition might be overrated. In fact, men can also be good language learners, and in some cases even outperform their female counterparts. Boyle (1987), for example, showed that males are better at comprehending listening vocabulary. In addition, the general belief that women have more positive attitudes and motivations to learn languages may be countered. As Ludwig (1983) demonstrated, male learners could be motivated more than their female peers. Furthermore, it must be remarked that a small number of studies have not found any significant differences between male and female language performances. An example of this may be found in the study conducted by Bacon (1992) (all in Ellis 2008: 314).

The inconclusive findings on gender differentiation in second language acquisition can be explained by the fact that not all researchers made a clear distinction between the terms *sex* and *gender* (Ellis 2008: 313). Gender is "a complex system of social relations and discursive

practices differentially constructed in local contexts" and should therefore at all times be separated from the biological perspective on the differences between males and females (Norton & Pavlenko 2004 as cited in Ellis 2008: 313). Ehrlich (2004) also adds that "gender is not an attribute of the individual but rather something that emerges out of the social practices that men and women engage in" (Ellis 2008: 314). In other words, whether males or females are the more successful learners strongly depends on the social contexts in which the language is acquired.

In this respect, it is interesting to consider Pavlenko's (2004) findings on language learning in settings of formal instruction. This researcher challenged the general assumption that males are better language learners in educational contexts by arguing "that both boys and girls can be interactionally disenfranchised in different classroom contexts" (Ellis 2008: 315). Although learners individually develop motivations and opinions on the basis of gender, they might all be confronted with a different perspective on gender when acquiring a second language. By consequence, every language learner, whether it be a man or a woman, may have to reconstruct his or her personal gender identity (Pavlenko 2004 in Ellis 2008: 315).

2.2.2.3 Social class

Next to age and gender, social class also plays an important role in second language acquisition. According to Ellis (2008: 316), "[a]n individual's social class is typically determined by means of a composite measure that takes account of income, level of education, and occupation." Hence, social class could be considered an equivalent of socioeconomic status, which respectively is also defined by education, occupation, and income (Hoff 2006: 60). Furthermore, Ellis (2008: 316) remarks that researchers tend to make the distinction between four types of social class: lower class, working class, lower middle

class, and upper middle class. Occasionally, more detailed categorizations are made.

The effects of social class on second language acquisition have been examined by several researchers. Most studies show that middle class children tend to be educationally more successful than those belonging to the lower- and working classes. Skehan (1990), for example, found that the socioeconomic status of 23 secondary school children in Bristol had a significant impact on their foreign language achievement in French and German, as well as on their language learning aptitudes. Results also indicated that the lower middle class children were outperformed by their higher middle class peers (Skehan 1990 in Ellis 2008: 317). Burstall (1975), and Olshtain, Shohamy, Kemp, and Chatow (1990) obtained similar findings. However, socioeconomic disadvantage does not always affect language learning, as shown in the study by Holobrow, Genesee, and Lambert (1991) (all in Ellis 2008: 316-317).

Furthermore, Milroy and Milroy (1997) argue that the relation between social class and second language achievement should be understood from a wider perspective (Ellis 2008: 317). They warn that

> there may be many aspects of social behavior that are not accounted for in a single social variable, and also underlying social factors that are subsumed under a label such as 'social class' (such as educational level) may sometimes yield more precise correlations than the main composite variable. (Milroy & Milroy 1997 as cited in Ellis 2008: 317).

Researchers have for example shown that maternal education in itself has a significant influence on both first and second language acquisition (Hoff 2006: 60; Paradis 2011: 230). Elaborating on Milroy and Milroy (1997), Ellis (2008: 317) states that "it is the particular experiences of the world which members of the different social classes are likely to have that are important for acquisition." Social class may thus entail much more than education, occupation or income alone (Block 2012: 193).

It should however be remarked that there has been little research on the specific influences of social class on second language acquisition (Block 2012: 193-195). This may be explained by the fact that social class has ceased to be "a straightforward construct" (Ellis 2008: 318). As argued by Rampton (2006), "economic, social, and cultural changes have made it less easy to provide water-tight definitions of what constitutes working class and middle class" (Ellis 2008: 318). Moreover, due to these changes people's social class may vary over time. According to Ellis (2008: 318), "[i]t is possible, then, that class is [nowadays] less important for success in language learning than it has been in the past."

2.2.2.4 Input and intake

The distinction between input and intake is related to the notion of consciousness mentioned earlier. According to de Bot et al. (2005: 8), input "is everything around us we may perceive with our senses." More specifically, it can be defined as "that which is available to the learner" but is "not integrated into the current learner-language system" (Behney et al. 2013: 340). Corder (1967) argues that input must therefore be distinguished from intake, which respectively refers to that which is "actually internalized … by the learner" (Behney et al. 2013: 340). Schmidt (1990) further adds that intake is "that part of the input that the learner notices" (Schmidt 1990 as cited in Hummel 2014: 81). This description of intake also supports his Noticing Hypothesis, which states that only "what learners notice in the input is what becomes intake for learning" (Schmidt 1990 as cited in Hummel 2014: 82). The importance of noticing is not only stressed by Schmidt (1990), but also by de Bot et al. (2005). They claim that "[f]or intake, at least some minimal level of processing needs to take place. There must be some awareness of new information that is relevant for the learning system to incorporate" (de Bot et al. 2005: 8-9). In sum, intake primarily depends on whether

the input is noticed or not.

Even though intake occurs when the input is noticed, this does not necessarily imply that all input is used for language acquisition (de Bot et al. 2005: 8). Schmidt and Frota (1986) argue that learners consciously have to compare what "they have observed in the input and what they themselves are typically producing on the basis of their current interlanguage system" (Ellis 1994: 361). This process is also referred to as "noticing the gap". In other words, the information learners are exposed to does not only strengthen their previously acquired knowledge, but also fills the gaps they have already noticed within that knowledge (de Bot et al. 2005: 8-9).

The importance of input for second language acquisition is particularly emphasized in Krashen's Input Hypothesis (1982). This second hypothesis of the Monitor Model principally tries to explain how we acquire language (Krashen 1982: 20). The theory focuses on the acquisition rather than on the learning of languages, although it can be applied to both first and second language acquisition (Krashen 1982: 21-24).

Contrary to general assumptions, Krashen (1982) hypothesizes that acquiring linguistic structures is a result of, and not the basis of acquiring the meaning of language through input. He claims that in order for acquirers to move from their current level of linguistic competence (i) to the next ($i + 1$), they must first understand the input ($i + 1$) they are provided with, "where 'understand' means that the acquirer is focused on the meaning and not the form of the message" (Krashen 1982: 21). Krashen (1982) stresses that, in this process, input is in itself only profitable if it "is slightly ahead of a learner's current state of grammatical knowledge" (Behney et al. 2013: 131). In other words, it needs to contain an $i + 1$ structure at its core. However, when the input is understood and there is enough of it, $i + 1$ will be spontaneously provided. By consequence, optimal input does not necessarily need to aim at $i + 1$ (Krashen 1982: 21).

The last part of Krashen's Input Hypothesis posits that the ability to produce a language cannot be learned. It rather develops on its own as the acquisition process continues, although it may be stimulated by a sufficient amount of input (Krashen 1982: 22). For Krashen (1982: 22) this explains why learners tend to make many mistakes in the beginning stages of the acquisition process, but later become very accurate in their speech performances.

Furthermore, Krashen (1982) is convinced that, similar to L1 input, L2 input is more comprehensible when modified. He distinguishes three types of modified input (Krashen 1982: 24). First, there is foreigner-talk, which usually "results from the modifications native speakers make with less than fully competent speakers of their language" (Krashen 1982: 24). Then, foreigner-talk used for instructional and explanatory purposes in second language classroom settings is labelled as teacher-talk. However, it should be distinguished from interlanguage talk, which is "the language that learners receive as input when addressed by other [second language] learners" (Ellis 2008: 220). As stressed by Krashen (1982: 25), these three types of modified input are all equally important to the second language learner.

Just as the Monitor Theory, the Input Hypothesis has been subjected to the criticism that it is based on rather vague conceptualizations of input and consequently cannot be falsified (Behney et al. 2013: 132; Ellis 2008: 251-252). According to Ellis (2008: 251), one of the major points of discussion is "the claim that comprehensible input is *necessary* for acquisition."

Finally, it is important to mention the Frequency Hypothesis by Hatch and Wagner Gough (1976), who claim that "the frequency with which different linguistic items occur in the input" affects the order of second language acquisition (Rod Ellis 2008: 241). Although studies have led to contrasting results, there is sufficient evidence that this hypothesis holds true (Rod Ellis 2008: 243-246). Palmberg (1987), for example, demonstrated that the frequency with which lexical items appeared in the textbooks of students learning English had

a positive effect on their vocabulary development (Palmberg 1987 in Rod Ellis 2008: 243). Nick Ellis (2002) is one of the leading supporters of the Frequency Hypothesis. He strongly believes that "[f]requency is … the key determinant of acquisition because 'rules' of language, at all levels of analysis (from phonology, through syntax, to discourse), are structural regularities that emerge from learners' lifetime analysis of the distributional characteristics of the language input" (Nick Ellis 2002: 144). However, it must be remarked that "input frequency alone cannot explain L2 acquisition" (Rod Ellis 2008: 246). There are several other factors, such as the learner's native language, which need to be taken into account (Rod Ellis 2008: 246).

2.2.2.5 Language contact

Language contact, or linguistic stimulation, is another crucial factor in second language acquisition. It seems only logical that the more contact learners have with the L2, the better, and perhaps the faster they will learn it. Even though learners mostly enter in contact with second languages in educational settings, they might encounter them in various other ways as well. When visiting family or friends, or travelling abroad, learners may hear people using other languages than their own. Furthermore, they may develop linguistic knowledge by reading books or listening to music. Moreover, learners nowadays more easily come into contact with second and foreign languages through other media such as films and television programmes, computer games, and the internet.

There is a wide variety of studies which have confirmed the positive effects of language contact on second language acquisition. Berns et al. (2007) carried out an international study in which they examined the effects of mass media on English language acquisition. The informants were aged between 12 and 18, and were recruited from different

schools in Belgium, France, Germany, and the Netherlands. They were requested to complete a questionnaire about their contact with English (in and outside of school contexts), as well as their English proficiency level, family background, and language attitudes. To test the participants' language proficiency, three measures were used: two self-assessment tasks and one vocabulary test (Berns et al. 2007: 44-49). Results indicated a significant correlation between the informants' English proficiency levels and language contact through reading books and newspapers, listening to English music, watching television programmes and films, and going on holidays. Especially listening to music and watching television proved to be highly influential (Berns et al. 2007: 72, 85). As such, Berns et al. (2007) demonstrated that various forms of language contact may indeed foster the acquisition of second languages.

In another study, Kuppens (2007) investigated the influence of media on the productive English vocabulary development of 374 Flemish children. All the informants were in the last year of primary school, and had therefore not yet received any formal instruction of English. Kuppens (2007) used a questionnaire in order to assess how various media were used by these children. In addition, an oral vocabulary test examined the participants' vocabulary knowledge (Kuppens 2007: 327-329). Results showed that watching subtitled English television programmes and films had a positive effect on students' English vocabulary acquisition. However, this only applied for the group that watched television most. Kuppens (2007: 330) therefore argued that children have to watch English television very often before vocabulary learning can take place. Furthermore, she found that English music led to the acquisition of difficult words, but admitted that music is merely influential when heard every day (Kuppens 2007: 332-333). As for English video games, only male participants were affected in the types of words they learned (Kuppens 2007: 332-333). Nevertheless, when summarizing her results, Kuppens (2007: 334) came to the conclusion that the use of media most certainly has a positive influence on the English lexical skills of Flemish children.

Other examples of studies on the specific effects of subtitling on vocabulary acquisition are those by Koolstra and Beentjes (1999), Ghia (2012), and d'Ydewalle and Van de Poel (1999). Van Lommel, Laenen, and d'Ydewalle (2006: 254-255) further examined the implications of watching subtitled television programmes for foreign grammar acquisition, but could not find any significant effects.

In sum, the above studies demonstrate that language contact has a considerable effect on the acquisition of second languages. Nevertheless, it is important to keep in mind that it does not in itself account for language learning.

2.2.2.6 Affect

Affect is a socio-cognitive construct which may account for both failure and success in language learning. According to Krashen (1982: 31), there are three "affective variables" to be distinguished: motivation, self-confidence, and anxiety. When learners are highly motivated, they usually acquire second languages more easily than others. However, also with a lowered fear level or a considerable deal of self-confidence and self-esteem, they "tend to do better in second language acquisition" (Krashen 1982: 31).

In his Monitor Model, Krashen (1982) included a specific hypothesis on the relation between affect and second language acquisition. The Affective Filter Hypothesis (1982) claims that learners have an Affective Filter which acts upon their language acquisition process. When the filter is up, the input needed for language learning is stopped from getting to the acquisition device, and will therefore not be acquired. However, "[i]f, … the filter is down, or low, and if the input is comprehensible, the input will reach the acquisition device, and acquisition will take place" (Behney et al. 2013: 133). Krashen (1982) maintains that "[t]hose whose attitudes are not optimal for SLA will not only tend to seek less input, but …

will also have a high or strong Affective Filter" (Behney et al. 2013: 133). Even if the input is comprehensible for the learner, a high Affective Filter may still "prevent input from being used for language acquisition" (Krashen 1982: 32).

In contrast, a low Affective Filter "… can play a facilitative role in successful second language acquisition" (de Bot et al. 2005: 36). Learners with more positive attitudes and motivations, lower fear levels, and enough self-confidence usually engage with more input and have lower Affective Filters. As such, input can more easily pass through and be acquired (Behney et al. 2013: 133). Figure 3 more clearly visualizes how the Affective Filter influences the acquisition process.

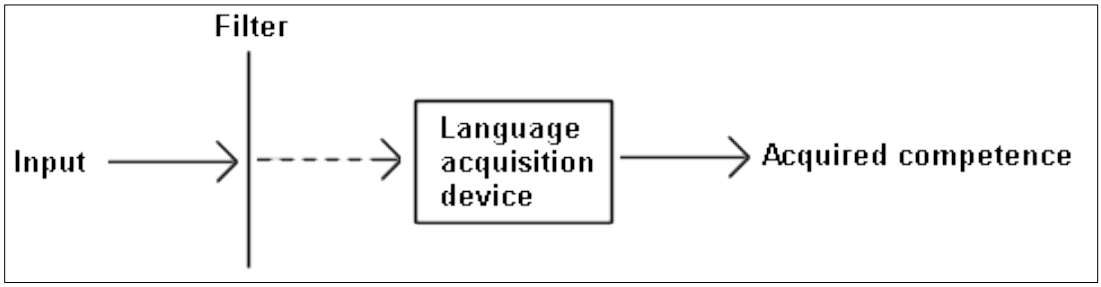

Figure 3. Krashen's Affective Filter Hypothesis (Source: http://teachingdevelopment.edublogs.org/files/2014/06/Affective-filter-19z9682.jpg)

In Krashen's view (1982), the Affective Filter Hypothesis explains why some people are better at learning second languages than others (Behney et al. 2013: 133). Due to their high Affective Filters, some learners cannot achieve nativelike proficiency in a second language, even if they are provided with the sufficient amount of comprehensible input (Krashen 1982: 32). However, this does not apply to children, "because the Affective Filter is not something children have [or] use" (Behney et al. 2013: 133). Thus, the Affective Filter can also explain the differences between child and adult second language learning (Behney et al. 2013: 133).

Finally, it should be remarked that "even though positive affect is necessary, it is not

sufficient on its own for acquisition to take place" (de Bot et al. 2005: 36). Krashen (1982: 21) for example stated that apart from a low Affective Filter, also a substantial amount of comprehensible input is needed for acquisition to take place.

2.2.2.7 Anxiety

With respect to the foregoing discussion of the Affective Filter Hypothesis, it is appropriate to elaborate on the implications of anxiety for second language acquisition. In SLA research, there are different perspectives on the relation between the two. Either anxiety is considered to influence language learning, or it is regarded as its cause (Ellis 2008: 693-695).

In line with the first position, most researchers have argued that learner anxiety has a negative effect on language learning. MacIntyre and Gardner (1994a), for example, demonstrated that anxiety may negatively affect the process of learning. Their informants were introduced to an anxiety-provoking video camera immediately before three stages of an L2 vocabulary class (input, processing, and output stages). Results showed that anxiety raised substantially after the camera was introduced in each of these three stages, and that it affected the participants' general cognitive activity (MacIntyre & Gardner 1994a in Ellis 2008: 696). Hence, the researchers proved that "anxiety-arousal can lead to poor L2 performance" (MacIntyre 2002: 65).

Although anxiety has been proven to have a negative influence on second language acquisition, it may also involve a stimulating function (Lightbown & Spada 2006: 61). As remarked by Eysenck (1979), anxiety often enhances language learning because it leads to increased effort (Eysenck 1979 in Ellis 2008: 694). In the study by MacIntyre and Gardner (1994a) mentioned above, it was also shown that during the recovery from initial anxiety, learners became more motivated and made more efforts to attend class (MacIntyre & Gardner

1994a in MacIntyre 2002: 65). These facilitating effects of anxiety on language learning have been confirmed by Chastain (1975) as well. He found that anxious university students obtained higher marks than their more relaxed counterparts (Chastain 1975 in Ellis 2008: 694). It could therefore be argued that anxiety is closely related to learner motivation. Lightbown and Spada (2006: 61) give the example of students experiencing fear before a test. In this context, anxiety may provide the sufficient amount of motivation not to fail. As MacIntyre (2002: 64) suggests, anxiety and motivation might even affect each other reciprocally.

According to a second perspective on the relation between learner anxiety and language acquisition, anxiety results from learning difficulties rather than being their cause (Ellis 2008: 693-695). Sparks and Ganschow (1991) explain that it may be "an unfortunate byproduct of poor performance" (MacIntyre 2002: 65). Among the few researchers who have examined this, MacIntyre and Gardner (1994b) demonstrated that low measures in L2 performance were correlated with higher amounts of fear (MacIntyre & Gardner 1994b in MacIntyre 2002: 65). It would therefore be a logical assumption that anxiety increases when language learners become aware of their low achievements or learning difficulties. However, as Ellis (2008: 695) and MacIntyre (2002: 64-65) seem to suggest, it remains rather difficult to determine to what extent anxiety can be the cause of poor language performance.

Furthermore, anxiety is closely related to self-confidence (Clément 1986 in MacIntyre 2002: 64). MacIntyre, Noels, and Clément (1997) showed that anxious learners are less confident about their language proficiency level, and therefore tend to underestimate their linguistic abilities. Relaxed learners, on the other hand, usually overestimate it (MacIntyre et al. 1997 in MacIntyre 2002: 67). Bailey (1983) demonstrated that learners may become less anxious, and thus more confident, when they realize that they are gaining more language proficiency (Bailey 1983 in Ellis 2008: 692). Thus, anxiety and self-confidence can influence

each other and simultaneously affect language acquisition. MacIntyre et al. (1997) explain that anxious and non-confident learners "tend to withdraw from situations that might increase their proficiency" (MacIntyre 2002: 67). Paradoxically, they will then not be able to overcome their fears and possibly further abstain from these learning contexts (MacIntyre et al. 1997 in MacIntyre 2002: 67). It may therefore be generally concluded that anxious learners do not acquire language as quickly as relaxed learners do.

Ultimately, anxiety is a dynamic construct which may vary according to the specific contexts in which it surfaces (Lightbown & Spada 2006: 61). Moreover, it is experienced differently by every language learner, and by consequence affects learners in different degrees, "depending in part on other individual difference factors such as their motivational orientation and personality" (Ellis 2008: 697).

2.2.2.8 Motivation and attitude

As mentioned earlier, Krashen (1982: 31) claimed that not only anxiety but also learner motivation and attitude account for different outcomes in the acquisition of second languages. The effects of these two socio-psychological factors on SLA have been confirmed by other researchers as well. In general, it is believed that "a high motivation and a positive attitude towards a second language and its community help second-language learning" (de Bot et al. 2005: 72). Even more, L2 learners with positive motivations are expected to be more successful than others, because they are commonly more willing to engage with the language they are acquiring (Lightbown & Spada 2006: 63).

Motivation is commonly "thought of as the inclination to put in effort to achieve a desired goal – namely acquisition of the L2" (Siegel 2003: 185). Based on the motivation theory established by Gardner and Lambert (1972), researchers generally distinguish between

integrative and instrumental motivation (de Bot et al. 2005: 72). A learner's motivation is integrative if it concerns the wish to engage with a second language and its culture in order to become integrated in the L2-speaking community (de Bot et al. 2005: 72; Dörnyei 2003: 5; Siegel 2003: 185). According to Dörnyei (2003: 5), integrative motivation relates to

> a positive interpersonal/affective disposition toward the L2 group and the desire to interact with and even become similar to valued members of that community. It implies an openness to, and respect for, other cultural groups and ways of life; in the extreme, it might involve complete identification with the community.

In contrast, instrumental motivation "derives from a perception of the concrete benefits that learning the L2 might bring about" (Ellis 2008: 682). Lightbown and Spada (2006: 63) explain that "[i]f learners need to speak the second language in a wide range of social situations or to fulfil professional ambitions, they will perceive the communicative value of the second language and will therefore be motivated to acquire proficiency in it." In other words, learners are instrumentally motivated if they can profit from the direct advantages of acquiring a second language. Thus, this kind of motivation is primarily connected with the learner's utilitarian perspective on second language acquisition.

Most researchers are convinced that integrative motivation is the most important cause of successful L2 acquisition (Siegel 2003: 185). However, instrumental motivation has proven to be much more influential in contexts where learners cannot directly get in contact with the language they wish to acquire (Ellis 2008: 683). Hence, Ellis (2008: 682) argues that integrative and instrumental motivation should be regarded as complementary rather than as oppositional. This is also suggested by de Bot et al. (2005: 73), who stress that it is possible for learners to be intrinsically and instrumentally motivated to learn a language at the same time.

Furthermore, motivation can also be the result of language acquisition. Resultative

motivation is particularly increased when the learner has been exposed to positive learning experiences (Ellis 1994: 514-515). In addition, language learning can lead to heightened intrinsic motivation. This type of motivation "… involves the arousal and maintenance of curiosity and can ebb and flow as a result of such factors as learners' particular interests and the extent to which they feel personally involved in learning activities" (Ellis 1997: 76).

In Dörnyei's view (2003: 14-16), there are still many other types of motivation to be explored, such as task motivation, and social motivation. He claims that motivation is a construct with a "*dynamic character* and *temporal variation*" (Dörnyei 2003: 17). Learners may have different kinds and degrees of motivation as their language process continues. Ellis (1997: 76) similarly points out that "motivation is dynamic in nature; it is not something that a learner has or does not have but rather something that varies from one moment to the next depending on the learning context or task."

Apart from motivation, learner attitude can also have a strong impact on language learning processes. According to Ellis (1994: 198), "[l]earners manifest different attitudes towards (1) the target language, (2) target language speakers, (3) the target-language culture, (4) the social value of learning the L2, (5) particular uses of the target language, and (6) themselves as members of their own culture." Researchers generally agree that positive attitudes stimulate language learning (Ellis 1994: 198-200). However, Lightbown and Spada (2006: 63) point out that "it is difficult to know whether positive attitudes produce successful learning or successful learning engenders positive attitudes, or whether both are affected by other factors." In this respect, Ellis (1994: 198-199) argues that there is a possibility that the relation between attitudes and language learning is bidirectional. He claims that the attitudes which influence second language proficiency may themselves be affected by it (Ellis 1994: 198-199). If language learners with positive attitudes experience success in learning, these

attitudes will consequently be strengthened. Similarly, negative attitudes may be reinforced if they lead to unsuccessful learning (Ellis 1994: 198-199).

2.2.2.9 Intelligence and aptitude

Next to the above-mentioned factors, intelligence and aptitude also play an important part in second language acquisition. Ellis (2008: 649) remarks that these notions are closely related to one another since they both refer to learners' cognitive capacities in language learning. Nevertheless, aptitude and intelligence are usually defined as two independent cognitive constructs (de Bot et al. 2005: 70-71; Ellis 2008: 649-650).

According to Ellis (2008: 649), intelligence "is the general set of cognitive abilities involved in performing a wide range of learning tasks." Learners with high cognitive abilities may learn languages with less effort than their less intelligent peers. However, Cummins (1983) maintains that there is a fundamental difference between this "linguistic intelligence" and "general intelligence". The former is a specific ability employed for language learning, whereas the latter is the overall cognitive ability used in everyday life (Cummins 1983 in Ellis 2008: 649-650). In addition, Gardner (1993) claims that learners dispose of multiple intelligences which interact with each other and all may facilitate language learning in their own respect (Gardner 1993 in Lightbown & Spada 2006: 57). Lightbown and Spada (2006: 57) explain that these "includ[e] abilities in the areas of music, interpersonal relations, and athletics, as well as the verbal intelligence that is most often associated with success in school."

Aptitude "is believed to be in part related to general intelligence but also to be in part distinct" (Ellis 1997: 73). Behney et al. (2013: 444) define it as "one's potential for learning new knowledge or new skills. With regard to language aptitude, it refers to one's ability to

learn another language." They further add that language aptitude is of no importance in first language acquisition, at least not with respect to children with no cognitive disabilities (Behney et al. 2013: 444). Hence, it may be better described as "a person's inherent capability of second-language learning …" (de Bot et al. 2005: 69). Most researchers agree that language aptitude is an important distinguishing variable in second language acquisition (Behney et al. 2013: 444). According to Skehan (1989), it is even the most adequate factor to predict language learning success (Skehan 1989 in Behney et al. 2013: 444).

In addition, Carroll (1958), a pioneer in aptitude research, regards language aptitude as a combination of four components: "the ability to identify and remember sounds of the foreign language; the ability to recognise how words function grammatically in sentences; the ability to induce grammatical rules from language examples; and the ability to recognise and remember words and phrases" (de Bot et al. 2005: 69). These were respectively labelled as "phonemic coding ability", "grammatical sensitivity", "inductive language-learning ability", and "associative memory" (Ellis 2008: 654).

Skehan (1989) proposed to change Carroll's "standard 'four component' view of language aptitude" into a three-part model, in which grammatical sensitivity and inductive language-learning ability are combined into one component, called "language analytic ability" (Skehan 1989 as cited in Behney et al. 2013: 445). Moreover, he remarks that successful language learners may not be equally skilled in each of these abilities. The one may have a natural aptitude to memorize new vocabulary, whereas the other does not. Thus, he concludes that the different components of aptitude are to be considered as independent factors; and accordingly distinguishes eight learner types (Skehan 1989 in Behney et al. 2013: 445-446).

2.3 Second language vocabulary

After having neglected vocabulary for quite some time, researchers have come to recognize its importance for SLA (Behney et al. 2013: 194). As Lightbown and Spada argue (2006: 96), "we can communicate by using words that are not placed in the proper order, pronounced perfectly, or marked with the proper grammatical morphemes, but communication often breaks down if we do not use the correct word." According to Behney et al. (2013: 194), vocabulary should therefore be considered the most important component of second language acquisition.

Current research has particularly tried to determine what the knowing of words entails, and to examine how these words can be acquired (Ellis 2008: 99-100). First, the characteristics of vocabulary knowledge will be discussed. The interest in L2 vocabulary acquisition will be dealt with later.

2.3.1 Second language vocabulary knowledge

Defining second language vocabulary knowledge is a complex issue because there are various "types of knowledge an L2 learner can have about a particular word and words in general" (Behney et al. 2013: 196). Moreover, the knowledge second language learners have about vocabulary easily changes over time. Consequently, it is difficult to determine what it means to know a word. Researchers have tried to provide a theoretical framework to define vocabulary knowledge in its multifaceted character by making the distinction between receptive, productive, breadth, and depth vocabulary. Each of these will be discussed in their own respect. However, it is important to bear in mind that even though these distinctions exist, defining lexical knowledge remains a problematical issue (Ellis 2008: 99).

2.3.1.1 Receptive and productive vocabulary

A learner's receptive vocabulary is that which is recognized and understood when it is perceived while listening or reading. It is also referred to as passive vocabulary, because it "consists of items which can only be activated by external stimuli. That is, they are activated by hearing or seeing their forms, but not through associational links to other words" (Nation 2001: 25). In contrast, productive, or active vocabulary is the lexicon which is used actively when speaking or writing. As explained by Meara (1990), "[a]ctive vocabulary can be activated by other words, because it has many incoming and outgoing links with other words" (Nation 2001: 25).

By making this basic distinction between receptive and productive vocabularies, it becomes clear that they involve two different degrees of vocabulary knowledge. However, according to Laufer (1998: 257), there are three instead of two types of lexical knowledge to be separated from one another: passive, controlled active, and free active knowledge. Passive lexical knowledge entails the "understanding [of] the most frequent and core meaning of a word", controlled active vocabulary knowledge includes being able to produce words "when prompted by a task", and free active knowledge "has to do with the use of words at one's free will", that is, where specific prompts are not needed (Laufer 1998: 257). Laufer (1998: 257) states that especially controlled and free active vocabulary knowledge must be distinguished from one another, because second language learners might produce certain words either freely, or when they are forced to. This also ties in with Corson's (1995) conviction that vocabularies should be described by means of how they are used rather than according to the degree to which they are known (Nation 2001: 25).

Furthermore, it is important to stress that these different types of vocabulary knowledge are best "represented as a continuum, with the initial stage being recognition, and the final being production …" (Behney et al. 2013: 197). Although learners might only

recognize certain words in the early stages of the L2 acquisition process, they will undoubtedly be able to produce them as their language knowledge develops. Put differently, words may initially be part of a learner's receptive vocabulary knowledge and later pass on to the productive one.

Returning to the general dichotomy between receptive (passive) and productive (active) vocabulary knowledge, it must be remarked that "[second language learners] generally have a wider range of receptive vocabulary than productive vocabulary" (Behney et al. 2013: 197). This has been empirically proven by several studies. Laufer (1998), for example, demonstrated that 16 and 17 year old L2 learners had a significantly larger amount of receptive vocabulary knowledge. Moreover, she found that their passive vocabularies developed at a faster rate, and that the differences in vocabulary size increased with age (Laufer 1998 in Ellis 2008: 101). These findings were also confirmed by Waring (1997) (Nation 2001: 370).

2.3.1.2 Breadth and depth vocabulary

In SLA research, a second important distinction is made between the breadth and the depth of vocabulary knowledge. The breadth of lexical knowledge is associated with vocabulary size, because it "refers to the number of words learners know …" (Behney et al. 2013: 199). Ellis (2008: 101) points out that "the size of learners' lexicons increases over time and [by consequence] reflects the nature of the input to which they have been exposed." It should however be noted that the processes of vocabulary growth in L1 and L2 acquisition are not alike. "Whereas vocabulary growth is slow in L1 acquisition up to the first fifty words and then rapidly accelerates, it is initially much more rapid but soon decelerates in L2 acquisition" (Ellis 2008: 100). Furthermore, Lightbown and Spada (2006: 96) remark that it is rather

difficult to determine to what extent L2 vocabularies are known, because vocabulary may be counted differently. Take for example the words *write*, *writing*, and *writer*: either these can be counted as separate words, or they might all be regarded as derivations of only one single word and therefore be counted as such (Lightbown & Spada 2006: 96).

On the other hand, the depth of vocabulary knowledge is related to "the quality of the learner's vocabulary knowledge" (Read 1993 as cited in Zhong 2012: 24). Behney et al. (2013: 199) explain that this quality depends on whether the meaning of words, "semantic relationships with other words, syntactic patterning, collocations, pronunciation, and so forth" are known. It is however rather difficult to determine L2 learners' vocabulary depth. As argued by Laufer (1998: 256), "lexical knowledge is not an all-or-nothing phenomenon." It can range on a continuum according to how many aspects of words are known. Moreover, L2 vocabulary knowledge is deepened as the acquisition process continues. In this respect, the discussion of depth vocabulary leads back to the complexity of defining what "knowing a word" actually implies (Behney et al. 2013: 199).

2.3.2 Second language vocabulary acquisition

The following sections will focus on the specific characteristics of second language vocabulary learning. First, the developmental stages of the L2 acquisition process are discussed. Then, the research on incidental vocabulary acquisition will be reviewed. Moreover, the influence of one's mother tongue on second language learning is observed. Here, also the concept of transfer is described. Ultimately, some paragraphs will elaborate on Error Analysis.

2.3.2.1 Phases of vocabulary acquisition

According to Lightbown and Spada (2006: 97), "[t]he first step in [learning] a word may simply be to recognize that it is a word." Similarly, Zhong (2012: 27) points out that "[t]he recognition of the existence of the word in a language is considered as the first step in vocabulary acquisition." Put differently, only after word recognition, vocabulary learning can take place. In the initial stages of the L2 acquisition process, learners cannot yet fully comprehend the words they have acquired. However, as Zhong (2012: 26) argues, this vague understanding of word meanings later moves to a very accurate lexical comprehension.

In addition to Zhong (2012), also Henriksen (1999) discusses the process of L2 vocabulary development. In fact, she describes it in similar terms. She states that "[i]n the process of acquiring word meaning, the learner's knowledge of a certain lexical item moves from mere word recognition (i.e., acknowledging that the word exists in the target language) through different degrees of partial knowledge … toward precise comprehension" (Henriksen 1999: 311). However, she also stresses that lexical development involves more than simply learning the meanings of words (Henriksen 1999: 307-308). Second language learners should also come to understand the different existing connections between lexical items within "the complex structure of the mental lexicon or semantic network …" (Henriksen 1999: 308). The author refers to this aspect of vocabulary learning as "network building", and defines it as "the process of discovering the sense relations or [intentional] links between words—that is, fitting the words together in semantic networks" (Henriksen 1999: 308). The more connections between words and concepts the L2 learner makes, the better s/he will learn and understand new vocabulary. As such, second language learners can achieve the mastery of precise lexical comprehension (Henriksen 1999: 311).

From a more analytical perspective, the process of vocabulary development may also be described with respect to the stages or levels of L2 acquisition. In total, three approaches

can be distinguished (Ellis 2008: 101-102). First, several researchers have adopted a developmental approach. Paribakht and Wesche (1993), for example, claim that there are five stages of L2 vocabulary acquisition according to whether words can be recognized, defined, or produced. In the first stage, words are not at all familiar to the learner. In the second, they are, although their meaning is not yet understood. Moving to the third stage, synonyms or translations of these words can be given. In the fourth they can be produced with semantic appropriateness, and in the fifth also with grammatical accuracy (Paribakht & Wesche 1993 in Ellis 2008: 101).

In contrast to this developmental view on L2 vocabulary learning, researchers like Schmitt (1998) have argued for a dimensional approach in which "the level of mastery of various aspects of word knowledge" is delineated (Ellis 2008: 101-102). Although this approach does not suggest that one understanding of a word should be acquired before another, it does not deny such a possibility (Schmitt 1998 in Ellis 2008: 101-102).

A third descriptive approach was proposed by Jiang (2000). He advocates a psycholinguistic approach which focuses on "how a specific word evolves in the learning processes" (Jiang 2000 as cited in Ellis 2008: 102). In this approach, second language vocabulary is considered to be acquired according to three different stages. The first is called the "lexical association stage". In this stage words are merely recognized through associations with the L1 vocabulary. These associations are particularly based on the links between L2 words and their L1 translation equivalents. When learners start to transfer the L1 semantics and syntax of words to the conceptual meaning of L2 words, they then enter the "L1 lemma mediation stage". Only when the L2 words take on their own linguistic information and eradicate that of L1 words, the "ready-state stage" can be reached. However, Jiang (2000) assumes that few second language learners do (Jiang 2000 in Behney et al. 2013: 208).

Although there have been many descriptions of the process of L2 vocabulary

acquisition, researchers have not yet agreed on what the terminal stage of vocabulary learning entails (Ellis 2008: 99). The discussion seems again to be based on the question of what it means to know a word. As mentioned earlier, vocabulary acquisition is a "cumulative activity" in which various kinds of information about words can be acquired (Ellis 2008: 100). Hence, it is difficult to determine at what stage vocabulary is sufficiently learned. Moreover, "vocabulary, in contrast to grammar, constitutes an open system …" which may continuously be developed (Ellis 2008: 99).

2.3.2.2 Incidental vocabulary acquisition

In the field of second language vocabulary acquisition, incidental learning refers to the process in which "learners are focused on comprehending meaning rather than on the explicit goal of learning new words" (Paribakht & Wesche 1999 as cited in Behney et al. 2013: 209). Put differently, it is a "by-product of something else …", such as reading or listening activities (Behney et al. 2013: 209). According to Nation (2001: 232), context is the most important source of L2 incidental vocabulary acquisition. He argues that apart from word meaning and form "there are many other kinds of information that can be learned from context that are important in the receptive and productive use of [a] word" (Nation 2001: 240). Some examples are pronunciation, nuance of meaning, and syntax (Nation 2001: 240).

Many researchers have examined incidental vocabulary acquisition by means of reading (Behney et al. 2013: 209). For example, Pitts, White, and Krashen (1989) investigated how much vocabulary could be incidentally acquired by ESL learners when reading two chapters of Anthony Burgess's *A Clockwork Orange*. Results indicated that reading significantly affected the learners' vocabulary development (Pitts et al. 1989 in Hulstijn 2003: 363). Hence, Pitts et al. (1989) confirmed that "L2 learners can acquire vocabulary by

reading" (Hulstijn 2003: 363). In a wide variety of other studies, similar conclusions have been drawn, for which there is now little doubt that "reading is an important potential source of vocabulary development for second language learners …" (Lightbown & Spada 2006: 100).

However, researchers like Hulstijn (2003) and Nation (2001) remark that second language learners usually do not acquire much new vocabulary by normal reading. Only a small number of new words encountered are understood and truly learned. Others might be understood correctly but not learned, understood incorrectly, or simply ignored (Nation 2001: 237). Therefore, these researchers argue that only through extensive reading the meaning of words may be completely acquired (Hulstijn 2003: 362; Nation 2001: 237-238). Particularly Nation (2001: 238) stresses that "[s]mall gains [solely] become large gains if learners do large quantities of reading. If learners read thousands or millions of running words per year, then considerable vocabulary learning is possible."

In addition, it should be noted that reading does not automatically, nor directly lead to incidental vocabulary learning. As mentioned earlier, second language vocabulary acquisition is an accumulative process in which the comprehension of words may develop over time (Ellis 2008: 100). Learners may need to encounter new words several times before they can fully acquire them. Rott (1999), for example, showed that the vocabulary growth of her participants was only affected after two times of exposure through reading (Rott 1999 in Behney et al. 2013: 209). Put differently, the frequency with which new words are encountered may facilitate the process of L2 vocabulary acquisition (Lightbown & Spada 2006: 98). Furthermore, it can be argued that "words are likely to be remembered better if there was some difficulty in interpreting them" (Nation 2001: 239). It can therefore be concluded that "[i]ncidental learning is not entirely 'incidental', as the learner must pay at least some attention to individual words" (Huckin & Coady 1999 as cited in Ellis 2008: 448).

2.3.2.3 Influence of the L1 on L2 vocabulary acquisition

Researchers have argued that the influence of a speaker's mother tongue on second language acquisition should not be underestimated. Behney et al. (2013: 79) state that "in an L2 learning situation, learners rely extensively on their native language." Similarly, Ellis (2008: 349) points out that "… the learner's existing linguistic knowledge influences the course of L2 development."

The process in which native language knowledge is projected onto the second language is usually called *language transfer*. As explained by Ellis (2008: 350-351), this concept cannot easily be defined. In his opinion, "[l]anguage transfer refers to any instance of learner data where a statistically significant correlation (or probability-based relation) is shown to exist between some feature of the target language and any other language that has been previously acquired" (Ellis 2008: 351). Like Behney et al. (2013: 83), he further adds that transfer is often alluded to in behaviourist theories which claim that the prior learning of a particular task affects the subsequent learning of another (Ellis 2008: 349).

In general, two types of language transfer can be distinguished: positive and negative transfer. Behney et al. (2013: 84) stress that these terms do not refer to "two distinct cognitive processes" but to "whether transfer results in something correct or something incorrect." Positive transfer, or facilitation, is defined as "[t]he use of the first language (or other languages known) in a second-language context, when the resulting second-language form is correct" (Behney et al. 2013: 529). In contrast, negative transfer, or interference, occurs when the transfer of the first language results in an incorrect L2 form (Behney et al. 2013: 526). Moreover, negative transfer entails either retroactive or proactive inhibition. The former implies that the "learning acts backwards on previously learned material, causing someone to forget" (Behney et al. 2013: 84). Hence, it can be regarded as an instance of language loss. On the other hand, proactive inhibition takes place when "a series of already learned responses

tends to appear in situations where a new set is required" (Behney et al. 2013: 84).

It should be noted that not all researchers acknowledge the importance of language transfer for second language acquisition. Inspired by Newmark (1971), Krashen and Terrell (1983: 41) claim that transfer is nothing but the simple "result of 'falling back' on the first language when we lack a rule in our second language." They argue that second language acquirers who have not yet learned a certain L2 rule cannot do other than use previously acquired L1 rules when needed (Krashen & Terrell 1983: 41). To them, language transfer is a mere consequence of linguistic ignorance (Krashen & Terrell 1983: 41).

Whenever second language learners produce L2 sentences using the rules of the first language, they rely on their Monitors as to avoid making errors. This way of producing sentences is referred to by Krashen and Terrell (1983: 41) as the "L1 plus Monitor Mode", and may have both advantages and disadvantages. Language acquirers are advantaged by using L1 rules because it enables them to communicate in the target language when L2 rules have not yet been acquired. Thus, they can engage more in conversation and consequently also with more comprehensible input to acquire that language. Nonetheless, falling back on the first language also causes them to make errors, because L1 and L2 rules are not always alike. Even though the Monitor may repair some of these errors, "[i]t will not eradicate the first language rule …" (Krashen & Terrell 1983: 42). In other words, first language interference will continue to occur as long as the rules of the second language have not been fully acquired by the learner (Krashen & Terrell 1983: 41-42).

When it comes to second language vocabulary acquisition, many researchers are convinced that first language vocabulary is often transferred to that of the second language. Singleton (1999) claims that "L1 and L2 lexis are separately stored, but that the two systems are in communication with each other …" (Singleton 1999 as cited in Behney et al. 2013: 207). This has also been confirmed by a plethora of empirical studies. Ringbom (1978), for

example, showed that the lexical errors made by Finnish and Swedish speakers acquiring English as a second language could particularly be ascribed to language transfer. Moreover, he demonstrated that the closer the relation between the L1 and L2 lexicons, the easier new L2 vocabulary was acquired (Ringbom 1978 in Ellis 2008: 369). Elaborating on Ringbom's (1978) study, Jarvis (2000) examined lexical acquisition in Swedish and Finnish L1 and L2 speakers by means of receptive and productive vocabulary tasks. In line with Ringbom (1978), he found that there were significant transfer effects (Jarvis 2000 in Ellis 2008: 369). Both researchers have thus shown that the L1 lexicon undoubtedly has an important influence on the acquisition of second language vocabulary.

2.3.2.4 Error Analysis

Error Analysis is a linguistic analysis which is based on the belief that second language errors are made due to the learner's mother tongue (de Bot et al. 2005: 34). As mentioned by Lightbown and Spada (2006: 80), "it [seeks] to discover and describe different kinds of errors in an effort to understand how learners process second language data." In other words, it tries to explain the ways in which second languages are learned (Corder 1967 in Ellis 2008: 45).

Since Error Analysis is primarily occupied with language learning errors, it is necessary to first distinguish errors from mistakes. Errors are systematic deviations which occur repeatedly due to the lack of competence (Ellis 2008: 48). Moreover, they are not usually noticed by the proper language learner. Behney et al. (2013: 91) argue that errors should not be ignored in SLA research, since they provide insight into the state of the L2 learner's language knowledge. Mistakes, on the other hand, are similar to casual slips of the tongue, as they appear "as a result of competing plans, memory limitations, and lack of automaticity" (Ellis 2008: 48). Thus, speakers may become aware of having made a mistake

and by consequence be able to correct it. Contrary to errors, they are not made systematically; they are merely "one-time-only events" (Behney et al. 2013: 91).

It is also important to more specifically define language errors, even though that is rather problematical. As Ellis (2008: 47-48) points out, there are different perspectives on what an error consists of depending on the criteria that are used. For example, utterances may be considered grammatically correct, but pragmatically wrong. In addition, it is not always easy to determine what the grammaticality of an utterance in itself entails (Ellis 2008: 47-48). Furthermore, grammatically correct utterances may be used in contexts in which native speakers would preferably not employ them (Ellis 2008: 49). Clearly, these issues make it hard for researchers to construct an appropriate definition of the term *error*. In his attempt, Lennon (1991) defined it as "[a] linguistic form or combination of forms which, in the same context and under similar conditions of production, would, in all likelihood, not be produced by the speaker's native speaker counterparts" (Lennon 1991 as cited in Ellis 2008: 49). Nevertheless, there are other possible definitions for the notion of error.

In the Error Analysis framework, a distinction can be made between two types of errors: interlingual and intralingual errors. Interlingual errors derive from the speaker's native language. They result from "the use of elements from one language while speaking another" (Richards 1971 as cited in Ellis 2008: 53). Therefore, they are also called *transfer errors*, or alluded to by the notion of interference (Ellis 2008: 53). As for intralingual errors, Behney et al. (2013: 92) explain that they are made "due to the language being learned, independent of the [native language]." Richards (1971) distinguishes a third type of errors, namely developmental errors (Richards 1971 in Ellis 2008: 53). These occur when the learner "attempts to build up hypotheses about the target language on the basis of limited experience" (Ellis 2008: 53). Although this threefold categorization of errors is often mentioned in the SLA discipline, Ellis (2008: 53) remarks that it is not supported by all researchers. Dulay and

Burt (1974), for example, state that it is sometimes impossible to assign errors to a specific category (Dulay & Burt 1974 in Behney et al. 2013: 96).

Error Analysis has undoubtedly renewed the value of error-making in second language learning (Behney et al. 2013: 91). This has particularly been reflected in the many studies on error evaluation (Ellis 2008: 60). However, the analysis has received some criticism as well. Researchers mostly argue that it can only partially explain differences in learner production (Behney et al. 2013: 99; Ellis 2008: 61). In addition, Error Analysis is rejected for neglecting the dynamic characteristic of acquisition processes. Thus, its very objective to explore how languages are learned, could be fundamentally undermined (Ellis 2008: 61).

2.4 Previous studies on the English of Flemish secondary school children prior to instruction

The last part of this chapter will take a closer look at three studies which similarly investigated the English knowledge of Flemish secondary school children prior to instruction. In two of these studies, participants have also been divided into various groups according to type of education. In order to fully understand the distinctions made, the structure of the Belgian education system will first be explained. Moreover, this brief discussion will be of use to understand the methodology of this study.

In the first two years of Flemish secondary education, called the first grade of secondary education, there is only a general division between A stream and B stream education, but from the third year onwards a broader distinction between four types of education is made: (1) ASO – general secondary education, (2) TSO – technical secondary education, (3) KSO – artistic secondary education, and (4) BSO – vocational secondary education. Students from A stream education can take any of these four educational directions when reaching the second grade, although they most often choose ASO or TSO education.

Students in B stream education are particularly prepared for vocational education. Hence, it is generally expected that they move on to this particular form of education after the first grade. However, within certain limits, B stream students can also register for any of the other types of education. In Flanders, A stream students are taught English from the second year of secondary education onwards in free subsidized (i.e., catholic) schools, and from the first year of secondary education onwards in state schools. For B stream students, English is not a school subject in the first grade. In the third year of vocational education, English is offered as an optional course. As such, across all education types, English is not taught to students in the first year of secondary education, with the exception of A stream students going to state schools.

Returning to the two studies on the English knowledge of Flemish adolescents across three different types of education, Caroline Lippens (2010) investigated to what extent extracurricular activities affected the acquisition of English in 145 Flemish children of 12 and 13 years old. These pupils were recruited from two catholic schools in Aalst, across three different types of education (A stream ASO, A stream TSO, and B stream). They were in the first year of secondary education and had not been taught any English before (Caroline Lippens 2010: 6). Lippens (2010) used a questionnaire to assess the children's attitudes towards English, as well as to examine how much daily contact with the English language they experienced. In addition, participants were asked to keep a diary for one week in which they had to write down how much they engaged with the English language during their personal extracurricular activities (Caroline Lippens 2010: 6, 34-36). Results indicated that all the participants generally had positive attitudes towards English (Caroline Lippens 2010: 138-143). Furthermore, Lippens (2010) found that watching English television programmes, listening to English music, and playing English video games had a significant effect on the children's acquisition of English (Caroline Lippens 2010: 138-143). Thus, she proved that

both language attitude and language contact are key factors in the English linguistic development of Flemish adolescents, regardless of what type of education they receive.

In addition to her sister's research, Charlotte Lippens (2010) examined the differences in the English productive vocabularies of the same children who participated in the first study. In order to investigate the participants' active knowledge of English, a written vocabulary test was constructed in which the participants were asked to "give the correct English words on the basis of translations or on the basis of pictures" (Charlotte Lippens 2010: 43). Lippens (2010) showed that the informants' productive vocabulary knowledge differed significantly according to type of education. The most substantial difference was that between the A stream ASO and TSO students on the one hand, and the B stream students on the other. Across the three groups, the ASO pupils obtained the highest scores, whereas the B stream students the lowest. The scores of the TSO students could be situated somewhat in between (Charlotte Lippens 2010: 127-128). According to Lippens (2010: 127-128), these results could be explained by the differences in amount of linguistic exposure to English, as well as the children's language attitudes and motivations. Based on her findings, Lippens (2010) then concluded that it can be assumed that Flemish children have at least some basic productive knowledge of English, although she stressed that the sizes of their lexicons may differ individually (Charlotte Lippens 2010: 127-128).

In a third study, De Jans (2013: 6, 85) investigated to what extent the use of popular media influenced the English productive vocabulary development of 118 Flemish children aged between 11 and 13. These children were in the first year of secondary ASO education and had not yet received formal instruction of English. As in the study by Caroline Lippens (2010), students were asked to keep a diary for one week, in which they were to write down in what ways they had come into contact with English in their natural environments. In addition, they were requested to complete a questionnaire about their exposure to English through

popular media (De Jans 2013: 6, 35-36, 85). Afterwards, the children's active lexical knowledge of English was measured by means of the Peabody Picture Vocabulary Test (Fourth Edition) (De Jans 2013: 6, 85). De Jans (2013: 85-86) found that the amount of time students spent surfing on the internet had a significant effect on their English productive vocabulary development. Having lived abroad in an English speaking country, watching English television programmes and films, reading English books, and playing English video games appeared to be influential factors as well, although this was not statistically confirmed (De Jans 2013: 85-86). As such, De Jans (2013: 85-86) concluded that the exposure to English via popular media may indeed positively affect the English productive vocabulary development of Flemish secondary school children, but most likely only to a minor extent.

The present study will merge those of the Lippens sisters (2010) and De Jans (2013) into one broader investigation on the English vocabulary knowledge of Flemish secondary school children prior to formal instruction. On the one hand, the vocabularies of these children will be compared with respect to the type of education they receive. On the other hand, also the effects of various types of language contact on the informants' lexical acquisition of English will be explored. Furthermore, this study will elaborate on those mentioned above by focusing on the receptive, rather than the productive vocabularies of these Flemish adolescents.

3. Methodology

3.1 Main objectives

During this research, three main objectives had to be met. To begin, participants had to be recruited from A stream ASO, A stream TSO, and B stream education. These informants needed to be registered at schools with equal levels of teaching in order to limit the possible effects of differences between these levels on their test performances. As such, the informants were recruited from schools offering A stream ASO, A stream TSO, or B stream education according to similar educational policies.

The second objective was to obtain parents' legal consent to test their children, as well as to gather more information on the families' socioeconomic backgrounds. Consequently, the schools which participated in this study were requested to distribute and recollect (1) a school letter in which parents were asked to complete the consent form which was included, and (2) the questionnaire about socioeconomic status (SES) which was attached to it.

Ultimately, the third goal was to measure the participants' English receptive vocabulary levels by means of the Peabody Picture Vocabulary Test (PPVT-IIII; Dunn & Dunn 2007). In addition, students were to complete a questionnaire about their exposure to English through various media.

3.2 Participants

The children in this study were aged between 12;2 and 14;2 years and were all in the first year of secondary education. They were recruited from five secondary schools located in Flanders. Forty ASO students belonged to two class groups from Sint Pietersinstituut Gent, a school which offers exclusively A stream ASO education to its pupils. The 67 TSO and 44 B stream

students were recruited from Instituut Sancta Maria Ruiselede, VTI Harelbeke, VTI Gullegem, and VTI Kortrijk. At Instituut Sancta Maria Ruiselede, children can receive A stream ASO, A stream TSO, or B stream education in the first and second grade only. At the other three schools, children can enter A stream TSO or B stream education in the first grade, and KSO, TSO, or BSO education in the second and third grade.

The students included in the final sample were selected on the basis of various conditions. Students whose parents had not given their legal consent to use their child's test results were to be excluded. Also those whose parents had not completed or handed in the SES questionnaire could not be taken into account. As a result, the data and test scores of 15 ASO students from Sint Pietersinstituut Gent, 3 TSO students from VTI Harelbeke, 4 B stream students from Instituut Sancta Maria Ruiselede, 3 B stream students from VTI Gullegem, and 4 B stream students from VTI Kortrijk could not be used for further statistical analyses.

Since this study aimed at investigating students' typical acquisition of English as a second language, native speakers of English and students with severe language impairments could not be included in the final sample either. As such, one pupil who claimed English to be his mother tongue was excluded. Three students frequently spoke English when communicating with their English speaking mothers, but given the fact that English was not their native language, they were still included in the sample. Five more other children stated to be native speakers of Cantonese, Mandarin, Arabic, Portuguese, and Polish; and one said to be a bilingual speaker of Dutch and French. These children were included as well.

Among the students with general and linguistic disorders, eleven had an attention deficit disorder, and two were autistic. In addition, eleven children had dyslexia, one dysphasia, and yet another dysorthography. Nevertheless, all these students were included in the study, since their disorders could not have negatively affected their test performances.

In total, only 110 out of the 151 children which initially participated in this research could be included in the final sample. Within this group, all 25 ASO students came from Sint Pietersinstituut Gent. As for the TSO students, 16 came from Instituut Sancta Maria Ruiselede, 23 from VTI Gullegem, 10 from VTI Kortrijk, and another 10 from VTI Harelbeke. Among the B stream students, 5 attended school at Instituut Sancta Maria Ruiselede, 5 at VTI Gullegem, 7 at VTI Kortrijk, and 9 at VTI Harelbeke. For further statistical analyses, this group was subdivided according to the students' gender (male, female) and socioeconomic status (SES; low, mid, high). Specific numbers for the subgroups can be found in table 1 below.

	Low SES	Mid SES	High SES	All participants
ASO				
Male	0	4	2	6
Female	0	12	7	19
TSO				
Male	17	28	0	45
Female	3	11	0	14
B stream				
Male	9	12	0	21
Female	3	2	0	5
All participants	32	69	9	110

Table 1. Division of the participants among all subgroups
Note. SES: socioeconomic status

3.3 Materials

3.3.1 School letter and SES questionnaire

Information on the students' socioeconomic backgrounds was collected by means of the SES questionnaire (see appendix A). This document had to be completed by the students' parents. By keeping the questionnaire limited to one page, they would be encouraged to answer every question and return the document before the deadline.

The SES questionnaire was attached to a school letter which informed parents that a university study would be performed at school, and that their child might be asked to participate (see appendix A). Parents were also urged to complete, sign, and return the consent form which was included. Their consent was needed to conduct this study in a legal way, because the participants were still underage at the time of testing. In addition, parents were requested to complete the attached SES questionnaire.

The school letters and SES questionnaires were distributed among all the first year students in every participating school. In total, 179 of the 252 documents were returned. At Sint Pietersinstituut Gent 77 out of 140 documents could be retrieved. Instituut Sancta Maria Ruiselede recollected the documents of 9 out of 10 B stream students and 17 out of 18 TSO students. At VTI Harelbeke all 9 B stream students and 14 of the 15 TSO students handed in the documents on time. Such was the case for 9 out of 11 B stream students and 22 out of 23 TSO students from VTI Gullegem, and for 12 out of 15 B stream students and 10 out of 11 TSO students from VTI Kortrijk.

3.3.2 Language contact questionnaire

Prior to performing the vocabulary test (PPVT-IIII, Dunn & Dunn 2007), students were asked to complete a four page questionnaire about their exposure to English through various media (see appendix B). At the top of the front page, students had to write down their personal records. As such, the participants' answers could be linked to their test results at a later stage of this research.

The questionnaire consisted of 23 questions in total. Two of these questions inquired whether students spoke Dutch as their native language, and whether they had any cognitive deficits or linguistic disorders. These questions were used as a means to exclude native speakers of English and children with severe language impairments from the final sample. Furthermore, there were two questions about students' general attitudes towards English. In addition, a third set of questions asked whether students had ever (1) spoken English when travelling abroad, or had ever been exposed to English through (2) occasional instruction, when attending language camps, or (3) when having lived abroad in an English speaking country. Other questions inquired about their contact with English through (4) listening to English music, (5) reading English books and magazines, (6) surfing on the internet, (7) playing English (video) games, and (8) watching English television programmes and films both with and without subtitles. At the end of the questionnaire, students were also given the opportunity to write down in what other ways they often came into contact with English (9).

3.3.3 The Peabody Picture Vocabulary Test (PPVT-IIII)

The students' receptive vocabulary knowledge was measured by means of the Peabody Picture Vocabulary test (PPVT-IIII, Dunn & Dunn 2007). This standardized lexical test can be administered to people of all ages, ranging from preschool children of 2;6 years to adults of

90 years and older. In this study, the fourth edition of the English version was used (PPVT-IIII, Dunn & Dunn 2007).

During the test, the researcher confronts the examinee with test plates which each consist of four different pictures (see figure 4). It is the examinee's task to determine which of these four pictures corresponds best to the stimulus word pronounced by the examiner. Younger children are allowed to give their answer by means of pointing towards the picture, but older informants are usually asked to pronounce the number that goes with it. In order to introduce the test, at least two training items should be administered. As soon as the examinee shows enough understanding of how the test works, the researcher can start the actual assessment.

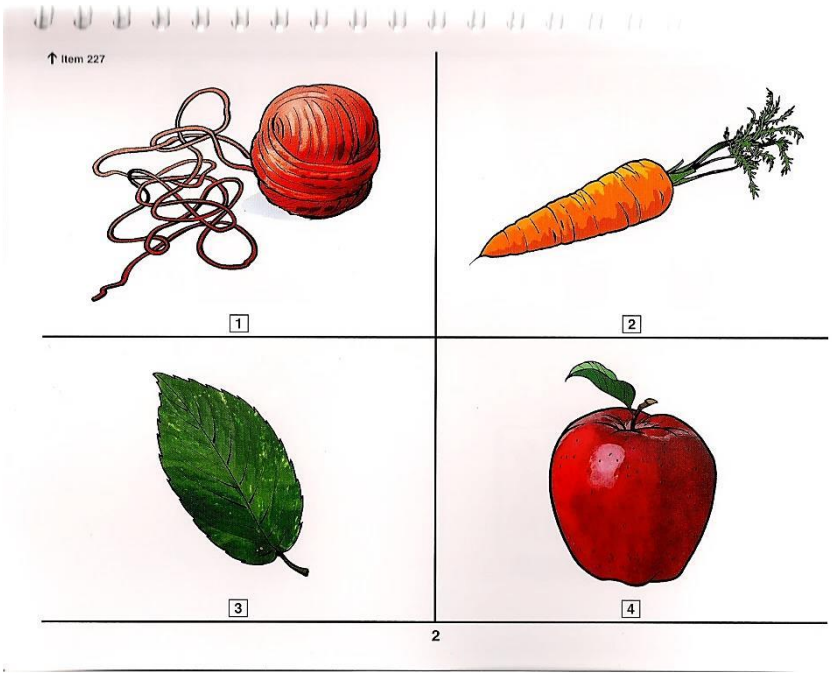

Figure 4. PPVT test plate

The PPVT-IIII consists of 19 sets of 12 words each, which appear in order of increasing difficulty. The test has to be started with the set corresponding to the examinee's chronological age. Whenever the examinee gives an incorrect answer or does not know the answer, this counts as a mistake. When eight or more mistakes are made within one set, the

ceiling set is reached. To calculate a raw test score, the total number of errors made during the test has to be subtracted from the number of the last item in the ceiling set. Raw scores can range from 0 to 228. By means of tables included in the manual, these scores can be standardized, or be compared to age equivalents (PPVT-IIII, Dunn & Dunn 2007).

Dunn and Dunn (2007: 5) recommend that the PPVT-IIII should be performed individually in a quiet room where testing cannot be interrupted or disturbed by any other activities. In this study, it was however impossible to follow this advice. The schools' head masters and student counsellors did not grant permission, nor was there enough time, to test the students individually. As such, in each school, students performed the PPVT in group. In order to show the test plates to an entire group at once, they were inserted in a PowerPoint presentation and projected on the wall or on the blackboard. Every slide in the presentation corresponded to one PPVT test plate. In addition, students were given their own answer sheets to write down the numbers of the pictures corresponding to the stimulus words pronounced (see appendix C). The record forms included in the PPVT-IIII testing pack could not be used because the correct answers had already been highlighted beforehand.

3.4 Procedures

Before the actual testing took place, a small pilot study was conducted to determine which set of the PPVT could be maximally reached within a limited time frame without pushing students beyond their cognitive limits. Students had to be able to perform the test in a pleasant way, so that they would be motivated to complete it with due attention.

At every school, the same testing procedures were followed. First, the purpose of this study was briefly explained to the students. In addition, students were asked to complete the language contact questionnaire. They were allowed to ask for clarifications if necessary, and

were given approximately 15 to 20 minutes to answer all the questions. At this moment, the vocabulary test was not mentioned yet in order to keep students motivated to cooperate.

As soon as all the students had completed the questionnaire, the vocabulary test was introduced and explained. Students were also instructed to remain silent during the test. It was essential that students would not speak, since they might provide their companions with hints about the correct answers. Once the instructions were clear to every student, the test was administered. Despite time pressure, every class group was given enough time to respond to each PPVT-item, and was allowed to hear the stimulus words a second time. During the test, students were often reassured that making mistakes or not knowing the correct answer was absolutely normal. They were also reminded several times to remain silent. The test started with the first set and was continued until the time provided (approximately 50 minutes) had run out, but was not interrupted until at least the fifteenth set was reached. Ultimately, before leaving the classroom students were requested not to pass any answers to other students who still had to perform the test.

3.5 Data analysis and variables

3.5.1 Data analysis

In the first stage of the data analysis, it was checked whether there were any documents missing, and whether the vocabulary tests had been corrected consistently. Secondly, test results and answers from the questionnaires were entered in the statistic computer programme SPSS Statistics 22. This programme was used to perform statistical analyses with the variables described below. The results of these analyses will be presented in the next chapter.

3.5.2 Variables

The data gathered in the first stage of this research were grouped into five different variables: vocabulary scores, education type, gender, socioeconomic status (SES), and language contact.

3.5.2.1 Vocabulary scores

The continuous variable "vocabulary scores" includes the informants' raw scores on the English Peabody Picture Vocabulary Test (PPVT-IIII, Dunn & Dunn 2007). Raw scores were not standardized since the informants in this study were all second language speakers of English and could thus hardly be compared to the sample of native speakers on which the PPVT-IIII standardization is based (Dunn & Dunn 2007).

3.5.2.2 Education type

Another variable used in this study is education type. It consists of three different categories: (A stream) ASO education, (A stream) TSO education, and B stream education. This distinction was made in other studies as well (Caroline Lippens 2010; Charlotte Lippens 2010). Furthermore, this categorical variable was related to those of language contact and the vocabulary scores in the statistical analyses.

3.5.2.3 Gender

Apart from education type, also gender (male, female) is used as a categorical variable. Students were asked to indicate their gender on the language contact questionnaire they had to

complete prior to performing the vocabulary test. As such, the students' gender could be linked to their test results, and consequently the test performances of boys and girls could be statistically compared.

3.5.2.4 Socioeconomic status (SES)

The third categorical variable, socioeconomic status (low, mid, high), is based on four indicators: maternal education, paternal education, maternal occupation, and paternal occupation. Information on the students' socioeconomic background was elicited by means of the SES questionnaire (see appendix A). In this document parents had to indicate their highest educational degree, as well as their current working status. Using a simple calculation method, the combinations of the responses were scored. This score was then assigned to one of the three SES categories (low SES, mid SES, and high SES). The higher the score, the higher the parents' and, by consequence, the students' socioeconomic status.

3.5.2.5 Language contact

As for language contact, nine categorical variables were distinguished: travelling, having lived abroad, occasional instruction of English, listening to English music, reading English books and magazines, surfing on the internet, playing English (video) games, and watching subtitled and non-subtitled English television programmes and films. The categories of these variables all correspond to the range of possible answers to the multiple choice questions in the language contact questionnaire (see appendix B). Although they may be grouped under the umbrella term "language contact", each of these qualitative variables was used separately

for statistical analyses, in which they were related to the vocabulary scores both with and without respect to the type of education students received.

4. Results

4.1 Research questions and hypotheses

The first research question to be answered in this study is whether the English receptive vocabulary knowledge of Flemish secondary school children in A stream ASO, A stream TSO, and B stream education, prior to formal instruction, differs significantly. The second question to be dealt with is whether gender, socioeconomic status (SES), and various types of language contact affect these students' English vocabulary acquisition. It is hypothesized that the ASO, TSO, and B stream students will all have a different receptive knowledge of the English lexicon, and that their lexical skills in English will be strongly influenced by their socioeconomic status. As for gender, it is believed that the girls in the sample will show a better English vocabulary knowledge than the boys. With respect to language contact, ultimately, it is expected that particularly listening to English music, playing English (video) games, occasional English instruction, reading English books and magazines, and watching English television programmes and films will prove to have a significant impact on the students' lexical acquisition of English.

4.2 General vocabulary scores

The mean vocabulary score for all the participants across the three types of education (N = 110; ASO, TSO, B stream) is M = 102.57 (SD = 23.63). Individual test scores range from a minimum of 55 to a maximum of 149 (see figure 5).

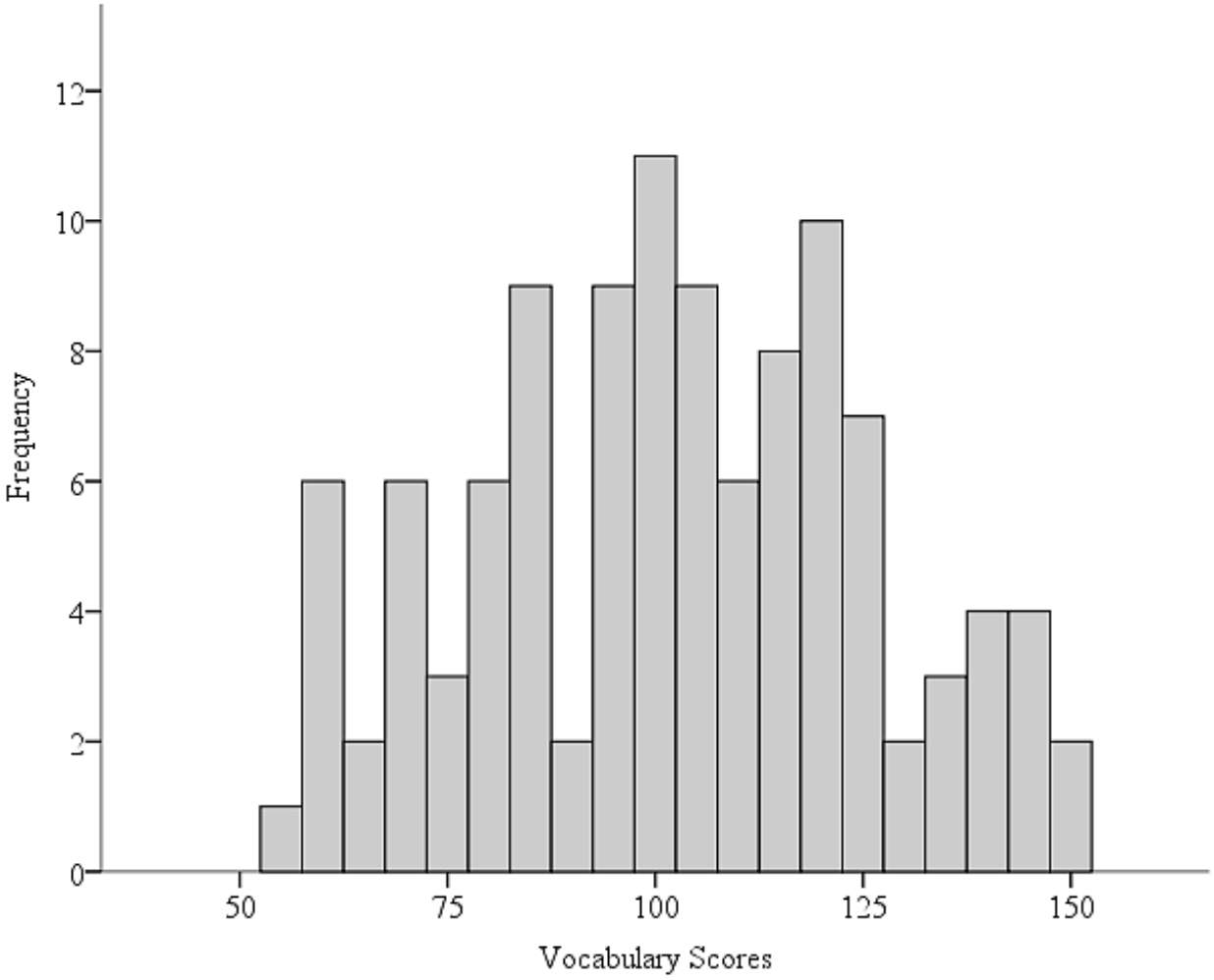

Figure 5. Histogram of the general vocabulary scores

Table 2 and the box plots in figure 6 provide an overview of the mean, median, minimum, and maximum vocabulary scores according to type of education. Regarding table 2, it stands out that the ASO students reached a higher mean score than the TSO students, who in their own respect reached a higher score than the B stream students. In other words, the mean PPVT scores gradually increase moving from B stream through TSO to ASO education.

	ASO	TSO	B stream
Number participants	25	59	26
Mean	106.28	102.69	98.73
Median	102	104	96
Standard Deviation	18.19	24.73	25.87
Minimum	82	55	59
Maximum	144	148	149

Table 2. Vocabulary scores according to type of education

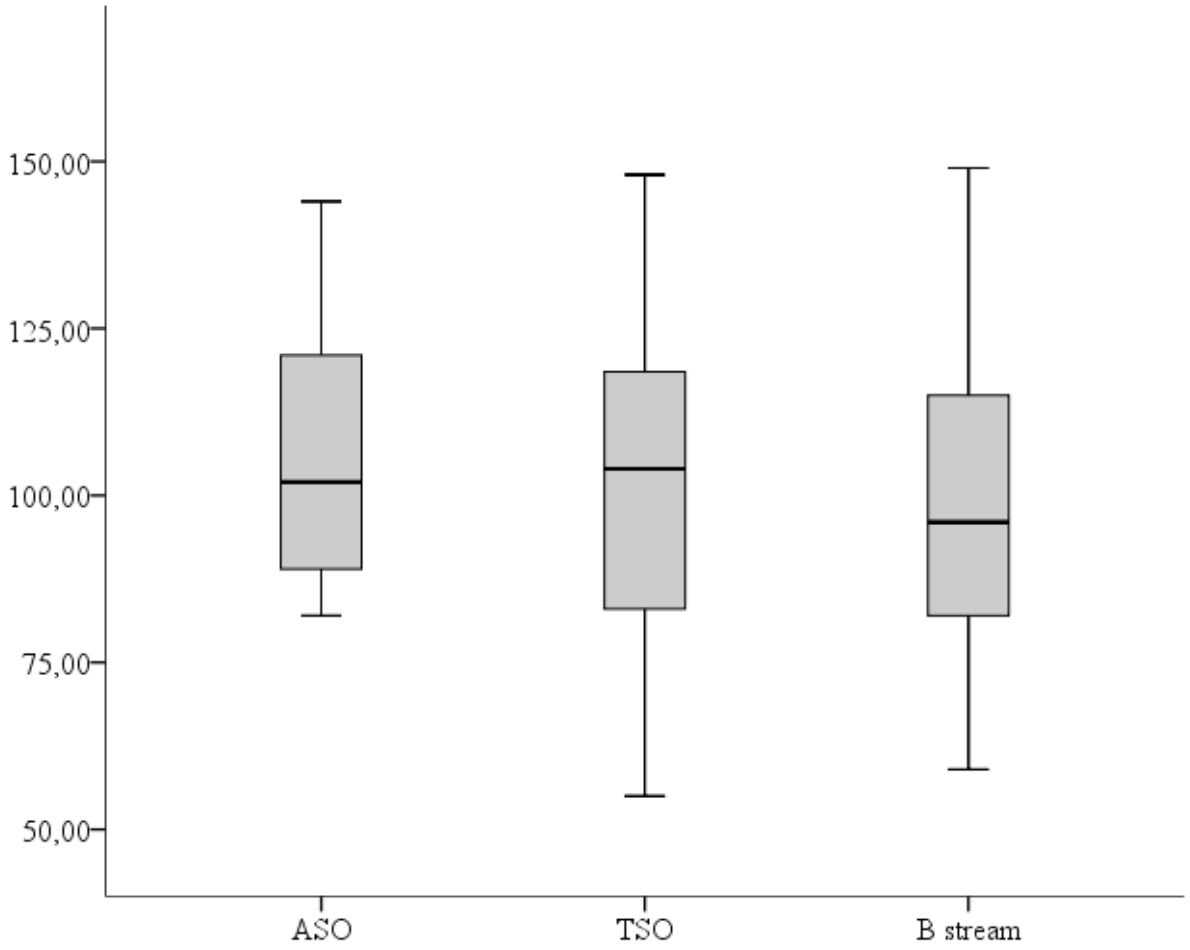

Figure 6. Vocabulary scores according to type of education

Nevertheless, a one-way ANOVA[1] indicates that the differences between the mean vocabulary scores of the ASO, TSO, and B stream groups are not statistically significant[2] ($F(2, 107) = .65$, $p = .525$).

[1] Assumptions for the statistical analyses are reported in appendix D.

[2] All the statistical analyses were performed at a $p = .05$ significance level.

4.3 The effects of gender, socioeconomic status, and language contact on the vocabulary scores

4.3.1 Gender

There were 72 male and 38 female participants in this study. As shown in table 3, the mean PPVT score of the boys is higher than that of the girls. Also the minimum and maximum scores of both groups slightly differ. In addition, figure 7 demonstrates that the dispersion of the male vocabulary scores is larger than that of the female vocabulary scores.

	Male	Female
Number participants	72	38
Mean	106	95.47
Median	108.50	95.50
Standard Deviation	24.97	19.23
Minimum	55	58
Maximum	149	144

Table 3. Vocabulary scores according to gender

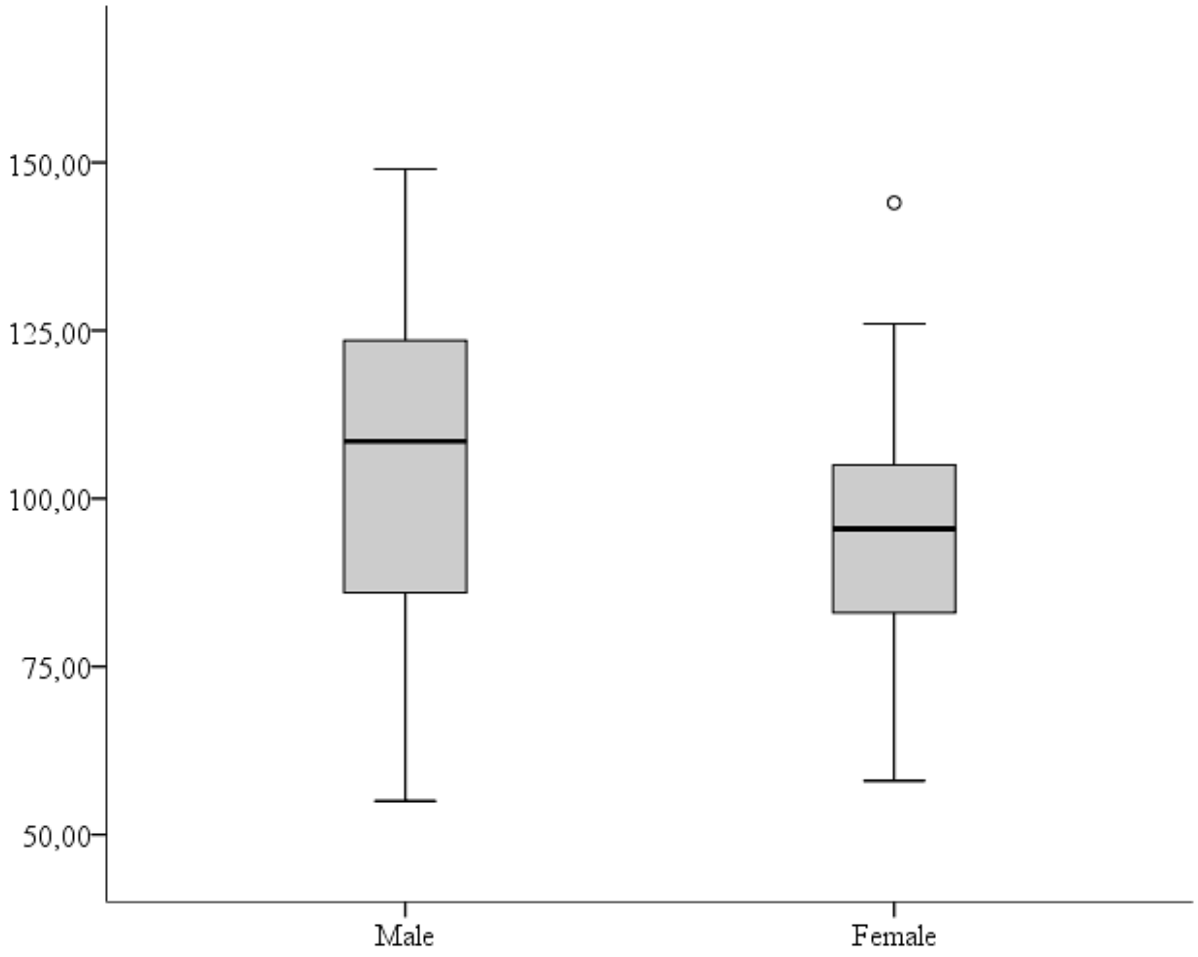

Figure 7. Vocabulary scores according to gender

A two-tailed independent samples *t*-test (with unequal variances assumed) reveals that the difference between the mean scores of the male and female students is statistically significant ($t(93) = 2.53$, $p = .013$). As such, it is proven that the test scores of the boys are significantly better than those of the girls (mean difference = 10.85; 95% CI [2.33, 19.36]).

Table 4 contains the results of boys and girls per education type. It can be remarked that the ASO male participants obtained a higher mean PPVT score than their TSO and B stream peers. With respect to the female informants, the same observation can be made. Furthermore, it may be noticed that the difference between the male and female mean vocabulary scores is rather large within the TSO group, but rather small within its B stream counterpart.

		ASO	TSO	B stream
Male	Number participants	6	45	21
	Mean	119.17	106.98	101.24
	Median	122	108	105
	Standard Deviation	17.97	23.98	28.10
	Minimum	86	55	59
	Maximum	140	148	110
Female	Number participants	19	14	5
	Mean	102.21	88.93	88.20
	Median	101	94.50	83
	Standard Deviation	16.69	22.69	7.98
	Minimum	82	58	82
	Maximum	144	126	100

Table 4. Vocabulary scores according to gender, per education type

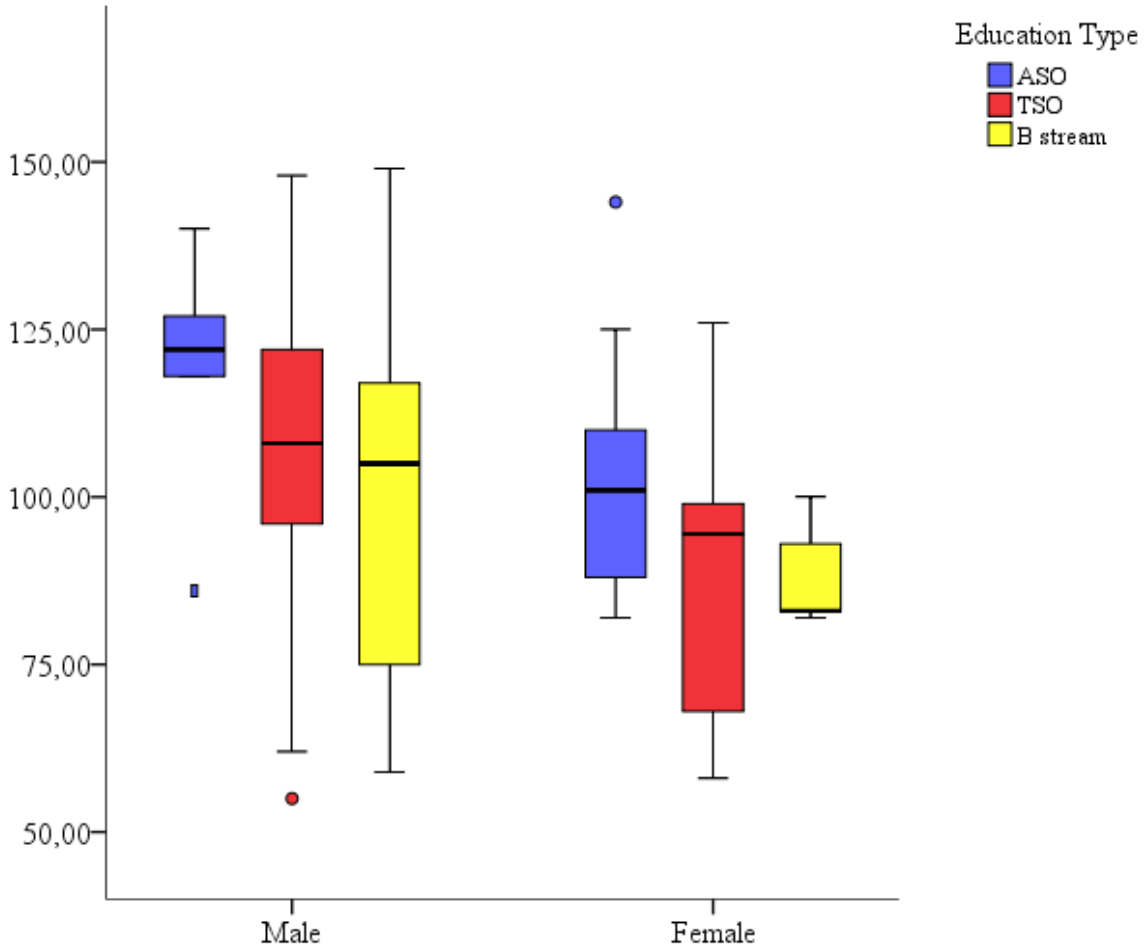

Figure 8. Vocabulary scores according to gender, per education type

Figure 8 demonstrates that the vocabulary scores of the boys are generally better than those of the girls across all three education types (ASO, TSO, B stream). Since the data of the male and female subgroups are not evenly distributed, this trend was however not statistically analysed.

4.3.2 Socioeconomic status (SES)

A second social factor which may affect students' English receptive vocabulary development is socioeconomic status (SES). In total, 32 low SES, 69 mid SES, and 9 high SES children participated in this study. Table 5 shows that the mean vocabulary score of the high SES students is higher than that of the mid SES students, which is again higher than that of the low SES students. In other words, the average scores increase moving from the low SES to the high SES group. The minimum scores of the low and mid SES groups are very close together, but clearly differ from that of the high SES counterpart. The maximum scores are more or less equal for all three SES groups.

	Low SES	Mid SES	High SES
Number participants	32	69	9
Mean	98.25	102.94	115.11
Median	102	102	121
Standard Deviation	23.22	24.30	15.80
Minimum	59	55	97
Maximum	144	149	144

Table 5. Vocabulary scores according to socioeconomic status
Note. SES: socioeconomic status

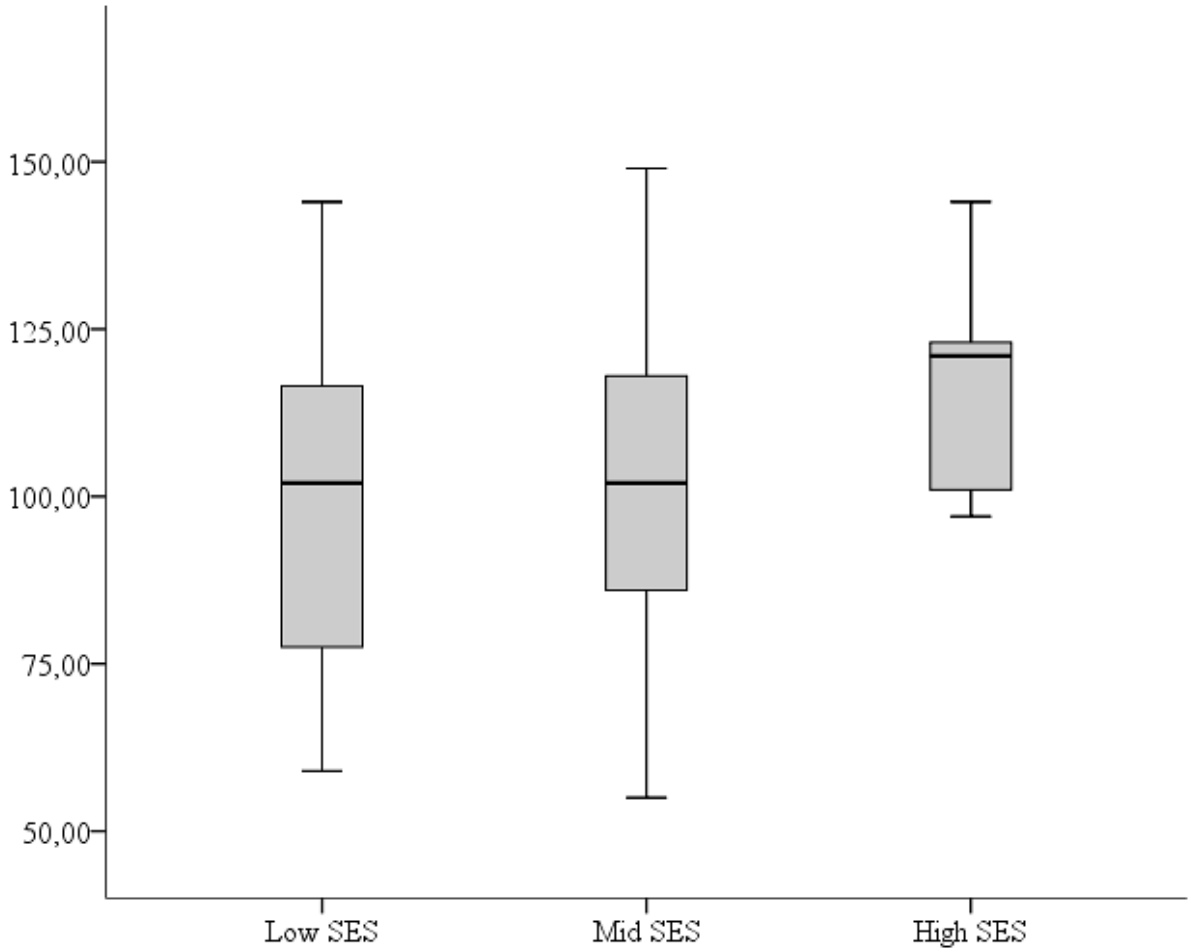

Figure 9. Vocabulary scores according to socioeconomic status (SES)

As visible in figure 9, the dispersions of the low and mid SES vocabulary scores are quite similar, but are substantially larger than that of the high SES scores. Furthermore, figure 9 shows that the high SES informants generally obtained better test scores than their low and mid SES peers. Nevertheless, a one-way ANOVA indicates that the mean vocabulary scores of the low, mid, and high SES students do not differ significantly ($F(2, 107) = 1.84$, $p = .164$).

The results of the low, mid, and high SES groups per education type can be found in table 6 on the following page. With respect to the mean PPVT scores, one may notice that within the low SES group the mean score of the B stream students is lower than that of their TSO peers. This observation perfectly ties in with the finding that the general mean score of the B stream students is lower than those of the ASO and TSO students. However, it should also be remarked that within the mid SES group, the average score of the B stream students is very similar to that of the TSO students. Together, these pupils even slightly outperformed their ASO companions.

		ASO	TSO	B stream
Low SES	Number participants	0	20	12
	Mean	Na	101.45	92.92
	Median	Na	103	96.50
	Standard Deviation	Na	22.66	24.15
	Minimum	Na	68	59
	Maximum	Na	144	132
Mid SES	Number participants	16	39	14
	Mean	101.31	103.33	103.71
	Median	97	106	96
	Standard Deviation	17.97	25.99	27.12
	Minimum	82	55	71
	Maximum	140	148	149
High SES	Number participants	9	0	0
	Mean	115.11	Na	Na
	Median	121	Na	Na
	Standard Deviation	15.81	Na	Na
	Minimum	97	Na	Na
	Maximum	144	Na	Na

Table 6. Vocabulary scores according to socioeconomic status, per education type
Note. Na: Not applicable, SES: socioeconomic status

Figure 10 shows that the dispersions of the ASO vocabulary scores are smaller than those of the TSO and B stream scores. In addition, it can be denoted that within the mid SES group the dispersion of the TSO scores is rather large compared to those of the ASO and B stream scores.

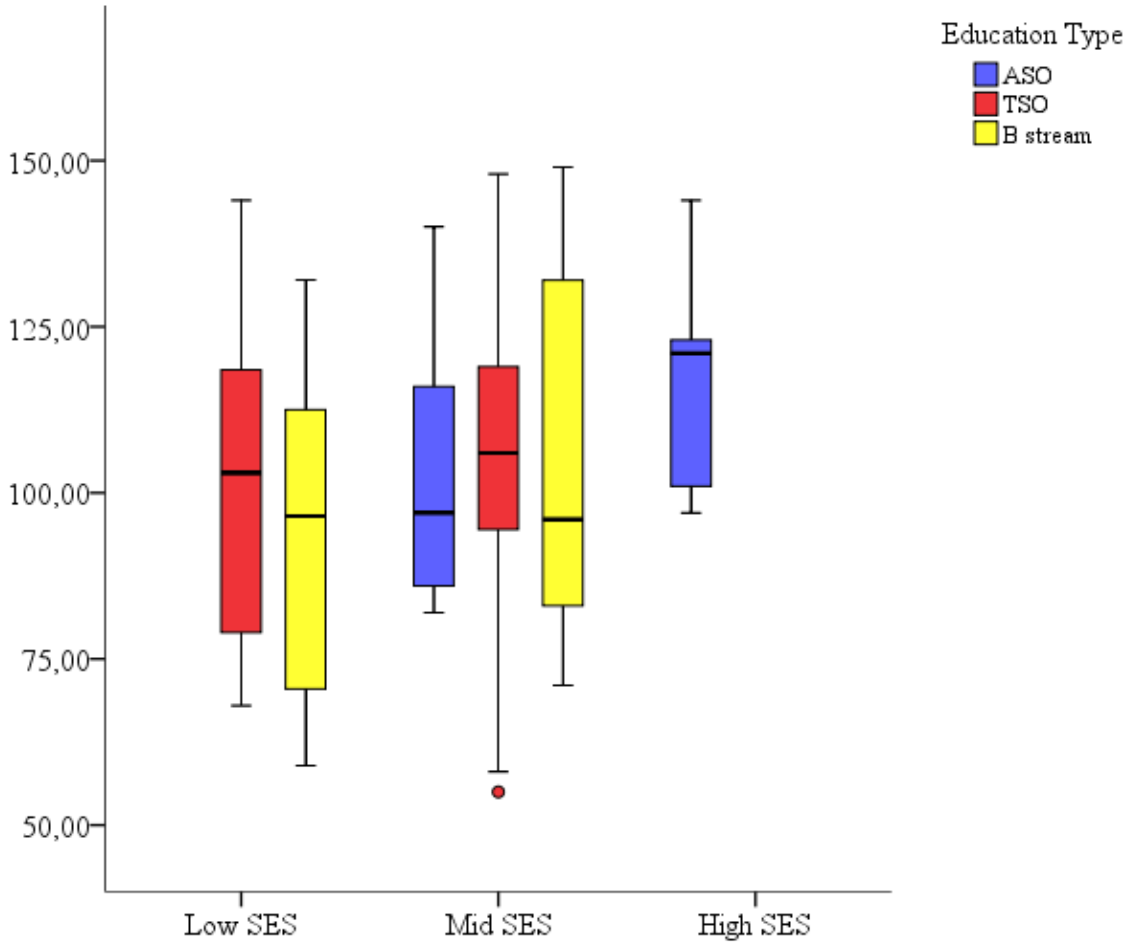

Figure 10. Vocabulary scores according to socioeconomic status (SES), per education type

As demonstrated in table 6 and figure 10, none of the TSO and B stream participants in this study had a high socioeconomic status. Among the ASO students, informants belonged either to the mid SES or the high SES group. Therefore, the effects of SES on the average vocabulary scores of each educational group (ASO, TSO, B stream) were not statistically analysed.

4.3.3 Language contact

4.3.3.1 Having lived abroad in an English speaking country

There was only one student included in this research who had already lived abroad in an English speaking country. This child's mean PPVT score is much higher than that of the other students (see table 7).

	All participants	
No	109	102.15
Yes	1	149

Table 7. Mean vocabulary scores according to having lived abroad

When looking at the mean scores of the ASO, TSO, and B stream students, it also becomes clear that this one participant belongs to the B stream group (see table 8).

	ASO (25)		TSO (59)		B stream (26)	
No	25	106.28	59	102.69	25	96.72
Yes	0	Na	0	Na	1	149

Table 8. Mean vocabulary scores according to having lived abroad, per education type
Note. Na: Not applicable

Since none of the other participants had lived in an English speaking country before, the general and specific effects of living abroad on the vocabulary scores of the ASO, TSO, and B stream students were not analysed in further detail.

4.3.3.2 Travelling

The seventh question of the language contact questionnaire inquired whether students had ever travelled to a country where they had to speak English in order to make themselves understood (see appendix B). Table 9 shows that 53 students had indeed already spoken English on one of their travels. These students obtained an average vocabulary score which is as good as equal to that of the students who claimed not yet having used English as a means of communication when travelling. The similarity between the PPVT scores of these two groups is visible in figure 11 as well.

	All participants	
No	57	102.68
Yes	53	102.45

Table 9. Mean vocabulary scores according to travelling

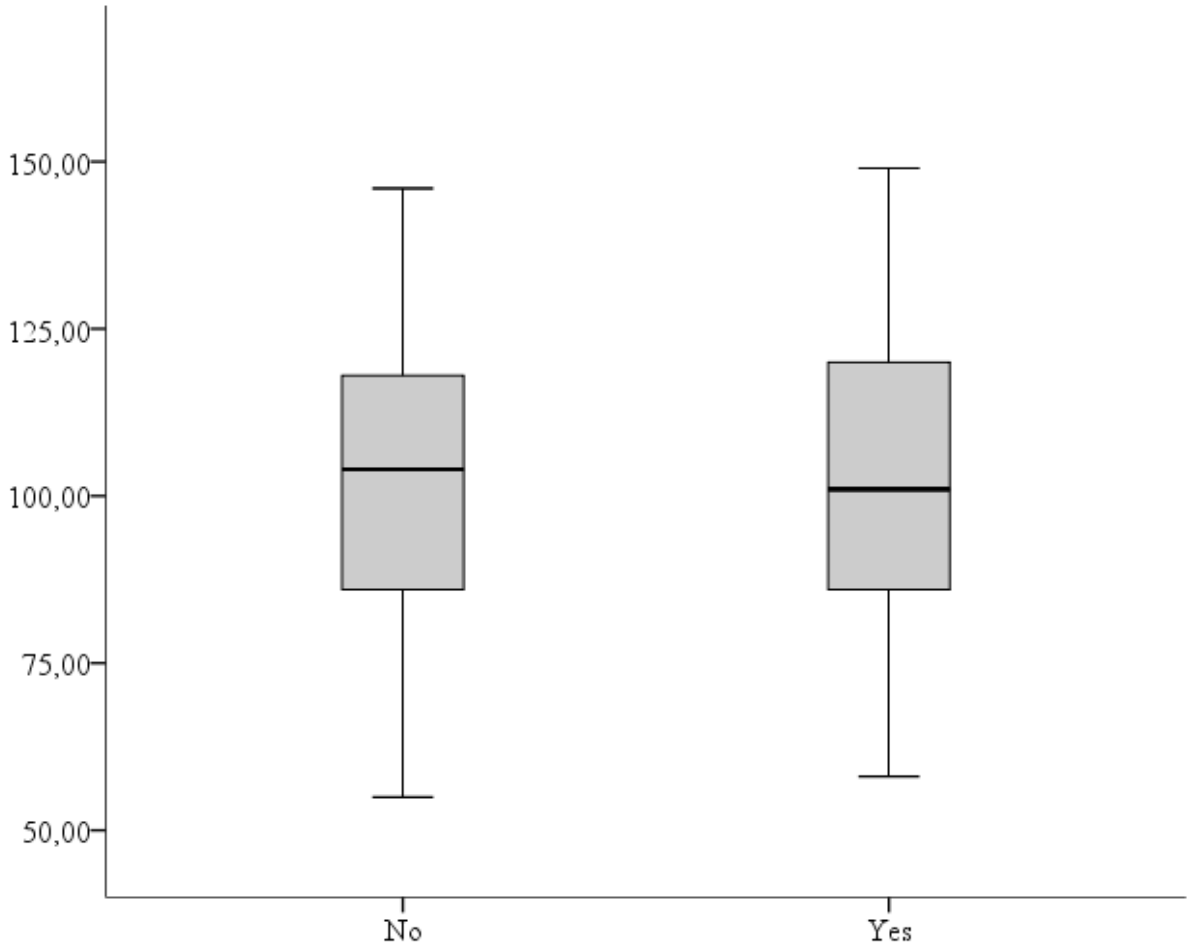

Figure 11. Vocabulary scores according to travelling

A two-tailed independent samples *t*-test (with equal variances assumed) indicates that travelling is not significantly related to the students' vocabulary scores ($t(108) = .05$, $p = .959$; 95% CI [-8.75, 9.21]).

Table 10 contains the results of the two groups per education type. The ASO students who had already spoken English on their travels obtained a higher mean PPVT score than the other ASO students. The same applies to the B stream group, where the difference between the scores is even larger. Within the TSO group the average scores also clearly differ. However, it is the students who had not yet spoken English on their travels who reached a higher mean score than those who had.

	ASO (25)		TSO (59)		B stream (26)	
No	8	103.13	34	106.62	15	94.07
Yes	17	108.24	25	97.36	11	105.09

Table 10. Mean vocabulary scores according to travelling, per education type

Furthermore, figure 12 shows that the dispersions of the ASO vocabulary scores are somewhat smaller than those of the B stream scores, which in turn are slightly smaller than those of the TSO scores.

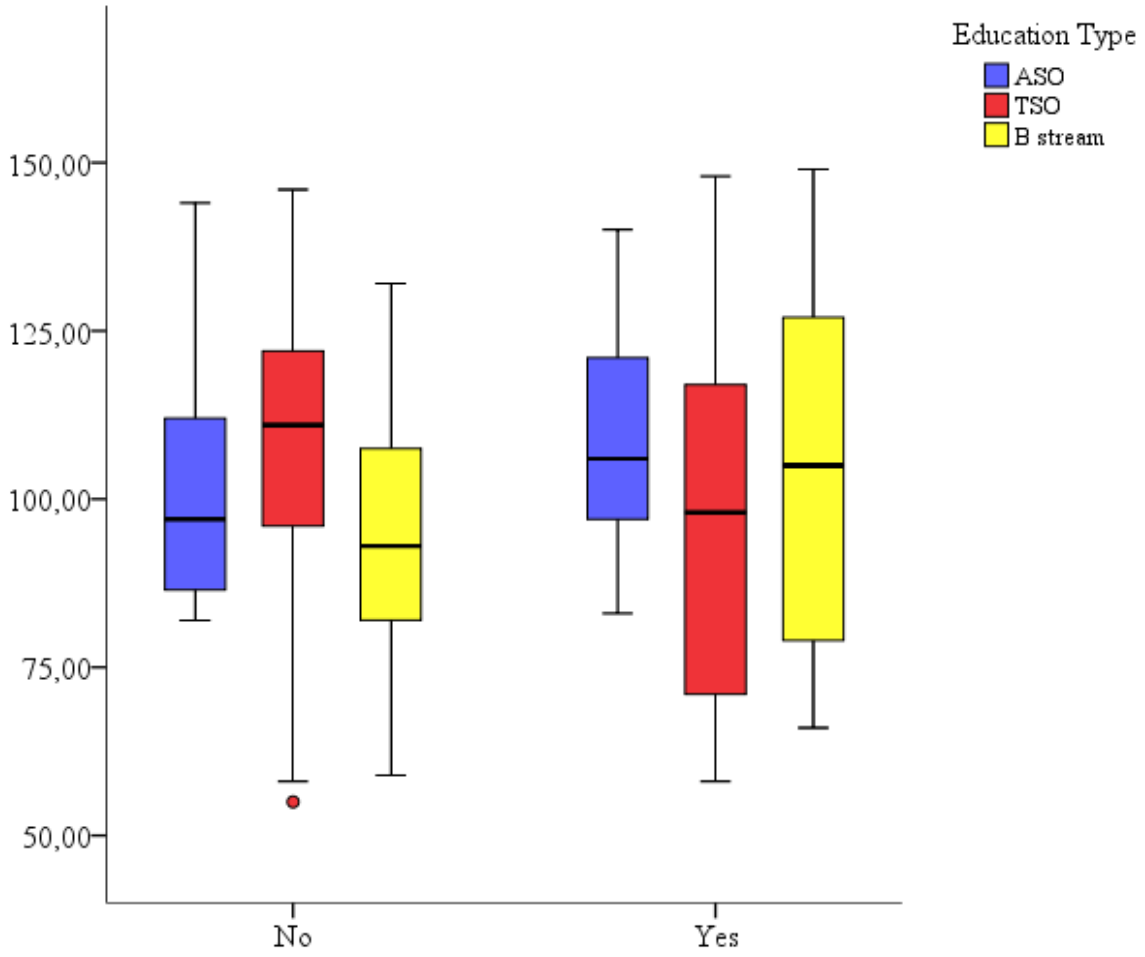

Figure 12. Vocabulary scores according to travelling, per education type

A two-way ANOVA[3] reveals that the mean vocabulary scores of students who had and had not yet spoken English on one of their travels do not differ significantly when controlling for education type ($F(1, 104) = .27$, $p = .604$).

[3] The interaction between travelling and education type is not statistically significant ($F(2, 104) = 1.95$, $p = .147$).

4.3.3.3 Occasional instruction of English

There were seven participants who had already received instruction of English outside of school contexts. Three of them had English speaking mothers who sometimes taught them English at home, two had studied English when attending language camps, and two more others had occasionally been instructed during one of their extracurricular activities. The mean PPVT score of these seven informants is clearly much higher than that of the students who had never received any instruction of English at all (see table 11).

	All participants	
No	103	101.26
Yes	7	121.86

Table 11. Mean vocabulary scores according to occasional instruction

Figure 13 shows that the dispersion of the vocabulary scores of students who had not yet occasionally received instruction of English is larger than that of the scores of students who had.

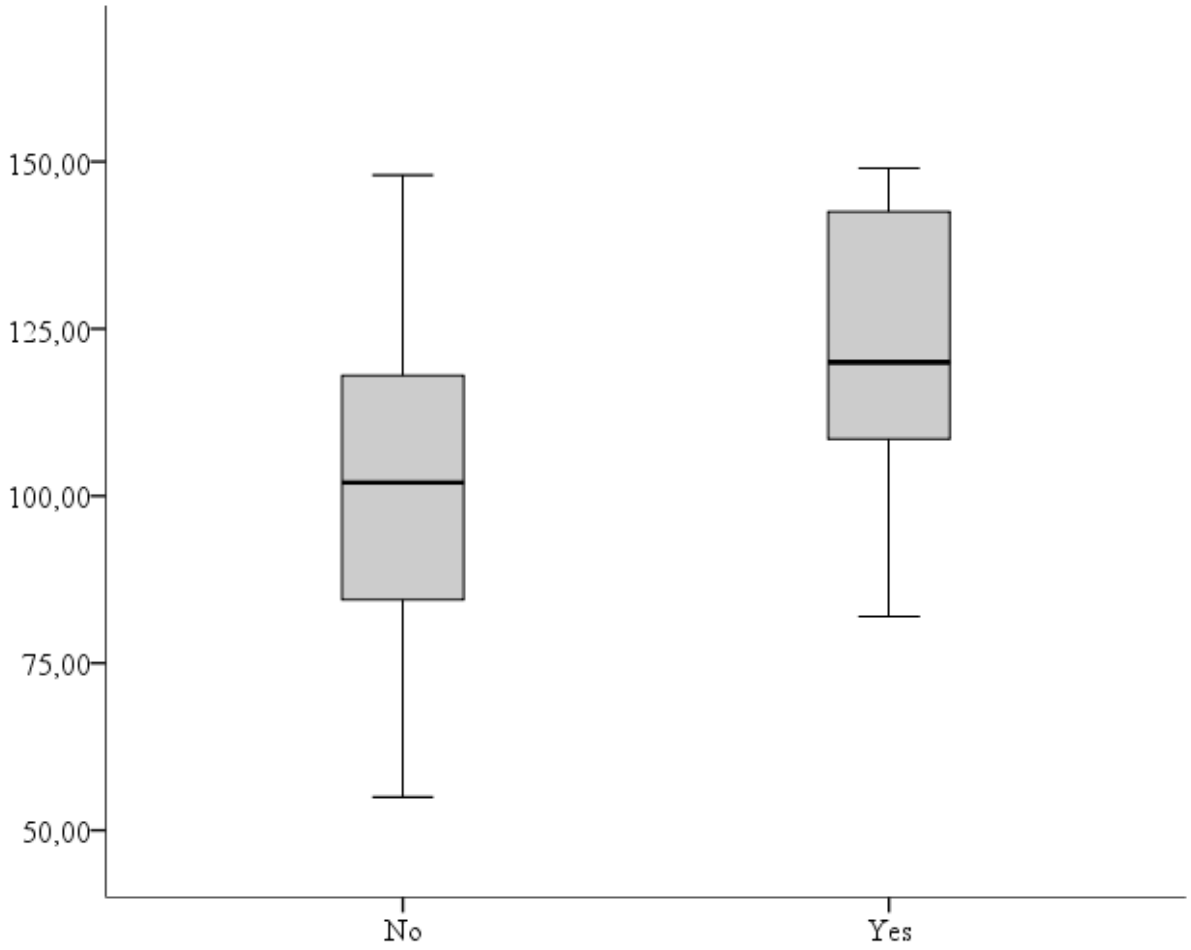

Figure 13. Vocabulary scores according to occasional instruction

A two-tailed independent samples *t*-test (with equal variances assumed) proves that the difference between the mean vocabulary scores of the two groups is statistically significant ($t(108) = -2.27$, $p = .025$; mean difference = -20.60; 95% CI [-38.55, -2.64]). More specifically, the students who had already been exposed to English through occasional instruction obtained a significantly better average score than those who had not.

The results of the ASO, TSO, and B stream students are presented in table 12 and figure 14. The most substantial difference between the mean scores of children who had and had not yet received occasional instruction of English is to be found within the B stream group. Among the students who had not received English instruction before, the ASO students scored higher than the TSO students, who again scored higher than the B stream students. For the groups who had already received English instruction, an opposite trend can be observed.

	ASO (25)		TSO (59)		B stream (26)	
No	24	105.79	56	101.68	23	95.52
Yes	1	118	3	121.67	3	123.33

Table 12. Mean vocabulary scores according to occasional instruction, per education type

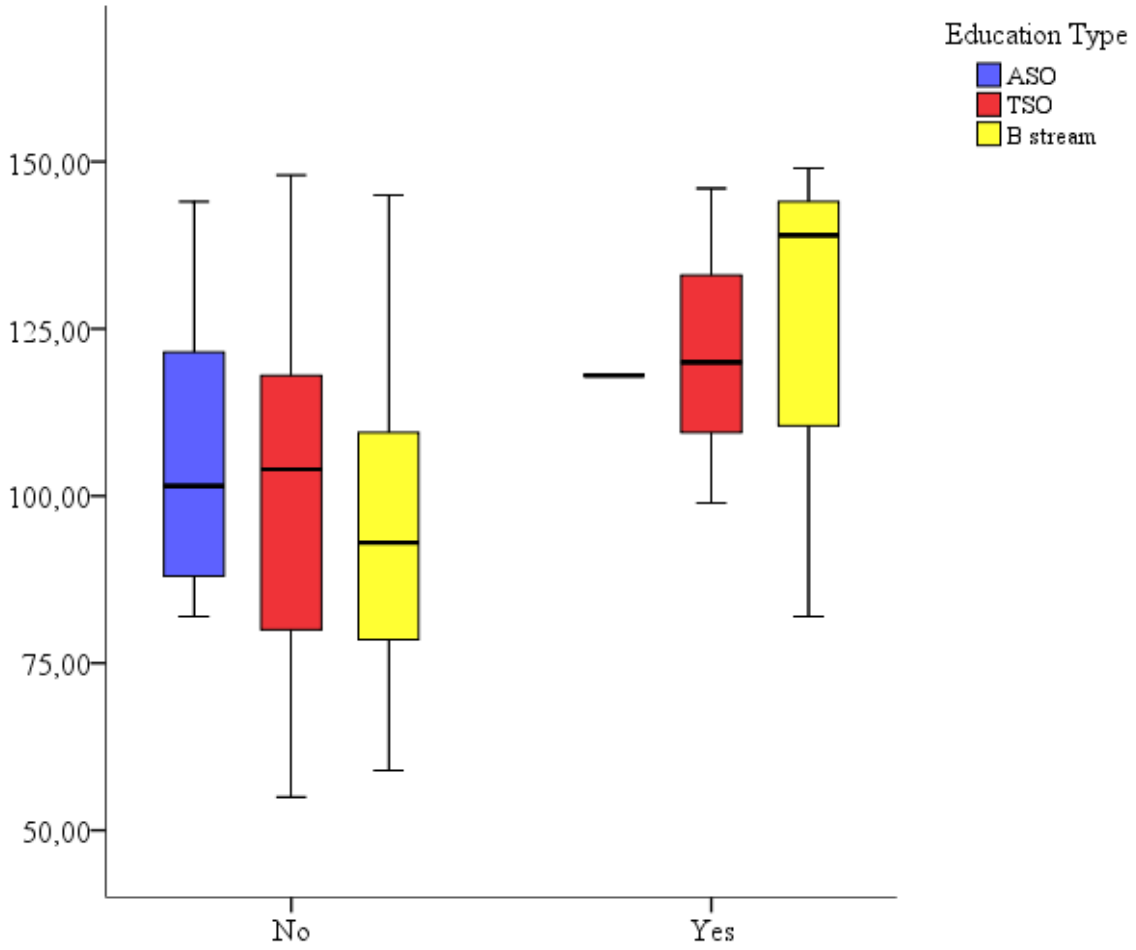

Figure 14. Vocabulary scores according to occasional instruction, per education type

Since the data of the subgroups are not evenly distributed, the effects of occasional instruction of English on the mean scores of the ASO, TSO, and B stream informants were not statistically analysed.

4.3.3.4 Listening to English music

The tenth and eleventh question of the language contact questionnaire asked participants how often they listen to English music, and how much estimated time they do so every day (see appendix B). Table 13 shows that only one participant claimed never to listen to English music at all. Most informants said to be listening to English music for less than one hour a day. On average, they obtained a lower score than pupils who get in contact with English music between one and two hours a day. Students who indicated to listen during more than three hours a day reached a higher mean vocabulary score, but were still outperformed by those listening to English music between two and three hours.

	All participants	
I never listen to English music	1	140
Less than one hour a day	68	100.56
Between one and two hours a day	24	103.46
Between two and three hours a day	8	108.50
More than three hours a day	9	106

Table 13. Mean vocabulary scores according to listening to English music

In addition, figure 15 demonstrates that the dispersions of the vocabulary scores of the different groups are rather varied. It may also be noticed that, up to a certain point, the dispersions of the scores get smaller as students listen more to English music every day.

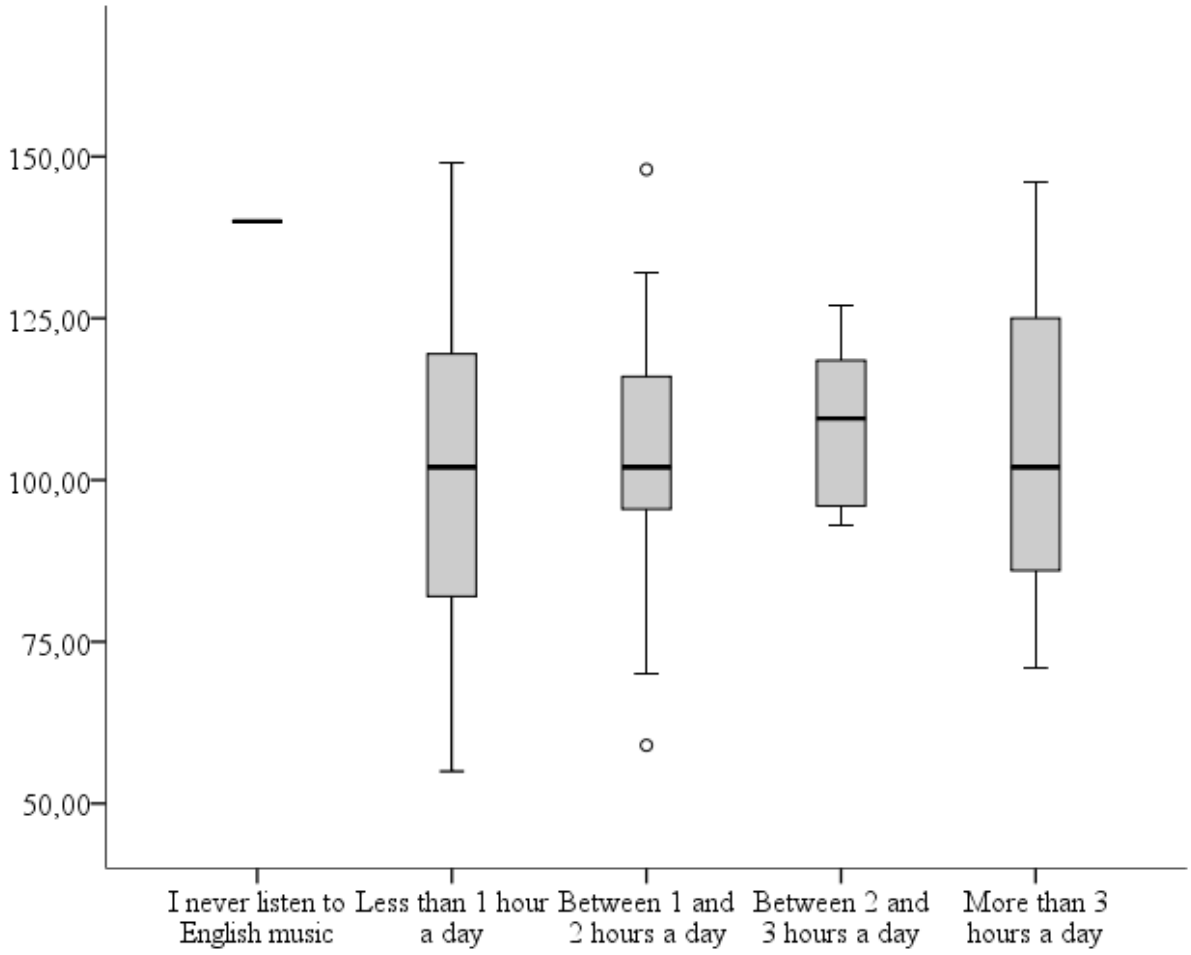

Figure 15. Vocabulary scores according to listening to English music

For further statistical analyses, the vocabulary scores were grouped together according to whether or not pupils listen to English music for more than one hour a day. A two-tailed independent samples *t*-test (with unequal variances assumed) reveals that the difference between the mean PPVT scores of these two groups is not statistically significant ($t(98) = -.88$, $p = .383$; 95% CI [-12.63, 4.89]).

Regarding the results according to type of education, it can be remarked that the mean vocabulary scores of the ASO students who listen to English music for less than one hour, and between one and two hours a day, are nearly equal. The score of the one ASO informant who listens during more than three hours a day is substantially lower. However, this score is not much different from that of the B stream students who listen daily to English music just as long. It can also be denoted that the mean vocabulary scores of the TSO pupils improve as they experience more contact with English music every day. Within the ASO and B stream groups this pattern is clearly reversed (see table 14 and figure 16).

	ASO (25)		TSO (59)		B stream (26)	
I never listen to English music	1	140	0	Na	0	Na
Less than one hour a day	17	106.06	38	97.53	13	102.23
Between one and two hours a day	6	106.67	11	104.91	7	100.14
Between two and three hours a day	0	Na	6	113.67	2	93
More than three hours a day	1	86	4	129.25	4	87.75

Table 14. Mean vocabulary scores according to listening to English music, per education type
Note. Na: Not applicable

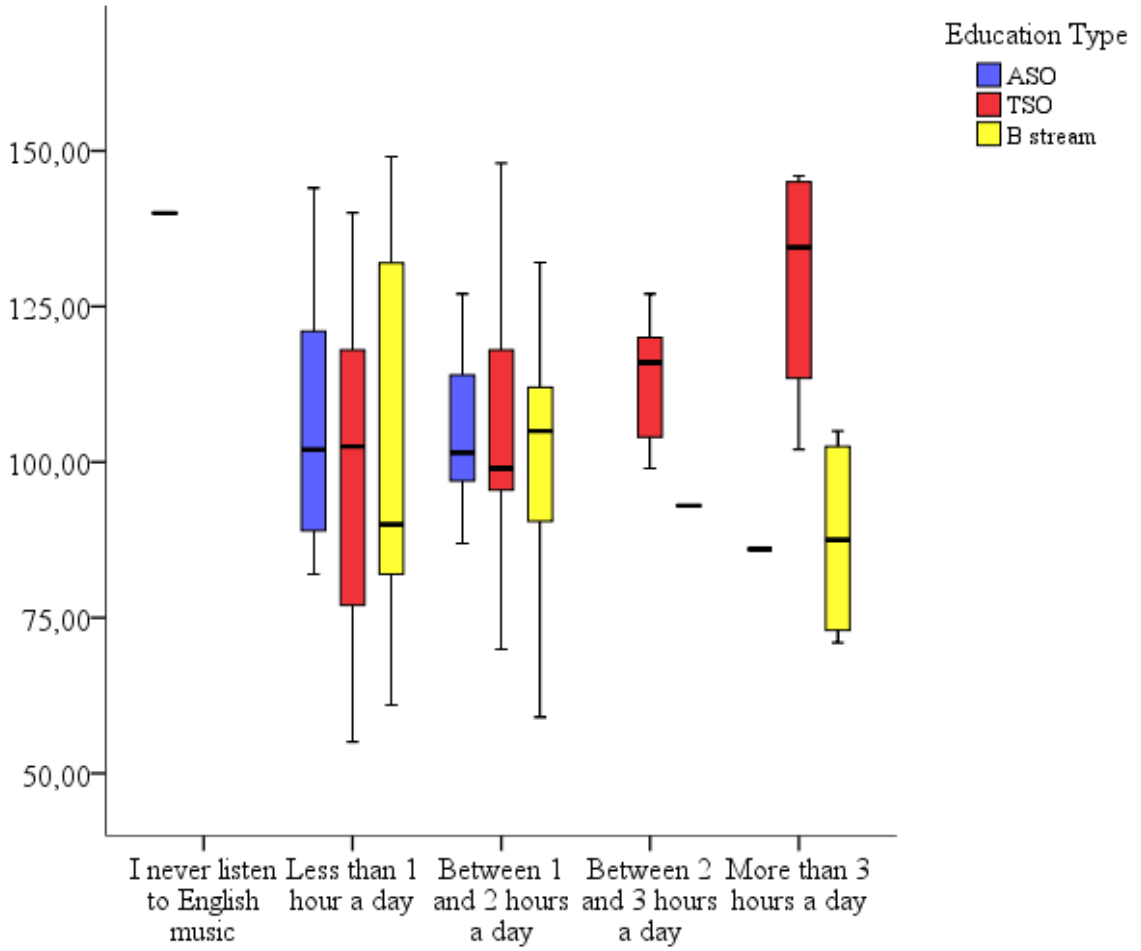

Figure 16. Vocabulary scores according to listening to English music, per education type

A two-way ANOVA[4] shows that the mean vocabulary scores of students who do and do not listen to English music for more than one hour a day do not differ significantly when controlling for education type ($F(1, 104) = .01$, $p = .918$).

[4] The interaction between listening to English music and education type is not statistically significant ($F(2, 104) = 2.53$, $p = .084$).

4.3.3.5 Reading English books and magazines

A fifth way in which students might get in contact with English is by reading English books and/or magazines. There were 91 informants who had never read English books or magazines before. In total, there were 19 who had: 12 of them had read about four books or magazines, whereas the other 7 students had already read more. The average vocabulary scores of these students are visibly higher than that of students who had not yet read any English books or magazines at all (see table 15).

	All participants	
No	91	99.79
Yes (less than four)	12	112.67
Yes (more than four)	7	121.43

Table 15. Mean vocabulary scores according to reading English books and magazines

With respect to figure 17, it can be remarked that the dispersions of the vocabulary scores get smaller as students have read more English books and/or magazines.

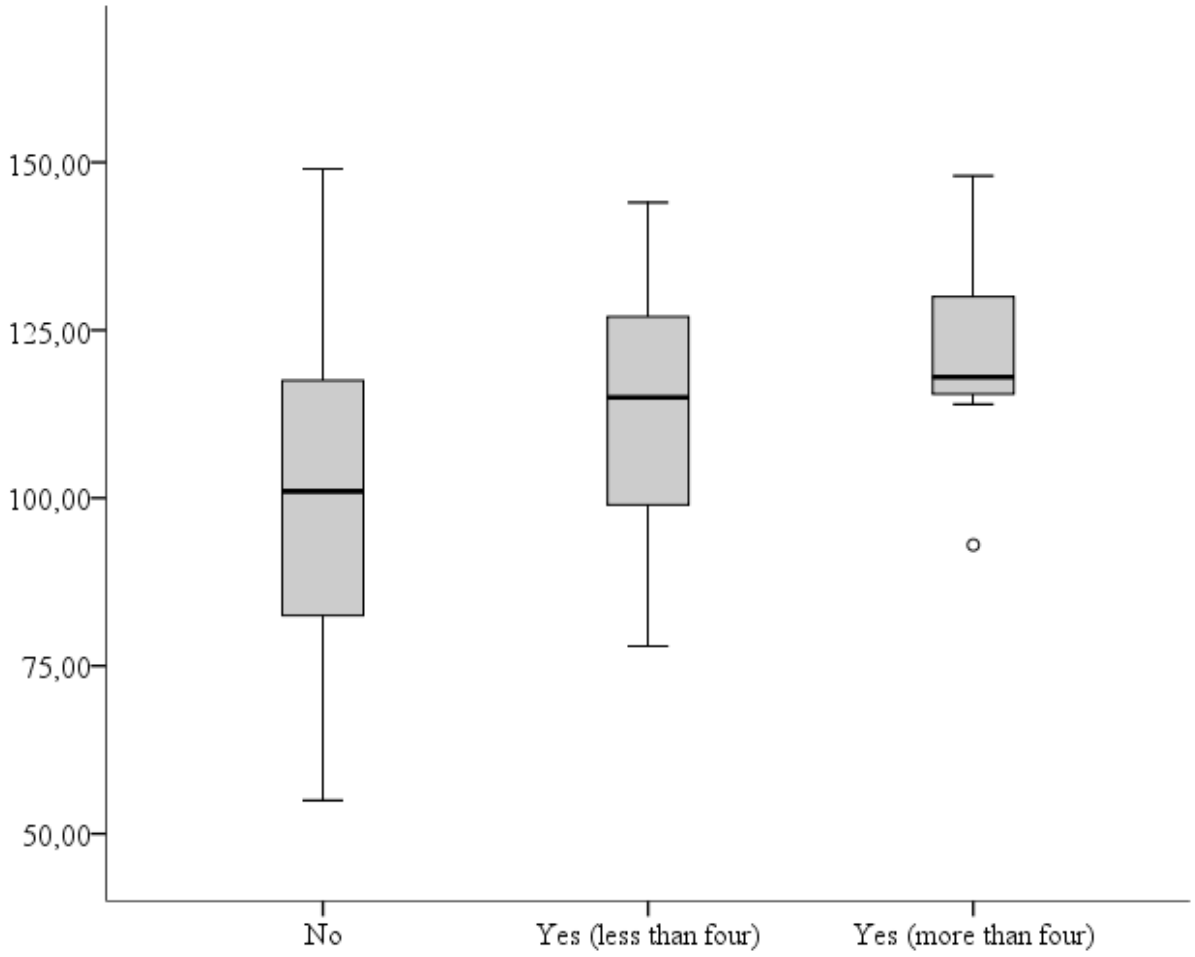

Figure 17. Vocabulary scores according to reading English books and magazines

A two-tailed independent samples *t*-test (with equal variances assumed) indicates that the difference between the mean PPVT scores of students who had (both more and less than four) and had not yet read English books is highly statistically significant ($t(108) = -2.78$, $p = .006$). More specifically, the average vocabulary score of students who had already experienced contact with English by means of reading English books and/or magazines is significantly greater than that of students who had not (mean difference = -16.10; 95% CI [-27.57, -4.64]).

The results of the three groups according to type of education are shown in table 16 and figure 18. Among the students who had not yet read English books or magazines before, the ASO students scored higher than the TSO students, who again scored higher than the B stream students. As for the students who had already read about four English books and/or magazines, the TSO and B stream students obtained similar average scores. These scores differ substantially from the mean score of the ASO students. Regarding the students who had already read more than four books and/or magazines, the TSO students reached a much higher mean PPVT score than the ASO and B stream students.

	ASO (25)		TSO (59)		B stream (26)	
No	21	105.24	51	100.16	19	92.79
Yes (less than four)	2	104	6	114.83	4	113.75
Yes (more than four)	2	119.50	2	131	3	116.33

Table 16. Mean vocabulary scores according to reading English books and magazines, per education type

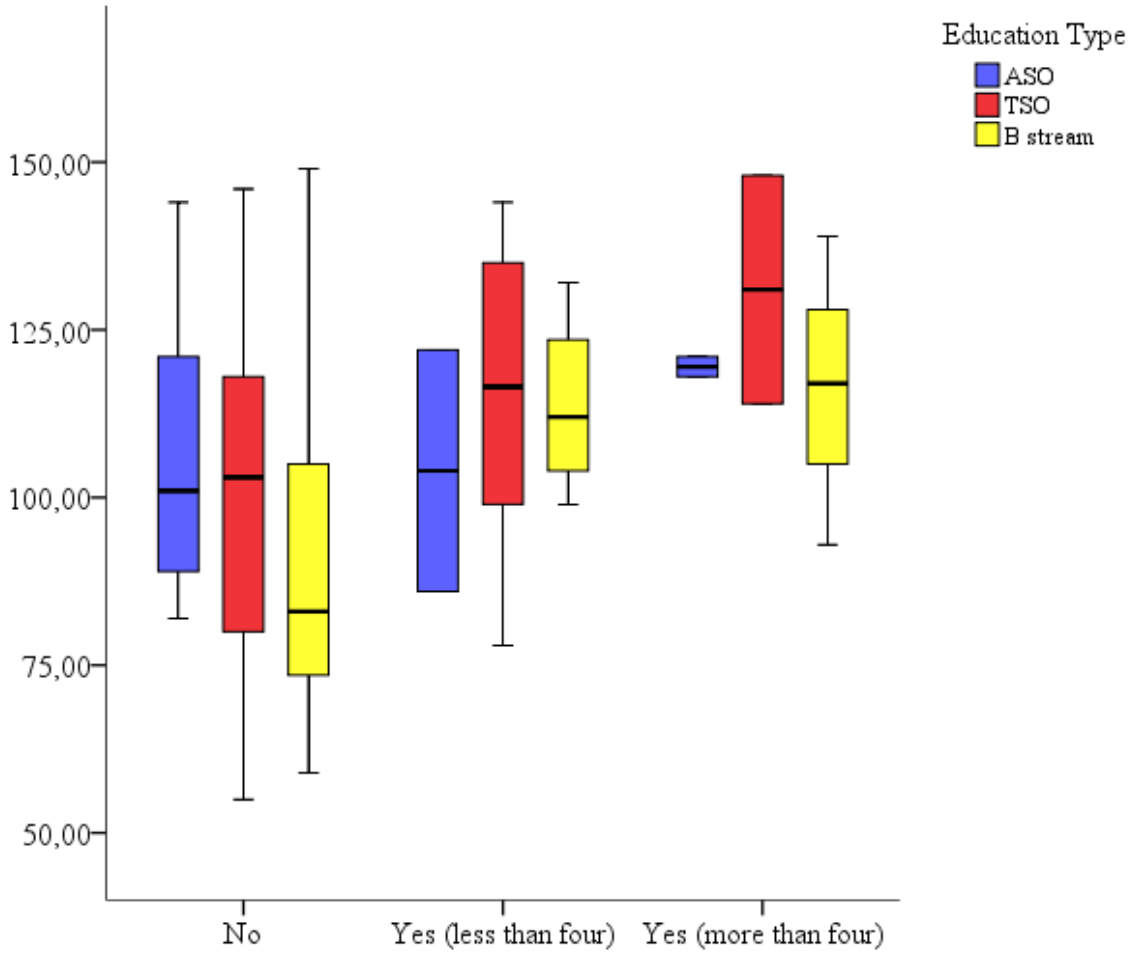

Figure 18. Vocabulary scores according to reading English books and magazines, per education type

Since there were only 19 students who had already read several English books and/or magazines, the effects of reading on the vocabulary scores were not analysed with respect to the type of education the informants received.

4.3.3.6 Watching subtitled English television programmes and films

Most informants in this study watch subtitled English television programmes or films for less than one hour a day. The mean PPVT score of this group is rather low compared to those of the other groups. The children who watch subtitled programmes between one and two, and two and three hours a day had similar average scores, and outperformed their peers who never watch such programmes at all. However, these children still obtained lower mean scores than the students who watch for more than three hours a day. As shown in table 17 and figure 19, the vocabulary scores also gradually improve as students watch subtitled English programmes and films for longer periods of time.

	All participants	
I never watch	7	98.86
Less than one hour a day	43	93.48
Between one and two hours a day	35	106.86
Between two and three hours a day	17	109.29
More than three hours a day	8	121.50

Table 17. Mean vocabulary scores according to watching subtitled English television programmes and films

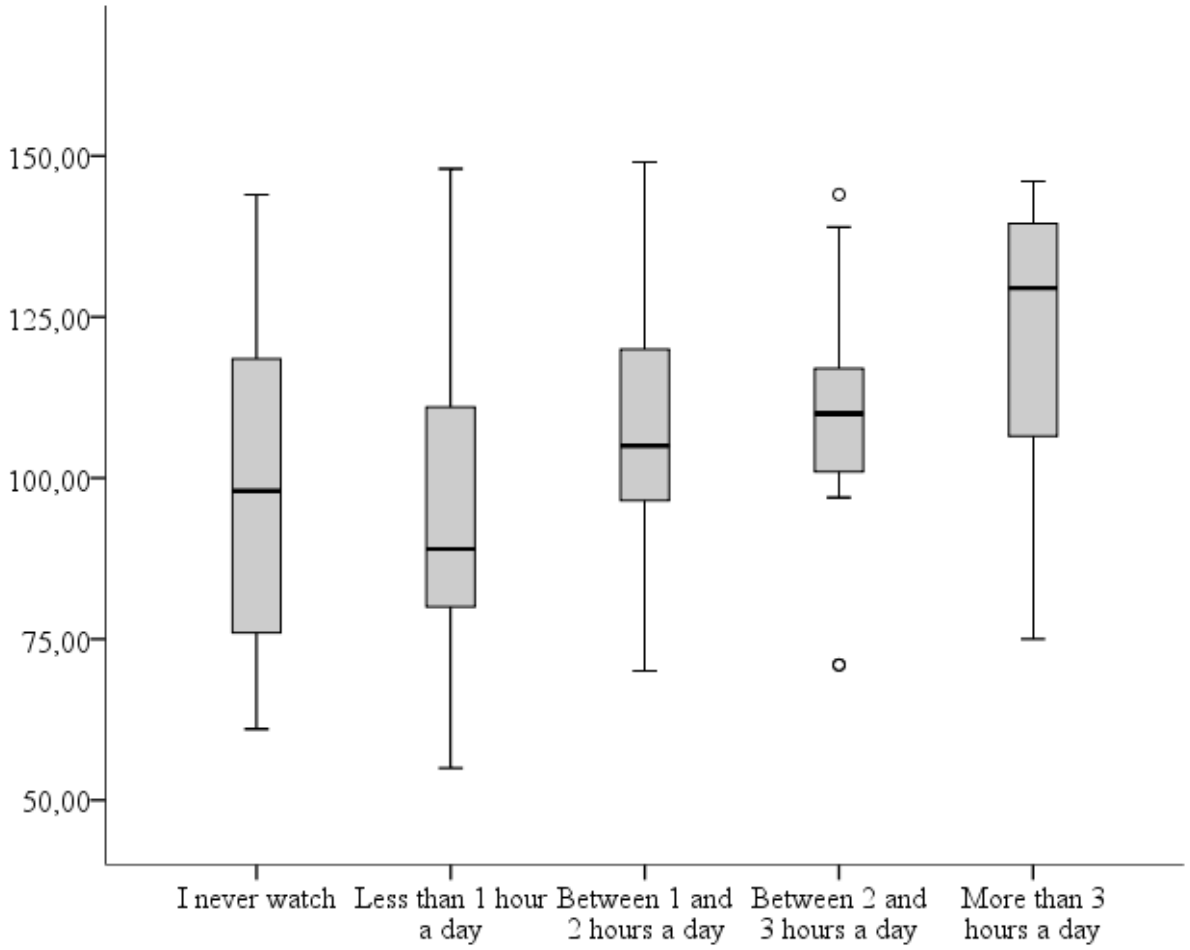

Figure 19. Vocabulary scores according to watching subtitled English television programmes and films

For further statistical analyses, the vocabulary scores were grouped depending on whether or not pupils watch subtitled English programmes and films for more than one hour a day. A two-tailed independent samples *t*-test (with equal variances assumed) proves that the mean vocabulary score of pupils watching subtitled English programmes for more than one hour a day is significantly greater than that of students who do not watch these programmes that long ($t(108) = -3.55$, $p = .001$; mean difference = -15.28; 95% CI [-23.80, -6.75]).

Table 18 provides the results of the ASO, TSO, and B stream students. The TSO students who never watch subtitled English programmes clearly reached a higher mean score than the ASO and B stream students within this group. Among the students who watch up to one hour a day, the ASO students scored higher than the TSO students, who again scored higher than the B stream students. When looking at the groups watching daily between one and two, and two and three hours, it stands out that the mean scores of the ASO students are higher than those of the TSO and B stream students. The highest mean score was obtained by the TSO students who watch English programmes and films during more than three hours a day.

	ASO (25)		TSO (59)		B stream (26)	
I never watch	2	92	2	124.50	3	86.33
Less than one hour a day	13	101.08	25	92.36	5	79.40
Between one and two hours a day	7	114.29	19	104.79	9	105.56
Between two and three hours a day	3	119.67	8	104.75	6	110.17
More than three hours a day	0	Na	5	134.40	3	100

Table 18. Mean vocabulary scores according to watching subtitled English television programmes and films, per education type
Note. Na: Not applicable

Furthermore, figure 20 demonstrates that there are quite a number of differences in the dispersions of the ASO, TSO, and B stream vocabulary scores. It can also be denoted that there are several outliers for the TSO and B stream groups, but not for the ASO counterparts.

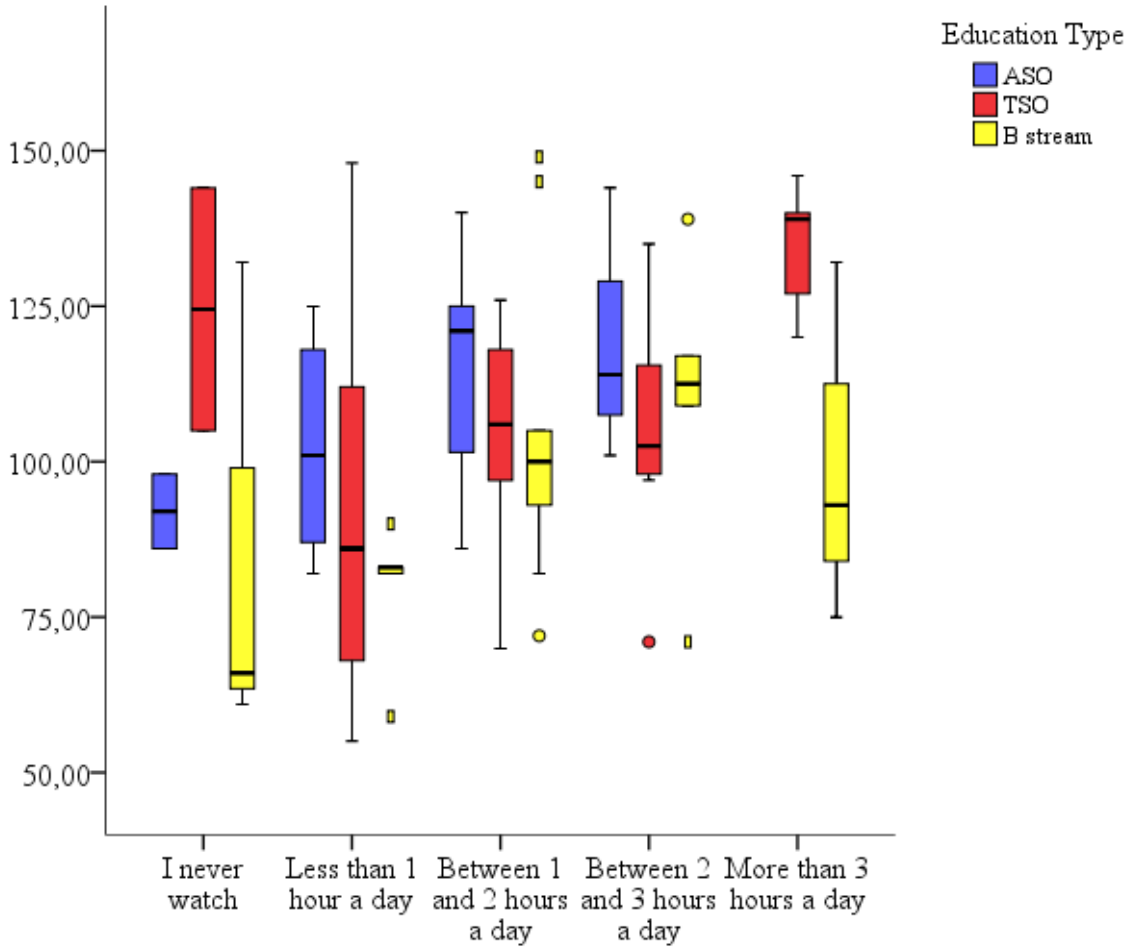

Figure 20. Vocabulary scores according to watching subtitled English television programmes and films, per education type

As previously mentioned, a two-tailed independent samples *t*-test confirmed that the mean vocabulary score of students watching subtitled English programmes for more than one hour a day is significantly better than that of students who do not. A two-way ANOVA[5] indicates that this is also the case when controlling for education type (ASO, TSO, B stream) ($F(1, 104) = 14.43$, $p < .001$; mean difference = 18.19; 95% CI [8.74, 27.85]).

[5] The interaction between watching subtitled English television programmes and films, and education type is not statistically significant ($F(2, 104) = .37$, $p = .693$).

4.3.3.7 Watching non-subtitled English television programmes and films

English television programmes and films may of course also be watched without any subtitles. As shown in table 19, only 20 participants in this study never do. These students clearly outperformed those who watch non-subtitled English programmes in between two and three hours a day. Nevertheless, their mean score is still very close to that of students watching up to one hour. A higher score was obtained by children watching non-subtitled English programmes and films for more than three hours a day. However, pupils who do so for about one to two hours reached an even higher mean PPVT score.

	All participants	
I never watch	20	99.45
Less than one hour a day	52	100.42
Between one and two hours a day	23	113.09
Between two and three hours a day	6	90
More than three hours a day	9	103.44

Table 19. Mean vocabulary scores according to watching non-subtitled English television programmes and films

In addition, figure 21 reveals that the dispersions of the vocabulary scores of the five groups all differ from one another.

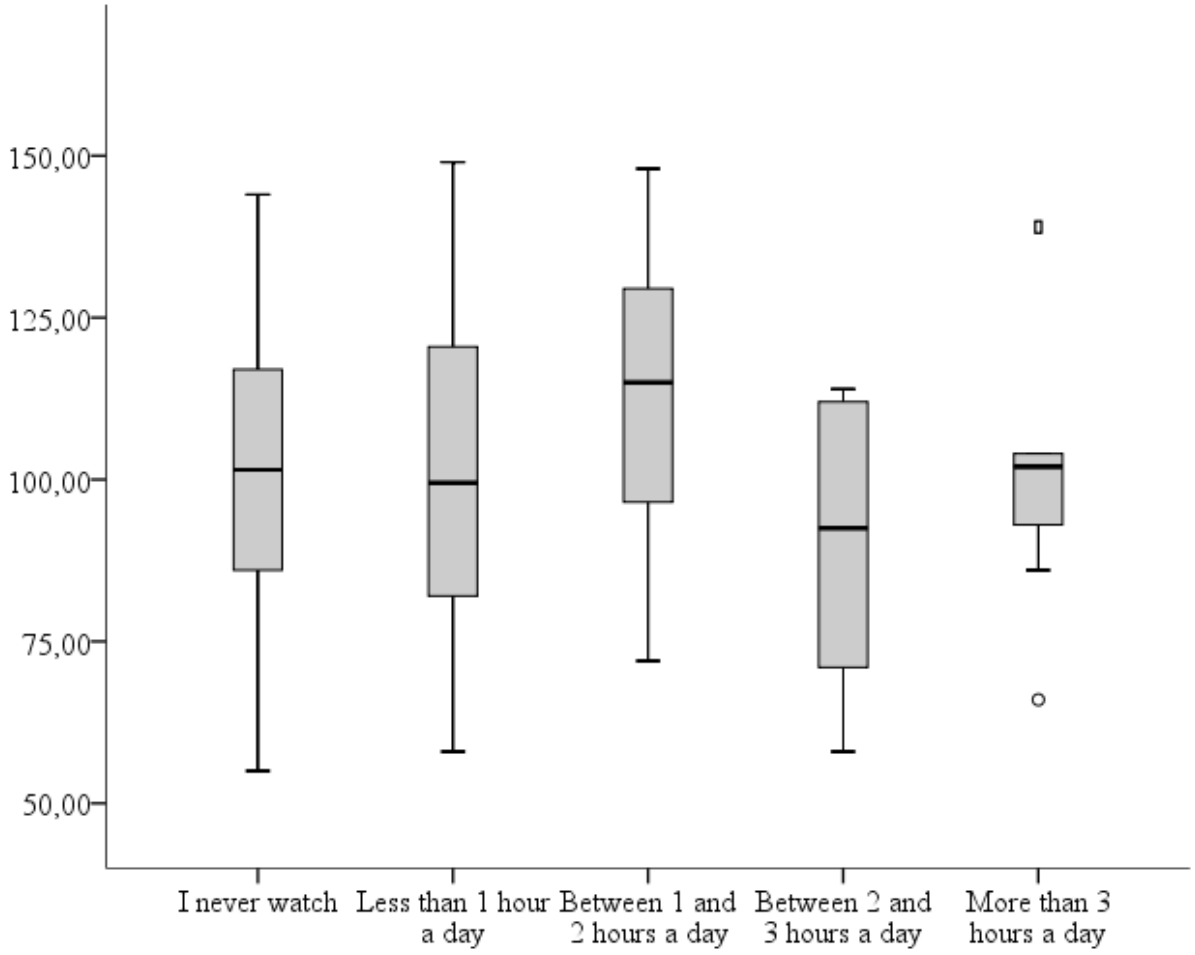

Figure 21. Vocabulary scores according to watching non-subtitled English television programmes and films

Since the data in this sample are rather unbalanced, only the difference between the mean scores of students who do and do not watch non-subtitled English television programmes and films for more than one hour a day was analysed in more detail. According to a two-tailed independent samples *t*-test (with equal variances assumed), this difference is however not statistically significant ($t(108) = -1.49$, $p = .140$; 95% CI [-16.35, 2.34]).

Regarding the results according to type of education, it can be noticed that among the students who never watch non-subtitled English programmes, and those who do so for about two to three hours a day, the ASO students outperformed their TSO peers, who in their own respect outperformed their B stream peers. Within the group watching between one and two hours a day, the ASO students obtained a substantially lower score than their TSO and B stream companions (see table 20).

	ASO (25)		TSO (59)		B stream (26)	
I never watch	3	114.33	11	100.90	6	89.33
Less than one hour a day	15	108.80	28	96.64	9	98.22
Between one and two hours a day	5	96.40	12	120	6	113.17
Between two and three hours a day	2	100	3	89.67	1	71
More than three hours a day	0	Na	5	106.80	4	99.25

Table 20. Mean vocabulary scores according to watching non-subtitled English television programmes and films, per education type
Note. Na: Not applicable

As visible in figure 22, the dispersions of the ASO, TSO, and B stream vocabulary scores vary quite a lot. Furthermore, one may observe that there are a number of outliers, both towards much lower and much higher vocabulary scores.

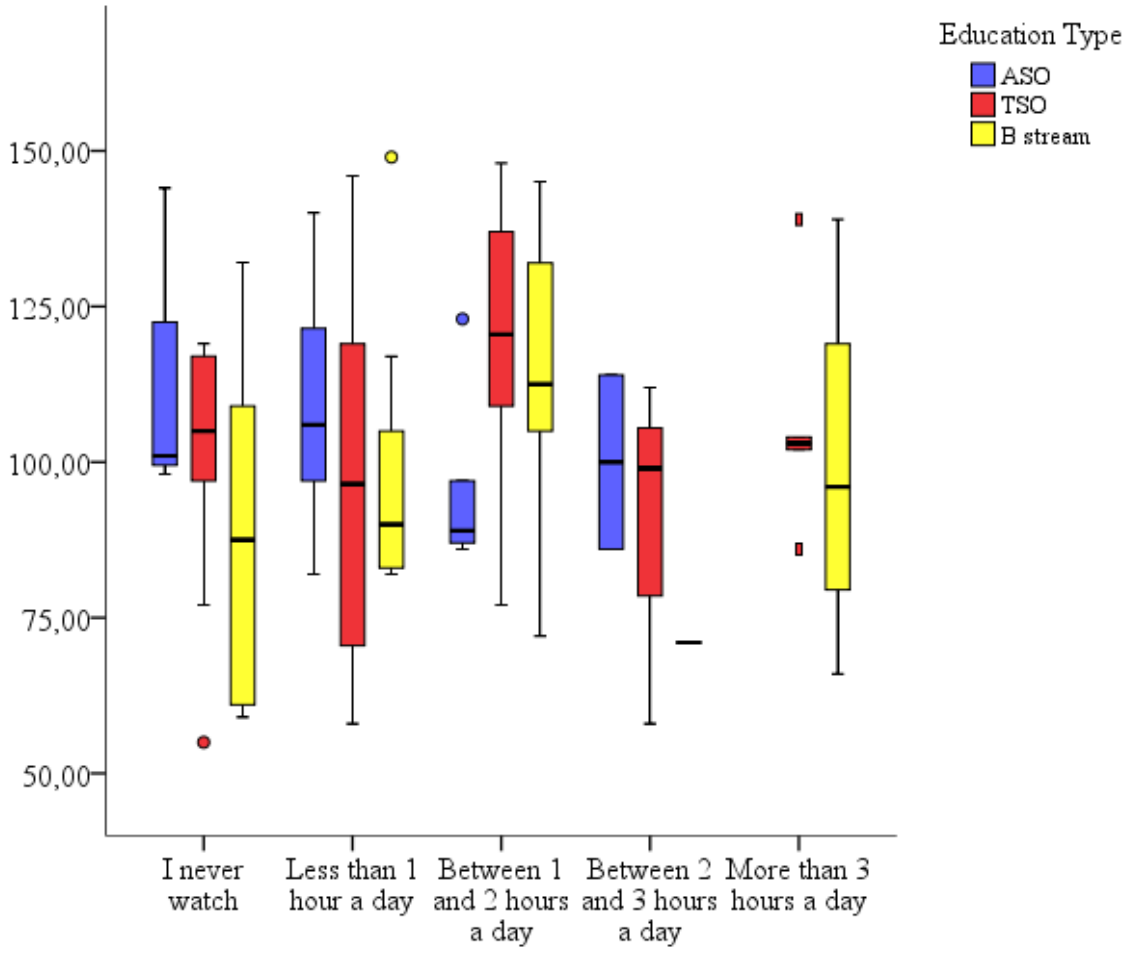

Figure 22. Vocabulary scores according to watching non-subtitled English television programmes and films, per education type

A two-way ANOVA[6] shows that the mean scores of students who do and do not watch non-subtitled English television programmes and films for more than one hour a day do not differ significantly when controlling for education type ($F(1, 104) = .58$, $p = .448$).

[6] The interaction between watching non-subtitled English television programmes and films, and education type is not statistically significant ($F(2, 104) = 2.42$, $p = .094$).

4.3.3.8 Surfing on the internet

Every student included in this study claimed to be surfing on the internet every day. The average vocabulary score of students who surf for less than one hour a day is as good as equal to that of students who do so for about two to three hours. Moreover, there is only a small difference between these scores and that of students who surf between one and two hours on the internet every day. Pupils surfing for more than three hours a day obtained the highest mean test score (see table 21).

	All participants	
I never surf on the internet	0	Na
Less than one hour a day	27	100.89
Between one and two hours a day	37	103.24
Between two and three hours a day	26	100.54
More than three hours a day	20	106.25

Table 21. Mean vocabulary scores according to surfing on the internet
Note. Na: Not applicable

With respect to figure 23, it can be remarked that the dispersions of the vocabulary scores of the different groups are all very similar.

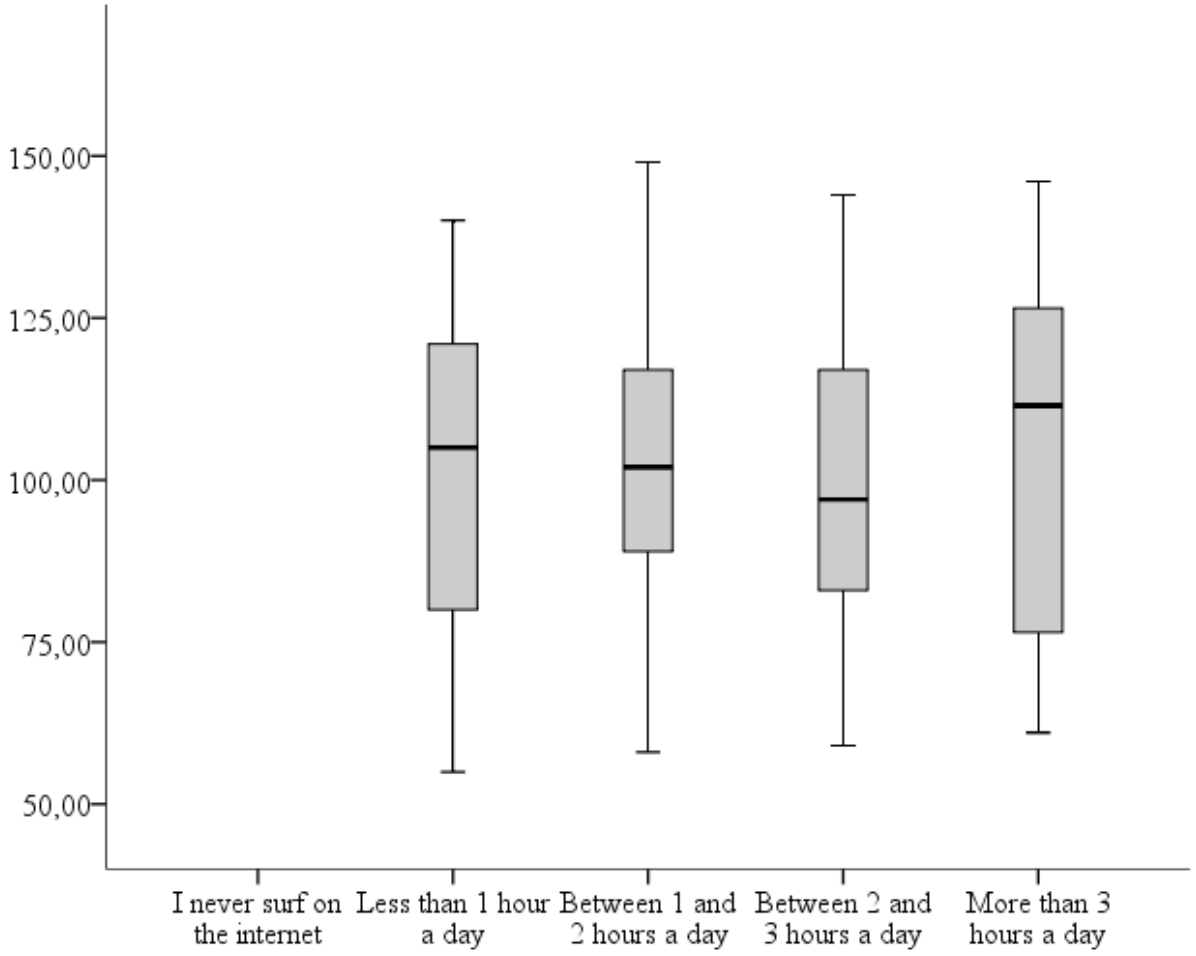

Figure 23. Vocabulary scores according to surfing on the internet

When analysing the average vocabulary scores of students who do and do not surf on the internet for more than one hour a day, a two-tailed independent samples *t*-test (with equal variances assumed) shows that there is no significant difference between the mean scores of these two groups ($t(108) = -.43$, $p = .672$; 95% CI [-12.65, 8.19]).

Table 22 contains the separate results of the ASO, TSO, and B stream students. Among the students who surf on the internet up to one hour a day, the ASO students had a much higher PPVT score than their TSO companions. Within the group of students surfing between one and two hours, the average scores are all relatively close together. This is however not the case for the groups surfing on the internet for about two to three, and more than three hours a day.

	ASO (25)		TSO (59)		B stream (26)	
I never surf on the internet	0	Na	0	Na	0	Na
Less than one hour a day	11	113.82	16	92	0	Na
Between one and two hours a day	12	102.08	19	104.05	6	103
Between two and three hours a day	2	90	14	105.21	10	96.10
More than three hours a day	0	Na	10	113.70	10	98.80

Table 22. Mean vocabulary scores according to surfing on the internet, per education type
Note. Na: Not applicable

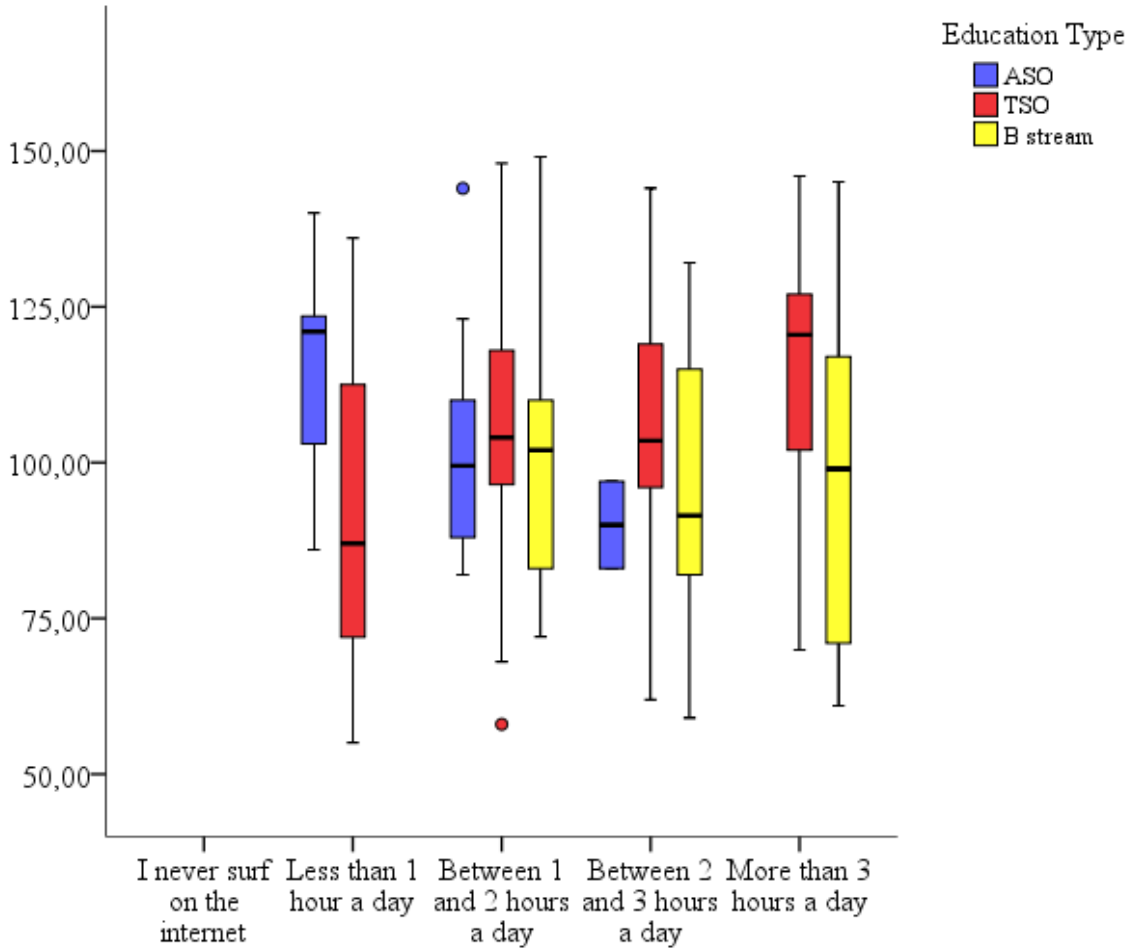

Figure 24. Vocabulary scores according to surfing on the internet, per education type

As demonstrated in figure 24, the vocabulary scores of the TSO students also improve as they surf more on the internet. For the scores of the ASO pupils this pattern is clearly reversed. Since there are data missing for some of the subgroups, these trends were however not analysed in further detail.

4.3.3.9 Playing English (video) games

Young adolescents may also get in contact with English by playing English (video) games. As shown in table 23, the students who never play such games obtained a lower mean score than all those who do. Most informants claimed to be playing English games up to one hour a day. Their mean score is higher than that of students who play for about two to three hours. The children playing English games between one and two hours reached a higher score, but did not outperform those who tend to do so for more than three hours.

	All participants	
I never play English games	15	90.73
Less than one hour a day	39	99.79
Between one and two hours a day	24	106.20
Between two and three hours a day	14	95.14
More than three hours a day	18	119

Table 23. Mean vocabulary scores according to playing English (video) games

Furthermore, figure 25 reveals that the test scores generally improve as students spend more time playing English (video) games.

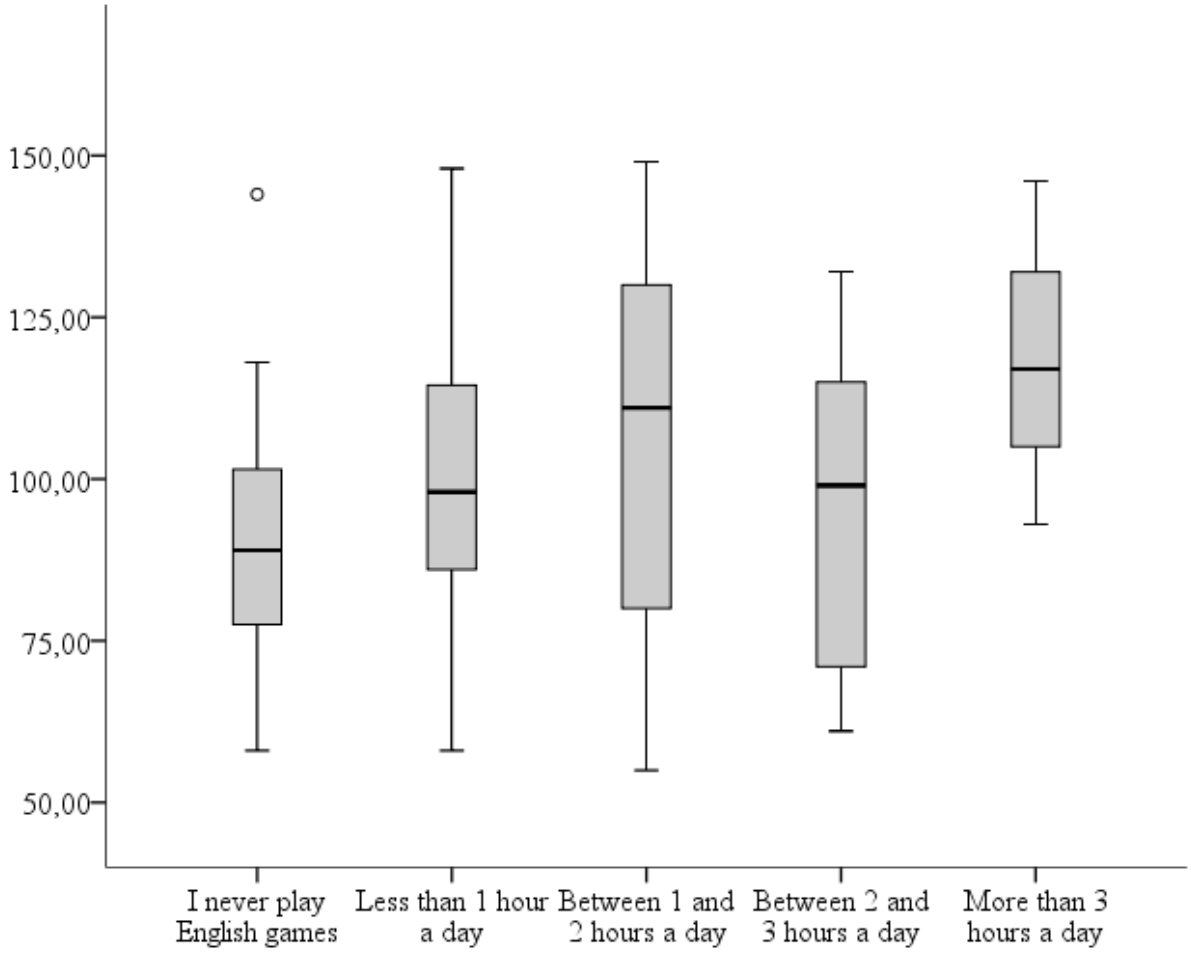

Figure 25. Vocabulary scores according to playing English (video) games

For further statistical analyses, the vocabulary scores were grouped according to whether or not students play English (video) games for more than one hour a day. A two-tailed independent samples *t*-test (with equal variances assumed) indicates that the difference between the mean vocabulary scores of these two groups is statistically significant ($t(108) = -2.29$, $p = .024$). More specifically, the students playing English games for more than one hour a day obtained a significantly higher mean score than those who do not (mean difference = -10.15; 95% CI [-18.91, -1.38]).

Table 24 and figure 26 provide an overview of the results according to type of education. As can be seen in table 24, the ASO students outperformed their TSO and B stream peers in every respect. For example, the ASO students who never play English (video) games scored much higher than the TSO and B stream students within that group. Also the mean scores of students who play games up to one hour every day differ quite noticeably. Moreover, it can be remarked that the average ASO, TSO, and B stream scores generally improve as students play English games for longer periods of time.

	ASO (25)		TSO (59)		B stream (26)	
I never play English games	8	104.75	3	68.66	4	79.25
Less than one hour a day	15	105.47	21	98.19	3	85
Between one and two hours a day	2	118.50	16	106.56	6	101.17
Between two and three hours a day	0	Na	8	93	6	98
More than three hours a day	0	Na	11	122	7	114.29

Table 24. Mean vocabulary scores according to playing English (video) games, per education type
Note. Na: Not applicable

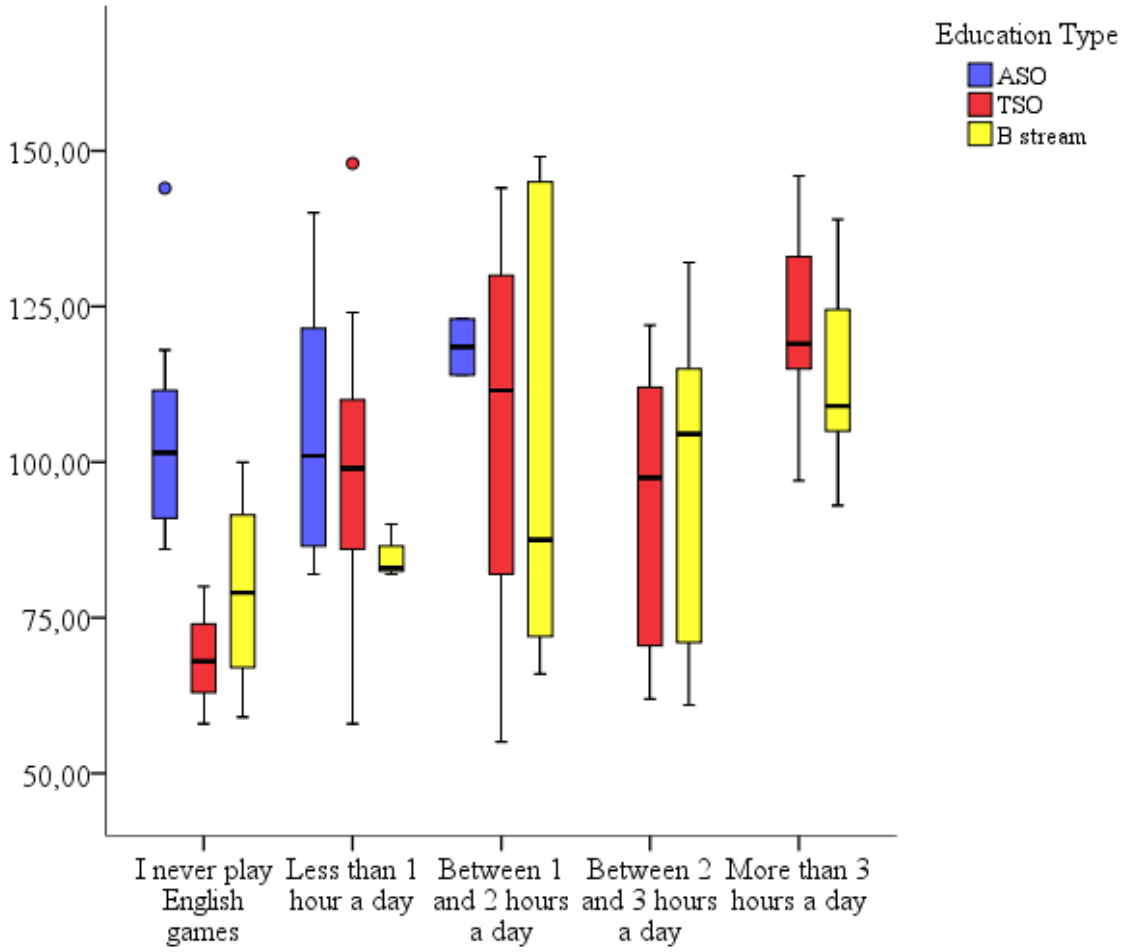

Figure 26. Vocabulary scores according to playing English (video) games, per education type

Since there is an unbalanced distribution of the data among the subgroups, the specific effects of playing English (video) games on the vocabulary scores of each educational group (ASO, TSO, B stream) were not statistically analysed.

5. Discussion

5.1 The English receptive vocabulary knowledge of Flemish secondary school children across three types of education

The first research question put forward in this study is whether there are any significant differences in the English receptive vocabulary knowledge of Flemish secondary school children prior to formal instruction across A stream ASO, A stream TSO, and B stream education. It was expected that the results would have differed significantly across the three types of education, but statistical analyses showed that they did not. This finding can be somewhat compared to the observations by Charlotte Lippens (2010: 127), who investigated the differences in the English productive vocabularies of ASO, TSO, and B stream students. She found that ASO informants scored much higher than TSO and B stream informants on a productive vocabulary test, and therefore concluded that ASO students have a better productive lexical knowledge of English than their TSO and B stream companions (Charlotte Lippens 2010: 127-128). It should however be remarked that Lippens (2010) did not perform any statistical tests. Furthermore, it is important to bear in mind that she observed the productive, rather than the receptive English vocabulary knowledge of Flemish secondary school children (Charlotte Lippens 2010: 6, 127-128). There are in fact only few studies which have aimed at investigating the differences in the receptive vocabularies of ASO, TSO, and B stream students. Consequently, the present findings cannot be more clearly contrasted with those of others.

5.2 The effects of gender, socioeconomic status, and language contact on the English receptive vocabulary knowledge of Flemish secondary school children across three types of education

A second question to be answered in this study is whether gender, socioeconomic status, and various types of language contact have an influence on the English receptive vocabulary development of Flemish secondary school children in A stream ASO, A stream TSO, and B stream education. On the basis of previous research, it was hypothesized that the girls in this study would have a better lexical knowledge of English than the boys. In addition, it was expected that the students' receptive vocabulary levels would be significantly related to their socioeconomic status. Furthermore, it was assumed that various types of language contact would be shown to have a positive effect on the students' lexical acquisition of English.

5.2.1 Gender

Although there have been few studies which have examined the effects of gender on second language acquisition, researchers tend to find that women are better second language learners than men. However, these results are not always very clear-cut (Ellis 2008: 313-316). Hence, it was tentatively hypothesized that the girls in this sample would have a more advanced English receptive vocabulary knowledge than the boys, and consequently would have outperformed them on the vocabulary test (PPVT-IIII, Dunn & Dunn 2007). Contrary to these expectations, the mean PPVT scores of the boys were significantly better than those of the girls. Other researchers have similarly shown that women need not always be the better L2 learners. Boyle (1987), for example, found that males had better listening skills than females (Boyle 1987 in Ellis 2008: 314), and Kuppens (2007: 333) demonstrated that boys significantly outperformed girls on a receptive vocabulary test.

5.2.2 Socioeconomic status (SES)

Statistical analyses indicated that the students' socioeconomic status (SES) did not significantly affect their lexical acquisition of English. This outcome was not expected at all, since most researchers have proven that SES is a highly influential factor in second language acquisition. Burstall (1975) already showed that middle-class children outperformed those belonging to the lower classes in learning French as a foreign language. These observations were also supported by Skehan (1990), who found that low SES students had more difficulties than their mid SES peers in learning French and German. In addition, Olshtain et al. (1990) demonstrated that this also holds true for second language learners of English (all in Ellis 2008: 316-317).

5.2.3 Language contact

Based on the findings of other researchers (Berns et al. 2007; De Jans 2013; Kuppens 2007), it was hypothesized that the students' English receptive vocabulary knowledge would be strongly determined by the various types of contact with English they experience. Particularly occasional instruction of English, reading English books and magazines, listening to English music, playing English (video) games, and watching English television programmes and films were expected to have a significant impact on their English receptive vocabulary development.

In this study, there was only one participant who had already lived abroad in an English speaking country. Descriptive statistics showed that this B stream student's PPVT score was much higher than the mean score of the other students. Likewise, in the study by De Jans (2013: 51-52), the one ASO student who had already lived abroad obtained a higher vocabulary score, which was also proven to be significantly better than the average test score

of the other students. As such, De Jans (2013: 51-52) concluded that living abroad in an English speaking country has a positive effect on the English productive vocabulary development of Flemish youngsters. Since among the participants of the present study only one student had lived abroad, it is not possible to make any significant statements about this.

When looking at the vocabulary scores in relation to travelling, statistical analyses showed that the scores of students who had and had not yet used English as a means of communication on one of their travels did not differ significantly. Also when controlling for education type, there were no meaningful differences to be found. These results clearly stand in contrast to those of Berns et al. (2007: 85), who found that the factor of travelling abroad was positively related to the receptive vocabulary scores of adolescents aged between 12 and 18.

As expected, statistics (for the general groups) further indicated that students who had occasionally received instruction of English in the past had a better English receptive vocabulary knowledge than those who had not. In contrast, De Jans (2013: 52), found that English instruction had no significant influence on students' lexical abilities at all. It is however important to keep in mind that De Jans (2013) observed students' productive, rather than their receptive vocabulary knowledge. Moreover, he did not consider the occasional teaching of English at language camps or at home as a type of instruction (De Jans 2013: 51-52).

It was then also assumed that listening to English music would strongly affect the students' English vocabulary acquisition. Kuppens (2007: 332-334) already showed that the more Flemish children listen to English music on a daily basis, the more non-cognate words they acquire. Berns et al. (2007: 85) even demonstrated that English music was one of the most influential factors in adolescents' lexical acquisition of English. In the present study, it was however revealed that the different amounts of time spent on listening to English music

(i.e., more or less than one hour a day) had no significant effect on the students' receptive vocabulary levels, not even when looking separately at the three educational groups (ASO, TSO, B stream). These findings clearly contradict those by Kuppens (2007) and Berns et al. (2007), but are in line with those by De Jans (2013: 64), who also found no correlation between the productive vocabularies of Flemish secondary school children and listening to English music.

Besides the effects of listening to English music, those of reading English books and magazines were analysed as well. As expected, statistical tests (for the general groups) indicated that students who had already read English books and/or magazines had a significantly better average vocabulary score than those who had not. Also De Jans (2013: 68) observed that students who had already read English books obtained better test scores than the other students, although it could not be statistically confirmed whether or not these scores differed significantly. It may therefore be more interesting to mention the study by Berns et al. (2007: 85), in which it was found that reading English books had a meaningful effect on the informants' self-assessment tasks, but not on their vocabulary scores. As such, the present findings clearly contradict those of Berns et al. (2007). It is however important to bear in mind that the observations by Berns et al. (2007: 49) are based on a sample of students aged between 12 and 18 years. Probably, these informants had already had more opportunities to read English books and magazines. Moreover, it is likely that most of these adolescents had received formal instruction of English for some time. Consequently, it may be of little surprise that their English receptive vocabulary knowledge had developed to a similar extent.

Furthermore, it was shown that students who watch subtitled English television programmes for more than one hour a day significantly outperformed those who do not. As such, the hypothesis that watching English television programmes and films has a positive effect on the English vocabulary acquisition of Flemish secondary school children seems to be

confirmed. In previous research, watching subtitled television programmes has been proven to be an influential factor as well. Kuppens (2007: 330), for example, showed that students who watched these programmes for at least six times a week acquired significantly high amounts of new English vocabulary, whereas other students did not. Moreover, De Jans (2013: 57-58) demonstrated that pupils spending more time on watching subtitled programmes and films each day had already acquired more English verbs and adjectives than the others.

Also when controlling for education type, watching subtitled English television programmes and films was found to have a significant effect on the students' English receptive vocabulary development. More specifically, both within the ASO, TSO, and B stream subgroups students watching subtitled English programmes for more than one hour a day had a significantly better lexical knowledge of English than students who do not watch these programmes that long. It should however be remarked that there was no direct correlation between education type (ASO, TSO, B stream) and the time students spent watching subtitled television programmes (i.e., more or less than one hour a day). As such, these results suggest that watching subtitled English television programmes and films has an equally positive effect on the English receptive vocabulary development of children in ASO, TSO, and B stream education. Since there are few studies which have aimed at comparing the English receptive vocabulary knowledge of ASO, TSO, and B stream students in relation to the different types of language contact they may experience, it is not possible to contrast the present findings with those of others.

Although it was expected that watching non-subtitled English television programmes and films (i.e., more or less than one hour a day) would equally have a strong impact on the students' English receptive vocabulary acquisition, statistical analyses indicated that it did not. Also when looking separately at the three educational groups (ASO, TSO, B stream), there were no meaningful effects to be found. This finding is similar to that of De Jans (2013:

60), who showed that watching non-subtitled English programmes and films did not significantly affect students' productive vocabulary knowledge either.

Concerning the use of internet, statistical analyses (for the general groups) revealed that there were no considerable differences between the average PPVT scores of students who do and do not spend more than one hour a day surfing on the internet. Yet again, this observation may be compared to that of De Jans (2013). He found that students spending large amounts of time surfing on the internet had obtained significantly better vocabulary scores than those who did not (De Jans 2013: 68-71). Hence, present results seem to somewhat contradict those of De Jans (2013).

Ultimately, it was hypothesized that playing English (video) games would strongly influence students' lexical acquisition of English. As expected, statistical analyses (for the general groups) indicated that students who play English games during more than one hour a day had indeed acquired a significantly larger amount of English words than students who do not play these games that long. This result stands in contrast to previous observations. De Jans (2013: 73-76), for example, demonstrated that the amount of time students spend on playing English video games is of no importance for their English vocabulary acquisition. Similarly, Kuppens (2007: 330, 333-334) proved that playing English video games did not have a direct effect on the amounts of English words students acquired.

6. Conclusion

This study aimed at investigating the differences in the English receptive vocabulary knowledge of Flemish secondary school children in A stream ASO, A stream TSO, and B stream education prior to formal instruction. As such, the English receptive vocabulary levels of 25 ASO, 59 TSO, and 26 B stream students aged between 12;2 and 14;2 years were measured by means of the Peabody Picture Vocabulary Test (PPVT-IIII, Dunn & Dunn 2007). Statistical analyses indicated that there were no significant differences in the students' English vocabulary knowledge. Since there are few studies in which the receptive lexical abilities of ASO, TSO, and B stream students have been compared, this finding could however not be clearly contrasted with those of others.

Furthermore, this research dealt with the question of whether the English receptive vocabulary development of Flemish young adolescents is affected by their gender, socioeconomic status (SES), and contact with English through various media. With respect to gender, it was shown that the boys in the sample had a more advanced lexical knowledge of English than the girls. In the past, some researchers have argued that women are better second language learners than men, whereas others have claimed the opposite to be true (Ellis 2008: 313-316; Kuppens 2007: 333). The present findings clearly support the latter point of view.

Regarding socioeconomic status, statistics revealed that the low, mid, and high SES students all had a similar receptive knowledge of the English lexicon. This finding contradicts those of other researchers, who generally have shown that socioeconomic status has a significant impact on students' acquisition of second languages (Burstall 1975; Olshtain et al. 1990; Skehan 1990; all in Ellis 2008: 316-317).

As for language contact, reading English books and magazines, occasional instruction of English, watching subtitled English television programmes and films, and playing English (video) games all proved to have a positive effect on the students' lexical acquisition of

English, although listening to English music, watching non-subtitled English television programmes and films, travelling, and surfing on the internet did not. Previous research has shown that watching subtitled English television programmes and films is indeed an influential factor in SLA, and that watching non-subtitled English television programmes and films usually is not. In contrast to the present findings, however, researchers have also demonstrated that travelling, listening to English music, and surfing on the internet certainly do have a significant influence on the vocabulary development of young adolescents. Also with respect to reading English books and magazines, playing English video games, and occasional English instruction, the results of this study contradict those of others, since it was already proven that these factors do not always affect students' English vocabulary acquisition (Berns et al. 2007; De Jans 2013; Kuppens 2007).

All in all, the present study demonstrated that Flemish secondary school children in ASO, TSO, and B stream education, prior to formal instruction, all have an equally advanced receptive lexical knowledge of English. Secondly, it was shown that the English receptive vocabulary development of these students is significantly affected by the various ways in which they come into contact with English. Also gender proved to be an influential factor, although socioeconomic status did not. In general, it may thus be concluded that regardless of their socioeconomic backgrounds, ASO, TSO, and B stream students, in one way or another, all experience an equally positive influence of their exposure to English on their English receptive vocabulary development, and that boys do so even more than girls.

7. Suggestions for further research

This study unexpectedly showed that there are no meaningful differences in the English receptive vocabulary knowledge of Flemish first year secondary school children in A stream ASO, A stream TSO, and B stream education. It could therefore be of interest to examine whether these children's productive lexical skills in English are equally developed as well. Additionally, their previously acquired grammatical and syntactic knowledge of English could be compared and analysed to further extent. By doing so, researchers could gain broader insights into the possible differences in the English language competence of Flemish students in ASO, TSO, and B stream education prior to instruction.

As most of the students included in this research will be taught English when entering the second or third year of secondary education, it would also be interesting to conduct a follow-up study in order to investigate how fast their receptive vocabularies further develop while they are studying English. In addition, one could determine to what extent the pupils' current English vocabulary knowledge will have changed after having received English instruction for some time. Moreover, researchers could explore in what ways students' lexical acquisition of English is affected by their motivations to learn the language. Furthermore, the association between the students' English vocabulary development and the different teaching methods used across the five participating schools may be examined. This could be of particular interest for researchers in the field of language teaching.

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Appendix

Appendix A School letter and SES questionnaire

Appendix B Language contact questionnaire

Appendix C Answer sheets vocabulary test

Appendix D Assumptions for statistical analyses

Appendix A

School letter and SES questionnaire

Ruiselede, 15 februari 2016

Beste ouders

Binnen het kader van een masterproefonderzoek aan de universiteit van Gent is het mogelijk dat uw zoon/dochter in de komende weken verzocht wordt deel te nemen aan een kort onderzoek. Daarin wil men nagaan in welke mate de Engelse taalvaardigheid van leerlingen van het eerste middelbaar onderwijs al gevorderd is voor ze lessen Engels hebben gehad.

Het onderzoek bestaat er concreet in dat uw zoon/dochter een eenvoudige woordenschattoets aflegt die het niveau van de Engelse woordenschatkennis bepaalt. Indien uw zoon/dochter wordt opgenomen in de studie, zullen zijn/haar persoonlijke gegevens en resultaten achteraf anoniem en confidentieel verwerkt worden. De uiteindelijke onderzoeksresultaten zullen bijdragen tot een verbetering van de onderwijspraktijken en de academische prestaties van de leerlingen binnen onze school.

Gelieve zowel de onderstaande strook als de bijgevoegde vragenlijst in te vullen, te ondertekenen, en terug te bezorgen vóór 22 februari.

De ouders van (naam en klas) ……

0 geven de toestemming om hun zoon/dochter te laten deelnemen aan het onderzoek.

0 geven geen toestemming om hun zoon/dochter te laten deelnemen aan het onderzoek.

Handtekening en datum

Vragenlijst masterproefonderzoek Universiteit Gent

Naam van uw kind: ……..

Klas – studierichting: …….

Handtekening en datum: ……

Gelieve volgende vragen kort te beantwoorden. Voor elke vraag is telkens maar 1 antwoord mogelijk.

Gelieve de ingevulde vragenlijst samen met het toestemmingstrookje terug te bezorgen vóór 21 februari.

1. Wat is het hoogst behaalde diploma van de moeder?

- ☐ Geen diploma
- ☐ Diploma basisonderwijs
- ☐ Diploma secundair onderwijs
- ☐ Hogeschool (professionele bachelor)
- ☐ Universitair diploma (academische bachelor)
- ☐ Universitair diploma: master of doctor

2. Wat is het hoogst behaalde diploma van de vader?

- ☐ Geen diploma
- ☐ Diploma basisonderwijs
- ☐ Diploma secundair onderwijs
- ☐ Hogeschool (professionele bachelor)
- ☐ Universitair diploma (academische bachelor)
- ☐ Universitair diploma: master of doctor

3. Wat is de huidige werkstatus van de moeder?

- ☐ Arbeider
- ☐ Bediende
- ☐ Ambtenaar
- ☐ Zelfstandig
- ☐ Vrij beroep
- ☐ Tijdig werkloos
- ☐ Anders: ……

4. Wat is de huidige werkstatus van de vader?

- ☐ Arbeider
- ☐ Bediende
- ☐ Ambtenaar
- ☐ Zelfstandig
- ☐ Vrij beroep
- ☐ Tijdig werkloos
- ☐ Anders: ……

Appendix B

Language contact questionnaire

Vragenlijst masterproefonderzoek Universiteit Gent

Naam: ……..

Klas: …….

Richting: ASO / TSO / BSO

School: …….

Beantwoord de volgende vragen. Voor elke vraag is telkens maar 1 antwoord mogelijk. Indien je geen specifieke mening hebt, zet dan een kruisje door het nummer van de vraag.

1. Wat is je geslacht?

☐ Man
☐ Vrouw

2. Heb je een bepaalde leerstoornis of taalstoornis (dyslexie, dyscalculie, ADHD, …)?

☐ Ja, ……..
☐ Neen

3. Is Nederlands je moedertaal? Zo niet, welke taal spreek je thuis?

☐ Ja
☐ Neen, ik spreek thuis ……..……

4. Spreekt een van je ouders Engels als moedertaal?

☐ Ja
☐ Neen

5. Heb je al in een land gewoond waar men Engels spreekt?

☐ Ja
☐ Neen

Indien ja, waar en hoe lang heb je daar gewoond? ……..……..

6. Heb je al Engelse les gekregen? Bijvoorbeeld in een andere school of op taalkamp?

☐ Ja, ……
☐ Neen

7. Ben je al op reis geweest naar een land waar je Engels moest spreken om jezelf verstaanbaar te maken? Zoja, welk land was dat?

- ☐ Ja, ……..……..
- ☐ Neen

8. Kijk je er naar uit om volgend jaar Engels te leren op school?

- ☐ Neen, helemaal niet
- ☐ Eerder niet
- ☐ Eerder wel
- ☐ Ja, enorm

9. Hoe belangrijk is het voor jou om volgend jaar Engels te leren op school?

- ☐ Helemaal niet belangrijk
- ☐ Minder belangrijk
- ☐ Vrij belangrijk
- ☐ Zeer belangrijk

10. Op welke manieren kom je in contact met Engels? Omcirkel wat het best bij je past.

	Nooit	Zelden	Soms	Vaak
Familie en vrienden	Nooit	Zelden	Soms	Vaak
Muziek	Nooit	Zelden	Soms	Vaak
Boeken en magazines	Nooit	Zelden	Soms	Vaak
Films	Nooit	Zelden	Soms	Vaak
Televisie	Nooit	Zelden	Soms	Vaak
Internet	Nooit	Zelden	Soms	Vaak
Games	Nooit	Zelden	Soms	Vaak

11. Hoeveel minuten per dag luister je ongeveer naar Engelstalige muziek?

……..……...……..…

12. Begrijp je doorgaans de teksten van de liedjes waar je naar luistert?

- ☐ Nooit
- ☐ Zelden
- ☐ Soms
- ☐ Vaak

13. Duid aan wat voor jou het meest van toepassing is.

- ☐ Ik heb een voorkeur voor Nederlandstalige muziek
- ☐ Ik heb een voorkeur voor Engelstalige muziek
- ☐ Ik luister graag naar zowel Nederlandstalige als Engelstalige muziek
- ☐ Ik luister bijna nooit naar muziek

14. Heb je ooit al een Engelstalig boek of magazine gelezen? Zoja, hoeveel waren dat er ongeveer?

- ☐ Ja, ……
- ☐ Neen

15. Duid aan wat voor jou het meest van toepassing is.

- ☐ Ik lees vaker Nederlandstalige boeken dan Engelstalige
- ☐ Ik lees vaker Engelstalige boeken dan Nederlandstalige
- ☐ Ik lees enkel Nederlandstalige boeken
- ☐ Ik lees enkel Engelstalige boeken
- ☐ Ik lees geen boeken

Indien je Engelstalige boeken leest (of al gelezen hebt), hoeveel zijn dat er ongeveer op een jaar?

…….....

16. Hoeveel uur per dag kijk je naar ondertitelde Engelstalige programma's/films?

- ☐ Ik kijk nooit naar ondertitelde Engelstalige programma's/films
- ☐ Minder dan 1 uur per dag
- ☐ Tussen 1 en 2 uur per dag
- ☐ Tussen 2 en 3 uur per dag
- ☐ Meer dan 3 uur per dag

17. Hoeveel uur per dag kijk je naar niet-ondertitelde Engelstalige programma's/films?

- ☐ Ik kijk nooit naar niet-ondertitelde Engelstalige programma's/films
- ☐ Minder dan 1 uur per dag
- ☐ Tussen 1 en 2 uur per dag
- ☐ Tussen 2 en 3 uur per dag
- ☐ Meer dan 3 uur per dag

18. Duid aan wat voor jou het meest van toepassing is.

- ☐ Ik heb een voorkeur voor Nederlandstalige programma's/films
- ☐ Ik heb een voorkeur voor Engelstalige programma's/films met Nederlandse ondertiteling
- ☐ Ik heb een voorkeur voor Engelstalige programma's/films zonder Nederlandstalige ondertiteling (of met Engelse ondertiteling)
- ☐ Ik heb een voorkeur voor gedubde Engelstalige programma's/films (Nederlandse voice-over)

19. Hoeveel uur per dag surf je op het internet?

- ☐ Ik surf nooit op het internet
- ☐ Minder dan 1 uur per dag
- ☐ Tussen 1 en 2 uur per dag
- ☐ Tussen 2 en 3 uur per dag
- ☐ Meer dan 3 uur per dag

20. Heb je het gevoel dat je Engels bijleert door te surfen op het internet?

- ☐ Ja
- ☐ Neen

21. Hoeveel uur per dag speel je Engelstalige games?

- ☐ Ik speel nooit Engelstalige games
- ☐ Minder dan 1 uur per dag
- ☐ Tussen 1 en 2 uur per dag
- ☐ Tussen 2 en 3 uur per dag
- ☐ Meer dan 3 uur per dag

22. Heb je het gevoel dat je Engels bijleert door Engelstalige games te spelen?

- ☐ Ja
- ☐ Neen

23. Zijn er nog andere manieren waarop je in contact komt met Engels (die nog niet eerder genoemd zijn)? Hoe vaak is dat dan?

……

……

Bedankt voor je medewerking!

Appendix C

Answer sheets vocabulary test

UNIVERSITEIT GENT

Antwoordenblad

Naam: ……..

Klas: ……...……

Richting: ASO / TSO / BSO

School: ……...

Schrijf bij elke vraag het nummer (van 1 tot 4) van de tekening die overeenkomt met het woord dat luidop gezegd wordt. Je mag telkens maar één nummer invullen.

Indien je twijfelt, schrijf dan het nummer op van de tekening die volgens jou het best past. Als je het antwoord echt niet weet, zet dan een kruisje door het nummer van de vraag.

In de donker gekleurde vakken moet je niets invullen. Ze helpen je om te zien of je geen vakje hebt overgeslaan.

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Appendix D

Assumptions for statistical analyses

Statistical analysis	**Assumptions** Kolmogorov-Smirnov test (normality) Levene's test (equality of variances)
One-way ANOVA for type of education	ASO: (KM = .11, p = .200) TSO: (KM = .08, p = .200) B stream: (KM = .11, p = .200)
	(F(2, 107) = 1.40, p = .251)
Two-tailed independent samples *t*-test for gender	Male: (KM = .08, p = .200) Female: (KM = .10, p = .200)
	(F(108) = 4.48, p = .037)
One-way ANOVA for socioeconomic status (SES)	Low SES: (KM = .11, p = .200) Mid SES: (KM = .05, p = .200) High SES: (KM = .20, p = .200)
	(F(2, 107) = 1.06, p = .350)
Two-tailed independent samples *t*-test for travelling	No: (KM = .06, p = .200) Yes: (KM = .07, p = .200)
	(F(108) = .15, p = .698)

Two-way ANOVA for travelling	No: (KM = .06, *p* = .200) Yes: (KM = .07, *p* = .200)
	(*F*(5, 104) = .84, *p* = .526)
Two-tailed independent samples *t*-test for occasional instruction	No: (KM = .05, *p* = .200) Yes: (KM = .18, *p* = .200)
	(*F*(108) = .02, *p* = .888)
Two-tailed independent samples *t*-test for listening to English music	Less than 1h: (KM = .09, *p* = .200) More than 1h: (KM = .09, *p* = .200)
	(*F*(108) = 4.59, *p* = .034)
Two-way ANOVA for listening to English music	Less than 1h: (KM = .09, *p* = .200) More than 1h: (KM = .09, *p* = .200)
	(*F*(5, 104) = 2.98, *p* = .015)
Two-tailed independent samples *t*-test for reading English books and magazines	No: (KM = .05, *p* = .200) Yes: (KM = .15, *p* = .200)
	(*F*(108) = 2.15, *p* = .145)
Two-tailed independent samples *t*-test for watching subtitled English television programmes and films	Less than 1h: (KM = .10, *p* = .200) More than 1h: (KM = .06, *p* = .200)

	($F(108) = 1.81$, $p = .182$)
Two-way ANOVA for watching subtitled English television programmes and films	Less than 1h: (KM = .10, $p = .200$) More than 1h: (KM = .06, $p = .200$)
	($F(5, 104) = 1.91$, $p = .100$)
Two-tailed independent samples *t*-test for watching non-subtitled English television programmes and films	Less than 1h: (KM = .08, $p = .200$) More than 1h: (KM = .07, $p = .200$)
	($F(108) = .004$, $p = .948$)
Two-way ANOVA for watching non-subtitled English television programmes and films	Less than 1h: (KM = .08, $p = .200$) More than 1h: (KM = .07, $p = .200$)
	($F(5, 104) = .87$, $p = .506$)
Two-tailed independent samples *t*-test for surfing on the internet	Less than 1h: (KM = .12, $p = .200$) More than 1h: (KM = .05, $p = .200$)
	($F(108) = .89$, $p = .347$)
Two-tailed independent samples *t*-test for playing English (video) games	Less than 1h: (KM = .07, $p = .200$) More than 1h: (KM = .10, $p = .200$)
	($F(108) = 2.03$, $p = .157$)