DIPLOMARBEIT / DIPLOMA THESIS

Titel der Diplomarbeit / Title of the Diploma Thesis

„A study of receptive and productive lexical knowledge of Austrian EFL students in year 8, 10, and 12"

verfasst von / submitted by

Carolina Zichtl

angestrebter akademischer Grad / in partial fulfilment of the requirements for the degree of

Magistra der Philosophie (Mag. phil.)

Wien, 2017 / Vienna, 2017

Acknowledgements

As this thesis means the end of my studies, I would like to thank some people who helped me achieving my goals and continually supported my throughout this chapter in my life.

First and foremost, I would like to thank my supervisor, Univ.-Prof. Dr. Christiane Dalton-Puffer, who believed in me from the very first day on. She always encouraged and enlightened me during each step of this diploma thesis, gave constructive and useful feedback, and always found the right words to motivate me.

Secondly, I would like to express thankfulness to the Stiftsgymnasium der Benediktiner in Melk, not only because they equipped me with perfect skills for my studies at the University of Vienna, but for also letting me conduct my study on vocabulary knowledge at their school. A special thanks goes to the headmaster HR Mag. Anton Eder, Mag. Johannes Eichhorn, and all participants, who did a brilliant job, as can be seen in the forthcoming pages!

Many of my friends and colleagues need to be thanked for always being there for me when I needed help, pieces of advice, a shoulder to cry on or encouraging words in times of frustration. Thank you Julia, Oona, Angelika, Katja, Astrid and Elisabeth for being amazing friends!

Special thanks go to Ricardo, who motivated me to successfully finish this thesis on a daily basis and, thus, has been an important part in my life during this final stage of my studies. Your boundless ambition, knowledge, and optimistic view on life are my genuine source of inspiration every single day. You have showed me that hard work pays off. Thank you for everything I have learned from you so far.

Furthermore, one person deserves even more honorable mention, namely my wonderful sister Theresa. Thank you for continuously believing in me, encouraging me to fulfill my dreams, being on the phone with me for hours to reflect our lives, goals and wishes, and being the most inspiring role model one can ask for. You are an amazing person whom I've looked up since the day I was born. I love you.

Finally, my deepest gratitude goes to my beloved parents who always tried their best to open up as many opportunities for me to live the life I am wishing for. I am eternally grateful for always supporting me, both financially and mentally, and for bearing my emotional ups and downs throughout my studies. Without you, I would have never come so far. You mean the world to me.

Declaration of Authenticity

I confirm to have conceived and written this paper in English all by myself.

Quotations from other authors and any ideas borrowed and/or passages paraphrased from the works of other authors are all clearly marked within the text and acknowledged in the bibliographical references.

Vienna, January 2017   _____

Table of Contents

List of Tables

List of Figures

Abbreviations and Symbols

used in this thesis

AHS	Allgemein Bildende Höhere Schule
ANOVA	Analysis of Variance
EFL	English as a foreign language
F	f-Value
L1	Mother Tongue
Lex30	Word Association Test (Meara and Fitzpatrick 2000)
n	Sample Size
SD	Standard Deviation
p	p-Value
r	Coefficient of Variation
t-(test)	Statistical Hypothesis Test
VLT	Vocabulary Levels Test (Nation 1990, revised Schmitt et al. 2001)
VST	Vocabulary Size Test (Nation and Beglar 2007)

1. Introduction

In present times, multiculturalism, diversity and social networks worldwide have been attached global importance to, as an increasing number of people nowadays yearn to internationally widen their cultural, intellectual, and social horizons. As a consequence, proficient language skills in the principal world languages, especially in the English language which can be considered as the most commonly used lingua franca in the world, are required for most professions, jobs, professional occupations, and business activities. Therefore, schools and educational institutions strive to provide students with a lasting improvement of their mastery in the foreign languages learned at school. It is aimed to properly equip students with a profound knowledge and a good command of the English language to enable them to compete successfully and to excel in certain areas, like foreign language skills.

As vocabulary constitutes a fundamental component of each language, Austrian students' lexical knowledge is the center of attention in this thesis. Being able to understand the meaning of words and phrases, and to chose from a wide range of lexical items stored in one's mind, one might face fewer difficulties in following conversations, in expressing oneself, in discussing a variety of topics, in communicating successfully in an informal or formal manner, in describing states, conditions, and feelings more precisely, etc. Hence, with a wide lexical knowledge, students might feel more confident and might struggle less when listening, reading, speaking, or writing in the English language.

In Austrian schools, English is one of the mandatory school subjects held in high esteem which students are obliged to take regardless of the type of school they are attending. Teachers working in Austrian school settings are required to follow guidelines, like the CEFR and the Austrian curriculum for foreign language learning. However, they are also free to prepare, organize, and conduct the lessons as they wish – as long as the stipulated standards in terms of students' language competences are met. According to my own investigation, studies on Austrian students' lexical knowledge are, unfortunately, still severely lacking, which causes an absence of relevant and extensive expertise in the development of Austrian students' vocabulary repertoires or, differently put, their lexical growth. On account of this, it was decided to focus on Austrian students' lexical knowledge, on the development of their vocabulary repertoire, and on influencing factors which might positively affect a successful

expansion of their lexical knowledge. As only few studies are concerned with the Austrian educational system in connection with students' vocabulary knowledge in the English language, the findings of this empirical fieldwork might provide revealing insight into the quality of Austrian English lessons. Further, students' lexical knowledge might then become comparable to that of students of different countries and educational systems.

1.1 Aims

Bearing in mind the background information given, it is now essential to present this study's purpose and aims.

The present study exclusively focusses on the receptive and productive vocabulary knowledge and lexical growth of Austrian students attending three different school years at a grammar school. Hence, the students can be categorized into three groups which comprise students of year 8, year 10, and year 12.

The first purpose of this study is to discover Austrian students' passive vocabulary size and to compare it according to school years. A second purpose is to find out more about students' active vocabulary knowledge, and to investigate whether or not differences in the productive vocabulary knowledge can be identified between the three school years. The intention is to detect whether students of year 12 feature a broader vocabulary repertoire than that of their colleagues from year 10, and whether those students in turn passively and actively know more vocabulary than students attending year 8. Hence, the first research question can be formulated as follows:

- Do Austrian students have a larger receptive and productive vocabulary repertoire at higher grade levels?

Furthermore, it is intended to discover which groupings of students feature a broader or more limited receptive or productive vocabulary knowledge than others. To fulfil this aim, students are arranged according to gender, linguistic and academic background, interests, and extracurricular activities.

Moreover, the strength of the relationship between the students' receptive and productive vocabulary knowledge is of interest. Therefore, this study is designed to gain insight into the

correlation between the passive vocabulary size and the active lexical knowledge, and to find out whether those two types of vocabulary develop concurrently or not. For this area of interest, the following research question has been formulated:

- Do students who are equipped with a larger receptive vocabulary also feature a broader productive lexical knowledge?

Finally, the last aim of the present study is to identify which factors in particular, be they gender, linguistic and academic background, interests, or extracurricular activities, contribute to the expansion of the tested population's receptive and productive vocabulary knowledge. It is intended to examine which factors in the tested students' environment and circumstances can be considered most beneficial for the enlargement of lexical knowledge. Thus, a third research question has been defined as follows:

- Which conditions and circumstances are most favorable for Austrian students to be able to most successfully expand their receptive and productive vocabulary knowledge?

1.2   Outline of the study

In the first section of this thesis, the role of vocabulary in the Common European Framework of Reference for Languages, a document offering European language teachers guidelines for their work, and in the Austrian curriculum for foreign language teaching are analyzed in detail. This will illustrate how far the Council of Europe and the Austrian Ministry of Education stipulate to draw attention to vocabulary learning and to the expansion of students' lexical repertoire in the language classrooms.

Chapter 3 is exclusively concerned with the study's theoretical framework. Firstly, the question *What is a word?* is attempted to be answered by finding an accurate definition of the term *word*. Secondly, the different types of vocabulary are discussed, to illustrate of which types of words lexical knowledge constitutes. Thirdly, the importance of lexis in connection with language competence is mentioned, followed by a definition of the nature of vocabulary knowledge. Finally, lexical growth is described in detail.

The main focus of Chapter 4 is on measuring vocabulary breadth or size. Testing instruments, like the Vocabulary Size Test and the Lex30 Word Association Test, are explained and previously conducted studies of lexical growth in both receptive and productive vocabulary knowledge, and their findings are presented and discussed.

Chapter 5 is devoted to the research methodology, as the research design, the study's participants, the school context, the data collection, and the analysis procedure of the empirical fieldwork are in the center of attention.

The following chapter is dedicated to the present study's findings. As there were three types of statistical analysis employed, the demonstration of the results of each are arranged successively, and move from a comparison of mean scores, to the calculation of a correlation, and eventually to the calculation of two multiple linear regressions where a connection between the students' test performance and their linguistic biography is established.

In the final section, the findings are thoroughly discussed and pedagogical implications are highlighted in the course of the interpretation of the results, before the main aspects of the present thesis are summarized once more in the conclusion.

The appendix provides the two tests administered in the selected Austrian grammar school and the questionnaire used for the fulfillment of the aims and objectives of this study.

2   Vocabulary learning in the Austrian EFL classroom

Before presenting the theoretical framework relevant for this study on the English vocabulary repertoire of L2 learners of an Austrian grammar school, the CEFR, a document offering European language teachers guidelines for their tuitions, and the underlying curricula for foreign language teaching in the Austrian school system, will be outlined in this chapter. Furthermore, the role of lexical knowledge and the acquisition of English vocabulary in both the Austrian curricula for foreign language teaching and the CEFR will be analyzed in detail.

In order to have a deeper understanding of the vocabulary knowledge of Austrian L2 learners under examination, it is first necessary to give an overview of the prevalent teaching principles in the Austrian lower and upper secondary schools. It is pertinent to mention that the teaching syllabus of Austrian English classes is based on the Austrian curriculum for foreign language teaching in secondary schools of higher education (Allgemeinbildende Höhere Schulen, henceforth AHS). For this thesis, two curricula for foreign language teaching are relevant, one for lower secondary level and one for upper secondary level. These documents are structured similarly and share the same characteristics.

The last version of the curriculum for lower secondary level was published in 2000, while the latest update of the one for upper secondary classes took place in 2004 by the 'Bundesministerium für Bildung'. Both curricula are based on the communicative language teaching approach and include elementary teaching principles and a predetermined teaching syllabus language teachers are obliged to adhere to.

The curricula for foreign language teaching are primarily based on the 'Common European Framework of Reference' (CEFR), which serves as a guideline for the teaching of foreign languages throughout Europe. Its purpose is to lay the groundwork for the development of curricula and syllabi of foreign language teaching, for material used in the language classes, and for uniform assessment criteria throughout Europe (cf. Council of Europe 2003: 1). The Council of Europe (2003: 1) briefly describes the main characteristics of the CEFR and its purpose as follows:

> The Common European Framework provides a common basis for the elaboration of language syllabuses, curriculum guidelines, examinations, textbooks, etc. across Europe. It describes in a comprehensive way what language learners have to learn to do in order to use a language for communication and what knowledge and skills they have to develop so as to be able to act effectively. [...] The Framework also defines levels of proficiency which allow learners' progress to be measured at each stage of

learning and on a life-long basis.

Hence, one could summarize that the CEFR defines achievements of learners of foreign languages across Europe and is, as Milton (2009: 174) mentions, often referred to as a summary of 'can-do' descriptors. Moreover, the CEFR defines six language proficiency levels (A1, A2, B1, B2, C1, and C2) and encapsulates what learners need to know to reach one of these levels (cf. Council of Europe 2003: 23f.). Milton (2009: 174) points out that the CEFR describes learners' achievements in the language learning process rather vaguely, which brings not only advantages, but also minor disadvantages. On the one hand, teachers might benefit from the can-do descriptors, as they might not feel restricted in terms of their tuition, their teaching methods or in staying on rigid schedule, but rather are encouraged to teach freely, independently, and in a varied manner. Nevertheless, teachers adhering to the CEFR guidelines are expected to equip their L2 learners with a certain level of language knowledge which enables them to reach the goals defined in the CEFR. As the can-do descriptors allow freedom in the teaching procedures and only define goals learners should reach, it is possible to easily apply the system of the CEFR to a wide range of languages. On the other hand, however, the vaguely and broadly defined goals L2 learners should achieve can unfortunately be quite nebulous. The A1 level descriptors, for example, contain some passages which feature ambiguity, as can be seen in Table 1. One might wonder what is meant by the adjective 'familiar', or how everyday expressions are defined, and there is also the problem of what is meant in the case of 'basic phrases'.

Table 1: Common Reference Level A1 (CEFR 2003: 24)

A1	Can understand and use familiar everyday expressions and very basic phrases aimed at the satisfaction of needs of a concrete type. Can introduce him/herself and others and can ask and answer questions about personal details such as where he/she lives, people he/she knows and things he/she has. Can interact in a simple way provided the other person talks slowly and clearly and is prepared to help.

Hence, when analyzing the A1 level descriptor above, it becomes immediately evident that those descriptors feature the absence of clear definitions and examples. As a result, "[i]t is possible for learners with very different amounts and different kinds of knowledge, including vocabulary knowledge, to be placed within the same CEFR level" (Milton 2009: 174).

Because the descriptors found in the CEFR protocol are rather broadly defined, teachers working in the Austrian school system do not necessarily have to rigorously adhere to the guidelines suggested in the CEFR. Instead teachers are expected to consider the Austrian curricula for foreign language teaching as the mandatory guidelines for their teaching, as these are specially designed, on the basis of the CEFR, for Austrian students, teachers, and school settings (cf. BMB 2000: 1 & BMB 2004: 1). Paradoxically, both curricula for foreign language teaching cover only five to six pages, while the CEFR exceeds 200 pages. To accomplish the aims of this thesis – which is to measure and subsequently compare the size of the English vocabulary repertoire of Austrian L2 learners attending different grades at an Austrian grammar school – the role of vocabulary learning and teaching in the Austrian curricula and the CEFR protocol needs to be analyzed. This analysis needs to be undertaken so that we may fully grasp the extent to which vocabulary learning and teaching is prevalent in the applicable documents to which Austrian teachers are obliged to adhere to.

2.1   The role of vocabulary in the CEFR

As the Austrian curricula for foreign language learning are based on the CEFR, a guideline for the teaching of foreign languages throughout Europe, it is essential to first investigate in how far the acquisition of lexical knowledge is the subject of discussion in the CEFR. Hence, in the present subchapter, it is examined whether a tendency of a negligence of the expansion of learners' vocabulary repertoire is detectable in the CEFR or not. Therefore, in what follows, an outline is provided concerning to what extent vocabulary acquisition is topicalized in the CEFR.

At first glance, it is noticeable that vocabulary knowledge does not play a prominent role in the CEFR, similar to Milton's (2009: 175) observation, for instance, who claims that the "reference to vocabulary is almost entirely absent in the latest CEFR documentation". In the CEFR a whole section dedicated to linguistic competence which is, according to the Council of Europe (2003: 109), composed of six competences, is incorporated. One of these capacities is lexical competence, which is explained in detail on three entire pages of the CEFR document. On these pages, the Council of Europe (2003: 110f.) clarifies that lexical knowledge is composed of lexical and grammatical elements, which are both clearly outlined and illustrated by examples given. According to the categorizations made by the authorities and experts who

designed the CEFR, lexical elements include fixed expressions like sentential formulae, phrasal idioms, fixed frames, phrasal verbs, and collocations, as well as single word forms. Articles, quantifiers, demonstratives, personal pronouns, question words and relatives, possessives, prepositions, auxiliary verbs, conjunctions, and particles are assigned to the category of grammatical elements.

With regard to the learners' vocabulary range, the Council of Europe (2003: 112) provides a scale of how well-developed the learners' vocabulary knowledge should be at the different language proficiency levels (A1, A2, B1, B2, C1, C2) stipulated by the CEFR. As the CEFR describes achievements in can-do descriptors, the vocabulary range of learners of the different language proficiency levels are also formulated in this manner.

Table 2: Vocabulary range scale of the CEFR (Council of Europe 2003: 112)

	VOCABULARY RANGE
C2	Has a good command of a very broad lexical repertoire including idiomatic expressions and colloquialisms; shows awareness of connotative levels of meaning.
C1	Has a good command of a broad lexical repertoire allowing gaps to be readily overcome with circumlocutions; little obvious searching for expressions or avoidance strategies. Good command of idiomatic expressions and colloquialisms.
B2	Has a good range of vocabulary for matters connected to his/her field and most general topics. Can vary formulation to avoid frequent repetition, but lexical gaps can still cause hesitation and circumlocution.
B1	Has a sufficient vocabulary to express him/herself with some circumlocutions on most topics pertinent to his/her everyday life such as family, hobbies and interests, work, travel, and current events.
A2	Has sufficient vocabulary to conduct routine, everyday transactions involving familiar situations and topics.
	Has a sufficient vocabulary for the expression of basic communicative needs. Has a sufficient vocabulary for coping with simple survival needs.
A1	Has a basic vocabulary repertoire of isolated words and phrases related to particular concrete situations.

When taking a closer look at Table 2, it becomes apparent that some of these CEFR can-do descriptors addressing vocabulary range are rather vaguely defined. In the A1 descriptor, for instance, it is altogether unclear which words actually belong to 'basic vocabulary'. Another

example of lack of precision can be found in the descriptor allocated to the B2 level as the 'most general topics' are not sufficiently restricted or defined either.

The level Austrian students of year 12 have to reach at the end of their schooling career in each of the five strands (listening, reading, writing, fluently speaking, participating in conversations) is the B2 level of the CEFR. As vocabulary knowledge does not constitute a separate language skill in neither the CEFR nor in the Austrian curricula, but is rather integrated in the other strands, it can be inferred that Austrian learners in year twelve graduating at an Austrian upper secondary school need to have a lexical proficiency similar to the one described in level B2 (shown in Table 2). Hence, at the end of year twelve, Austrian students should have expanded their English vocabulary repertoire to one which enables them to successfully and effectively communicate, to easily get their message across, and to frequently vary their choice of words. In the B2 descriptor of general linguistic range established by the Council of Europe (2003: 110), this is mentioned once more, as it is stated that learners allocated to the B2 level should have "a sufficient range of language to be able to give clear descriptions, express viewpoints and develop arguments without much conspicuous searching for words".

In conclusion, even though an entire section of the CEFR is dedicated to the acquisition of lexical knowledge including a scale of desired competences learners need to achieve at certain language proficiency levels, my analysis shows that lexical knowledge is definitely not held in high regard in the CEFR document. When analyzing the scale listing the competences learners should achieve, for example, it was noticed that some of the competences described in this scale are not clearly defined, but rather vaguely formulated. Furthermore, it was detected that only a few pages, which comprises a rather small proportion out of a total of more than 200 pages, are concerned with the acquisition of lexical knowledge. Hence, it can be stated that only conspicuously limited and scant attention is exclusively spent on the expansion of learners' English vocabulary in the CEFR protocol. Therefore, it can be argued that because it does so in the CEFR, vocabulary learning and teaching might probably also play a minor role in the Austrian curricula. Whether this trend is indeed observable in the Austrian curricula for foreign languages or not will be examined in the following chapter.

Lastly, it should definitely be taken into account that the CEFR principally serves as a useful guideline which might be helpful for teachers, especially in the planning of the syllabus and

their English lessons, however, an expansion of the section concerning lexical acquisition may have a positive effect on the role of vocabulary learning in the classroom.

2.2 The role of vocabulary in the Austrian curriculum

In the last subchapter the importance of vocabulary learning and teaching in the CEFR, a document which defines achievements of learners of foreign languages across Europe, was analyzed and discussed in detail. It was found that vocabulary acquisition is not held in high esteem in the CERF. The extent to which lexical knowledge is covered in Austrian syllabi and curricula, which are underlying guidelines primarily based on the CEFR, is carefully examined in the present subchapter.

First of all, the Austrian curricula are documents stipulating how to prepare, design, and conduct for English language lessons in Austrian non-vocational lower and upper secondary schools. The curricula function as a principal organizational tool, as they influence the methods and the content of language learning and teaching. These documents primarily focus on communicative language teaching principles as there is the understanding that the main aim of Austrian language teachers should be to equip Austrian L2 learners acquiring English as a foreign language with adequate language skills to be able to successfully communicate in everyday real-life situations. Hence, the capacity to use the English language adequately in different environments is the ultimate goal L2 learners should achieve at the end of year 12 of an Austrian grammar school. These communicative language teaching principles become evident in the following passage from the Austrian curriculum of foreign language teaching for upper secondary schools (BMB 2004: 2):

> Dem handlungsorientierten Ansatz gemäß stellt die kommunikative Sprachkompetenz das übergeordnete Lehr- und Lernziel des Fremdsprachenunterrichts dar. Das heißt, fremdsprachliche Teilkompetenzen sind in dem Maße zu vermitteln, wie sie für erfolgreiche mündliche und schriftliche Kommunikation nötig sind.

From this excerpt it can be immediately deduced that the central demand Austrian L2 learners should meet is a sufficient command of the English language which enables adequate and successful oral and written communication. Teachers are expected to help L2 learners to achieve this goal by exposing them to the language they need in order to communicate in an effective way (cf. BMB 2000: 2 & BMB 2004: 2). Hence, when reading and interpreting this passage, the inference can be drawn that vocabulary learning should primarily be implicitly

taught, preferably in the course of the performance and fulfilment of a communicative task. Only in case L2 learners need certain words, phrases or expressions to reach their communication goal, attention should be devoted to vocabulary teaching and learning.

Furthermore, when examining the curricula more closely, it becomes evident that teachers are required to train their students in all five strands (listening, reading, writing, fluently speaking, participating in conversations), as can be inferred from the following extract of the curriculum for upper secondary schools (BMB 2004:2):

> Die Fertigkeitsbereiche Hören, Lesen, an Gesprächen teilnehmen, zusammenhängendes Sprechen, Schreiben sind mit gleicher Gewichtung, regelmäßig und möglichst integrativ zu üben. Auf Praxisrelevanz sowie steigende Authentizität der Sprachmittel und Sprachsituationen ist dabei besonders zu achten.

Interestingly, in this passage vocabulary is not explicitly mentioned and, hence, is not equivalent in terms of importance to the other five language skills addressed in this excerpt. This might lead to the interpretation that vocabulary should instead be enlarged in the course of teaching and training of the five language skills mentioned in the curricula. In other words, vocabulary learning should be incidentally incorporated into teaching across the board, especially when engaging students with certain subject areas specified by the curricula (those listed in Table 3).

According to the curricula under examination, teachers are expected to prepare L2 learners for varying situational communication about the topics listed by the curricula. In the curriculum for foreign language learning designed for Austrian upper secondary schools, it is explicitly pointed out that teachers should strive for the expansion of the English vocabulary of their students, especially when working on the subject areas listed in Table 3 (BMB 2004: 4).

Table 3: Subject areas suggested and specified by the BMB (BMB 2000: 3 & BMB 2004: 4)

Lower secondary schools	Upper secondary schools
• Family and friends • Living conditions and environment • Food and drinks • Clothes • The body and health issues • Daily, monthly, and annual routines • Celebrations, festivals, and holidays • Hobbies and interests	• Media and its influence on society • World of work and leisure time • Education • Life planning • Attitudes and values • Living together • Current social, economical, and political development

• Handling of money • Experiences and imagination • Thoughts, sensations and feelings • Attitudes and values • Environment and society • Culture, media, and literature	• Globalization • Cultural and intercultural competence • Environment • Technological and scientific developments • Art expressed in literature, music, and visual arts

In the curriculum for foreign language teaching for lower secondary schools the acquisition of lexical knowledge is only mentioned briefly within one single sentence (BMB 2000: 2):

> Der Vermittlung von Wortschatz und Grammatik in vielfältig kontextualisierter und vernetzter Form ist größtes Gewicht beizumessen, zB ist Vokabular, wo immer möglich, in Kollokationen, Redewendungen und Phrasen mit impliziter Grammatik einzubetten.

According to the BMB, language teachers of students attending lower secondary school are supposed to principally teach words in context, to make students familiar with collocations, idiomatic expressions, and useful phrases, and to help them build mental networks of new and already acquired lexicon (cf. BMB 2000: 2)

In the document addressing upper secondary schools, however, a little more attention is devoted to the expansion of the English vocabulary (BMB 2004), as it can easily be detected that vocabulary learning is integrated to a greater extent. The curriculum for upper secondary schools includes a section dedicated to the acquisition of linguistic competence, in which the importance of the expansion of one's English vocabulary is briefly mentioned (BMB 2004: 3):

> Wortschatz und Idiomatik sind situationsorientiert, im Kontext und systematisch zu erweitern. Dabei ist insgesamt zu beachten, dass das rezeptive Sprachvermögen der Schülerinnen und Schüler im Bereich von Wortschatz und Idiomatik das produktive Sprachvermögen übertrifft.

What can be interpreted from this excerpt of the BMB (2004: 3) is that teachers should instruct students to systematically develop their vocabulary knowledge, preferably in context, that is to say by being exposed to varying situations and conditions. Further, teachers are obliged to bear in mind that students' receptive vocabulary knowledge should outweigh its counterpart, productive vocabulary knowledge. Hence, according to the curriculum for Austrian upper secondary schools, Austrian L2 learners' passive word knowledge is expected to outweigh active vocabulary knowledge. However, it is not stated specifically to what extent the receptive command in the English language should surpass the productive one. Additionally,

it is not clear whether this statement refers to vocabulary breadth/size or vocabulary depth, each of which would, then, require different approaches. Moreover, in the excerpt an interesting ambiguity can be noted. It is not clearly formulated whether teachers should only be aware of the difference between active and passive vocabulary in terms of vocabulary size, or if they are expected to accomplish this difference in students' vocabulary repertoire by their input, lessons, and work. The curriculum thus features a lack of clarity, which can be considered as serious flaw of the examined document. Moreover, it is mentioned that teachers should encourage their students to independently enlarge their English vocabulary knowledge outside school by dedicating some of their leisure time to English literature (cf. BMB 2004: 3). Numerous studies, like the one conducted by Yamamoto (2011), show that reading in the target language positively influences vocabulary acquisition. By reading regularly and extensively, learners of the English language not only expand their passive vocabulary size, but also retain passive and active word knowledge. Moreover, Yamamoto (2011: 240) finds that extensive reading has the capacity to stimulate the transition from receptive vocabulary to productive vocabulary. That is to say, a student's receptive vocabulary might become increasingly familiar to them, as students might be more frequently exposed to these words in different contexts while reading extensively, until they are able to use these words in their written and spoken compositions. Nation (2001: 258) stresses that students should constantly be encouraged to read in their leisure time by their teachers, as the long-term benefits of extensive reading only become evident after a certain period of time of passionate, continuing commitment and dedication to reading.

To sum up, the acquisition of lexis definitely plays a minor and subordinate role in the Austrian curricula, as vocabulary learning and teaching is clearly of secondary importance in comparison to other language skills (listening, reading, writing, fluently speaking, participating in conversations), as is grammar, for that matter. In the curriculum for foreign language teaching designed for teachers and students of lower secondary school vocabulary learning or teaching is explicitly mentioned only once. However, in the one for upper secondary schools there is one short section devoted to the acquisition of linguistic competence with a focus on lexis. Nevertheless, it can be concluded that explicit learning of lexical knowledge is in general seriously neglected in the Austrian curricula for foreign language learning. This deficiency might entail that the English vocabulary repertoire of Austrian students is rather limited and takes conspicuously more time to reach a highly proficient language level than it would if more

attention was devoted to vocabulary acquisition. Furthermore, Austrian students might have to devote more of their leisure time to the English language to compensate this neglect of explicit vocabulary learning in class. As already mentioned, extensive reading on a regular basis, for example, could improve not only lexical knowledge, but also other areas involved in English language proficiency (cf. Nation 2001: 258). Hence, it can be summarized that the central focus of the Austrian curricula for foreign language learning is based on communicative language ability and the aspects involved with it. According to the authorities who developed these curricula, lexical knowledge constitutes only a minor part of communicative language ability and thus only occurs sporadically in the documents.

Furthermore, it can be concluded that in the CEFR document a little more, but still insufficient, attention is devoted to lexical knowledge than it is in the Austrian curricula for foreign language teaching, as an entire section of the CEFR is dedicated to the acquisition of lexical knowledge where a scale of desired competences learners need to achieve at certain language proficiency levels is added. Nevertheless, a negligence of lexical knowledge in the Austrian curricula can certainly be attributed to the conspicuously limited and scant attention that is exclusively spent on the expansion of the learners' English vocabulary in the CEFR protocol. As the CEFR exceeds 200 pages, while the curricula for foreign language teaching only cover five to six pages, the proportion concerned with the acquisition of lexical knowledge is about equal in both documents. Therefore, it can be argued that because it does so in the CEFR, vocabulary learning and teaching probably also plays a minor role in the Austrian curricula.

The upcoming change of the system of upper secondary school ('Neue Oberstufe – individuell und kompetenzorientiert', henceforth NOST) which will take place in selected Austrian schools from the school year 2017/2018 onwards, involves a modification of the curriculum for foreign language learning (cf. BMB 2016). Hopefully, in the new curriculum the expansion of students' lexical knowledge will be held in higher regard than it is in the current versions. As an analysis of the the NOST curriculum would go beyond the scope of this thesis though, it is not further discussed here.

Even though adaption and modification of the current curricula is absolutely essential, especially in the field concerned with lexical knowledge and probably in other languages areas as well, it is, nonetheless, necessary to mention that unfortunately the curricula in general have less influence on the actual teaching and lesson design than textbooks, student's books or workbooks. In Austria it is common practice that lessons, regardless of the subject, are

often exclusively based on textbooks, as these are commonly regarded as primary teaching material and thus play a central role within the class or course. Consequently, the focus often shifts from the curricula to the textbooks in terms of lesson planning and design. One should, however, not overgeneralize and keep in mind that this is not the case for all Austrian teachers, as some certainly follow the curricula instead of the order of the textbook used when planning, preparing and conducting their lessons. A research into the coverage of vocabulary in the main official textbook series would be desirable, as it might offer significant insight into the input Austrian students are provided with in their language classes. However, this cannot be done within the space of this thesis, as it would also go beyond its scope, but might probably be considered as research topic for research conducted in future on Austrian students' vocabulary acquisition.

3   Second language vocabulary knowledge

Having analyzed the role of vocabulary learning and teaching in the Austrian curricula and the CEFR, it is now essential to gain a deeper understanding of what lexical knowledge actually is. Vocabulary knowledge is a concept that seems, at first glance, to be basic and simple, however, when conducting research in the field of lexical knowledge, it becomes apparent that the concept of vocabulary knowledge is rather complex. Taking this complexity into consideration, a wide range of aspects need to be thought about before conducting research on vocabulary. In the following section, terms that are used in measuring vocabulary knowledge are outlined in detail. Firstly, it is discussed what a word actually is or rather how the nature of words can be adequately defined. Next, different types of vocabulary and the importance of vocabulary in terms of language acquisition are taken into careful consideration, as the lexicon comprises a central component of every language. After this, the nature of vocabulary knowledge is defined by categorizing receptive and productive knowledge, and vocabulary depth and breadth. Subsequent to these subsections, lexical growth is discussed in detail.

3.1   What is a word?

Lexical knowledge is often taken for granted and referred to as a very natural and simple concept as it can easily be described as 'all that is known about words and the relationship among them' even by non-specialists or non-linguists. According to Read (2000: 17), the concept of a word, however, features highly complex and manifold facets, which need to be kept in mind, especially when defining what exactly constitutes lexical competence.

Above all, the most crucial foundation necessary for specifying lexical knowledge is defining what a word actually is. The term *word* can be characterized as follows:

> **UNIT OF LANGUAGE** [...] a single unit of language which means sth and can be spoken or written (*Oxford advanced learner's dictionary* 2010: 1775)

For the present study, however, it is essential to also consider items which are constituted of more than a single unit of language, also referred to as *lexemes* or *lexical units*:

LEXEME/LEXICAL UNIT a word or several words that have a meaning that is not expressed by any of its separate parts (Oxford advanced learner's dictionary 2010: 885)

An umbrella term for all units of language, be they single or multiple lexical units, is *lexis*, which is indicated in the OALD (2010: 886) to be a synonym of the word *vocabulary*. The term *vocabulary,* however, has a broader meaning than *lexis*, and thus is comparable to the word *lexicon*, the meaning of which equally matches that of the word *vocabulary* (as demonstrated and indicated by different shades of grey in Table 4).

Table 4: Definitions of the word lexis, vocabulary, and lexicon by the OALD (2010)

LEXIS	VOCABULARY	LEXICON
all the words and phrases of a particular language	1. all the words that a person knows or uses; 2. all the words in a particular language; 3. all the words that people use when they are talking about a particular subject; 4. a list of words with their meanings, especially in a book for learning a foreign language	1. all the words and phrases used in a particular language or subject; 2. all the words and phrases used and known by a particular person or group of people
(*OALD* 2010: 886)	(*OALD* 2010: 1722)	(*OALD* 2010: 885)

Hence, in the present thesis, the terms *vocabulary* and *lexicon* are used interchangeably, and the adjective *lexical* and the noun *vocabulary* are employed to serve as modifiers for 'knowledge', 'competence', 'skills', and other terms belonging to the linguistic field of language knowledge.

With regard to the concept of a *word* and the question 'What is a word?', it is essential to outline some basic points in order to illustrate this concept more precisely. First of all, the distinction between what are called 'function words' and what are called 'content words' has to be drawn. On the one hand, the lexis of the English language consists of numerous words that have a specific semantic content and are essential for describing reality. Nouns, 'full' verbs, and adjectives and adverbs, belong to the category of content words, as they can also stand on their own and convey meaning even in isolation. On the other hand, the second component of lexis of the English language is comprised of function words, which are characterized by their lack of semantic or descriptive content, expect for some word classes like prepositions, for example. Function words are often categorized as part of the grammar of the English language, instead of part of the English vocabulary, which is attributable to the fact that in isolation function words cannot convey any precise meaning, but rather serve as connecting link between content words. Under the category of function words are articles,

prepositions, pronouns, conjunctions, auxiliaries, etc. (cf. Corver, van Riemsdijk 2001: 1f & Read 2000: 18). For studies on lexical knowledge though, it is content words which are primarily taken into consideration (Read 2000: 18).

Besides the distinction between content words and function words, it is crucial to mention what inflected forms of words are. It can be readily noticed that the same word can appear in different forms by simply adding inflectional endings to a base form. An example given by Read (2000: 18) is the word *wait,* which can also be found as *waits, waited* or *waiting* and the word *society* whose inflectional forms are *socieities, society's* and *socieities'.* In the examples given, the meaning of the word does not change nor does the word class. Read (2000) explains that "[i]n vocabulary studies, the base and inflected forms of a word are collectively known as a lemma" (18). Milton (2009: 10) describes a lemma as a headword, which would be in this case *wait* or *society*, whose inflected forms are added without changing the part of speech. Read (2000: 18) additionally points out that for the majority of studies on vocabulary knowledge and use in written or spoken form, lemmatization processes are required to count inflected forms as the equivalent base form.

Apart from inflectional endings, words can appear in derived forms as well. However, when a derived form is chosen, the original meaning and word class might alter. An example which perfectly illustrates the slight change in meaning by simply choosing derived forms, can be examined with the word *significant.* Derived forms of this word could be *significance, significantly, insignificant,* etc. Nonetheless, all derived forms share a common underlying meaning and are closely linked to each other. Thus, the totality of those derived forms is referred to as word family (cf. Read 2000: 18f.). The British National Corpus (BNC) lists analyzed by Nation (2006) display that a single word family features an average of between six and three word family members. This number is based on an observation of the mean of word family members of the 1,000 most frequently used word families in English and the 9,000 word family branch. Within the 1,000 frequency level an average of six word family members can be detected, while within the 9,000 frequency level the average number declines to three word family members per word family (65). Hence, one can deduce from this information that "a vocabulary of 6,000 word families […] entails knowing 28,015 individual word forms, while the 8,000 families […] entails 34,660 words" (Schmitt 2010: 8). Nonetheless, it should not be automatically assumed that the passive knowledge of the root form necessarily involves the familiarity with each single member of the word family. In other words, even though some

members of a word family are perfectly known by a learner, other members related to the root form might not be known at all (Schmitt 2010: 8).

Considering the English lexicon, Goulden, Nation and Read (1990) assume that there are around 54,000 base word families in English (322f.). However, this number greatly varies according to the criteria of how words and items sharing some points of similarity with each other are separated into word families. The word *society*, for example, in some respects resembles words like *social, unsociable, sociability, socialism, sociology,* etc. in form and meaning. Although a certain common meaning can be identified, those words clearly do not belong to the same word family, but are allocated to subsets (Read 2000: 19). Therefore, counting word families in a language varies enormously according to how word families are formed.

According to Milton (2009), counting word families is the standard convention, especially when it comes to estimating vocabulary size as "this type of count will produce smaller figures for vocabulary size than calculations made using a lemmatized count" (11). However, it is also pointed out that foreign language learners' vocabulary knowledge is often measured by counting different lemmas. Hence, it depends on the researcher, the nature of the research, with its particular purpose and desirable goal, and the learners under examination when it comes to the decision of taking lemma or word family as a unit of measurement. A clear definition of a word and of the unit of measurement, thus, is essential (12f.)

3.2   Vocabulary types/levels

Having discussed how a word can and should be defined, especially before conducting research on vocabulary knowledge and use, it will now be outlined how many vocabulary items learners of English need to know to properly communicate in the language they are acquiring. Furthermore, in this section, vocabulary categorizations will be introduced and characterized in detail.

With regard to the question concerning how many words learners really need to know, Nation (2001: 14) reveals that "a relatively small amount of well-chosen words can allow learners to do a lot". Nation (2006) asserts that learners need to know approximately 3,500 word families in order to properly understand 95% of a text, while a vocabulary repertoire of between 6,000 and 9,000 word families is required to grasp 98% of texts (77-79). In case learners are not

familiar with 2% of the running words in a text, they would not know two words in 100, which might not greatly hinder them from understanding the texts' overall meaning (Nation 2001: 14f.).

Nation (2001: 16) therefore proposes to categorize vocabulary according to frequency-based word lists, which is described in more detail in the following subsections.

3.2.1 Frequency bands

High-frequency words

According to Nation (2001: 18), the first category comprises high-frequency words which are primarily function words like *in, for, the, of, a*, etc. and highly frequent nouns. As function words are indispensable due to their function, which is connecting content words with each other, any arbitrary text usually features a considerably high proportion of high-frequency words. Nation (2001: 18) points to Michael West's (1953) *A General Service List of English Words*, which is a commonly used list of the 2,000 most frequently used word families in English. Hence, when acquiring the English language, the word families of this list should be learned first, to establish a solid basis of vocabulary knowledge. According to Nation (2001: 25), "high frequency words are so important that anything that teachers and learners can do to make sure they are learned is worth doing", which means that without those highly frequent words, students might face considerable difficulties in grasping the meaning of texts, be they in written or spoken form. Thus, it is essential to devote close attention to the acquisition of these words, especially at the beginning of the language acquisition process, as students might substantially profit from the knowledge of these words at later stages (cf. Nation 2001: 25).

Mid-frequency words

Nation (2001) identifies another vocabulary type, namely the mid-frequency word level. The words belonging to this vocabulary type range from the third 1,000 words to the ninth 1,000 most frequently used words in English. These words can be categorized as frequently used words learners of English are very likely to encounter in any context, be it written or spoken. The mid-frequency words coupled with the highly frequent words described above amount to the vocabulary size needed to properly communicate in English without relying on any help or

support. Additionally, one reason for distinguishing mid-frequency words form low-frequency ones is mentioned: as teachers are advised to set realistic goals, a grasp of the mid-frequency word level seems to be an achievable goal students might longitudinally pursue and ambitiously work towards (18).

Low-frequency words

The third frequency level is comprised of words that are rarely met in the daily usage of the English language as, according to Nation (2001), only words beyond the first 9,000 words belong to this category. Nation (2001: 18f.) states that the low-frequency word level is significantly larger than the other ones mentioned before, since all existing words of the English language, except for the first 9,000 words, belong to the low-frequency level of an estimated total size of around 54,000 base word families in English (cf. Goulden, Nation and Read 1990: 322f.). In the majority of texts low-frequency words only appear occasionally so that the proportion of low-frequency words is considerably lower compared to the proportion of mid- and high-frequency words.

3.2.2 Specialized vocabulary

Having defined high-, mid-, and low-frequency words according to Nation's (2001) categorization, another type of category, the so called specialized vocabulary, needs to be considered, as this type also forms a constituent part of our understanding of the lexicon. To this category belong academic words as well as technical terms which are characterized in more detail in the subsequent subsections.

3.2.3 Academic vocabulary

Academic words can be generally found in any type of academic texts, as those words are mostly chosen to serve academic purposes. Some lists of academic words have been compiled, which can be accessed freely online. According to Nation (2001: 19), the most popular one is the Academic Word List developed by Coxhead in 2000, which lists 570 word families belonging to the academic word category. Coxhead (2000) argues that roughly 10% of all words in academic texts are words from her Academic Word List (222), while, in contrast

to academic compositions, a limited coverage of only 1.4% of academic words can be identified in fiction, for instance. This was clearly stated by Coxhead (2000: 225) in one of her papers:

> The AWL accounts for approximately 1.4% of the tokens in the fiction collection, much lower than the AWL's 10% coverage of the Academic Corpus. The markedly different coverage suggests that the majority of word families in the AWL are associated particularly with academic writing.

Hence, when dealing with academic language, knowledge of the vocabulary being part of the academic word level is advisable in order to properly understand the English used for academic purposes.

3.2.4 Technical/Semi-technical vocabulary

Another subcategory of specialized vocabulary comprises technical lexicon, which can frequently be found in specialist texts. Nation (2001: 19) alleges that technical terms "typically cover a large proportion of the running words in a text". More precisely, a coverage of between 20% to 30% of technical vocabulary is prevalent in most specialist texts (20). Additionally, technical vocabulary is always related to specific topics and subject matters, and thus, differs from text to text according to their content. Therefore, a group of technical words might be frequently used when communicating about a particular subject area, however, might barely appear in texts of a different field. Further, technical vocabulary is composed of high-, mid- and low-frequency words, and also of academic vocabulary, which might explain why the lexical coverage of technical vocabulary is conspicuously high in any text. Nation (2001: 304) illustrates technical vocabulary and how this type of vocabulary is generally assembled:

> Some high-frequency words can be technical vocabulary in certain disciplines. For example, *arm, leg* and *neck* are technical words in the field of anatomy. *Language, word* and *comprehend* are technical words in applied linguistics. Some mid-frequency academic words can take on technical meanings in certain disciplines, and what may be low-frequency words in one discipline may be technical words in another.

When defining technical vocabulary, one should also bear in mind the subcategory of semi-technical vocabulary. Into this subcategory go words that are used when referring to a range of subjects or disciplines, not only to one in particular. That is to say, semi-technical words

are likely to occur in texts of larger fields or disciplines (cf. Baker 1988: 92). Baker (1988: 92) defines semi-technical words as "[i]tems which express notions general to all or several speciali[z]ed disciplines, e.g. *factor, method* and *function"*.

3.3   Lexis as central component of language

Up to this point, general terms used in the description of a language's lexis have been explained and types of vocabulary have been outlined. In this section, the focus will be laid on the importance of vocabulary in the acquisition of a language, as vocabulary forms a constituent part of language proficiency as such.

"Without grammar very little can be conveyed,
without vocabulary nothing can be conveyed." (Wilkins 1972: 111)

This quote by Wilkins (1972) carries a very important message, namely that vocabulary is an indispensable part of language proficiency. Milton (2009) affirms this statement and refers to studies on second language ability which demonstrate that "reducing the volumes of vocabulary acquired by learners may actually harm the development of other aspects of language" (3). That is to say, the fewer words learners acquire, the more difficulties they might face in other skills involved in second language proficiency and use. Milton (2009) also addresses the issue that lexical knowledge positively influences and stimulates structural or grammatical knowledge (3), which forms another component of language proficiency and can be characterized as the ability to organize individual utterances or sentences (cf. Read 2000: 6). Therefore, the profound importance of vocabulary should not be underestimated or undervalued, as it has been unfortunately done in the last half century (Milton 2009: 1).

In the last decades, lexical knowledge has often been neglected, as has, for example, already been noticed in the CEFR document and the Austrian curricula (see chapter 2.1 and 2.2), due to several reasons. Milton (2009: 1f.) investigated this unfortunate trend and named three plausible reasons. First, language teaching methods changed towards structural approaches, focusing on grammar and syntax, and hence disregarding lexis. It was believed that learners should increasingly concentrate on language rules and structures rather than on the expansion of their lexical repertoire. By emphasizing language structures, only the words and phrases necessary for performing the rules that have been learned were acquired, but neither

learners nor teachers following this structural language learning approach were too concerned about learning additional words. Secondly, the widespread assumption that learners can achieve high proficiency in a language even though they have a limited vocabulary repertoire reached many learners, teachers, and also educational experts. According to Odgen (1930), only 850 words should be known by learners to have good command in a language. Unfortunately, this mistaken belief, which has already been proved to be a misconception, is still prevalent. To avoid the spreading of this belief, Milton (2009) makes clear that "thousands of words are needed even for basic communication, let alone for fluency" (2). It is assumed that the misconception of only needing several hundred words to properly communicate in a language still persists because learners wish and desire that this would be the case. However, the process of language acquisition is a lengthy and slow one. Milton (2009: 2) claims that it might take the average learner several years to achieve a level of proficiency to communicate and understand the basics of the language, as language is a complex system consisting of numerous elements. Therefore, it might often be challenging for teachers to familiarize students with the massive amount of thousands of words within a restricted timetable. Consequently, learners as well as teachers might adhere to the wishful thinking of only needing a few hundred words to be well-equipped for communication in a language. Thirdly, Milton (2009: 2) addresses another persistent misconception which influences learners' and teachers' opinion of the importance of vocabulary acquisition and contributes to the disregard of lexical knowledge. It is believed that learners do not considerably profit from explicit vocabulary learning but from oral input which they might pick up incidentally. Milton (2009: 2) also refers to this assumption as wishful thinking and explains that:

> The evidence suggests that the vocabulary uptake from truly incidental language exposure is usually negligible and that successful learners acquire large volumes of vocabulary from the words explicitly taught in the classroom and supplement their learning by targeting vocabulary in activities, like learning the words of songs, outside of class.

Schmitt (2010) also approves of the promotion of vocabulary learning, as he makes clear that an adequate lexical repertoire cannot be acquired by incidental learning only. Additionally, the lexis used in language tasks, regardless of the tasks' nature, does not appear to be sufficient or adequate enough to serve as a rich source or sole input (8). Therefore, Schmitt

(2010) advises language teachers to expose their learners to a wide range of vocabulary input and to incorporate explicit vocabulary teaching into the language lessons (8).

Although in the past lexical knowledge was not considered as crucial to the process of language acquisition and thus was for a long time neglected, the situation has, at least to some extent, improved and vocabulary has increasingly been emphasized by some learners, language teachers, and linguistic researchers (Read 2000: 1). Unfortunately, in the GERS or the Austrian curricula or syllabi, the documents relevant for the present thesis, it could not be detected that more attention is devoted to vocabulary acquisition though (see chapter 2.1. and 2.2).

Lexical knowledge is, next to a broad set of other elements and skills, a significant part of mastering a second language. Read (2000: 1) even refers to lexical knowledge as a "priority area in language teaching" and criticizes Bachmann and Palmer's (1996) framework of language ability. According to Bachmann and Palmer (1996), language knowledge consists of numerous components, as illustrated in Table 5.

Table 5: Components of language knowledge by Bachman and Palmer (1996: 68)

Organizational knowledge
- o   Grammatical knowledge
  - Knowledge of vocabulary
  - Knowledge of syntax
  - Knowledge of phonology/graphology
- o   Textual knowledge
  - Knowledge of cohesion
  - Knowledge of rhetorical or conversational organization

Pragmatic knowledge
- o   Functional knowledge
  - Knowledge of ideational functions
  - Knowledge of manipulative functions
  - Knowledge of heuristic functions
  - Knowledge of imaginative functions
- o   Sociolinguistic knowledge
  - Knowledge of dialects/varieties
  - Knowledge of register
  - Knowledge of natural or idiomatic expressions
  - Knowledge of cultural references and figures of speech

When examining the table more closely, the inference can be drawn that general language knowledge is a complex construct consisting of various types of knowledge. Interestingly, Bachmann and Palmer (1996) categorize lexical knowledge as a minor component of the construct, as it "is classified as part of Grammatical knowledge, which suggests a very narrow view of vocabulary as a stock of meaningful word forms that fit into slots in sentence frames" (Read 2000: 5). Read (2000) comments that lexical knowledge substantially contributes to various other types of knowledge (indicated in the table), and thus is placed wrongly in the list created by Bachman and Palmer (1996). Furthermore, with regard to the category 'Sociolinguistic knowledge' in Table 5, it can be detected that aspects of vocabulary, like 'natural or idiomatic expressions', 'cultural references', and 'figures of speech' are not allocated to the category of vocabulary but to the sociolinguistic category. What is more is that 'knowledge of register' is also assigned to the sociolinguistic category, although one might argue that this type of knowledge is likewise linked to vocabulary, as registers "are varieties of language associated with particular users, uses and contexts" (Read 2000: 6). With this, then, different registers are primarily adopted by using certain words and phrases that are associated with the desired level or style. In other words, a fundamental difference between formal and informal register can only be found in the choice of words and vocabulary. Read (2000: 6) summarizes and makes clear that the table of Bachman and Palmer (1996) "understates the contribution of vocabulary to language knowledge". Here, it becomes obvious once again that vocabulary knowledge is definitely not held in as high esteem as it ought to be, as their categorization of language knowledge does not accurately reflect the importance of vocabulary (cf. Read 2000: 5).

Schmitt (2010) also points to the prominent role of vocabulary in terms of competently performing in a language by addressing studies which suggest that correlations between vocabulary and other strands of language knowledge do not only exist, but are remarkably high. Laufer's (1992) findings, for instance, point towards a correlation of .50-.75 between the size of learners' vocabulary repertoire and their proficiency in reading. Albrechtsen, Haastrup, and Henriksen's (2008) study likewise revealed that a correlation of approximately 0.75 between vocabulary size and learners' ability in reading in the target language exists. One of the most significant studies in terms of the importance of vocabulary in language use is the one conducted by Alderson (2005). In the course of carrying out Alderson's DIALANG test, which is a set of tests on vocabulary and on other language skills, interesting findings were

recorded. The participants' scores showed that lexical knowledge is closely linked to all other language components; similar to the results of Laufer's (1992) and Albrechtsen, Haastrup, and Henriksen's (2008) study. However, one difference was discovered, namely that in Alderson's (2005) research, the highest correlation was found between vocabulary and writing. Leaving apart writing competence though, correlations were surprisingly found to be consistently high within all other language skills as well. Alderson (2005) concisely summarizes that "the size of one's vocabulary is relevant to one's performance on any language test, in other words, that language ability is to quite a large extent a function of vocabulary size" (88).

In conclusion, even though the importance of vocabulary had been neglected for a long time, it has been attempted to highlight the role of lexis in the process of language acquisition, as it has been shown that vocabulary knowledge positively contributes to correct language use (see Alderson 2005). Clark (1993: 259) succinctly summarizes the functions of vocabulary, as "[i]t provides the content for syntax and the instantiation of syntactic rules, and it is the environment for phonological and morphological patterns". Thus, it can be concluded that special attention should be devoted to lexis, which forms a fundamental component of language proficiency, not only by researchers, but also by learners themselves and English language teachers.

3.4   Nature of vocabulary knowledge

In the previous chapter it was stated that vocabulary knowledge constitutes a significant and indispensable part of mastering a second language, as a large vocabulary repertoire enables learners to perform better in other aspects involved in the language knowledge and use (cf. Milton 2009: 3). Thinking of the essential role of vocabulary, one can draw the conclusion that increasing attention should be devoted to vocabulary learning, due to the fact that the size of learners' lexical repertoire significantly influences other language proficiency skills (cf. e.g. Alderson 2005, Laufer 1992, Albrechtsen, Haastrup, and Henriksen's 2008). Bearing this fact in mind, it needs to be highlighted that learners of the English language should not only strive for broadening and expanding their repertoire of lexis, but should also try to acquire thorough knowledge of how to properly use each individual lexical item in context, as this, along with other aspects which will be discussed in the present chapter, forms another component part of the complex nature of vocabulary knowledge. Even though vocabulary knowledge is

extremely difficult to define, in this chapter, an overview of definitions previously formulated by well-known researchers is given. Additionally, the attempt will be made to break vocabulary knowledge down into separable, though interrelated, aspects involved in knowing and using a word to amply illustrate the components of the rather multifaceted and complex construct known as 'lexical knowledge'.

Vocabulary knowledge involves many aspects, as knowledge is often defined broadly. For some linguists, for instance, the recognition of a word is already referred to as knowledge of the word. However, others might claim that a word is known when the learner is capable of using it correctly in any context. Hence, the scope of vocabulary knowledge is wider than one would expect and, thus, needs to be clearly outlined. The first approach forward defining vocabulary knowledge was developed by Richards (1976), as he compiled a list of eight attributes of lexical knowledge which provide insight into the complexity of its nature. The first assumption made by Richards (1976) addresses the lexical competence of native speakers. According to Richards (1976), native speakers constantly expand their vocabulary, even in their adulthood, whereas their grammatical competence stops to develop at a certain time (78). The other assumptions stated concern aspects involved in knowing a word:

Table 6: Richard's (1976: 83) eight attributes of lexical knowledge

2. Knowing a word means knowing the degree of probability of encountering that word in speech or print. For many words we also know the sort of words most likely to be found associated with the word.
3. Knowing a word implies knowing the limitations on the use of the word according to variations of function and situation.
4. Knowing a word means knowing the syntactic behavior associated with the word.
5. Knowing a word entails knowledge of the underlying form of a word and the derivations that can be made from it.
6. Knowing a word entails knowledge of the network of associations between that word and other words in the language.
7. Knowing a word means knowing the semantic value of a word.
8. Knowing a word means knowing many of the different meanings associated with a word.

Meara (1996) examines some of Richards' (1976) assumptions more closely and simultaneously questions the wording, as the list proves to be not as comprehensive as it appears at first glance. Then, it is clarified by Meara (1996) that the list is not intended to serve

as a general framework for vocabulary knowledge, but rather should be considered as a "honest attempt to give an account of contemporary linguistic research with inferences and applications to teaching where appropriate" (Meara 1996: 2). Further, Meara (1996) points to the imperfection of Richards' (1976) framework, as minor flaws have been identified. For example, a clear-cut distinction between active and passive vocabulary is totally omitted. Additionally, Meara (1996: 3) criticizes that lexical growth and vocabulary attrition, for instance, are not mentioned in any of the eight assumptions listed by Richards (1976). Leaving aside the weaknesses Meara (1996) intended to draw attention to, one has to acknowledge that the list of aspects involved in knowing a word presented by Richards (1976) nicely illustrates the complexity of the nature of word knowledge and might have inspired researchers, like Nation (1990), to investigate further in this topic area.

As just mentioned, Nation (1990) assigned importance to Richards' (1976) work and revised the aspects involved in lexical knowledge. According to Nation (1990), vocabulary knowledge features eight different dimensions:

Table 7: Eight types of vocabulary knowledge (Nation 1990: 31)

- o spoken form
- o written form
- o grammatical form
- o collocations
- o frequency
- o appropriateness (register)
- o meaning
- o associations.

Nation (2001) adjusted and expanded the list presented above even further and published the concept of 'what is involved in knowing a word' which is referred to as "the best specification of the range of 'word knowledge' aspects to date" by Schmitt (2010: 16). Nation (2001) categorizes lexical knowledge into three groups, namely knowledge of *form*, knowledge of *meaning*, and knowledge of *use*.

The first group, knowledge of word *form*, can be characterized as expertise regarding the pronunciation and spelling of a particular word. Hence, the written and phonological form of word items is at the center of attention. Nation (2001) also allocates the knowledge of word parts to this group, "by which he means knowledge of the prefixes and suffixes we use to add

or change meaning in a word" (Milton 2009: 14). In other words, by 'word parts', lemmatization, and word family grouping, which is explained in detail in section 3.1., is meant here.

The knowledge of word *meaning* comprises the second area of lexical knowledge, which is further subdivided into three categories. The first subdivision, 'form and meaning', refers to the stereotypical idea one has of word knowledge, namely that a form is linked to a particular meaning. In terms of second language acquisition, the link between form and meaning is frequently associated with the translation of foreign language words into the native language. It should be kept in mind that languages differ from one another in various aspects such as in the use of vocabulary. Therefore, the other subdivisions of this category, 'concepts and referents' and 'associations', also cover the possibility to translate English words in diverse ways into learners' mother tongue or to assign several meanings to a single word item which might not necessarily resemble the meanings in one's L1 (Milton 2009: 14).

Table 8: What is involved in knowing a word by Nation (2001: 27)

Form	Spoken	R	What does the word sound like?
		P	How is the word pronounced?
	Written	R	What does the word look like?
		P	How is the word written and spelled?
	Word parts	R	What parts are recognizable in this word?
		P	What word parts are needed to express this meaning?
Meaning	Form and meaning	R	What meaning does this word form signal?
		P	What word form can be used to express this meaning?
	Concept and referents	R	What is included in the concept?
		P	What items can the concept refer to?
	Associations	R	What other words does this make us think of?
		P	What other words could we use instead of this one?
Use	Grammatical Functions	R	In what patterns does the word occur?
		P	In what patterns must we use this word?
	Collocations	R	What words or types of words occur with this one?
		P	What words or types of words must we use with this one?
	Constraints on use (register, frequency)	R	Where, when, and how often would we expect to meet this word?
		P	Where, when, and how often can we use this word?

The third group, knowledge of word *use,* also consists of three subdivisions (shown in Table 8). 'Grammatical function' refers to the expertise with regard to assigning words to different parts of speech. Moreover, it includes how these words correlate with others. The subsection 'collocations' is concerned with words that are likely to appear together and thus, tend to collocate with each other. The verbs *do* and *make,* for example, occur frequently combined with certain prepositions, and nouns or noun phrases (e.g. *do one's homework, make the bed).* Some words occur alongside a limited number of words only, while others feature a greater likelihood to co-occur with a wide range of different words (Milton 2009: 16). The third subsection, 'constraints on use' refers to the notion of when to chose a formal or an informal register.

3.4.1   Receptive and productive mastery

When taking a closer look at Table 8, it can be detected that Nation (2001) distinguishes between receptive (R) and productive (P) vocabulary knowledge and thus, divides each subcategory even further. According to Milton (2009) receptive - commonly referred to as passive - knowledge covers recognition and understanding of a word, whereas productive, also known as active, knowledge is characterized as expertise to call words quickly to mind and correctly apply them in active production, be it in written or spoken form (13). While the terms active and passive knowledge are often referred to as synonyms of receptive and productive knowledge, Nation (2001) stresses that listening and reading skills require full attention and active commitment which is why the adjective 'passive' is often criticized for not being entirely appropriate (47). Nevertheless, the adjectival modifiers active and passive are frequently used interchangeably with respect to the receptive and productive (Read 2000: 154), which, by the way, is also the case in the present thesis.

Having discussed the terms receptive/passive and productive/active, another issue concerning receptive and productive mastery needs to be considered – as conflicting opinions on this subject matter still prevail – namely the placing of the threshold between those two types of knowledge. According to Melka (1997), lexical knowledge is some kind of continuum, starting with a minimal degree of receptive word knowledge and ending with the highest level of productive knowledge possible. Consequently, words are known receptively first before they become accessible for active use (cf. Melka 1997: 90). Melka's (1997) theory has been

criticized due to the lack of a clearly defined boundary between receptive and productive knowledge. Read (2000), for example, does not overwhelmingly approve of the continuum, as it is still not quite clear where "to locate the threshold at which the word passes from receptive to productive status" (154). The absence of a precisely determined boundary results in a severe lack of a concise definition of the two types of lexical knowledge which accordingly leads to the application of inconsistent measurement techniques, and thus, to conflicting findings. Up to the present, no clear definition of the receptive and productive vocabulary has been formulated, which considerably complicates the investigation on learners' lexical knowledge.

Furthermore, it is essential to discuss the differences between receptive and productive knowledge as these differences are the main focus of the present study. Read (2000) argues that "the ability to use a word requires extended knowledge beyond what you need just to understand it" (26). Hence, when actively using a language, a higher degree of word knowledge is required than when being passively confronted with words (Read 2000: 26). Nation's (2001) point of view is similar, as he confirms that L2 learners face less difficulties in recognizing words, probably due to immediate context, than in the productive language strands, speaking and writing. In other words, it takes L2 learners more effort to actively produce words and phrases than being receptively exposed to the target language (50). Clark (1993: 245f.) also mentions an asymmetry between the learners' receptive and productive vocabulary knowledge. Learners might be capable of understanding and grasping the meaning of words, but cannot use these lexical items in their productive use of the learned language, which causes an unequal active and passive vocabulary size. According to Clark (1993: 245), "one's production vocabulary is always smaller than one's comprehension vocabulary". That is to say, the receptive vocabulary size usually outweighs its active counterpart. Additionally, Clark's (1993: 246) view of the order of acquisition is very similar to Melka's (1997), as she states that comprehension precedes production. Due to this asymmetry, Clark (1993: 246) recommends to always analyze both active and passive vocabulary knowledge, as an investigation of the active vocabulary repertoire only might not adequately represent one's actual vocabulary knowledge.

Concerning the effort it takes learners to expand their active and passive vocabulary knowledge, Nation (2001) lists three assumptions which try to explain why receptive learning and use appears to be easier and less effortful than its productive counterpart. First, it is

postulated that "[p]roductive learning is more difficult because it requires extra learning of new spoken or written output patterns" (Nation 2001: 51). That is to say, L2 learners have to learn only a couple of details, especially inflectional endings and derivations, of the form of an item to perceive and retrieve its meaning, while more profound knowledge of the word form is needed for active language production (51). Nation (2001) delightfully illustrates this by giving an ordinary example: children often feature receptive knowledge of the word *spaghetti*, however, face difficulties when it comes to writing down the word in its orthographically correct form. Ellis and Beaton (1993: 548) likewise argue that "learning a word for productive use is more difficult than for reception", as productive composition requires more precise knowledge of the word, its meanings, its natural surroundings, its spelling, and its pronunciation. Moreover, it is believed that learning about the form of particular items requires a greater deal of effort from L2 learners than learning their meaning does, "because there is much more shared knowledge of meaning between two distinct languages than there is shared form" (Nation: 2001: 51).

A second explanation why receptive learning and use seems to be more straightforward, in comparison to language production, is motivation theory. It is assumed that L2 learners store some words in their vocabulary repertoire which they could correctly use if they would intend to, but learners still do not employ these words in their spoken or written production due to certain aversion to these words. More precisely, L2 learners might have a personal preference for some words which they are fond of using in their language production. Nonetheless, there are words that are disliked and thus avoided. Consequently, these words remain in the learners' receptive vocabulary repertoire, even though L2 learners would actually be capable of using them correctly (cf. Nation 2001: 51). Linguists, like Corson (1995), often refer to these words as motivated and unmotivated vocabulary.

Thirdly, Nation (2001) explains a prevailing trend, namely that in language classes of any kind conspicuously more attention is devoted to receptive use and, thus, L2 learners often display increased knowledge in the receptive language strands, reading and listening, compared to their proficiency in the productive language strands, writing and speaking. This becomes evident when comparing the receptive and productive vocabulary size of L2 learners, as their passive vocabulary repertoire considerably outweighs the active counterpart. Furthermore, it is argued that "productive knowledge includes all the knowledge necessary for receptive use" (Nation 2001: 51), which explains why the passive lexical repertoire is in principle the larger

one compared to the active vocabulary, as it constitutes the basis for active usage. Nonetheless, it is noticeable that opinions still considerably differ in this matter. The present study, though, might offer evidence about which assumption should be accepted or challenged, as Austrian L2 learners' receptive and productive lexical knowledge is tested and analyzed accordingly.

Having discussed some issues on receptive and productive vocabulary knowledge, it is important to summarize the main points relevant for the present study on Austrian L2 learners' active and passive English vocabulary repertoire. While some claim that receptive and productive knowledge constitutes some kind of continuum (cf. e.g. Melka 1997, Clark 1993), others, like Read (2000: 157), postulate that "there is not a simple continuum running from minimal receptive knowledge to advanced productive ability". Unfortunately, there are still conflicting views and opinions prevailing in the debate of how to properly distinguish active vocabulary knowledge from its passive counterpart, as up to the present, no precise and satisfactory definition for both has been formulated yet. Nonetheless, for the present study, Melka's (1997) and Clark's (1993) position is adopted. Hence, the connection between active and passive lexical knowledge is referred to as a set of states of knowledge, "starting with a superficial familiarity with the word and ending with the ability to use the word correctly in free production" (Laufer and Nation 2012: 165). As this order of acquisition is quite likely to be accurate, it is assumed that passive lexical knowledge precedes active vocabulary knowledge. Further, this entire thesis is based on the conventional assumption that "a learner's receptive knowledge, the words that are recognized when heard or read, is greater than a learner's productive knowledge, the words that can be called to mind and used in speech or writing" (Milton 2009: 13).

3.4.2   Vocabulary breadth/size and depth

As has already been shown, lexical knowledge is multifaceted as it consists of various different kinds of knowledge which are all connected with each other, at least to some extent (Schmitt 2010: 79). The most common approach of dividing vocabulary knowledge into its components is the separation into receptive and productive knowledge, which has been outlined in the previous subchapter. Another convention to divide lexical knowledge often conformed to is the distinction of breadth and depth of lexical knowledge. Milton (2009: 13) explains that

"[b]readth of knowledge refers to the number of words a learner knows and depth of knowledge refers to what the learner knows about these words". In other words, breadth of vocabulary knowledge refers to the quantity of words L2 learners know, while depth is concerned with the quality of word knowledge, that is to say with the expertise of a word's meaning, its characteristics, its possible inflections or derived forms, and its typical environment. In comparison to the division into active and passive word knowledge, the threshold between vocabulary breadth and depth is more clearly set. According to Anderson and Freeboy (1981), a L2 learner should know the most essential facets of the meaning of a word to add it to the total vocabulary size (92f.). Hence, it can be inferred that by only knowing the word's meaning the criterion to add the word to the total vocabulary size is already met. The moment more precise knowledge about the word is acquired, be it "the word's format features, syntactic functioning, collocational possibilities, register characteristics" (Read 2004: 155) etc., deeper understanding of the word is gained and hence depth of word knowledge is acquired which might allow correct usage of the word. Milton (2009: 13f.) explains that L2 learners display a tendency to expand their English vocabulary repertoire by learning individual words or translation lists by heart, however, they then feature a lack of knowledge of how to correctly use these words in context. This hints at the fact that learning words in isolation might not be the best approach to improve one's overall language proficiency.

3.5   Lexical growth

Having discussed the rather complex nature of vocabulary knowledge with all its interrelated components, it is now appropriate to briefly explain another aspect of second language acquisition relevant for this study, namely lexical growth.

Teachers and learners of the English language should bear in mind that the acquisition of lexis is a process of incremental nature as both one's vocabulary size and the level of expertise concerning the characteristics of acquired words are only broadened step by step. Schmitt's (1998) study supports the idea that words are learned incrementally in the course of an investigation of the vocabulary knowledge of L2 learners' of eleven words which were examined several times within one year. Schmitt (2010: 21) explains and interprets the findings of his study as follows:

> The association scores for my students generally became more native-like over time, indicating the words were gradually becoming better integrated into the students'

mental lexicons. All of this shows that learner knowledge of the various word knowledge aspects is often partially mastered, and that it takes time to develop each of these word knowledge aspects towards more precision.

What can be deduced from Schmitt's (2010) interpretation is that each of the several different aspects involved in word knowledge slowly develops and gradually increases. Another study of relevance for the present thesis is the one conducted by Henriksen (2008) on lexical growth in English and the participants' L1. What is of great interest about Henriksen's (2008) research now is that it exclusively focuses on the expansion and the growth of vocabulary size which is, according to Milton (2009: 170), an indication of advancement in the language learning process. Thus, Henriksen's (2008) study is very similar to the one in this present paper. Henriksen's (2008) study provides intriguing insights which likewise reveal that the expansion of the vocabulary repertoire occurs gradually – very similar to Schmitt's (1998) findings. Another quality of this study is that not only the English vocabulary size of Danish EFL students was tested for an increase in breadth of lexicon, but the L1 vocabulary size as well. It was discovered that the participants' vocabulary size in both their L1 and their target language steadily increased. Henriksen's (2008) investigated even further and checked the vocabulary size of Danish learners attending different grades in school. The results showed that the number of participants mastering the frequency levels of the Vocabulary Levels Test (including the 2,000, 3,000, 5,000, and 10,000-word frequency level) considerably increased with higher grade. The same approach is adopted for the research of the present thesis, as the vocabulary size in English of Austrian students of year eight, ten, and twelve of an Austrian grammar school is examined and analyzed. As the present study is based on other tools of measurement, the Vocabulary Size Test and the Lex30, instead of the Vocabulary Levels Test, the findings cannot be directly compared. However, whether a similar trend is predominant for Austrian L2 learners attending grade eight, ten, and twelve of an Austrian grammar school can be identified.

Considering lexical growth in general again, Schmitt (2010: 19f.) points out that learners need to be exposed to words more than a single time to familiarize themselves with its characteristics, meanings, and environment. A full command of a word encompasses several different types of word knowledge, (shown in Table 8), however, each type develops and progresses individually, and also incrementally. Hence, a full mastery of one dimension of word knowledge might be achieved, while L2 learners lag behind in other dimensions. In other

words, some types of word knowledge are mastered before others. Nonetheless, all aspects involved in lexical knowledge are interrelated and interconnected to a varying degree.

In the present study, lexical growth plays a significant role, as the active and passive vocabulary knowledge of Austrian L2 students attending three different years at an Austrian grammar school is tested and compared. By analyzing the students' scores of two vocabulary tests according to the participants' school year and a set of other factors, one can gain illuminating insights into the development and expansion of students' vocabulary repertoire, be it receptive or productive.

4   Measuring vocabulary knowledge

Having discussed the nature of vocabulary knowledge, its interrelated components, and lexical growth, it is now essential to devote attention to measuring vocabulary knowledge. With regard to assessing students' vocabulary repertoire, it has been found that measures on vocabulary breadth provide illuminating insights into the size of learners' English vocabulary repertoire, which might broaden and deepen the understanding of L2 learners' vocabulary acquisition process. Although vocabulary breadth measures feature minor flaws in illustrating how profoundly learners' know word items, "they can give a more representative picture of the overall state of the learners' vocabulary than an in-depth probe of a limited number of words" (Milton 2009: 115). Thus, the present study's focus is laid on breadth of vocabulary knowledge and fully leaves depth of lexical knowledge out of account. For this paper's study, L2 learners' total vocabulary size in English is measured by two vocabulary tests featuring word items from word-frequency lists, which is a common approach for estimating L2 learners' total vocabulary size. For tests like these, samples of different word frequency levels are incorporated to approach a valuable estimate of a test takers' vocabulary size (cf. Read 2000: 31f.)

At the moment, there are several tests available to measure receptive vocabulary size which have been developed, used, and examined by some researchers working in the field of second language vocabulary acquisition. Those 'standardized' tests make comparisons between different learner groups, learners of varying proficiency levels or learners speaking different L1s possible (cf. Milton 2009: 75). One of the most common and widely used tests is the Vocabulary Levels Test by Nation (1990, revised Schmitt et al., 2001). The VLT features a form-recognition matching format and tests vocabulary at the 2,000, 3,000, 5,000, 10,000, and the academic word level. Due to the restricted levels that are being tested, the VLT "is not really designed to provide an estimate of a person's overall vocabulary size" (Schmitt 2010: 198). Therefore, the VLT was not considered as appropriate testing instrument for the present study.

Even though there exists a wide range of other tests, besides the VLT, like checklist tests of passive vocabulary recognition, the Eurocentre's Vocabulary Size Test (Meara and Jones, 1990), and many more, which all provide profound insight into test-takers' vocabulary size, a multiple-choice test, the Vocabulary Size Test (Beglar and Nation 2007) was preferred for the

present study, as it seemed to be the most suitable one for this study's teenage participants and also for this study's purpose. Interestingly, according to Nation (2001: 53), the most frequently used testing formats of receptive knowledge actually is the multiple choice format, which again facilitated the decision making regarding the testing instrument for the present study of Austrian L2 learners' English vocabulary knowledge.

For the measurement of active vocabulary knowledge, the Lex30 test (Meara and Fitzpatrick 2000), a word association test, was chosen out of a set of three possible options. The tests or tools under discussion besides the Lex30 test were the active version of the Vocabulary Levels Test (Laufer and Nation, 1999) and the Lexical Frequency Profile (Laufer and Nation, 1995). Even though both tests have been commonly used in various studies, they feature minor flaws, which Milton (2009: 141) precisely points out:

> [C]ontrolled and elicitation tasks can be critici[z]ed because they may not measure a learner's ability to produce vocabulary in a range of communicative tasks and free production tasks are critici[z]ed because they may not usefully reflect the totality of a learner's knowledge or ability.

Hence, the Lex30 test was eventually decided for, as it seemed to be the most appropriate testing format for this study's participants who feature varying language proficiency levels in the English language. In the Lex30 test, the test-takers are asked to actively supply English words they associate with a given stimulus, which is a testing format that activates learners' language production skills, and therefore tests a higher state of knowledge. To summarize, for the present study the lexical expertise of Austrian L2 learners of English is tested with two complementary test formats, as the VST provides insight into learners' passive vocabulary and the word association test also does so in its counterpart, the active lexicon.

In the following subchapters, the test format as well as the scoring procedure of both the Vocabulary Size Test and the Lex30 test will be explained in detail, before an outline of previously conducted studies using the same and similar testing instruments is given.

4.1 The Vocabulary Size Test

One of the tools used for the present research on Austrian L2 learners' lexical repertoire in English is the 14k version of the Vocabulary Size Test (VST), which was originally elaborated and designed by Nation and Beglar (2007). The test was principally created to facilitate the measurement of learners' total receptive vocabulary size in English. More precisely, the VST

measures learners' written receptive vocabulary knowledge, which is especially needed for reading in the English language. Moreover, Beglar (2010) points out that the VST is an adequate instrument to not only evaluating the vocabulary size of individual students, classes and age-groups, but also to "compare the vocabulary sizes of those same individuals and groups, chart the growth of their vocabularies as they progress through educational programs" (Beglar 2010: 102) and to investigate to what extent lexical knowledge develops and expands in the course of a certain period of time. Hence, the VST seems to be a suitable instrument for the attainment of this thesis' research goal, which is to measure and compare the English vocabulary repertoire of Austrian L2 learners at different proficiency levels.

The development of the VST is principally based on fourteen 1,000 BNC word lists by Nation (2006). However, minor changes have been made in the 14k word list created by Nation (2006), which is based on the whole 100,000,000 token BNC. Nation and Beglar (2007: 10) justify the adjustment of the fourteen 1,000 BNC word list as follows:

> [T]he largely formal written nature of the British National Corpus strongly affected the high frequency levels, meaning that items like *cat, hello sun, worse* occurred in the 4th 1000 rather than at the higher frequency level. [...] As a result the first twelve 1000 word lists were revised using word family range and frequency figures from only the 10 million token spoken section of the British National Corpus.

Thus, the actual list, which forms the basis for the selection of the test items for the VST, comprises the first twelve 1,000 word frequency bands of the spoken corpus and the thirteenth 1,000 list and the fourteenth 1,000 list of the written BNC corpus (cf. Nation and Belgar 2007: 10). The reason for selecting mainly spoken corpus-based ordering is that spoken language rather resembles non-natives vocabulary repertoire than the written corpus-based ordering does (10f). Further, for the 14,000 version of the VST, the boundary of 14,000 word families of English was chosen, as 99% of all words used when communicating, be it in written or spoken form, belong to the most frequent 14,000 words of English (see Nation 2006). According to Nation and Beglar (2007: 12), those 14,000 words consist of lexicon that can be referred to as the most important and most commonly used.

Concerning the nature of the VST, Nation and Beglar (2007) designed a test which consists of 140 test items that are presented in a multiple-choice test format. Ten word forms from each 1,000 word level up to the fourteenth 1,000-word level, which are 140 word forms in total, are presented to the learners individually and in context. Hence, learners are exposed to the isolated test items and also to the word incorporated into a non-defining sentence. According

to Nation and Beglar (2007: 11), the embedding of the word into context "provides a little extra associational help in accessing the meaning". Those context sentences were added with the aim to represent the most common surrounding for the tested item (12). If, for instance, the tested item occurs more frequently in its plural form (e.g., *standard*) or within a common collocation (e.g., *for instance*), the context sentence is best possibly adapted to its most frequent surrounding (12). An example of the item format is given below:

  0. WATER: We had some **water**.
    a. a green plant
    b. something to drink
    c. a very hard thing
    d. a part of your body

Distractors are wisely chosen to prevent learners from getting the answer correct even though their lexical knowledge of the word is small. In other words, learners need to have a certain amount of knowledge of the word to be able to choose the correct answer, as all distractors are related in form and meaning to the tested word and thus, resemble each other greatly (cf. Nation and Belgar 2007: 11). The *I don't know* option is not given, as testees should be encouraged to hazard a guess. Informed guesses can be associated with sub-conscious knowledge (see Nation 2012: 4) which also forms part of passive lexical knowledge. Additionally, the language used for the distractors consists of words belonging to word levels below the word level of the tested word. That is to say, "the words in the definitions were of higher frequency than the item being defined" (Nation and Beglar 2007: 11).

In addition, with regard to the response options, it needs to be pointed out and clarified that some of the options have been slightly adapted for the present study only. When taking a closer look at the 20k version of the VST, it is noticeable that some test items of the 14k version feature slightly different and simplified response options than the 20k version does. As some of the response options of the 20k version seemed to be more appropriate, the original response options of the 14k version were exchanged with the ones of the 20k version. To illustrate the minor alterations made, an example is given:

14k version	**20k version**
OLIVE: We bought **olives**.	OLIVE: We bought **olives**.
a. oily fruit	a. oily fruit
b. scented pink or read flowers	b. scented flowers
c. men's clothes for swimming	c. men's swimming clothes
d. tools for digging up weeds	d. tools for digging

This example shows that the response options of the two versions slightly differ from each other. Here, the response options of the 20k version seem to be more suitable as the length of each option does not vary that much as it does in the 14k version. Hence, the response options of the 20k version were taken to replace the ones of the 14k version. The same procedure was adopted for the following test items: *strap, tummy, devious, veer, azalea, palette, eclipse, fen, awe, counterclaim, aperitif, skylark, atoll, didactic*, and *bawdy* of the 14k version. Another change in the response options was made for the test item *gimmick*. As two response options (c. attention-getting action or thing and d. clever plan or trick) caused some problems in the pilot testing, especially due to the resemblance of their meaning, it was decided to replace the last response option with a completely new one (d. an entertainer who makes people laugh by telling jokes or funny stories) randomly taken from the Oxford advanced learner's dictionary (2010: 295).

With regard to the frequency levels chosen for this test, it is essential to mention that words from each 1,000 word level up to the 14,000 word level were chosen as test items for the VST, as test takers should also be exposed to levels beyond their actual level. This was done "because frequency level is not a perfect indicator of which words are likely to be known" (Nation and Beglar 2007: 11). For Austrian participants, for example, the word *kindergarden,* from the eight 1,000 word level, might even be known by learners with very low proficiency in English, as it is a loanword from Austrian learners' first language, German. Hence, it is essential to consider that learners might be likely to know words beyond their present level of English proficiency. Therefore, it is recommended that students sit all fourteen levels of the VST, regardless of their level of language proficiency in English (11). Therefore, loanwords and cognates should not be removed from the test as they constitute an indispensable part of a learners' vocabulary repertoire, in their mother tongue as well as in the target language. Thus, Nation (2012: 2) stresses that the VST should be rather considered as measurement of words that learners know than of words learners have acquired. Moreover, the test items of the different frequency levels were randomly mixed and arranged, regardless of the test items'

frequency levels. By doing this, it was intended to motivate the test takers to give their best throughout the entire examination.

With reference to the scoring process of the VST, it is essential to know that each tested item stands for 100 word families. As ten words from each 1,000 word level, which adds up to the total of 140 words, were chosen for the VST, the maximum score that can be achieved is 14,000. Since testees are asked to choose out of four possible options, the one correct meaning of the word, a right answer would be counted as 100 words the learner receptively knows (Nation and Beglar 2007: 12). In other words, "[a] test-taker's score needs to be multiplied by 100 to get their total vocabulary size up to the 14th 1000 word family level" (Nation and Beglar 2007: 12).

Knowing the exact size of non-natives' receptive vocabulary repertoire provides deep insight into the general language proficiency of L2 learners and, thus, might be influential information for course designers, teachers, and the students themselves. Not only does information about students' passive vocabulary repertoire help teachers when choosing appropriate tasks for their students' language proficiency level, but it can also be used as an indication whether students have reached certain goals in terms of vocabulary increase. Further, the VST can be used by students themselves to check to what extent their vocabulary knowledge has expanded during a certain period of time (cf. Nation and Beglar 2007: 9).

Unfortunately, the VST also features some flaws or disadvantages which should be borne in mind when conducting research in the field of second language vocabulary acquisition and especially when using the VST as a tool of measurement in research. First of all, one should be aware of the fact that the purpose of the VST is to measure test takers' receptive vocabulary size. Consequently, the final results of the VST only provide insight into learners' receptive vocabulary repertoire. That is to say, no valuable information about learners' ability to use those words actively is offered (cf. Nation and Belgar 2007: 12). Another shortcoming of the VST stems from the testing format, more precisely, the multiple choice test format. As test takers are asked to choose out of four given options, it is not a far-fetched thought that they could easily guess the correct answer without having any knowledge of the tested word. Hence, it would be possible that learners do not know the right answer and have no presumption which option could probably be the correct one, but might simply tend to guess any given option. This, then, might lead to a distortion of the final results.

Nation and Beglar (2007) acknowledge that the results of the VST only provide a rough estimate of participants' written receptive vocabulary knowledge (12). However, it needs to be emphasized that vocabulary knowledge, be it receptive or productive, comprises a fundamental component of language proficiency. As already stated in Chapter 3.3., "language ability is to quite a large extent a function of vocabulary size" (Alderson 2005: 88), why the measurement of vocabulary size by the VST offers deeper insight into the general language proficiency of learners of the English language. Furthermore, the VST features several advantages which are nicely summed up by Nguyen and Nation (2011: 90):

> The test works very well because it covers a very wide range of frequency levels, it includes a large number of items (even half of this number would work well), the items have been very carefully designed, made, and trialled, and the test is designed to measure just one kind of vocabulary knowledge.

As the advantages outweigh the flaws of the VST, a decision in favor of the VST as testing instrument for the present study was made. Nevertheless, as a variety of measurement tools is often preferable, a second test was chosen to properly achieve the study's purpose which is to compare Austrian students' active and passive vocabulary repertoire in English. In the following section, the second test, the Lex30 Word Association Test, is explained in detail.

4.2 The Lex30 Word Association Test

The second tool used in this study is the Lex30 test, which is often referred to as word association test. It was created for assessing the productive vocabulary of non-native speakers of English by Meara and Fitzpatrick (2000).

Meara and Fitzpatrick (2000) claim that reliable and practicable tests which measure the productive vocabulary knowledge of non-native speakers were and still are lacking (19). They point out this is due to the fact that precise measurement of productive knowledge of non-native speakers takes more effort than researching into passive vocabulary repertoires (20). Meara and Fitzpatrick (2000) additionally point out that it is "difficult to devise simple tasks which produce the large quantities of vocabulary that are necessary to make reasonable estimates" (20). Milton (2009) likewise states that measuring productive knowledge is no easy task, as there are not enough elaborated approaches to properly elicit a sufficient amount of learners' active vocabulary in the target language. Further, written compositions and oral text samples produced by learners of the English language are likely to be very context-specific so

that researchers face severe difficulties in estimating and calculating the actual size of the learners' productive vocabulary repertoire (20). For example, a text of 250 words about the topic 'In how far has technology changed our lives?' might be primarily composed of topic-related vocabulary and technical terms related to the subject matter. Moreover, approximately half of all words produced might be words from the very first 1,000 word band, and thus are highly frequent pronouns, function words or content words of a general nature, which give no valuable indication of the true size of learners' productive vocabulary range. Solid evidence was found by Cobb (2007), who thoroughly examined learners' use of the 1,000 most frequent words in English. According to Cobb's findings, 70% of all words used in written compositions of English native speakers are words from the 0-1,000 zone. In oral samples, native speakers rely even more on words from the 0-1,000 zone, as those comprise 80% of the spoken texts. As the proportion of highly frequent words is very high, even for native speakers, one can draw the inference that the proportion is considerably higher for learners of English who are equipped with a considerably reduced vocabulary repertoire. Further, Cobb (2007) observed that even learners of English with high proficiency tend to overuse "general, unnuanced lexical items" (402).

Thus, Meara and Fitzpatrick (2000: 22) decided to develop and design a test format which conspicuously stands out from the previously and currently used ones with the aim to compensate for the lack of accurate tests on non-native speakers' productive vocabulary knowledge with a more innovative one, namely the so-called Lex30 test. Their research tool is not only practical, but also efficient in terms of measuring and estimating non-natives' control of their productive vocabulary knowledge.

Concerning the test format of the Lex30 test, it can be argued that the task set is a rather simple and basic one, as the test takers are asked to write down immediate responses to 30 given stimulus words. As the responses are not predetermined, test takers actively and arbitrarily produce words that come into their mind when they are confronted with the stimulus words. Thus, the Lex30 test features parallels with a free productive task. With regard to the 30 stimulus words test takers are presented with, Meara and Fitzpatrick (2000) chose base words from the first 1,000 level of the JACET list (Ishikawa et al. 2003) which can be considered as highly frequent word items. Hence, the task is not only manageable for English learners with a high proficiency level, but also for students at a lower intermediate level whose language proficiency in English is rather low (22). Further, "the stimulus words give the testee

a reasonable opportunity to generate a wide range of response words" (Meara and Fitzpatrick 2000: 23), as the stimulus base words are wisely chosen by Meara and Fitzpatrick (2000), who had the necessity of a wide range of different responses in mind while designing the task (23). For each stimulus base word, test takers have 30 seconds to write down at least three words that immediately come to their mind when they see the given word. Thus, for administering the test, one needs 15 minutes in total (23).

Regarding the test sheets used for this research, it is worth mentioning that on each page, of a total of three pages, one can find 10 stimulus words. Test takers have a time limit of five minutes to work through each page, as the tester announces when they have to turn over to the next page. This is done in order to achieve a certain goal, namely to put the testees under time pressure so that their responses are spontaneous and arbitrarily chosen. An example is given to illustrate how the test works:

| 0 | **animal** | elephant | tiger | farm | wild |

With reference to scoring the Lex30 word association test, it is essential to consider the scoring criteria mentioned by Meara and Fitzpatrick (2000). As a first step, all words need to undergo a lemmatization procedure according to certain criteria: Meara and Fitzpatrick (2000) explain that in their research "[i]nflectional suffixes (plural forms, past tenses, and comparatives, etc.) and frequent regular derivational affixes (-able, -ly, etc.) were counted as examples of base-forms of these words" (13). All other words which do not feature inflectional suffixes or frequent regular derivational affixes do not need to undergo lemmatization. After this procedure of lemmatization, the remaining words are then analyzed by using a vocabulary analysis program, for this research, AntWordProfiler, which gives information about the words' frequency. According to the word's frequency, points are allocated or not. For words belonging to Meara and Fitzpatrick's (2000) Level 0, which merely consists of high frequency structure words and proper names, and for those belonging to Level 1, namely the first 1,000 words of the JACET list, no points are allocated, whereas each word not belonging to Level 0 and Level 1 scores one point (23).

When examining Meara and Fitzpatrick's lemmatization criteria more closely, it becomes evident that their criteria are partially based on those established by Bauer and Nation (1993), who offer a set of seven levels into which English inflectional forms and affixes are categorized

(253). For the development of the Lex30 Word Association Test, level 2 (inflectional suffixes) and level 3 (the most frequent and regular derivational affixes) of Bauer and Nation's (1993) categorization were taken as main lemmatization criteria (see Table 9) for the scoring of the test. All words produced by the testees with one or more of those affixes listed in Table 9 are counted as their equivalent base lemmas, whereas words which feature affixes which cannot be found in the list below are not lemmatized. To illustrate how the lemmatization procedure is conducted, an example is given: The affixes from the word UNHAPPINESS can be categorized as Level 3 affixes (UN- and –NESS) so that the word is lemmatized as HAPPY. When categorizing HAPPY according to the levels established by Meara and Fitzpatrick (2000), this word would belong to level 1, and therefore no points are allocated to the word UNHAPPINESS.

Table 9: Lemmatization criteria by Bauer and Nation (1993) summarized by Meara and Fitzpatrick (2000)

Level 2 Inflectional suffixes	*Level 3* Most frequent and regular derivational affixes
▪ Plural ▪ 3rd person singular present tense ▪ past tense ▪ past participle ▪ -ing ▪ comparative ▪ superlative ▪ possessive	▪ -able not when added to nouns ▪ -er ▪ -ish ▪ -less ▪ -ly ▪ -ness ▪ -th cardinal – ordinal only ▪ -y adjectives from nouns ▪ non- ▪ un-

When the scoring process has taken place, the Lex30 Word Association Test scores and the scores from the Vocabulary Size Test are finally compared with each other to analyze the correlation between receptive and productive vocabulary knowledge. Although the Vocabulary Size Test in combination with the Lex 30 Word Association Test provides deep and crucial insight into both, the active and passive vocabulary knowledge of learners, Read (2000: 83) recalls that learners' language proficiency not only relies on the number of words they acquire and know. According to Read (2000), language proficiency is constituted by various skills of which lexical competence is only one component of several. Nevertheless, Read (2000: 83) asserts that "adequate knowledge of words is a prerequisite for effective language use".

This means that lexical knowledge is an indispensable component of the whole construct of language proficiency which constantly correlates with other components and is urgently required for the full development of language proficiency in English.

4.3 Literature review on measuring growth in vocabulary breadth/size

At earlier stages of this thesis it was emphasized that vocabulary size in particular positively influences the learners' language ability (see Chapter 3.3., cf. Alderson 2005: 88). Laufer and McLean (2016) approve of this belief and also claim that "[t]he larger the vocabulary of the learners, the more successful they are likely to be in reading, writing, and general language proficiency, as well as in academic achievement" (202). Hence, the measurement of the learners' vocabulary size has lately become the center of attention for many researchers and linguists, as this knowledge serves as valuable indication of the learners' lexical progress. A common approach for estimating vocabulary knowledge is the measurement of the vocabulary size or level by tests composed of test items taken from word frequency lists (cf. Laufer and McLean 2016: 202). In the following subchapters, some of these tests will be briefly discussed and a rough outline of studies on the learners' vocabulary size and their interesting and revealing findings will be given.

4.3.1 Studies of growth in receptive vocabulary knowledge

In recent years, the number of studies of growth in vocabulary knowledge using varying testing tools have increased, as the measurement of learners' vocabulary size has lately become the center of attention of many researchers and linguists. According to Nguyen and Nation (2010), the VST is one of the most suitable testing instruments for the measurement of a learner's receptive vocabulary size of the English language available, as it distinguishes learners according to their language proficiency levels, which can be considered as an outstanding feature of the VST (94). In the last decade, researchers have taken advantage of this particular test to measure their participants' receptive vocabulary size and have published interesting findings.

Beglar (2010), for example, tested the vocabulary size of nineteen native speakers of English and of 178 non-natives – Japanese university students learning English as a foreign language

– by using the VST as a testing instrument. The participants' English language proficiency varied from highly proficient language users to learners with low proficiency in the target language. The most successful and proficient participant of Beglar's (2010) study reached an estimated receptive vocabulary size of 13,100 word families (107). In general, the scores of the high proficiency group ranged from 7,500 to 10,000 word families (110). Further, it was detected that participants with higher English language proficiency indicated considerably larger receptive vocabulary size as they featured a higher score in the VST. That is to say, the vocabulary size of the highly proficient participants outweighs the one from the less proficient group of participants, and so on (110).

Nguyen and Nation (2010) record a similar trend, as higher scores were achieved by those participants having a higher language proficiency. That is to say, the better the English language proficiency of the participants, the higher they scored in the VST or the larger the receptive vocabulary size in the target language (92). However, Nguyen and Nation (2010) used a bilingual version (English-Vietnamese) of the VST and did not incorporate English native speakers into their research, like Beglar (2010) did, but tested Vietnamese University students who were divided into three equally large groups instead. The only difference between these groups was that the participants' level of proficiency varied. The first group comprised learners with low proficiency in the English language, while the participants of the second group of Vietnamese English learners featured a moderate level of proficiency. The third group consisted of participants being highly proficient in the use of the English language. The scores of the VST showed that the mean size of receptive vocabulary were around 6,100 for the low learners, 6,500 for the middle learners, and 7,400 for the top learners. It is noticeable that the receptive vocabulary size of the participants of Nguyen and Nation's (2010) study is considerably smaller than the one of Beglar's (2010) study, even though there can only be minor differences detected between the two studies' participants, as both Belgar (2010) and Nguyen and Nation (2010) selected university students as their participants. This variance might be attributable to differentiating school systems, educational standards, attitude towards language learning or cultural backgrounds.

Another study of learners' receptive vocabulary size was conducted by Elgort (2013), who also considers the vocabulary size of learners as "an important indicator of lexical proficiency" (254). Inspired by Nguyen and Nation (2010) who examined and evaluated a bilingual version of the VST, Elgort (2013) conceived the idea "to compare systematically the monolingual and

bilingual versions of the VST with the same group of participants" (254). Hence she decided to test 121 intermediate proficiency learners of the English language with Russian as their mother tongue for their receptive vocabulary size using the monolingual (English-only) as well as the bilingual (English-Russian) version of the VST. The participants of her study were exclusively high school and university students with a command of the English language at the CEFR's B1+/B2 level. Her findings showed that the intermediate proficiency learners feature an average vocabulary size of 6260 word families (263). Elgort (2013) reported a standard deviation of approximately 1650 word families and discovered a maximum vocabulary size of 10,700 word families of the test-taker who achieved the highest score in the VST testing procedure. When examining and comparing the results of the two versions of the VST, it becomes evident that the "VST scores were reliably higher on the bilingual version compared to the monolingual version of the test" (Elgort 2013: 267). That is to say, participants' scores are considerably higher on the bilingual version, as a mean vocabulary size of 6,600 word families was identified for the bilingual version, while an average vocabulary size of only 6,000 word families were counted on the monolingual version (264).

Nation and Beglar (2007: 12) themselves address studies using the VST as a testing instrument and report the following:

> Initial studies using the test indicate that undergraduate non-native speakers successfully coping with study at an English speaking university have a vocabulary of around 5,000-6,000 word families. Similarly competent non-native speaking doctoral students have around a 9,000 word vocabulary.

When comparing learners' approximate number of word families discovered by Beglar (2010), Nguyen and Nation (2011), Elgort (2013), and Nation and Beglar (2007), it becomes evident that their studies' findings markedly differ from each other. Milton (2009: 86) addresses the problem of slightly varying results which immensely complicate a meaningful comparison of learners' language proficiency and lexical growth attending different educational systems, probably even at different countries with distinct curricula, educational standards, or teaching practices. He points out the importance of clarifying the amount of time available for learning in the classroom as well as the volume of input when conducting a research on learners' lexical progress.

4.3.2 Studies of growth in productive vocabulary knowledge

Not only have studies on growth in productive vocabulary knowledge been increasingly conducted, but also studies on growth in its counterpart, active vocabulary knowledge. One of these interesting studies on active vocabulary knowledge with significant findings was conducted by Laufer (1998), for instance. It attempted to compare a group of learners' size of receptive vocabulary with the size of their productive lexical repertoire. Eventually, the correlation between active and passive vocabulary was observed and analyzed. The testing tools Laufer (1998) chose were the VLT (Nation 1990) for measuring passive vocabulary, the productive version of the VLT (Laufer and Nation 1999) for controlled active vocabulary knowledge, and the Lexical Frequency Profile (Laufer and Nation 1995) for the participants' free active lexical knowledge. Laufer (1998) selected 48 students attending tenth and eleventh grade at a high school in Israel as the participants of her study. In the course of her research, it was detected that the passive vocabulary repertoire significantly outweighs the controlled active one. Correlations of .67 for learners of grade eleven and .78 for students attending grade twelve were recorded. Laufer (1998) explains that the size of the participants' active vocabulary had not significantly increased, even though considerable progress in the passive and controlled active vocabulary repertoire had been detected (263). Furthermore, the findings show that "the gap between the two types of lexical knowledge [passive and controlled active] has widened at a higher level of language proficiency" (Laufer 1998: 264). That is to say, the higher the participants' language proficiency, the bigger the gap between the active and passive vocabulary size. Hence, those participants featuring a broader passive vocabulary range also achieved higher scores on the testing for controlled active knowledge (264).

A similar study with corresponding findings was conducted by Laufer and Paribakht (1998). The same testing tools and research technique were used for this study, and EFL and ESL learners were chosen as participants. The EFL group comprises learners attending the tenth and eleventh grade at an Israeli high school and university students enrolled in English Language and Literature classes. Canadian university students with varying L1 backgrounds, but featuring a high command in the French language, constitute the second group, the so called ESL group. Those participants show varying language proficiency in the English language. Laufer and Paribakht's (1998) findings confirm the apparent trend that learners'

receptive and productive vocabulary develops at different rates. The correlation between receptive and productive vocabulary size reported by Laufer and Paribakht (1998) was .72 for ESL learners and .89 for EFL learners, which implies that the gap between receptive and productive vocabulary size is larger for ESL learners than it is for EFL learners (380). Furthermore, these correlations indicate that learners who feature a wider receptive vocabulary repertoire tend to achieve higher scores in the productive language task (378), supporting Laufer's (1998) results.

Webb (2008) criticizes the test format Laufer (1998) and Laufer and Paribakht (1998) used for their research on receptive and productive vocabulary sizes, as they "may have been biased toward receptive vocabulary size, which brings the results into question" (Webb 2008: 80). Thus, he decided to employ a different testing method to analyze the correlation between receptive and productive vocabulary and view it from a different angle. Webb (2008) tested 83 Japanese university students with greatly varying language proficiency in the English language, ranging from beginner level to advanced level. The research instruments he used were different from Laufer (1998) and Laufer and Paribakht's (1998), as Webb (2008) exposes his test-takers to a receptive and a productive translation test instead of the VLT and the productive version of the VLT. Despite the change of testing tools, his findings are consistent with the ones recorded by Laufer (1998) and Laufer and Paribakht (1998), as the participants' receptive vocabulary knowledge was measured to be higher than the productive knowledge (85). Concerning the scoring methods employed, Webb (2008) decided for a method that was both sensitive and strict. The correlation between receptive and productive vocabulary sizes was observed to be .93 and .77 respectively. From this correlation, Webb (2008: 85) draws the following inference:

> The ratio of productive to receptive knowledge was much greater using sensitive scoring (93%) than strict scoring (77%), which indicates that the participants might have partial productive knowledge of L2 forms for almost all of the words known receptively, but that they did not possess full knowledge of meaning and form for nearly as many words productively as they did receptively.

Webb's (2008) study supports the prevalent assumption that the learners' receptive vocabulary knowledge outweighs the productive lexical repertoire, even though different test formats were used for the investigation. Although Webb (2008) refers to the receptive and productive translation test used in his study as a "more accurate measurement of vocabulary size" (92), compared to the VLT and the productive version of the VLT, Webb (2008) himself

points to a major flaw of his testing instrument (92). According to him, the test items need to be selected wisely to enhance the learners' chances of successfully responding to them. Otherwise, results might not accurately indicate a learner's actual vocabulary size. Thus, Webb (2008) advises researchers to consider different testing formats, besides the VLT and the translation tests, or even design new and more innovative test methods.

Meara and Fitzpatrick (2000: 19) similarly address the fact that a perfectly accurate, fully and flawlessly developed test precisely measuring learners' productive command in the English language is clearly lacking. Their solution to the problem is the elaboration of a new testing format, the Lex 30, which can be referred to as a word association test. In their paper, the correlation between receptive and productive vocabulary of 46 adult learners is calculated and analyzed. The participants featured varying L1 conditions as well as language proficiency in the English language, as some were categorized as intermediate language users, while some showed considerable proficiency. For the measurement of passive vocabulary, participants were asked to take a yes/no test (Meara and Jones, 1990). Meara and Fitzpatrick (2000: 24) found that their test-takers' receptive vocabulary comprises a mean of 5100 words. The learners' productive vocabulary repertoire was investigated by using the Lex30 test (Meara and Fitzpatrick 2000), which provided a mean score of 29 points. Considering the correlation between the participants' scores on the receptive and productive tests, it was discovered that it amounts to .84 which further implies that "subjects with a large receptive vocabulary also tended to produce a relatively high number of infrequent words in the Lex30 test" (Meara and Fitzpatrick 2000: 24). From this observation it can be inferred that the scores of the test used to measure receptive vocabulary knowledge forecast the test result of the productive knowledge test, and vice versa. In other words, test-takers achieving higher scores on one of the tests are likely to have good test results on the other test (24). Interestingly, also Meara and Fitzpatrick (2000: 24f.) conclude that their findings "suggest that the more proficient subjects become, the larger their receptive vocabulary is in relation to their productive vocabulary".

Inspired by previously conducted studies on active and passive vocabulary knowledge (e.g., Laufer, 1998; Laufer and Paribakht, 1998; Laufer and Nation, 1995), it was decided to compare students' receptive and productive lexical knowledge and calculate the correlation between the scores of both tests, which is a common practice in the field of vocabulary acquisition. By doing so, revealing insights into the relationship between students' passive and active

vocabulary is gained which might lead to a better understanding of the complex construct of vocabulary acquisition.

5   Methodology

5.1   Research design

As described in Chapter 1, the purpose of this quantitative L2 research study is to investigate the active and passive lexical knowledge of Austrian L2 learners attending year 8, 10, and 12 of an Austrian grammar school, as well as the factors which positively influence the expansion of both students' active and passive vocabulary repertoire. In this chapter, the empirical methodology and the aims of this study are explained and the participants, the data collection, and the analysis procedure are described in detail.

To test the hypotheses formulated in Chapter 1, two vocabulary tests and one additional questionnaire were considered as the most appropriate and suitable approach to measure the desired variables. This study's principal purpose is to investigate and compare students' receptive and productive lexical knowledge. The students attend the same school but different school years. The participants will be compared according to additional variables such as their gender, the specialization chosen from year 9 onwards, their L1, the acquisition of other foreign languages apart from English and Latin, experiences abroad, and time spent with English music, television, literature and conversations. The students' test scores of both tests are analyzed according to those criteria by using a statistical analysis program.

To acquire a deeper understanding of this study's methodology, it is essential to have precise information of the school context and the tested students, which is provided in the subsequent subchapters.

5.2   School context

The participants chosen for the present research are 275 Austrian students attending a grammar school, the Stiftsgymnasium der Benediktiner in Melk, which is located in Melk, Lower Austria. To obtain sufficient research data, students of twelve classes were selected as participants for this study. During the initial stages of the research project, it was considered to collect data from several grammar schools. However, since the headmaster of the Stiftsgymnasium der Benediktiner in Melk kindly granted his full permission to conduct the study at this school, data was collected from one single school only, which, considering it with

hindsight, greatly facilitated the data collection process. Thus, with the generous help of the headmaster and the teaching staff, two tests on students' lexical repertoire were administered in twelve classes of the Stiftsgymnasium der Benediktiner in Melk within several weeks. It is indispensable to give a brief overview of the school context and the number of English lessons taught per week in each school year. The students attending year 5, 6, 7, and 8 at Stiftsgymnasium der Benediktiner in Melk take four English lessons of 50 minutes each per week. Thereafter, students are obliged to select out of five possible specialization options (French language, ancient Greek language, natural science, music and art) and are rearranged and organized into classes according to their chosen specialization at the beginning of year 9. Even though there are minor differences in the teaching syllabi of each specialization, all students of year 9, 10, 11, and 12 are provided with three English lessons of 50 minutes each on a weekly basis. Furthermore, apart from English, all students regardless of their specialization are taught Latin from year 7 onwards. Other foreign languages, French and ancient Greek, are then studied from year 9 onwards, however, only by those students who decided for this specialization. From year 10 onwards, all learners of all classes are provided with the opportunity to take Spanish, Italian or Russian classes as optional foreign language subject. Moreover, year 10 students are given the chance to participate in a student exchange program organized by the school in collaboration with the Saint John's Preparatory School in Minnesota, where Austrian students attend an American high school for four months (cf. http://www.stiftsgymnasium-melk.org).

5.3   Participants

For this study, 275 Austrian students attending year 8, 10, and 12 at the Stiftsgymnasium der Benediktiner in Melk were chosen as participants.The selected test group of students of year eight are between thirteen and fourteen years old and attend classes 4A, 4B, 4C and 4D. The learner group of year ten, that is to say of classes 6A, 6B, 6C and 6D, are between fifteen and sixteen years old, while the group of participants of year twelve attending classes 8A, 8B, 8C and 8D are between seventeen and eighteen years of age. On the whole, 93 students of year eight, 95 students of year ten, and 87 students of year twelve were tested, which comprises a group of 275 participants in total.

Before going into more detail, it is essential to mention that 26 students out of 275 participants did not fill out the questionnaire, which was attached to the VST test paper, as they were absent during the test administration for unknown reasons. Thus, information about these learners' personal, academic and linguistic background has unfortunately not been obtained. Consequently, only the information of students who provided insights into their linguistic biography by filling out the questionnaire is considered in the following description of the participants.

As Table 10 illustrates, 13 participants out of a total of 275 test-takers have a different L1 background than the majority, which comprises students with German as their L1. Of these 13 participants with a different L1 from German, three consider Czech as their mother tongue. The remaining ten test-takers indicated having diverse languages ranging from Arabic to Chinese as their L1. Interestingly, only one of these students considers English as his L1. Concerning the ratio between genders, it is not possible to identify a clear number of girls and boys and, hence, a precise ratio, as this can only be found out by the questionnaire, which was, unfortunately, not filled out by all participants. However, when taking a closer look at those 249 participants who did indicate their sex in the questionnaire, it is noticeable that the number of girls considerably outweighs the number of boys participating in the study, as 156 female participants and 93 males ones were counted.

Table 10: Details of the selected test group

Grade level	Class	Number of participating students	Students' L1 other than German
Year 8	4A	27	1x Arabic, 1x Polish
	4B	26	1x Czech
	4C	20	1x Hungarian
	4D	20	1x Romanian
Year 10	6A	17	1x Turkish
	6B	20	1x Slovak
	6C	32	1x Chinese
	6D	26	1x Arabic
Year 12	8A	18	2x Czech
	8B	17	1x English
	8C	27	1x Spanish
	8D	25	

5.4   Data collection

Having described the participants of this study, the data and the procedure of the data collection are given close and special attention in this subchapter. As previously mentioned, two tests have been conducted in 12 classes of an Austrian grammar school during several weeks, starting in October 2016. Hence, the study cannot be considered a longitudinal study, as the administration of the test was restricted to one single test round. The two tests were administered separately and, thus, not on the same day, with the intention to prevent temporary lapses in students' concentration. Each class sat both tests within a time span of three months. More precisely, the VST test was conducted in all twelve classes from October 3rd 2016 until November 21st 2016. The completion of administering the Lex30 test in all classes, however, took more time, namely until December 20th 2016.

> VST administration: October 3rd 2016 – November 21st 2016
> Lex30 administration: October 3rd 2016 – December 20th 2016

One of the two tests administered, the VST, was conducted by the researcher herself. The test administration in each class followed the same procedure. Firstly, the researcher introduced herself to the students and explained briefly that the testing is part of an empirical study for a diploma thesis. Then, it was stated explicitly that students' anonymity is guaranteed and, eventually, instructions were given. Not only were students informed about the arrangement of the test items of different levels of frequency, but they were also encouraged to try their best and dare to have a guess in case they are to some extent familiar with the tested word's meaning but are not absolutely sure. Before the testing started, it was pointed out that students have 45 minutes to complete the test and an additional three minutes to fill out the questionnaire attached to the test paper. After each test administration the tests were collected and manually assessed according to the suggested scoring criteria by Beglar and Nation (2007).

As already mentioned in Chapter 4.1., the VST provides insight into students' receptive lexical knowledge, as the score students achieve multiplied by 100 equals test-takers' passive vocabulary size. Hence, Student X might achieve a score of 69, which would mean that his/her receptive vocabulary size is estimated to be of approximately 6900 word families (cf. Nation and Beglar 2007: 12). Thus, we can summarize that the VST provides an estimate in the form

of an exact size of non-natives' receptive vocabulary repertoire, which is the first relevant data obtained.

The second test, the Lex30, was administered in the same 12 classes by the English teaching staff of the Stiftsgymnasium der Benediktiner in Melk. In October 2016 at a staff meeting for English teachers working at this school, the specialist English teacher instructed his colleagues to properly administer the Lex30 in their classes. Additionally, instructions on how to administer the test were stuck onto the envelope in which the test papers were stored. On this document, teachers were advised to tell the students that they have five minutes for each of the three pages (10 prompt words). Furthermore, they should be encouraged to write as many response words as possible in the 15 minutes of the testing procedure. The test papers were collected from the school every second week and manually assessed and marked by the researcher herself according to the scoring criteria established by Meara and Fitzpatrick (2000).

As already stated in Chapter 4.2., the Lex 30 gives information about the students' productive lexical knowledge. In contrast to the VST, the Lex30 does not indicate the exact size of a student's productive vocabulary size, but points are allocated instead according to criteria predetermined by Meara and Fitzpatrick (2000) which are partially based on Bauer and Nation's (1993) lemmatization criteria. Hence, in case Student X scores 55 points, this result only becomes meaningful when comparing it to other students' scores. The scores achieved by the students are taken as second data-set relevant for this study.

As pointed out earlier in this chapter, a questionnaire was attached to the VST test paper which included several questions on the students' personal, academic, and linguistic, background. With this additional questionnaire, information on students' sex, specialization chosen from year 9 onwards, mother tongue, acquisition of other foreign languages apart from English and Latin, experiences abroad, and time spent with English music, television, literature, and conversations was gathered with the aim to attribute their scores to some of these factors. The ultimate goal is to find out which of these factors may substantially contribute to success in both tests and which seem to inhibit test-takers from achieving high scores. To enable an analysis of this kind, it was indispensable to create a Microsoft Excel spreadsheet into which students' qualitative answers about their background, their resulting test scores, and their personal anonymous code were keyed and collected. For each qualitative answer, predetermined numbers ranging from 0 to 5 according to the student's

responses, were allocated. That is to say, if Student X marked his specialization from year 9 onwards with a cross in the questionnaire, the corresponding number of this option, which was determined beforehand for each, was inserted into the Microsoft Excel spreadsheet. This was done for each item on the questionnaire for each student, except for those students who only sat the Lex30 test.

5.5   Analysis procedure

When the data was adequately prepared for the qualitative analysis, statistical software, more precisely the program SPSS, was used to employ the most common type of descriptive statistics, namely hypothesis tests. As the tested group exceeded 270 students, the statistical software was indispensable to test the hypotheses and obtain accurate information to answer the research question. Furthermore, SPSS greatly facilitated the analysis procedure in terms of discovering mean scores, their standard deviation, the median of test scores, statistical significance of the variables or factors under examination, the correlation between the two tests' scores for instance, and two multiple linear regressions.

Concerning how the data were summarized into numbers, the average of both test scores of each class, school year, specialization, gender group, etc. were calculated, as one score on its own without comparing it to other scores of the same population would not be meaningful (cf. Eddington 2015: 9). Hence, the mean, which "is calculated by summing up all of the scores and dividing by the total number of scores" (Eddington 2015: 9), is the key measure of central tendency for the present study. The median, another measure of central tendency, which is less sensible for outliers as it comprises the middle score (cf. Eddington 2015: 10), was also implemented for this study for the comparison of the students' two test scores according to school years.

Furthermore, statistical significance was tested via t-tests and ANOVA to gain a profound understanding of the effect of each variable tested. Besides analyzing the scores of each test individually, it is also important to bring the results of both tests together and correlate the scores accordingly. For that purpose, the Pearson correlation between the scores of the VST and the scores of the Lex30 was conducted. Thus, it was aimed to find out "whether changes in one variable are met with similar changes in the other variable" (Field 2009: 167), in other

words, whether a significant correlation can be detected. Field (2009: 168) explains what a correlation represents in simple words:

> If there were a relationship between these two variables, then as one variable deviates from its mean, the other variable should deviate from its mean in the same or the directly opposite way.

Furthermore, two multiple linear regressions between the VST and Lex30 test scores and several of the variables were calculated, as for the simple correlation between the two tests' scores calculated, other variables were entirely excluded. Although the correlation provided significant insight into the English vocabulary repertoire of Austrian students, there was still more to be found out about students' English vocabulary knowledge, especially in terms of influencing variables which affect the expansion of students' active and passive vocabulary repertoire. As the information about the students' personal, academic, and linguistic background, was not incorporated into the Pearson correlation between the two tests' scores, it was included in the multiple linear regression. Its calculation was considered appropriate in order to investigate which of the factors (gender, acquisition of other foreign languages, etc.) in particular have an influence on the VST and Lex30 scores.

With regard to reporting the results, Eddington (2015: 15) stresses "how important it is to describe the data not with a mean alone but also with its sidekick – standard deviation". Hence, for reporting results of the statistical tests the following figures will be provided: the statistically calculated mean scores of the respective test, the standard deviation of the mean scores, the significance values, and the correlation coefficient. Larson-Hall and Plonsky (2015: 135) satisfactorily explain and illustrate why, for descriptive statistics, it is important to always include measures of the variability:

> […] we would also be happy to see researchers provide effect sizes and Cis, and leave out the *p* values altogether. Giving a confidence interval provides all the information of a *p* value, plus much more. Providing both a *p* value and a confidence interval is like getting two emails, one of which tells you you've won the lottery for 20 million dollars, which will be distributed over 30 years, so that after taxes you'll receive $486,529 every year for 30 years, and another email that tells you you've won the lottery.

6 Results

This section is explicitly concerned with the presentation of the the results obtained by the statistical program SPSS. Firstly, frequency counts and the mean scores of the VST and the Lex30 are introduced. Secondly, the results of the Pearson correlation between the two tests' scores are presented before the findings of the multiple linear regression of each test are explained in detail.

6.1 Description of the population

In order to have a deeper understanding of the results that will be presented in the following subchapters, it is essential to illustrate first the frequency counts of the tested population to examine how the total of 275 students is distributed according to variables such as gender, L1, specialization, age at which students started learning English, acquisition of foreign languages other than English and Latin, experiences abroad, time spent listening to English music, watching English television, movies or series, reading English literature, and speaking in English. Table 11 presents information about the tested population which comprises 248 students, namely those who took the VST test and filled out the questionnaire attached to the VST test paper.

Table 11: Information about the tested population

Gender	
male	female
92	156

L1		
German	English	other L1
236	1	11

Experiences abroad	
yes	no
7	241

Age at which students started learning English		
3-6 years	6-10 years	> 10 years
34	152	62

Additional foreign languages	
yes	no
139	109

Specialization					
French	ancient Greek	Natural science	Music	Art	Lower secondary (no specialization)
45	22	21	47	25	88

Listening to English music			
rarely	occasionally	frequently	daily
1	18	38	191

Watching English television, music, or series			
rarely	occasionally	frequently	daily
42	112	58	35

Reading English literature			
rarely	occasionally	frequently	daily
55	153	27	13

Holding conversations in English			
rarely	occasionally	frequently	daily
93	112	33	9

When examining Table 11 more closely, it becomes evident that the distribution of male and female participants is not even. Of a total of 248 students, 92 participants were male and 156 female. The gender of 27 students, those who only took the Lex30 test and missed the VST, remains unknown. With regard to students' first language, it was discovered that out of 248 test-takers, 236 students consider German as their L1, while eleven students were raised in a language other than German. English is the first language of only one single student. Considering the experiences abroad, it becomes evident that the number of students with and without experiences abroad is unevenly distributed, as only seven students indicated that they studied abroad, while 241 students have no experience abroad. Furthermore, it was noted that most students, more precisely 152 test-takers, started learning English in primary school. Only 34 students started earlier, in Kindergarten. 62 students out of 248 encountered the English language for the first time in secondary school at the age of ten. Regarding the acquisition of additional languages other than English and Latin, it was identified that 139 students out of 248 decided for the French or ancient Greek language specialization and/or chose an optional language subject, while 109 test-takers only learn English and Latin. Moreover, an uneven distribution can also be noted in the specialization which students chose at the beginning of year 9. Out of 160 students, who attended an upper secondary grade and had already chosen a specialization, 47 students decided for the music specialization, 45 for French, and 25 for the art specialization. The group of students who chose the ancient Greek specialization comprises 22 students, while only 21 participants belong to the group of students with a specialization in natural science. When taking a closer look at Table 11, it can be noticed that the majority of students, namely 191 out of 248, listen to English music on a daily basis. 38 participants indicated that they frequently listen to English music, while only 18 students occasionally listen to songs with English lyrics. One student rarely listens to English music. Concerning the time spent watching English television, movies, or series, it became

evident that the majority of tested students, namely 112 participants, occasionally watch English movies or series, while 42 indicated that they rarely spent time watching English television. 58 students marked the option *frequently* and 35 the option *daily*. Regarding the time spent reading, it was discovered that only 13 students read English literature on a daily basis, 27 frequently read English literature, the majority, 153 students, occasionally reads English books, magazines, etc. and 55 test-takers rarely read English literature. Finally, it was found that 93 students rarely speak English outside school, 112 students occasionally hold conversations in English, 33 participants frequently speak English, and only 9 test-takers orally communicate in English on a daily basis.

6.2   Results of the VST

Considering the students' test scores of the VST, it is obvious that the mean scores of those students attending year 12 of the Stiftsgymnasium der Benediktiner in Melk is higher than that of the group of students attending year 10. The same trend is also detected for students of year 10 and year 8, as the youngest group of test-takers, students of year 8, achieved a lower mean score compared to their colleagues from year 10 and, logically, of year 12. The mean score of the group attending year 8 was 6604 word families (SD = 937) which those students receptively know. The mean score of the group of students of year 10 was 7690 word families (SD = 1058), which means that those students are equipped with 1086 more word families they receptively know than their fellows of year 8 are. With reference to the group of students attending year 12, it is noticeable that their mean score is even higher, as it is 8850 word families (SD = 1097) that are passively known by the 12th graders. Hence, students of year 12 receptively know 1160 word families more than students two school years below them and 2246 word families more than those students of year 8. The ANOVA revealed that the school year has a significant effect on the scores of the VST $F(2, 246) = 93.617$, $p < .05$. The post-hoc test showed that all pair-wise comparisons were significant, $p < 0.05$. This verifies that the students of year 12 scored higher in the VST than the students of year 10. The VST scores of the 10th graders again were higher than the scores of the students attending year 8, as can be seen in Table 12 and/or Figure 1.

Table 12: VST mean and median scores of year 8, 10, 12

	year 8	year 10	year 12
VST mean scores	6604	7690	8850
VST median	6600	7700	8700

The median of the VST scores of the three groups of students was also used as a measure of central tendency, as it seems to be an effective measure. Eddington (2015: 10) explains that "[i]f you order all of the scores from lowest to highest, the median is the middle one". The median score of the first group which comprises students of year 8 was 6600 word families, while the one of the second group, the students attending year 10, was 7700 word families. The median score of the third group, participants of year 12, was 8700 word families which these students passively know. When comparing these median scores, it becomes evident that the difference in passive vocabulary size between year 8 and year 10 is 1100 word families which the students of the latter passively know more. With regard to the difference in receptive vocabulary size between year 10 and year 12, it is obvious that 12th graders feature 1000 word families more than those from year 10.
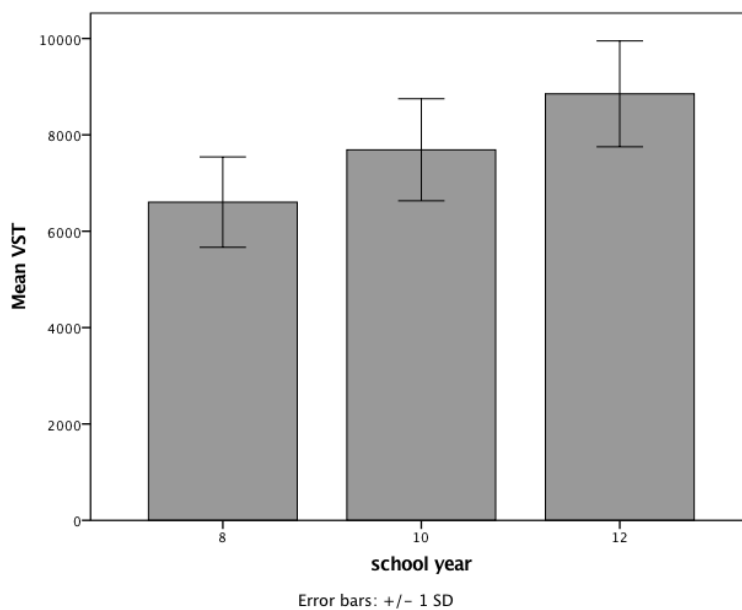

Figure 1: Mean scores of the VST of year 8, 10, and 12 with SD

Taking a closer look at Figure 1, it becomes evident that even though the VST mean scores of each school year under examination conspicuously differ from each other, the *standard deviation* is strikingly high, which means that some students in year 8, for example, know the

same number of words as some students in year 10. The same trend was observable for students in year 10 and students in year 12, as the *standard deviation* was similarly high. When comparing the mean scores of the passive vocabulary size of all classes of each school year, one can notice that the mean scores between all classes of each school year do not show great diversity, as the deviation of the scores of all four classes within each school year does not exceed an average of 600 word families (see Table 13). In the 8th grade, the mean score of the receptive vocabulary size of the 4C class was highest with 6865 word families (*SD* = 766), followed by the 4B with 6692 word families (*SD* = 1091), the 4A with 6560 word families (*SD* = 815), and the 4D class with 6290 word families (*SD* = 996). With regard to the scores of the VST of the group of students attending year 10, it was found that the 6C class achieved the highest mean score of 7864 word families (*SD* = 1157), followed by the 6B class with 7765 word families (*SD* = 1207), the 6D class with 7673 word families (*SD* = 1029) and the 6A class with 7319 word families (*SD* = 646). When examining the mean scores of the VST of all classes of year 12 in Table 13, one might observe that the mean score of receptive vocabulary size of the 8A class of 9369 word families (*SD* = 1373) outweighs the ones of the other classes. The class 8D achieved a mean score of 8911 word families (*SD* = 957), the class 8B one of 8847 word families (*SD* = 1338), and the class 8C one of 8495 word families (*SD* = 738). What can be deduced from the comparison of the mean scores of all classes of each school year, and the fact that there is no class that shows strikingly high or low VST mean scores, is that all students are provided with English lessons of similar quality, which might be welcome news for the headmaster.

Table 13: VST mean scores of all tested classes

year 8		year 10		year 12	
4A	6560	**6A**	7319	**8A**	9369
4B	6692	**6B**	7765	**8B**	8847
4C	6865	**6C**	7864	**8C**	8495
4D	6290	**6D**	7673	**8D**	8911

Regarding the specialization students are obliged to chose at the beginning of year 9, one can identify differences in the average receptive vocabulary size between the specialization. When analyzing the mean scores of each specialization, it becomes evident that those students of

year 12 who chose French as their specialization, feature the highest mean score of 9300 word families (*SD* = 1205), followed closely by the natural science-group who feature a mean score of 9000 word families (*SD* = 1212), as shown in Table 14. For those students of year 12 who decided for the ancient Greek specialization a mean score of 8825 word families (*SD* = 1867) was measured. For the art- and music-group a mean score of 8720 word families (*SD* = 729) and 8500 word families (*SD* = 720) respectively was identified.

Table 14: VST mean scores of year 12 according to students' specialization

Specialization				
French	ancient Greek	Natural Science	Music	Art
9300	8825	9000	8500	8720

Although the ANOVA showed that there is no significant difference in the scores of the VST between all classes of each school year F(3, 245) = 0.568, *p* > .05, a clear tendency that students' specialization might have an influencing effect on the expansion of their receptive vocabulary repertoire. Nonetheless, it can be summarized that students' interest does not seem to play a dominant role in terms of students' enlargement of their receptive lexical knowledge.

Concerning the participants' gender, only a slight difference between the mean scores of the two sexes was detected, as male participants feature an average receptive vocabulary size of 7641 word families (*SD* = 1419), while the mean score the female participants achieved was 7609 word families (*SD* = 1330). Hence, the difference in the size of boys and girls' passive vocabulary repertoire is almost not notable. However, when examining each school year more closely, obvious differences in the VST mean scores between male and female participants can be detected within all 12th graders, as the mean score for the male group of 12th graders is 9481 (*SD* = 1040) while the one for the female group is 8660 (*SD* = 1051). Nonetheless, the *t*-test displayed that gender had no significant effect on the VST mean scores *t*(246) = 0,177 p > .05.

Furthermore, the mean scores of three other groupings, students who started learning English in infancy, learners who were confronted with the English language in primary school, and participants who were exposed to English for the first time in the first grade of lower secondary school, were analyzed in detail and compared. The VST mean scores of these three groupings do not show great differences, as can be seen in Table 15. Those students who

indicated in the questionnaire that they were exposed to English in their infancy already achieved a VST mean score of 7418 word families (SD = 1342). The mean score of the group of students who started with the acquisition of the English language in primary school was 7721 word families (SD = 1328). The participants who were confronted with the English language in secondary school for the first time achieved a mean score of 7495 word families (SD = 1465). The ANOVA indicated that the point in life when students started acquiring English, in fact, had no significant effect on the VST scores $F(2, 243) = 1.043$, $p > .05$.

Table 15: VST mean scores according to the point in life stuents started learning English

Point in life students started learning English		
in Kindergarten	in primary school	in secondary school
7418	7721	7495

Regarding students' L1, the analysis of the VST mean scores showed that students who consider German as their mother tongue achieved higher VST scores than their colleagues with an L1 other than German, as shown in Table 16. Those students who were raised in the German language achieved a VST mean score of 7631 word families (SD = 1352), while those test-takers speaking a different language at home achieved a VST mean score of 7425 (SD = 1646). Only one student indicated in the questionnaire that he/she considers English as his/her L1. As expected, this student scored considerably high in the VST test, as his/her score was 11400 word families.

Table 16: VST mean scores according to students' L1

L1		
German	English	other languages
7631	11400	7425

Other interesting results worth mentioning are the VST mean scores of those students who learn Latin and English, and those who have Latin and English classes and additionally learn further foreign languages, like French, Spanish, Italian or Russian. The results show that the difference between the mean scores of those two groups can be considered as fundamental.

Those participants who learn Latin and English achieved a mean score of 7171 word families (*SD* = 1235), while the mean score recorded of students acquiring an additional foreign language was 8194 word families (*SD* = 1202) (see Table 17). The *t*-test for dependent samples revealed that the acquisition of other foreign languages, apart from Latin and English, had a significant effect on the mean scores of the VST *t*(246) = 6,320, *p* < .05 and, hence, on the passive vocabulary repertoire. Furthermore, a division between participants attending year 10 and year 12 was made to further examine the differences in the VST mean scores between 10th and 12th graders. As students attending year 10 have only had one year of French or Greek classes or have just started to learn one of the other foreign languages they could chose from as an optional language subject (see Chapter 5.2.), it was believed that a greater difference in the VST scores between students learning Latin and English only and students learning Latin, English, and another foreign language can be identified in school year 12 than in school year 10, as students attending year 12 have been exposed to those foreign languages for a longer period of time. Even though this was actually the case, the difference in passive vocabulary size between the two groups in year 10 (216 word families) was almost equal to the one of the two groups in year 12 (221 word families), as can be inferred from Table 17.

Table 17: VST mean scores according to students' acquisition of languages other than English and Latin

	additional language	no additional language
all school years	8194	7171
year 10	7771	7555
year 12	8921	8700

With reference to the students' experiences abroad, it is obvious that the mean scores of the VST of students of year 12 who participated in the exchange program and attended a Minnesotan high school for four months are higher than the ones of those 12th graders who did not study abroad. The mean score of the students who studied abroad was 9850 word families (*SD* = 1401) which are passively known, while that of the students without experiences abroad was 8789 word families (*SD* = 1059). Nonetheless, it should be borne in mind that very few students studied abroad, in comparison to the large number of students who have not yet spent a semester abroad. Due to this limited number, the significance was not calculated.

	experience abroad	no experience abroad
year 12	9850	8789

With regard to the time spent with English music, television, literature and conversations, illuminating mean scores could be recorded. For example, the more often participants watched television, series, movies etc. in the English language, the higher are their mean scores in the VST. That is to say, those test-takers who reported watching English-speaking television or movies on a daily basis feature higher mean scores (8268 word families with a *standard deviation* of 1554) in the VST than their fellow students who watch TV in the English language frequently but not every day (7967 word families with a *standard deviation* of 1469). Hence, one can summarize that the mean scores decrease with less time spent watching English-speaking television, series or movies, as those test-takers occasionally or rarely watching English television feature VST mean scores of 7448 word families (*SD* = 1203) and 7092 word families (*SD* = 1143) respectively (see Figure 2).
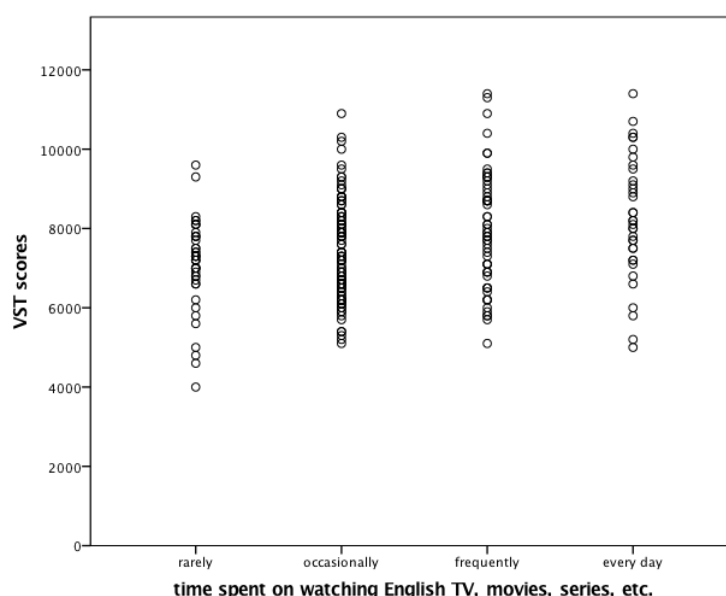
Figure 2: VST mean scores according to time spent watching English TV, movies and series

A similar rise in VST mean scores with an increase in time spent holding conversations in the English language is evident. Participants who marked the option *rarely* on the questionnaire achieved a mean score of 7380 word families (*SD* = 1180) in the VST, while the score of those who chose *occasionally* is 7634 word families (*SD* = 1474). The participants who indicated that they frequently speak in English with friends, family, etc. achieved a mean score of 8033 word

families (*SD* = 1316). The group of students who speak English on a daily basis finished the VST with a mean score of 8322 word families (*SD* = 1414).

Table 19: VST mean scores according to students' extracurricular activities

	daily	frequently	occasionally	rarely
music	7740	7189	7311	6800
TV and movies	8268	7967	7448	7092
literature	8569	9388	7374	7218
conversations	8322	8033	7634	7380

Nonetheless, the highest mean score in this category was recorded in literature. Students who are occupied with reading English literature, be it books, articles, magazines, etc., on a daily basis, feature a mean score of the VST of 8569 word families (*SD* = 1527). To fully examine the significance values of the extracurricular activities, a correlation between these variables was calculated. For the time spent on music, the Spearman correlation coefficient was calculated, as the scores were unequally distributed or, in other words, skewed to the left side. It showed that there was a positively significant relationship between the time spent listening to music and the VST test scores *r* = 0.162, *p* < .05, *n* = 248, one-tailed. Concerning the time spent watching television, movies or series in the English language, a positive Pearson correlation was found between the time participants being occupied with watching English television, movies or series and the VST scores, which was statistically significant *r* = 0.282, *p* < .05, *n* = 247, one-tailed. An analysis of students reading English literature in their leisure time indicated that there was a positive relationship between time spent reading and students' passive vocabulary size. This is shown by the Pearson correlation r = .279, which is statistically significant with a *p* value of < .05, *n* =248. Furthermore, a positive Pearson correlation was detected between the extent to which students spend time speaking English outside the school context and participants' passive vocabulary size, which was also statistically significant *r* = .182, *p* < .05, *n* = 247, one-tailed. What can be deduced from these positive correlations is that the more time students spend listening to English music, watching English-speaking television, reading English books and holding conversations in English, the better they scored in the VST, which means that they feature a broader receptive vocabulary repertoire.

6.3   Results of the Lex30

When examining students' mean scores of the Lex30 test, which give an illuminating insight into the participants' productive vocabulary knowledge, one might notice that the mean scores vary greatly according to the school years, as can be seen in Table 20 and/or in Figure 3. The participants attending year 8 at the Stiftsgymnasium der Benediktiner in Melk achieved a Lex30 mean score of 32.2 points (*SD* = 9.4), while the 10th graders' mean score was 39.0 points (*SD* = 10.9) and that of the students of year 12 was 46.8 points (*SD* = 11.1). When examining these results, it becomes obvious that the difference in mean scores is greater between years 10 and 12 (7.8 points) than it is between year 10 and 8 (6.8 points).

Table 20: Lex30 mean and median scores of year 8, 10, 12

	year 8	year 10	year 12
Lex30 mean scores	32.2	39.0	46.8
Lex30 median	31.0	38.0	47.0

Figure 3 displays that students of year 12 achieved higher scores in the Lex30 compared to the students of year 10, and the latter finished the VST with higher scores than the participants of year 8. Hence, an increase in the VST test scores, which is connected with and dependent on the school year of the participants, can be noticed. The ANOVA verified that the school year had a significant effect on the Lex30 test scores $F_{(2, 225)} = 44,495$, $p < .05$, from which the inference can be drawn that the school year had a significant effect on the productive vocabulary knowledge of the tested participants.
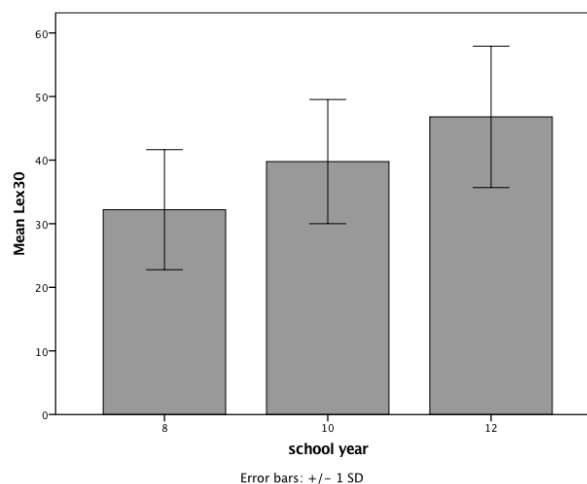

Figure 3: Lex30 mean scores of year 8, 10, 12

For this test, the median of the Lex30 test scores of each school year was also calculated. The median score of students attending year 8 was 31.0 points, while the one for 10th graders was 38.0 points. The highest median score was achieved by the students of year 12, as it was 47.0 points.

When arranging all classes of each school year according to the mean scores of the Lex30, from highest to lowest, one can identify that within year 8 the class 4A achieved the highest score of 34.5 points (SD = 9.0), followed by class 4B with 33.4 points (SD = 9.1), class 4D with 30.7 points (SD = 10.4) and class 4C with 29.3 points (SD = 9.1). Within year 10, the highest scores of 40.7 points (SD = 10.7) was allocated to class 6B. Class 6D achieved a slightly lower mean score of 40.1 points (SD = 8.4), followed by class 6A with a mean score of 38.4 points (SD = 10.0) and class 6C with a mean score of 39.6 points (SD = 9.5).

Table 21: Lex30 mean scores of all tested classes

year 8		year 10		year 12	
4A	34.5	6A	38.4	8A	47.3
4B	33.4	6B	40.7	8B	48.7
4C	29.3	6C	39.6	8C	47.4
4D	30.7	6D	40.1	8D	44.4

When taking a closer look at year 12, it is noticeable that class 8B achieved the highest Lex30 mean score of 48.7 points (SD = 9.8) in comparison to the other classes of year 12. The mean score of class 8C was 47.4 points (SD = 13.2), the one of class 8A was 47.3 points (SD = 9.9), and class 8D reached the lowest Lex30 mean score, 44.4 points (SD = 10.6).

When examining Table 21 more closely, one can notice that there is no dramatic difference in the mean scores of all classes of each school year. The ANOVA verified that it is unimportant for students into which class they are assigned to, as this has no significant effect on students' scores of the VST $F(3, 224) = 0.174$, $p > .05$. In other words, no class attracts special attention due to a strikingly high or poor VST mean score. Hence, one can deduce that each class is provided with an input of equal quality.

Concerning the specialization students had to chose at the beginning of school year 9, marked differences in the Lex30 mean scores and, hence, in the productive vocabulary knowledge of students of all specialization can be noted. The highest Lex30 mean score, which is 51.3 points

(*SD* = 7.2), was achieved by the students who chose natural science as their specialization, followed by the group of students who chose art as their specialization with a mean score of 47.2 points (*SD* = 11.6) and the group of Greek learners with a mean score of 43.2 points (*SD* = 14.1). The students who decided for the French specialization achieved a mean score of 42.6 points. The lowest mean score, which is 41.5 points (*SD* = 9.2), can be allocated to the group of students with music as their specialization. Despite the rather obvious differences in the mean scores, the ANOVA displays that the type of specialization had no significant effect on the Lex30 scores $F(4, 155) = 0,686$, $p > .05$ and, hence, on the productive vocabulary knowledge.

Table 22: Lex30 mean scores according to students' specialization

Specialization				
French	ancient Greek	Natural Science	Music	Art
42.6	43.2	51.3	41.5	47.2

With regard to differences in the Lex30 mean scores between male and female participants, it becomes obvious that female students achieved a conspicuously higher mean score than male students did. The Lex30 mean score of the girls participating in the present study is 40.72 points (*SD* = 11.3). Boys, on the other hand, only achieved a mean score of 35.27 points (*SD* = 12.4), which is 5.9 points lower than the mean score of the female group. When taking a closer look at the *t*-test results, one can draw the conclusion that gender had a significant effect on the Lex30 test scores $t(199) = -3,207$, $p < .05$ and, hence, on the active vocabulary knowledge of the participants tested. In this case, female participants scored better in the active vocabulary test of the present study, as shown in Figure 4. In comparison with the VST test, where male and female students reached equally high scores, the divergence of the Lex30 scores of male and female participants becomes especially evident, as can be seen in Figure 4.

Further investigation showed that the differences in the Lex30 mean scores found between gender is mainly attributable to the divergent mean scores of the male and female students of year 8. In school year 8, boys achieved a Lex30 mean score of 29.0 points (*SD* = 9.2), while the female participants' mean score was 34.5 points (*SD* = 9.2). Such a considerable and

notable difference in Lex30 mean scores between male and female participants is only obvious for school year 8.
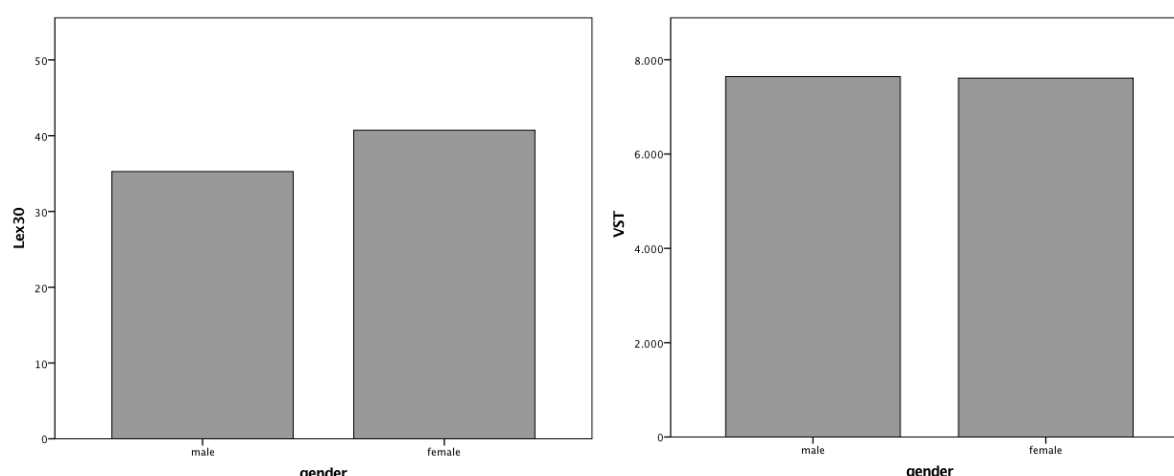

Figure 4: Lex30 and VST mean scores arranged according to gender

With reference to the Lex30 mean scores arranged according to the point in life participants started to acquire the English language in an educational context, no marked difference in the mean scores was discovered. The mean scores were divided into three groups, one which comprises students who were exposed to the English language in their infancy, that is to say in kindergarten, another one consisting of participants who started learning English in primary school, and the third one containing students who were confronted with English in secondary school. The first group's Lex30 mean score was 38.9 points (SD = 10.3), the second group achieved a mean score of 38.3 points (SD = 12.6), and the last group featured a mean score of 39.9 points (SD = 11.5). The ANOVA displayed that the age of onset of learning the English language had no significant effect on the Lex30 scores $F(2, 196) = .213$, $p > .05$.

Table 23: Lex30 mean scores according to point in life students started learning English

Point in life students started learning English		
in Kindergarten	in primary school	in secondary school
38.9	38.3	39.9

Concerning students' L1, the analysis of the Lex30 mean scores showed that students with German as their L1 achieved higher scores than students who consider languages other than German as their mother tongue. The group of students who were raised in the German

language achieved a mean score of 39.0 points (*SD* = 11.5), while those students with a different L1 feature a Lex30 mean score of 37.4 points (*SD* = 15.5). The single student who considers English as his/her mother tongue, achieved a Lex30 mean score of 68 points, which is a considerably high score in comparison to the mean scores of other groups presented so far.

Another interesting result was found in the Lex30 mean scores of two other groupings, namely participants learning Latin and English only and participants who acquire an additional second language. Those students who have neither chosen a language specialization nor an optional language subject and, hence, acquire Latin and English only, feature a Lex30 mean score of 35.7 points (*SD* = 12.0). Those students, however, who decided for the French or ancient Greek language specialization and/or chose an optional language subject, like Spanish, Italian or Russian, feature a Lex30 mean score of 42.3 points (*SD* = 11.0). Hence, students who learn more languages achieved an average of 6.6 points more than their fellows who only learn Latin and English. The *t*-test showed that the acquisition of more languages apart from Latin and English, in fact, had a significant effect on the Lex30 scores *t*(199) = 3,887, *p* < .05, or differently put, on the active vocabulary knowledge of the tested students.

Furthermore, the Lex30 mean scores were analyzed according to students' experiences made abroad. The mean scores of the two groupings, students who participated in the exchange program and students who have not gained the experience of studying abroad yet, were compared. It was found that students of year 12 who attended a Minnesotan high school for four months achieved a conspicuously higher Lex30 mean score than the students who have not spent time in a foreign country (see Table 24). The mean score of the students who studied abroad is 56.3 points (*SD* = 7.0), while the mean score of those students who lack experiences abroad is only 46.3 points (*SD* = 10.5). In other words, it was detected that those students who experienced an American high school for four months featured a mean score that was on average 10 points higher than the one achieved by students who did not participate in the exchange program offered by the Stiftsgymnasium der Benediktiner in Melk. However, a *t*-test was not conducted because of the uneven dispersion of students with experiences abroad and those without.

Table 24: Lex30 mean scores according to students' experience abroad

	experience abroad	no experience abroad
year 12	56.3	46.3

Additionally, the Lex30 mean scores were arranged and analyzed according to the extent participants are occupied with the English language outside the school context. It was found that students who indicated in the questionnaire that they watch television, movies, series, etc. in English on a daily basis, achieved a Lex30 mean score of 43.1 points (SD = 11.8). In contrast, those students who marked the option *occasionally* in the questionnaire feature a lower mean score of 37.5 points (SD = 11.3), and the group of students who rarely watches English television, movies or series only achieved a mean score of 31.8 points (SD = 11.0). A rise in mean scores with increasing time spent holding conversations in English was also detected. Students who rarely use the English language for conversations and talk outside school achieved a Lex30 mean score of 34.4 points (SD = 11.2), while the mean score of the group of students who occasionally hold conversations in English was 39.5 points (SD = 11.7). Those participants who marked the option *frequently* and *daily* with a cross in the questionnaire scored 44.2 points (SD = 10.2) and 46.9 points (SD = 13.0) respectively, as illustrated in Figure 5.
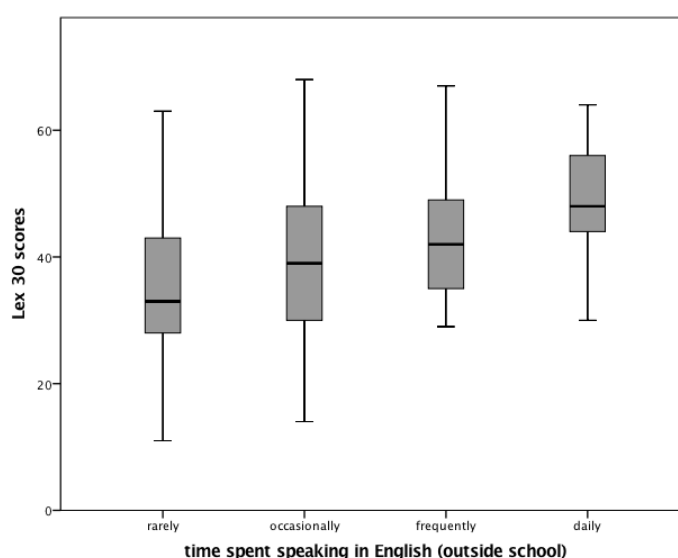

Figure 5: Lex30 mean scores according to time spent speaking in English (outside school)

The highest mean score in this category was achieved by students who indicated that they read English literature on a daily basis, at 47.2 points (*SD* = 9.0), as shown in Table 25.

Table 25: Lex30 mean scores according to extracurricular activities

	daily	**frequently**	**occasionally**	**rarely**
music	40.1	33.7	33.8	-
TV and movies	43.1	43.1	37.5	31.8
literature	47.2	49.8	37.8	32.5
conversations	46.9	44.2	39.5	34.4

With the help of the statistical software SPSS, a positive correlation was found between the time spent with each medium (music, television, literature, conversations) and the Lex30 test scores which can be considered as statistically significant. The relationship between time spent listening to music and the Lex30 scores can be defined by the Spearman correlation r = .221, *p* < .05, n = 201, one-tailed. The positive Pearson correlation between time occupied watching English television, movies or series was statistically significant with r = .311, *p* < .05, n = 200, one-tailed, and the one between time spent on reading English literature and the Lex30 test scores was statistically significant with r = .428 *p* < .05, n = 201, one-tailed. Finally, a Pearson correlation between the time spent speaking in the English language outside school and the Lex30 scores was calculated, which features the characteristic of being statistically significant with r = .270, *p* < .05, n = 200, one-tailed.

6.4 Results of the Pearson correlation between the VST and the Lex30 scores

Having discussed the scores of each test individually, it is now important to bring the results of both tests together and correlate the scores accordingly. The focus is laid on "whether changes in one variable are met with similar changes in the other variable" (Field 2009: 167). In order to draw inferences on the relationship between the receptive vocabulary size and the productive vocabulary knowledge, a correlation between the test scores was calculated.

The analysis on the passive and active vocabulary knowledge indicated that there was, in fact, a positive relationship between the receptive and the productive lexical repertoire. This was shown by the correlation *r* = .577, *p* < .05, r^2 = .333, two-tailed. The correlation coefficient *r*

was .577, which indicated that there was a linear, but not causal, relationship between the two variables, which were, in this case, the scores of the two tests, as they were positively correlated. That is to say, if "one variables increases, the other one one increases by a proportionate amount" (Field 2009: 170). Hence, according to the correlation coefficient, those students who feature a higher score in the VST also scored high in the Lex30.

By squaring the correlation coefficient *r,* it becomes evident that the passive vocabulary size accounts for 33% of the variance in the productive vocabulary knowledge or vice versa. What can be inferred from this percentage is that besides the size of the passive vocabulary repertoire, other factors, which then comprise 66%, can be related or attributed to how well-developed students' active vocabulary knowledge is. As causality has to be borne in mind when interpreting a correlation, it remains unknown in which direction the causality operates, as the correlation coefficient does not provide information about which of the two variables drives the other to change accordingly (cf. Field 2009: 173f.) Nonetheless, it can be summarized that the two variables analyzed, which are the scores of the VST on the one hand, and the scores of the Lex30 on the other, are related to each other at the 33% level.
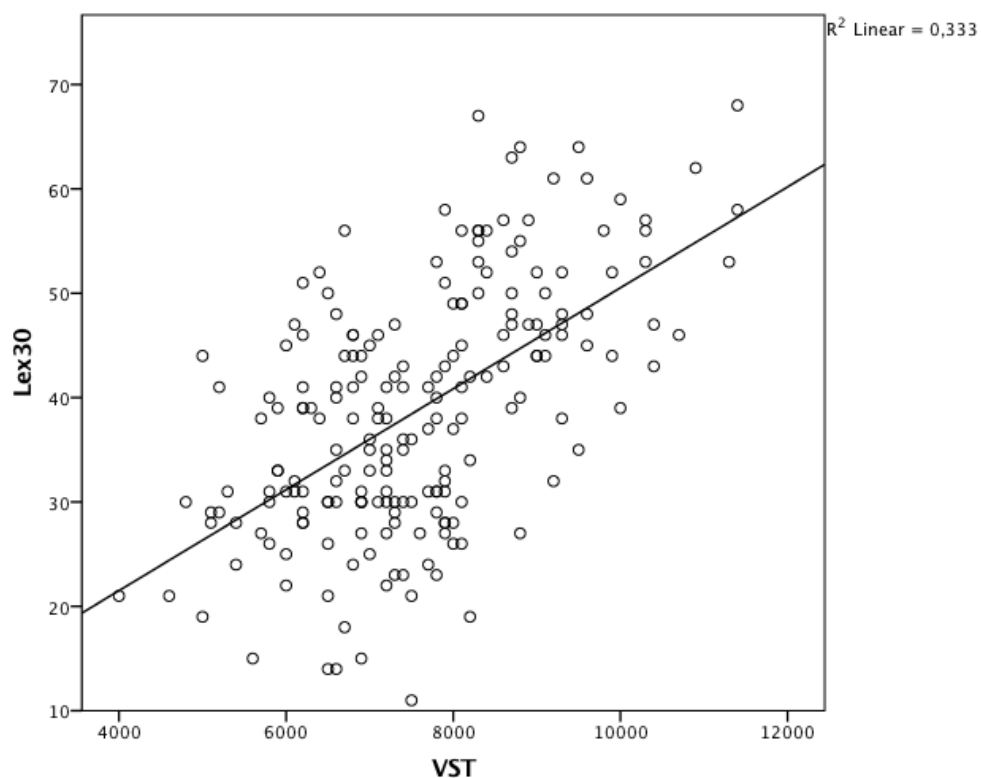

Figure 6: Scatterplot of the correlation of the VST and Lex30 scores

A scatterplot with an added regression line was created which serves to neatly illustrate the correlation. When examining Figure 6 more closely, it becomes evident that the test scores of the VST and the test scores of the Lex30 correlate in a linear manner. It is noticeable that the majority of those students who achieved a high score in one test, also scored high in the second test, which is a similar finding to those of Meara and Fitzpatrick (2000), Laufer and Paribakht (1998) and Laufer (1998) (see section 4.2.).

6.5   Results of the Multiple linear regression

Having explored the correlation between the scores of the two tests and, hence, between the receptive and productive vocabulary knowledge, the information about students' personal, academic, and linguistic background, was then incorporated. Therefore, the relationship between each individual test and several variables was analyzed employing a multiple linear regression. By examining the relationship between the VST scores and Lex30 test scores and selected variables, it was possible to find an answer to the following questions:

- To what extent do school year, gender, age of onset of the acquisition of the English language, the acquisition of other foreign languages apart form English, and time spent with the English language via different media (music, television, literature, conversations) relate to tested students' scores of the VST and Lex30?

- Which of those factors are most influencing and show a beneficial effect on the expansion of the tested populations' vocabulary knowledge?

For the multiple linear regression, the VST and Lex30 test scores, each individually, can be considered as outcome variable, while one can refer to the variables mentioned above as predictor variables. Furthermore, in order to calculate the multiple linear regression, it had to be ascertained first whether certain conditions were met or not. Firstly, the normal distribution of the continuous variables, which are the time spent listening to English music, time spent watching television, movies or series in the English language, time reading English literature, and time spent holding conversations in English, were examined and accepted, except for the variable time spent listening to English music, as it was unequally distributed or, differently put, skewed to the left side. This skewed distribution to the left side might be ascribed to the fact that listening to English music on a daily basis is almost unavoidable, as songs with English lyrics are present in our every day lives (on the radio, in shops and café

bars, etc.). Hence, most of the students consulted about the time spent with music in English indicated that they are listening to English songs on a daily basis, with the consequence of a skewed distribution. Secondly, the variables gender and other foreign languages acquired featured a dichotomy and were accepted as such for the multiple linear regression. The variables school year and age of onset of the English acquisition were coded using dummy variables which were included in the calculation of the multiple linear regression. Thirdly, residuals were linear, homogenous, normally distributed, and uncorrelated. The errors seem to be independent, as the Durbin-Watson test showed a value of 2, which displays no correlation between the adjacent residuals. Finally, the variable experiences abroad was expelled due to the uneven dispersion of students with and without experiences abroad.

6.5.1 Multiple linear regression – VST

Predictor Variables:
- gender
- school year
- acquisition languages other than English and Latin
- age of onset of the acquisition of the English language
- time spent listening to English music
- time spent watching English television, movies or series
- time spent reading English literature
- time spent holding conversations in the English language

Dependent Variable:

- VST test scores

With reference to the findings of the multiple linear regression between the VST test scores and the variables mentioned above, it can easily be identified when examining Table 26 more closely that the predictor variables significantly affect the VST test scores $F_{(10, 233)} = 25.286$, $p < .05$ and account for 52.0% of the variance in the receptive vocabulary knowledge.

Table 26: VST regression provided by SPSS

Model Summary

Model	R	R square	Adjusted R square	Standard Error of the Estimate
1	.721	.520	.500	967.238

ANOVA					
Model	**Sum of squares**	**df**	**Mean square**	**F**	**Sig.**
Regression	236559156.800	10	23655915.680	25.286	.000
Residual	217982974.300	233	935549.246		
Total	454542131.100	243			

The effect of each predictor variable exerted on the VST test scores were statistically calculated in order to obtain profound insights into the students' passive vocabulary size and to simultaneously discover which factors of those pointed out earlier positively influence the expansion of the tested students' receptive vocabulary repertoire.

According to the findings recorded by SPSS, the school year can be considered as an influencing factor, as a statistical significance between the school year and the VST scores was identified. A statistically significant effect was not only spotted between year 8 and year 10 (b = 1016.800, β = .359, t = 5.821, p < .05), but also between year 10 and year 12 (b = 2150.595, β = .710, t = 10.873, p < .05). Apart from the school year, another variable, namely gender, was also found to have a significant impact on the VST scores (b = -422.830, β = -.149, t = -3.178, p < .05). Interestingly, in the analysis of the VST mean scores, no statistically significant difference between the two sexes in the VST scores was detected and the *t*-test confirmed that gender had no significant effect on students' passive vocabulary size (*t*(246) = 0,177 p > .05). In this multiple linear regression, for which several variables and their correlation and interrelation are analyzed in detail, however, gender seems to be one of the factors which significantly affects students' receptive vocabulary knowledge. Additionally, a positive effect on the VST scores was discovered for the time occupied with reading English literature (b = 373.416, β = .202, t = 3.692, p < .05). When analyzing the findings provided by SPSS more closely, one might notice that students' VST scores slightly differed from each other according to where they allocated themselves to (reading literature in the English language rarely, occasionally, frequently, every day) in the questionnaire. Between each rating a difference of 373.416 word families was spotted. Hence, students who indicated that they read English literature occasionally, passively know 373.416 word families more than their fellows who chose the option to rarely spend time reading literature. The group of students who read English literature on a daily basis and the group of test-takers who claim to read English literature frequently, then again, feature a larger receptive vocabulary size, as they passively know 1120.248 word families and 746.832 word families receptively more than their

colleagues who read English literature only occasionally.

When examining the findings, it becomes evident that neither the age at which students start learning the English language (b = -326.749, β = -.116, t = -1.630, p > .05) nor the number of additional foreign languages acquired (b = -116.761, β = -.042, t = -.753, p > .05) have a significant effect on a student's passive vocabulary size. Furthermore, it was observed that the factors time spent watching television, movies or series in the English language (b = 36.472, β = 0.025, t = .469, p > .05), time spent listening to songs with English lyrics (b = 57.419, β = .026, t = .547, p > .05), and leisure time being occupied speaking in the English language (b = 54.770, β = .032, t = .630, p > .05) display no significant effect on the students' passive vocabulary size.

Table 27: Coefficients of the multiple linear regression (dependent variable: VST)

Model	Unstandardized coeffcients		Stand. coefficients		
	B	Standard Error	Beta	t	Sig.
(Constant)	6686.872	547.341		12.217	.000
gender	-422.830	133.070	-.149	-3.178	.002
music	57.419	104.907	.026	.547	.585
television	36.472	77.762	.025	.469	.639
literature	373.416	101.140	.202	3.692	.000
conversation	54.770	86.989	.032	.630	.530
other languages	-116.761	155.059	-.042	-.753	.452
age of onset – primary school	-326.749	200.251	-.116	-1.630	.105
age of onset – secondary school	-432.413	224.303	-.137	-1.928	.055
year 10	1016.800	174.668	.359	5.821	.000
year 12	2150.595	197.796	.710	10.873	.000

As a final step of the multiple linear regression, all significant variables were tested once more on their significance values. After conducting this test, it can be concluded that several variables, namely the school year, gender, and the time spent reading English literature, in fact, significantly influence a student's receptive vocabulary repertoire. Furthermore, it can be summarized that the age of onset of the acquisition of the English language, the acquisition of additional foreign languages, time spent watching television, movies, or series in the English language, time occupied speaking in English, and the time spent listening to songs with English lyrics seem not to be influencing in terms of the expansion of the receptive vocabulary.

6.5.2 Multiple linear regression – Lex30

Predictor Variables:

- gender
- school year
- acquisition of languages other than English and Latin
- age of onset of the acquisition of the English language
- time spent listening to English music
- time spent watching English television, movies or series
- time spent reading English literature
- time spent holding conversations in the English language

Dependent Variable:

- Lex30 test scores

The findings of the second multiple linear regression with the Lex30 test scores as dependent variable showed that the model composed of the predictor variables significantly affect the test scores of the Lex30 $F(10, 186) = 14.466$, $p < .05$, and hence the productive vocabulary knowledge of the students under examination, as it accounted for 43.7% of the variance in the active vocabulary knowledge.

Table 28:Lex30 regression provided by SPSS

Model Summary

Model	R	R square	Adjusted R square	Standard Error of the Estimate
1	.661	.437	.407	9.023

ANOVA

Model	Sum of squares	df	Mean square	F	Sig.
Regression	11777.436	10	1177.744	14.466	.000
Residual	15143.437	186	81.416		
Total	26920.873	196			

As each predictor variable was analyzed according to its effect on the Lex30 test scores, their influence and impact on the active vocabulary knowledge could be identified. It was found that the school year positively affected the Lex30 test scores. Between year 8 and year 10 a statistically significant effect was identified (b = 7.397, β = .275, t = 3.484, p < .05), as well as between year 10 and 12 (b = 13.545, β = .543, t = 6.505, p < .05). Hence, the inference can be

drawn that the higher the school year and the more students have been exposed to the English language, the more command they have in their active vocabulary and the better they productively function in English. Additionally, a positive effect on the Lex30 test scores was noted for time spent reading English literature (b = 3.590, β = .227, t = 3.366, p < .05). The findings revealed that for each rating students were asked to assign themselves to (reading English literature rarely, occasionally, frequently, daily), an average of 3.590 points in the Lex30 test scores were allocated to the test-taker per rating. Differently put, students who indicated that they read English literature occasionally achieved 3.590 points more on the Lex30 than students who claim to rarely spend time on reading literature. The average Lex30 test score of students reading English literature occasionally and of students being occupied with reading English literature on a daily basis, then, was 7.180 points and 10.770 points respectively higher than the mean score of students rarely reading in the English language. Concerning the time spent holding conversations in the English language, only a tendency of a statistical significance on the Lex30 test scores (b = 2.211, β = .151, t= 2.496, p < .05) was identified. Those students who claimed to hold conversations in English on a daily basis achieved on average a 2.211 points higher Lex30 test score than those students who indicated that they speak English frequently. The group of students who alleged that they hold conversations in English occasionally or rarely, achieved an even lower Lex30 mean score which was on average 4.422 points and 6.633 points respectively lower than that of the students speaking English daily.

Interestingly, no statistically significant effect was found between the Lex30 test scores and the acquisition of foreign languages other than English and Latin. Although a significant effect was identified in each test's individual analysis, in the multiple linear regression the acquisition of other languages is not relevant for the Lex30 test scores and, hence, for the productive vocabulary knowledge. Furthermore, gender had no statistically significant effect on the Lex30 test scores or, differently put, on the active vocabulary knowledge (b = 2.032, β = .083, t = 1.437, p > .05), and neither was a significant effect detected between the Lex30 scores and the time spent listening to English music (b = 1.354, β = .068, t = 1.175, p > .05) or on watching English television, movies, or series (b = .615, β = .049, t = .776, p > .05). Moreover, regarding the age of onset of the acquisition of the English language, the findings show that the point in life when students start acquiring English makes no difference in the active vocabulary knowledge of the students tested for this study (b = -3.439, β = -.144, t = -1.599, p > .05).

Table 29: Coefficients of the multiple linear regression (dependent variable: Lex30)

| Model | Unstandardized coeffcients | | Stand. coefficients | | |
	B	Standard Error	Beta	t	Sig.
(Constant)	10.444	6.023		1.734	.085
gender	2.032	1.414	.083	1.437	.152
music	1.354	1.153	.068	1.175	.242
television	.615	.793	.049	.776	.439
literature	3.590	1.067	.227	3.366	.001
conversation	2.211	.886	.151	2.496	.013
other languages	2.413	1.735	.103	1.391	.166
age of onset – primary school	-3.439	2.151	-.144	-1.599	.112
age of onset – secondary school	-1.663	2.404	-.063	-.692	.490
year 10	7.397	2.123	.275	3.484	.001
year 12	13.545	2.082	.543	6.505	.000

After having tested once more all significant variables, it can finally be summarized that the multiple linear regression revealed that the more students were exposed to the English language, the better they scored in the Lex30 test. Differently put, the higher the school year students attended, the better their results, which leads to a constant increase in the Lex30 test scores with increased school years. Nonetheless, neither the age of onset of the acquisition of the English language nor gender or language skills in other foreign languages affect the active vocabulary knowledge in the English language tested by the Lex30. Furthermore, it can be concluded that spending time reading English literature and speaking in the English language had a more beneficial effect on the students' Lex30 test scores and, hence, on the active lexical knowledge than time spent listening to English music or watching television, movies or series in the English language had.

7   Discussion of the findings

In the previous chapter, students' mean scores of the VST and the Lex30, the correlation between students' test scores of both tests, and the findings of a multiple linear regression were presented in a clear and structured way. Having introduced a considerable amount of mean scores, numbers, percentages, significant values, etc. it is now important to cautiously interpret and comment on the results outlined in the preceding chapter. A reasonable interpretation of the findings presented above might offer further insights into Austrian students' receptive and productive vocabulary knowledge and the relationship between those two types of word knowledge, and might evoke pedagogical implications which are, then, addressed and illustrated in the course of the interpretation of the results.

Concerning the VST test scores which can also be referred to as students' receptive vocabulary size, it became evident that with increasing school years completed, students' passive vocabulary size grew accordingly. That is to say, the more and the longer students were confronted with the English language at school, the larger their receptive vocabulary size was. The same trend is detected for the mean scores of the test of students' active vocabulary knowledge, the Lex30. This steady growth in students' receptive vocabulary size and in their active vocabulary knowledge, with increasing school years successfully completed, accurately shows that the acquisition of the English language is a lengthy and slow, but continuous, process (cf. Milton 2009: 2). This observation confirms the theory on lexical growth that was already proposed in a previous chapter (see Chapter 3.5.). Hence, the findings of the present study reinforce the assumption that the aspects involved in word knowledge, like passive and active vocabulary knowledge for instance, slowly develop and gradually increase (cf. Schmitt 2010) and that the number of words receptively and productively known considerably increases with higher grade (cf. Henriksen 2008).

The findings of students who learn additional foreign languages and those who only attend the mandatory language classes, which are English and Latin classes, can also be considered as very interesting and revealing in terms of students' receptive vocabulary size and active vocabulary knowledge. The results of the present study suggest that learners who are exposed to more foreign languages feature a broader passive and active lexical repertoire, while those who only take the obligatory English and Latin classes scored, for example, around 10 points less in the VST, which means that they passively know 1000 word families less. Hence, it can

be deduced that the acquisition of other foreign languages may contribute to a wider receptive and productive vocabulary, which might facilitate the use of the English language in general, as explained at an earlier stage of this thesis (see Chapter 3.3.).

Besides the school year and the acquisition of other foreign languages, experiences abroad can likewise be considered beneficial in terms of expanding students' receptive and especially the productive vocabulary. Students who indicated that they had studied abroad scored considerably higher on the VST and in the Lex30 than those students who did not participate in the exchange program provided by the Stiftsgymnasium der Benediktiner in Melk. Therefore, an appeal to the Austrian government should be made to support Austrian students who wish to spend a few weeks or months in English-speaking countries to attend high school or language courses there, as students might profit enormously from experiences abroad, linguistically speaking.

Furthermore, according to the results, no marked difference in the VST scores between students of different specialization was identified, which indicates that the specialization chosen at the beginning of year 9 do not have a great influence on students' passive English vocabulary size. That is to say, those students who chose French and ancient Greek as their specialization achieved similar scores to the ones achieved by students who decided for a specialization in natural science. Within year 10, musically gifted students and test-takers with an artistic talent scored as well as participants of other specialization. Within year 12, it was noticeable that those two groups of students achieved slightly lower VST scores. Nonetheless, it can be concluded that students' specialization, or rather their academic interests, is not one of the factors that seem to affect and positively stimulate students' receptive vocabulary size. With regard to the Lex30 scores and, hence, students' productive vocabulary knowledge, a fundamental difference was also not found in the students' Lex30 scores, when excluding the only outlier, the group of test-takers that chose natural science as their specialization. Those students seem to be equipped with a wider productive lexical knowledge, which, however, could be attributed to their English teachers' teaching methods which might be focused on the productive language skills.

Regarding the point in life at which students started acquiring the English language, one can rightly claim that no considerable difference in the receptive vocabulary size and the productive command of the English language of each group of test takers is noticed. From this observation it can be deduced that students who are confronted with the English language at

a later point in life are not disadvantaged in comparison to students who are being exposed to the English language in their infancy already. Hence, according to the results of the present study, all students have the possibility to broaden their English passive and active vocabulary repertoire into an extensive one, regardless of the age of onset of the acquisition of the English language.

Moreover, for the passive vocabulary repertoire, no significant difference was seen between female and male test-takers. Therefore, the conclusion can be drawn that gender has no influence on students' passive vocabulary knowledge and all students, regardless of their sex, might share an identical basic framework of the mental capacity which is necessary to expand the the receptive vocabulary repertoire. Interestingly, for the active vocabulary knowledge, however, this does not seem to be the case. According to the findings, female students surpass their male counterparts, as they feature a broader productive vocabulary repertoire than their male peers. The female participants' Lex30 mean score is 5.9 points higher than the one achieved by the male participants. The reason why female test-takers seem to have a wider range of active vocabulary items ready for productive usage remains unclear, though. Maybe the female superiority in terms of the active vocabulary knowledge is attributable to females' finely developed creative thinking, their imagination, their brain structure, the fact that girls usually try harder at tests and take tests more serious than their male counterparts, or other reasons; however, it needs to be pointed out that this is pure speculation. Further investigations on this issue might provide illuminating insight into the differences in lexical knowledge between the sexes. Nonetheless, the findings of this particular study suggest that Austrian teachers should particularly encourage male students to productively use the English language as much as possible in order to compensate for their minor disadvantage in terms of active vocabulary knowledge.

With reference to the amount of leisure time that test-takers enjoy with the English language, it can be concluded that those students who spend more time occupied with the English language via different media feature not only a larger receptive vocabulary size, but also a broader productive vocabulary knowledge. Bearing the results of the VST and the Lex30 in mind, it is legitimate to claim that the more students are exposed to the English language outside the school context, the better they scored on the two tests, which, then, means that they have a more extensive lexical knowledge. Furthermore, it can be claimed that literature is the medium that students profit the most from, as the highest VST and Lex30 mean scores

were achieved by students who indicated in the attached questionnaire that they frequently read English literature. Thus, the inference can be drawn that it is most beneficial for students to invest some of their leisure time in reading books, stories, comics, magazines, articles, or any other kind of literature in the English language, especially when they strive for a broader lexical knowledge, be it receptive or productive. This observation and interpretation might evoke a pedagogical implication for Austrian English teachers, which would suggest teachers to motivate students to regularly read in the English language on their own, but also to incorporate English literature whenever possible into English lessons. Yamamoto (2001) and Nation (2001: 258) likewise propose letting students read regularly and extensively, as they, by doing so, might considerably profit regarding their active and passive vocabulary size from spending time reading in English. Yamamoto (2011) points out that reading regularly in the English language not only facilitates the expansion of students' lexical repertoire, but also helps them retain receptive and productive word knowledge. Hence, the findings of the present research support and approve of the supposition that reading in the target language positively influences the expansion of students' vocabulary knowledge.

When interpreting the results of the Pearson's correlation between the two tests' scores, which provide information about the relationship between receptive and productive vocabulary knowledge, it can be summarized that there is a clearly observable tendency that test-takers achieving higher scores on one of the tests are likely to also score higher on the other test. These findings are almost identical to those of Laufer (1998), Laufer and Paribakht (1998), Meara and Fitzpatrick's (2000) studies, which are presented in Chapter 4. Nevertheless, it is essential to mention that the relationship between the two tests' scores is a linear, but not a causal, one. Hence, one should be cautious about interpreting the findings of this correlation, as it conceals which test's scores causes the other test's scores to change accordingly. However, when referring to the theory, it is often claimed that words are known passively first, before they get transferred to the active vocabulary repertoire where they are, then, stored for productive usage (cf. Melka 1997: 90, Clark 1993: 246). When adhering to this theory, it can be asserted that those participants featuring a broader passive vocabulary range also score higher on the test for active vocabulary knowledge. That is to say, the larger the student's receptive vocabulary size, the wider their active vocabulary knowledge is. English teachers in Austrian schools need to be advised and informed of the strong relationship between students' receptive and productive vocabulary knowledge in order to make them

aware of the importance of finding the right balance between exposing their students to the English language both passively and actively.

With regard to the findings of the multiple linear regressions, where the VST and Lex30 test scores were analyzed according to several variables, it can be deduced that within the interwoven model of all variables, only a few variables were found to have the most significant effect on students' passive vocabulary size and active lexical knowledge. For students' lexical knowledge in general, without distinguishing it into active and passive word knowledge, the school year the test-takers are in showed a significant effect. It was discovered that with increasing school year, students scored higher in both the active and the passive vocabulary test. In other words, the more and longer students are confronted with the English language in an educational context in their youth, the broader their lexical repertoire is. Another influencing and statistically significant factor behind the expansion of the passive and active vocabulary knowledge that was identified within the calculation of the multiple linear regression was students' time spent on reading English literature outside school. It was discovered that spending one's time on reading frequently or on a daily basis might not only enlarge one's passive vocabulary knowledge, but, interestingly, also one's active lexical repertoire. From the findings it can be inferred that Yamamoto's (2011: 240) assumption that the more students are receptively confronted with words, the faster they can commit them to memory and consequently actively use them in their written and spoken compositions seems to be reasonable, as the time spent on reading in the English language also constitutes an influencing factor for the expansion of the active vocabulary knowledge. Therefore, it can be concluded that reading in the English language is one of the most profitable and beneficial activities for the expansion of one's lexical knowledge, which should definitely be pursued whenever possible by students and learners of the English language who strive for a larger vocabulary repertoire, and simultaneously for a better command of the English language in general. At an earlier stage of this thesis (Chapter 3.3.), it was outlined that lexical knowledge forms a central part of successfully mastering a language (cf. Read 2001: 1), as it positively contributes to correct language use (cf. Alderson 2005). Hence, if students are attempting to improve their English language skills, they should probably be advised of the benefits of reading literature in the target language by their teachers. By spending time on reading English literature, they could expand their lexical vocabulary knowledge in an entertaining and joyful

way and concurrently improve each of the language strands, which, then, entails an improvement of their language competence in general.

Regarding the limitations of the present study, two issues need to be highlighted. Firstly, as already mentioned earlier, one student indicated that they were raised in the English language and, thus, considers English as his/her mother tongue. Although this student is a special case, his/her VST and Lex30 test scores were not excluded, as he/she is only one student out of a total of 87 participants attending year 12 and, hence, distortion of the results would be minimal or not even notable. The comparison of the vocabulary knowledge of Austrian students with German as their L1 and Austrian English-German bilingual students might provide information to what extent monolingual students' vocabulary repertoire differs from the one of a native speaker, and might be considered as a research topic for further investigation. In the present thesis, this comparison was not made, as the population of bilingual students comprised only one example and, thus, no objectivity was given. Secondly, the time span in which the Lex30 test was administered in the twelve classes under examination was fairly long due to administrative issues. This entailed that some classes took the VST test and the Lex30 test within several days, but the administration of both tests in other classes, however, took several weeks because of administrative limitations. In further investigations, temporal guidelines should be developed to ensure that the time span between the administration of the two tests is equally short or long and that both tests are administered on the same terms.

Summarizing the findings of the multiple linear regression, it was detected that within all variables (school year; gender; age at which students were confronted with the English language for the first time; acquisition of other languages apart from English and Latin; time spent on reading English literature; watching English television, movies, or series; listening to English music; and talking in the English language) only one, besides the school year, seemed to be the most prominent and influential for the expansion of the English vocabulary repertoire, namely time spent on reading English literature. Therefore, it can be inferred that neither the age at which students are exposed to the English language for the first time, nor the acquisition of other foreign languages exerts an influence on students' lexical knowledge. Even though the amount of time occupied with the English language via different media might be beneficial for the lexical knowledge, time and effort should, nonetheless, considerably be invested in reading in the English language, as this seems to be most constructive and

beneficial in terms of the expansion of one's lexical knowledge, especially when the conditions and circumstances are equal to those of the tested population.

8 Conclusion

In the course of this thesis, illuminating insights into several aspects concerning students' vocabulary knowledge were gained, which might help to more clearly understand how lexical growth develops within an Austrian school type, and can be best promoted both within this system and in an extracurricular way.

First of all, it was recorded that lexical knowledge constitutes a fundamental component of language proficiency as such, as vocabulary is indispensable for successful communication of any kind. The fewer words learners acquire, the more difficulties they might face in each of the language strands: reading, writing, speaking and listening (cf. Milton 2009: 3). Hence, students might considerably benefit from a wider vocabulary range accessible in the mind. Therefore, it is recommended to attach special importance to the teaching of lexical items and phrases to equip students with a broad vocabulary knowledge, and consequently enable them to communicate successfully in the English language.

However, an analysis of the stipulated guidelines Austrian teachers are supposed to adhere to showed that the acquisition of lexis is not held in high enough esteem, as it is barely mentioned in either the CEFR or the Austrian curriculum for foreign language learning. Teachers are rather advised to follow communicative language teaching principles and to implicitly teach words in the course of the students' performance and fulfilment of a communicative task. The conspicuously limited attention that is exclusively spent on the expansion of the learners' vocabulary knowledge in the CEFR and the Austrian curriculum for foreign languages, and the fact that there exists only very few studies which are concerned with the English vocabulary repertoire of Austrian students was, then, decisive for the decision to carry out the present study.

Referring back to the research questions, the primary aim was to examine how the active and passive vocabulary of students attending different grades at an Austrian grammar school differ from each other. A statistical analysis showed that the students attending a higher school year feature a larger receptive vocabulary size as well as a broader productive vocabulary knowledge than their colleagues of lower school years. Furthermore, when students were arranged according to gender, their linguistic and academic background, interests, and extracurricular activities, it was discovered that those students acquiring foreign languages other than English and Latin scored higher in both vocabulary tests, the VST and the

Lex30. The same trend was detected for students who experienced a semester abroad organized by the Stiftsgymnasium der Benediktiner in Melk. Those students who indicated in the questionnaire that they regularly or frequently spent time listening to English music, watching television, movies, or series in English, reading English literature, and holding conversations in English also achieved on average higher scores in both tests. No difference in terms of test performance was found for students' specialization chosen at the beginning of year 9 and the age at which students were first exposed to the English language. Interestingly, gender seems to be crucial for active vocabulary knowledge, as females scored considerably better in the Lex30 than their male counterparts. However, concerning students' receptive vocabulary size, no difference in the VST scores was found. Therefore, boys especially should be motivated to practice their productive language skills as often as possible.

The second research question concerned the relationship between students' scores of both tests. A correlation of r= .55 was identified, which implies that students who achieved high scores in one test are also likely to score highly in the second. That is to say, students who feature a large receptive vocabulary size also have a broader productive lexical knowledge. Those who are equipped with a limited passive vocabulary size achieved lower scores in the active vocabulary knowledge. Hence, it can be concluded that receptive and productive vocabulary knowledge do not seem to develop separately, but rather concurrently.

With regard to the final research question which addresses the tested Austrian students' circumstances (their gender, linguistic and academic background, choice of specialization, interests, and leisure time activities combined with their test scores, it can be summarized that in the tested students' environment it is most beneficial to invest time reading in the English language, if a lasting, substantial and rapid expansion of both the receptive and productive vocabulary knowledge is desired. However, it should be kept in mind that time spent reading outweighs the other tested factors (gender; age at which students were exposed to the English language for the first time; languages acquired other than English and Latin; times spent listening to music; time spent watching television movies, or series in English; and time spent speaking in English), but could certainly be more significant in combination with other variables than those selected. Hence, further investigation with a different set of factors and variables might certainly provide even more illuminating insights into the complex construct of lexical knowledge in a foreign language.

In conclusion, lexical knowledge should definitely be increasingly placed in the center of attention by teachers, as a large vocabulary size might positively contribute to successful usage in all language strands. Austrian teachers, in particular, who base their English lessons on official guidelines in which explicit vocabulary learning is severely neglected, should provide their students with rich input on words, phrases, collocations, idiomatic expressions, synonyms, antonyms, etc. to offer their students the opportunity to add as many lexical items to their existing vocabulary repertoires. Furthermore, special attention should be devoted to the language strand reading, as the findings of the present study suggest that students substantially benefit from reading in English in terms of the expansion of their lexical knowledge. When reading in the target language, students are exposed to an enormous amount of words within a minimum of time. Thus, they have a good chance to encounter unfamiliar words whose meaning they might be able to grasp from the context. The more often they are confronted with this word, the more likely it is to become part of a student's vocabulary repertoire. Hence, teachers should regularly read class readers with their English classes and should also motivate their students to read authentic literature of all kinds, be it newspaper articles, comics, novels, short stories or magazines in their leisure time.

Besides reading in the target language, the acquisition of foreign languages other than English and Latin, studying a few weeks or months abroad, and being frequently exposed to the English language via different media in one's leisure time seem to be beneficial factors for students attending an Austrian grammar school in terms of increase in one's vocabulary size. Reading in the target language, however, seems to be the key to success in terms of expanding one's vocabulary repertoire, if the circumstances are similar or at best equal to the ones of the tested population.

References

Alderson, J. C. 2005. *Diagnosing foreign language proficiency: The interface between learning and assessment*. London: Continuum.

Albrechtsen, D. Haastrup, K. Henrisken, B. 2008. *Vocabulary in writing in a first and second language: process and development.* Basingstoke: Palgrave Macmillan.

Anderson, R. C. Freebody. P. 1981. "Vocabulary knowledge". *Comprehension and Teaching: Research Reviews*, 77-117.

Anthony, Laurence. 2014. *AntWordProfiler (Version 1.4.1.).* Tokyo: Waseda University. http://www.laurenceanthony.net/ (28 November, 2016)

Bachman, L. F. Palmer, A. S. 1996. *Language testing in practice.* Oxford: Oxford University Press.

Baker, Mona. 1988. "Sub-technical vocabulary and the ESP teacher: an analysis of some rhetorical items in medical journal articles." *Reading in a Foreign Language* 4(2), 91-105.

Bauer, L. and Nation, I.S.P. 1993. "Word families". *International Journal of Lexicography* 6(4), 253-279.

Beglar, David. 2010. "A Rasch-based validation of the vocabulary size test." *Language Testing* (27)1. 101-118.

BIFIE. 2016. *Folder zur neuen Reifeprüfung (AHS) für Lehrer/innen.* https://www.bifie.at/system/files/dl/srdp_folder_lehrer_ahs_2016-02-03.pdf (28.11.2016)

BMB. 2000. (Bundesministerium für Bildung). *Lehrplan der AHS Unterstufe: Lebende Fremdsprache (Erste, Zweite)*. https://www.bmb.gv.at/schulen/unterricht/lp/ahs8_782.pdf?5i81ny, (21.11.2016).

BMB. 2004. *Lehrplan der AHS Oberstufe: Lebende Fremdsprache (Erste, Zweite)*. https://www.bmb.gv.at/schulen/unterricht/lp/lp_ahs_os_lebende_fs_11854.pdf?5i8 4jw, (21.11.2016).

BMB. 2016. *Die neue Oberstufe – Individuell und kompetenzorientiert. Grundinformation und Ziele im Überblick.* https://www.bmb.gv.at/schulen/unterricht/ba/nost/grundinformation.pdf?5l539f (23.11.2016)

Clark, Eve. 1993. *The lexicon in acquisition.* Cambridge: Cambridge University Press.

Cobb, Tom. 2003. "Analyzing late interlanguage with learner corpora: Québec replications

of three European studies". *Canadian Modern Language Review* 59(3), 393-423.

Corson, D. J. 1995. *Using English words*. Dortrecht: Kluwer Academic Publishers.

Corver, Norbert. Henk van Riemsdijk. 2001. "Semi-lexical categories.", In Corver, Norbert; Henk van Riemsdijk (eds.) *Semi-lexical categories: the function of content words and the content of function words*. Berlin: Mouton de Gruyter. 1-19.

Council of Europe. 2003. *Common European Framework of Reference for Languages: Learning, teaching assessment.* http://www.coe.int/t/dg4/linguistic/Source/Framework_EN.pdf (20.11.2016).

Coxhead, A. 2000. "A new academic word list." *TESOL Quarterly*, *34*(2). 213-238.

Eddington, David. 2015. *Statistics for linguists. A step-by-step guide for novices.* Newcastle: Cambridge Scholars Publishing.

Elgort, Irina. 2012. "Effects of L1 definitions and cognate status of test items on the vocabulary size test." *Language Testing* 30(2). 253-272.

Ellis, N., Beaton, A. 1993. "Factors affecting the learning of foreign language vocabulary: imagery keyword mediators and phonological short-term memory". *The Quarterly Journal of Experimental Psychology 46*(3). 533-558.

Field, Andy. 2009. *Discovering statistics using IBM SPSS statistics*. (3rd edition). Los Angeles: Sage Publications.

Goulden, R., Nation, P., & Read, J. 1990. „How large can a receptive vocabulary be?". *Applied Linguistics* 11(4). 341-363.

Heatley, A., Nation, I.S.P. 1998. "VocabProfile and Range." *School of Linguistics and Applied Language Studies*. Victoria University of Wellington, Wellington, New Zealand.

Henriksen, B. 2008. "Declarative lexical knowledge." In Albrechtsen, D; Haastrup, K; Henriksen, B. (eds.) *Vocabulary and writing in a first and second language*. Basingstoke: Palgrave Macmillan. 22-66.

Ishikawa, S., et al. 2003. "JACET 8000: JACET List of 8000 basic words." Tokyo: JACET

Larson-Hall, J., Plonsky, L. 2015. "Reporting and interpreting quantitative research findings: what gets reported and recommendations for the field". *Language Learning* 65(1). 127-159.

Laufer, Batia. 1992. "How much lexis is necessary for reading comprehension?" In Arnaud, P. J.; Béjoint, H. (eds.) *Vocabulary and applied linguistics.* London: Macmillan. 126-132.

Laufer, Batia. 1998. "The development of passive and active vocabulary in a second language: same or different?." *Applied Linguistics* 19(2). 255-271.

Laufer, Batia, Nation, Ian S. P. 1995. "Vocabulary size and use: lexical richness in L2 written production." *Applied Linguistics* 16(3). 307-322.

Laufer, Batia, Nation, Ian S. P. 1999. "A vocabulary-size test of controlled productive ability." *Language Testing* 16(1). 33-51.

Laufer, Batia. Nation, Ian S. P. 2012. "Vocabulary.", In Gass, Susan M.; Mackey, Alison (eds.) *The Routledge handbook of second language acquisition.* London: Routledge, 163-174.

Laufer, Batia. McLean, Stuart. 2016. "Loanwords and vocabulary size test scores: a case of different estimates of different L1 learners*." Language Assessment Quarterly* 13(3). 202-217.

Meara, Paul. 1996. The vocabulary knowledge framework, available over the Internet at http://www.lognostics.co.uk/vlibrary/meara1996c.pdf

Meara, Paul, Fitzpatrick, Tess. 2000 "Lex30: an improved method of assessing productive vocabulary in an L2." *System* 28(1), 19-30.

Meara, Paul, Jones, G. 1990. *The Eurocentres' 10K Vocabulary Size Test.* Eurocentres Learning Service, Zurich.

Melka, F. 1997. "Receptive vs. productive aspects of vocabulary." In Schmitt, M.; McCarthy, M. (eds.) *Vocabulary: description, acquisition and pedagogy.* Cambridge: Cambridge University Press. 84-102.

Milton, James. 2009. *Measuring second language vocabulary acquisition.* Bistrol: Multilingual Matters.

Nation, Ian S. P. 1990. *Teaching and learning vocabulary.* Boston: Heinle and Heinle.

Nation, Ian S. P. 2001. *Learning vocabulary in another language*. Cambridge: Cambridge University Press.

Nation, Ian S. P. 2006. "How large a vocabulary is needed for reading and listening?" *Canadian Modern Language Review* 63(1). 59-82.

Nation, Paul. 2012. The Vocabulary Size Test, available over the Internet at <http://www.victoria.ac.nz/lals/about/staff/publications/paul-nation/Vocabulary-Size-Test-information-and-specifications.pdf>

Nation, Paul, Beglar, D. 2007. "A vocabulary size test." *The Language Teacher* 31(7). 9-13.

Nguyen, L.T.C., Nation, Paul. 2011. "A bilingual vocabulary size test of English for Vietnamese learners." *RELC Journal* (42)1. 86-99.

Read, John. 2000. *Assessing vocabulary.* Cambridge: Cambridge University Press.

Read, John. 2004. "Research in teaching vocabulary." *Annual Review of Applied Linguistics*. 24. 146-161.

Richards, Jack C. 1976. "The role of vocabulary teaching". *TESOL Quarterly* 10(1). 77-89.

Odgen, C. K. 1930. *Basic English: a general introduction with rules and grammar.* London: Paul Treber.

Oxford Advanced Learner's Dictionary. 2010. (8th edition). Oxford: Oxford University Press.

Schmitt, N., Cobb, T., Horst, M., & Schmitt, D. 2015. „How much vocabulary is needed to use English? Replication of van Zeeland & Schmitt (2012), Nation (2006) and Cobb (2007)". *Language Teaching*, 1-15.

Schmitt, N. 1998. "Tracking the incremental acquisition of second language vocabulary: a longitudinal study." *Language Learning*. 48(2). 281-317.

Schmitt, N. 2010. *Researching Vocabulary. A Vocabulary Research Manual.* Basingstoke: Palgrave Macmillan.

Schmitt, N., Schmitt, D., Clapham, C. 2001. "Developing and exploring the behavior of two new versions of the vocabulary levels test." *Language Testing* 18. 55-88.

Stiftsgymnasium der Benediktiner in Melk. http://www.stiftsgymnasium-melk.org (5.2.1017)

Webb, Stuart. 2008. "Receptive and productive vocabulary sizes of L2 learners." *Studies in Second Language Acquisition* 30(1). 79-95.

West, M. 1953. *A general service list of English words.* London: Longman, Green & Co.

Wilkins, David A. 1972. *Linguistics in language teaching*. London: Edward Arnold.

Yamamoto, Y. 2011. „Bridging the gap between receptive and productive vocabulary size through extensive reading". *The Reading Matrix: An International Online Journal* 11(3). 226-242.

List of Appendices

Appendix 1: VST test paper with attached questionnaire

Appendix 2: Lex30 test paper

Multiple Choice (A)   Klasse: _____

Liebe Schülerin, lieber Schüler!

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

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

Dieser Code dient dazu, die Ergebnisse anonym zu halten. Deine Ergebnisse beeinflussen deshalb deine Englisch Note <u>nicht</u>!

Hinweise zum Ausfüllen:

In dieser Studie zum englischen Wortschatz wirst du auf den nächsten Seiten Multiple Choice Aufgaben lösen.

Bei jeder Aufgabe ist das **Wort**, um das es geht, in BLOCKBUCHSTABEN angegeben, und daneben steht ein **kurzer Satz**. Darunter sind **vier englische Bedeutungen** angegeben, von denen **nur eine richtig** ist.

*Bitte lies die Aufgaben **aufmerksam und genau** durch und kreuze für jedes Wort die Antwortmöglichkeit (a, b, c, d) an, von der du denkst, dass sie stimmt.*

Hier ist ein Beispiel:

0. WATER: We had some **water**.
  a.   a green plant
  b.   something to drink
  c.   a very hard thing
  d.   a part of your body

Hast du noch Fragen?

SEE: They **saw** it.
a. close it tightly
b. waited for it
c. looked at it
d. started it up

SOLDIER: He is a **soldier**.
a. person in a business
b. person who studies
c. person who uses metal
d. person in the army

INPUT: We need more **input**.
a. information, power, etc. put into something
b. workers
c. artificial filling for a hole in wood
d. money

STRANGLE: He **strangled** her.
a. killed her by pressing her throat
b. gave her all the things she wanted
c. took her away by force
d. admired her greatly

SHUDDER: The boy **shuddered**.
a. spoke with a low voice
b. almost fell
c. shook
d. called out loudly

UPBEAT: I'm feeling really **upbeat** about it.
a. upset
b. good
c. hurt
d. confused

HAZE: We looked through the **haze**.
a. small round window in a ship
b. unclear air
c. strips of wood or plastic to cover a window
d. list of names

MICROPHONE: Please use the **microphone**.
a. machine for making food hot
b. machine that makes sounds louder
c. machine that makes things look bigger
d. small telephone that can be carried around

THESAURUS: She used a **thesaurus**.
a. a kind of dictionary
b. a chemical compound
c. a special way of speaking
d. an injection just under the skin

PIGTAIL: Does she have a **pigtail**?
a. a rope of hair made by twisting bits together
b. a lot of cloth hanging behind a dress
c. a plant with pale pink flowers that hang down
   in short bunches
d. a lover

LATTER: I agree with the **latter**.
a. man from the church
b. reason given
c. last one
d. answer

EMIR: We saw the **emir**.
a. bird with long curved tail feathers
b. woman who cares for other people's children
   in eastern countries
c. Middle Eastern chief with power in his land
d. house made from blocks of ice

MUMBLE: He started to **mumble**.
a. think deeply
b. shake uncontrollably
c. stay further behind the others
d. speak in an unclear way

BUTLER: They have a **butler**.
a. man servant
b. machine for cutting up trees
c. private teacher
d. cool dark room under the house

LIMPID: He looked into her **limpid** eyes.
a. clear
b. sad
c. deep brown
d. beautiful

CIRCLE: Make a **circle**.
a. rough picture
b. space with nothing in it
c. round shape
d. large hole

ALLEGE: They **alleged** it.
a. claimed it without proof
b. stole the ideas for it from someone else
c. provided facts to prove it
d. argued against the facts that supported it

AWE: They looked at the mountain in **awe**.
a. with a worried expression
b. with an interested expression
c. with a sense of wonder
d. with a feeling of respect

HAUNT: The house is **haunted**.
a. full of decorations
b. rented
c. empty
d. full of ghosts

PEEL: Shall I **peel** it?
a. let it sit in water for a long time
b. take the skin off it
c. make it white
d. cut it into thin pieces

YOGA: She has started **yoga**.
a. handwork done by knotting thread
b. a form of exercise for body and mind
c. a game where a cork stuck with feathers is hit
   between two players
d. a type of dance from eastern countries

REFECTORY: We met in the **refectory**.
a. room for eating
b. office where legal papers can be signed
c. room for several people to sleep in
d. room with glass walls for growing plants

WHIM: He had lots of **whims**.
a. old gold coins
b. female horses
c. strange ideas with no motive
d. sore red lumps

TRILL: He practised the **trill**.
a. ornament in a piece of music
b. type of stringed instrument
c. way of throwing a ball
d. dance step of turning round very fast on the
   toes

BAWDY: It was very **bawdy**.
a. unpredictable
b. enjoyable
c. rushed
d. indecent

DINOSAUR: The children were pretending to be
   dinosaurs.
a. robbers who work at sea
b. very small creatures with human form
   but with wings
c. large creatures with wings that breathe fire
d. animals that lived a long time ago

SPLEEN: His **spleen** was damaged.
a. knee bone
b. organ found near the stomach
c. pipe taking waste water from a house
d. respect for himself

PALETTE: He lost his **palette**.
a. container for carrying fish
b. wish to eat food
c. young female companion
d. artist's board for mixing paints

AUTHENTIC: It is **authentic**.
a. real
b. very noisy
c. old
d. like a desert

BEAGLE: He owns two **beagles**.
a. fast cars with roofs that fold down
b. large guns that can shoot many people quickly
c. small dogs with long ears
d. houses built at holiday places

LONESOME: He felt **lonesome**.
a. ungrateful
b. very tired
c. lonely
d. full of energy

MARSUPIAL: It is a **marsupial**.
a. an animal with hard feet
b. a plant that grows for several years
c. a plant with flowers that turn to face the sun
d. an animal with a pocket for babies

JUMP: She tried to **jump**.
a. lie on top of the water
b. get off the ground suddenly
c. stop the car at the edge of the road
d. move very fast

CABARET: We saw the **cabaret**.
a. painting covering a whole wall
b. song and dance performance
c. small crawling insect
d. person who is half fish, half woman

HUTCH: Please clean the **hutch**.
a. thing with metal bars to keep dirt out of water
   pipes
b. space in the back of a car for bags
c. metal piece in the middle of a bicycle wheel
d. cage for small animals

PLANKTON: We saw a lot of **plankton**.
a. poisonous pants that spread very quickly
b. very small plants or animals found in water
c. trees producing hard wood
d. grey soil that often causes land to slip

PUB: They went to the **pub**.
a. place where people drink and talk
b. place that looks after money
c. large building with many shops
d. building for swimming

DIDACTIC: The story is very **didactic**.
a. tries hard to teach something
b. is very difficult to believe
c. deals with exciting actions
d. is written with unclear meaning

STONE: He sat on a **stone**.
a. hard thing
b. kind of chair
c. soft thing on the floor
d. part of a tree

FEN: The story is set in the **fens**.
a. a piece of low flat land partly covered by water
b. a piece of high, hilly land with few trees
c. a block of poor-quality houses in a city
d. a time long ago

ERYTHROCYTE: It is an **erythrocyte**.
a. a medicine to reduce pain
b. a red part of the blood
c. a reddish white metal
d. a member of the whale family

THESIS: She has completed her **thesis**.
a. long written report of study carried out for a university degree
b. talk given by a judge at the end of a trial
c. first year of employment after becoming a teacher
d. extended course of hospital treatment

YOGHURT: This **yoghurt** is disgusting.
a. grey mud found at the bottom of rivers
b. unhealthy, open sore
c. thick, soured milk, often with sugar and flavoring
d. large purple fruit with soft flesh

UBIQUITOUS: Many unwanted plants are **ubiquitous**.
a. are difficult to get rid of
b. have long, strong roots
c. are found everywhere
d. die away in the winter

REGENT: They chose a **regent**.
a. an irresponsible person
b. a person to run a meeting for a time
c. a ruler acting in place of the king
d. a person to represent them

TALON: Just look at those **talons**!
a. high points of mountains
b. sharp hooks on the feet of a hunting bird
c. heavy metal coats to protect against weapons
d. people who make fools of themselves without realizing it

NUN: We saw a **nun**.
a. long thin creature that lives in the earth
b. terrible accident
c. woman following a strict religious life
d. unexplained bright light in the sky

TUMMY: Look at my **tummy**.
a. fabric to cover the head
b. stomach
c. small soft animal
d. finger used for gripping

COMPOUND: They made a new c**ompound**.
a. agreement
b. thing made of two or more parts
c. group of people forming a business
d. guess based on past experience

WEIR: We looked at the **weir**.
a. person who behaves strangely
b. wet, muddy place with water plants
c. old metal musical instrument played by blowing
d. thing built across a river to control the water

SOLILOQUY: That was an excellent **soliloquy**!
a. song for six people
b. short clever saying with a deep meaning
c. entertainment using lights and music
d. speech in the theatre by a character who is alone

JOVIAL: He was very **jovial**.
a. low on the social scale
b. likely to criticize others
c. full of fun
d. friendly

PUMA: They saw a **puma**.
a. small house made of mud bricks
b. tree from hot, dry countries
c. very strong wind that lifts anything in its path
d. large wild cat

QUILT: They made a **quilt**.
a. statement about who should get their property when they die
b. firm agreement
c. thick warm cover for a bed
d. feather pen

CRANNY: We found it in the **cranny**!
a. sale of unwanted objects
b. narrow opening
c. space for storing things under the roof of a house
d. large wooden box

LECTERN: He stood at the **lectern**.
a. desk to hold a book at a height for reading
b. table or block used for church sacrifices
c. place where you buy drinks
d. very edge

PURITAN: He is a **puritan**.
a. person who likes attention
b. person with strict morals
c. person with a moving home
d. person who hates spending money

MARROW: This is the **marrow**.
a. symbol that brings good luck to a team
b. soft centre of a bone
c. control for guiding a plane
d. increase in salary

DRAWER: The **drawer** was empty.
a. sliding box
b. place where cars are kept
c. cupboard to keep things cold
d. animal house

ATOP: He was **atop** the hill.
a. at the bottom of
b. at the top of
c. on this side of
d. on the far side of

DASH: They **dashed** over it.
a. moved quickly
b. moved slowly
c. fought
d. looked quickly

CRAB: Do you like **crabs**?
a. sea creatures that walk sideways
b. very thin small cakes
c. tight, hard collars
d. large black insects that sing at night

OLIVE: We bought **olives**.
a. oily fruit
b. scented flowers
c. men's swimming clothes
d. tools for digging

STRAP: He broke the **strap**.
a. promise
b. top cover
c. shallow dish for food
d. strip of strong material

PERIOD: It was a difficult **period**.
a. question
b. time
c. thing to do
d. book

REPTILE: She looked at the **reptile**.
a. old hand-written book
b. animal with cold blood and a hard outside
c. person who sells things by knocking on doors
d. picture made by sticking many small pieces of different colours together

PAVE: It was **paved**.
a. prevented from going through
b. divided
c. given gold edges
d. covered with a hard surface

JUG: He was holding a **jug**.
a. a container for pouring liquids
b. an informal discussion
c. a soft cap
d. a weapon that explodes

ECLIPSE: There was an **eclipse**.
a. a strong wind blew all day
b. something hit the water with a loud noise
c. a large number of people were killed
d. the sun was hidden by the moon

MAINTAIN: Can they **maintain** it?
a. keep it as it is
b. make it larger
c. get a better one than it
d. get it

MONOLOGUE: Now he has a **monologue**.
a. single piece of glass to hold over his eye
   to help him to see better
b. long turn at talking without being interrupted
c. position with all the power
d. picture made by joining letters
   together in interesting ways

STEALTH: They did it by **stealth**.
a. spending a large amount of money
b. hurting someone so much that they
   agreed to their demands
c. moving secretly with extreme care and
   quietness
d. taking no notice of problems they met

ACCESSORY: They gave us some
   accessories.
a. papers allowing us to enter a country
b. official orders
c. ideas to choose between
d. extra pieces

GAUCHE: He was **gauche**.
a. talkative
b. flexible
c. awkward
d. determined

COUNTERCLAIM: They made a **counterclaim**.
a. a demand response made by one side in a
   law case
b. a request for a shop to take back things with
   faults
c. an agreement between two companies to
   exchange work
d. a decorative cover for the top of a bed

ROVE: He couldn't stop **roving**.
a. getting drunk
b. travelling around
c. making a musical sound through closed lips
d. working hard

CUBE: I need one more **cube**.
a. sharp thing used for joining things
b. solid square block
c. tall cup with no saucer
d. piece of stiff paper folded in half

ATOLL: The **atoll** was beautiful.
a. low island with a sea water in the middle
b. art created by weaving pictures from fine
   string
c. small crown with many valuable stones
d. place where a river flows through a narrow
   place with rocks

COMPOST: We need some **compost**.
a. strong support
b. help to feel better
c. hard stuff of stones and sand stuck together
d. rotted plant material

PALLOR: His **pallor** caused them concern.
a. his unusually high temperature
b. his lack of interest in anything
c. his group of friends
d. the faint colour of his skin

DEMOGRAPHY: This book is about
   demography.
a. the study of patterns of land use
b. the study of the use of pictures to show facts
   about numbers
c. the study of the movement of water
d. the study of population

EGALITARIAN: This organization is **egalitarian**.
a. does not provide much information about itself
   to the public
b. dislikes change
c. frequently asks a court of law for a judgement
d. treats everyone who works for it as if they are
   equal

PRO: He's a **pro**.
a. someone who is employed to find out
   important secrets
b. a stupid person
c. someone who writes for a newspaper
d. someone who is paid for playing sport etc

NIL: His mark for that question was **nil**.
a. very bad
b. nothing
c. very good
d. in the middle

DRIVE: He **drives** fast.
a. swims
b. learns
c. throws balls
d. uses a car

QUIZ: We made a **quiz**.
a. thing to hold arrows
b. serious mistake
c. set of questions
d. box for birds to make nests in

VEER: The car **veered**.
a. moved shakily
b. changed course
c. made a very loud noise
d. slid without the wheels turning

APERITIF: She had an **aperitif**.
a. a long chair for lying on
b. a private singing teacher
c. a large hat with tall feathers
d. a drink taken before a meal

TIME: They have a lot of **time**.
a. money
b. food
c. hours
d. friends

EXCRETE: This was **excreted** recently.
a. pushed or sent out
b. made clear
c. discovered by a science experiment
d. put on a list of illegal things

GIMMICK: That's a good **gimmick**.
a. thing for standing on to work high above the
   ground
b. small thing with pockets to hold money
c. attention-getting action or thing
d. an entertainer who makes people laugh by
   telling jokes or funny stories

DEFICIT: The company had a large **deficit**.
a. spent a lot more money than it earned
b. went down a lot in value
c. had a plan for its spending that used a lot of
   money
d. had a lot of money in the bank

UPSET: I am **upset**.
a. tired
b. famous
c. rich
d. unhappy

COVEN: She is the leader of a **coven**.
a. small singing group
b. business that is owned by the workers
c. secret society
d. group of church women who follow a strict
   religious life

RESTORE: It has been **restored**.
a. said again
b. given to a different person
c. given a lower price
d. made like new again

CAFFEINE: This contains a lot of **caffeine**.
a. a substance that makes you sleepy
b. strings from very tough leaves
c. ideas that are not correct
d. a substance that makes you excited

PEASANTRY: He did a lot for the **peasantry**.
a. local people
b. place of worship
c. businessmen's club
d. poor farmers

REMEDY: We found a good **remedy**.
a. way to fix a problem
b. place to eat in public
c. way to prepare food
d. rule about numbers

STANDARD: Her **standards** are very high
a. the bits at the back under her shoes
b. the marks she gets in school
c. the money she asks for
d. the levels she reaches in everything

CORDILLERA: They were stopped by the
   cordillera.
a. a special law
b. an armed ship
c. a line of mountains
d. the eldest son of the king

POOR: We are **poor**.
a. have no money
b. feel happy
c. are very interested
d. do not like to work hard

CANONICAL: These are **canonical** examples.
a. examples which break the usual rules
b. examples taken from a religious book
c. regular and widely accepted examples
d. examples discovered very recently

MUSSEL: They bought **mussels**.
a. small glass balls for playing a game
b. shellfish
c. large purple fruits
d. pieces of soft paper to keep the clothes clean when eating

WEEP: He **wept**.
a. finished his course
b. cried
c. died
d. worried

PATIENCE: He has no **patience**.
a. will not wait happily
b. has no free time
c. has no faith
d. does not know what is fair

AUGUR: It **augured** well.
a. promised good things for the future
b. agreed with what was expected
c. had a colour that looked good with something else
d. rang with a clear, beautiful sound

RUCK: He got hurt in the **ruck**.
a. region between the stomach and the top of the leg
b. noisy street fight
c. group of players gathered round the ball in some ball games
d. race across a field of snow

ALUM: This contains **alum**.
a. a poisonous substance from a common plant
b. a soft material made of artificial threads
c. a tobacco powder once put in the nose
d. a chemical compound usually involving aluminium

THRESHOLD: They raised the **threshold**.
a. flag
b. point or line where something changes
c. roof inside a building
d. cost of borrowing money

CROWBAR: He used a **crowbar**.
a. heavy iron pole with a curved end
b. false name
c. sharp tool for making holes in leather
d. light metal walking stick

AZALEA: This **azalea** is very pretty.
a. small tree with many flowers growing in groups
b. light material made from natural fabric
c. long piece of material worn in India
d. sea shell shaped like a fan

CANDID: Please be **candid**.
a. be careful
b. show sympathy
c. show fairness to both sides
d. say what you really think

BLOC: They have joined this **bloc**.
a. musical group
b. band of thieves
c. small group of soldiers who are sent ahead of others
d. group of countries sharing a purpose

MINIATURE: It is a **miniature**.
a. a very small thing of its kind
b. an instrument to look at small objects
c. a very small living creature
d. a small line to join letters in handwriting

FIGURE: Is this the right **figure**?
a. answer
b. place
c. time
d. number

COMMUNIQUÉ: I saw their **communiqué**.
a. critical report about an organization
b. garden owned by many members of a community
c. printed material used for advertising
d. official announcement

FRACTURE: They found a **fracture**.
a. break
b. small piece
c. short coat
d. rare jewel

MYSTIQUE: He has lost his **mystique**.
a. his healthy body
b. the secret way he makes other people think he has special power or skill
c. the woman he dated while he was married to someone else
d. the hair on his top lip

SHOE: Where is your **shoe**?
a. the person who looks after you
b. the thing you keep your money in
c. the thing you use for writing
d. the thing you wear on your foot

LINTEL: He painted the **lintel**.
a. beam over the top of a door or window
b. small boat used for getting to land from a big boat
c. beautiful tree with spreading branches and green fruit
d. board showing the scene in a theatre

MALIGN: His **malign** influence is still felt.
a. evil
b. good
c. very important
d. secret

HESSIAN: She bought some **hessian**.
a. oily pinkish fish
b. stuff producing a happy state of mind
c. coarse cloth
d. strong-tasting root for flavouring food

KINDERGARTEN: This is a good **kindergarten**.
a. activity that allows you to forget your worries
b. place of learning for children too young for school
c. strong, deep bag carried on the back
d. place where you may borrow books

LOCUST: There were hundreds of **locusts**.
a. insects with wings
b. unpaid helpers
c. people who do not eat meat
d. brightly coloured wild flowers

DEVIOUS: Your plans are **devious**.
a. tricky and threatening
b. well-developed
c. not well thought out
d. more expensive than necessary

PERTURB: I was **perturbed**.
a. made to agree
b. worried and puzzled
c. corrupt
d. very wet

VOCABULARY: You will need more **vocabulary**.
a. words
b. skill
c. money
d. guns

ROUBLE: He had a lot of **roubles**.
a. very valuable red stones
b. distant members of his family
c. Russian money
d. moral or other difficulties in the mind

CAVALIER: He treated her in a **cavalier** manner.
a. without care
b. politely
c. awkwardly
d. as a brother would

PREMIER: The **premier** spoke for an hour.
a. person who works in a law court
b. university teacher
c. adventurer
d. head of the government

SKYLARK: We watched a **skylark**.
a. show with planes flying in patterns
b. human-made object going round the earth
c. person who does funny tricks
d. small bird that flies high as it sings

HALLMARK: Does it have a **hallmark**?
a. stamp to show when to use it by
b. stamp to show the quality
c. mark to show it is approved by the royal family
d. mark or stain to prevent copying

ERRATIC: He was **erratic**.
a. without fault
b. very bad
c. very polite
d. unsteady

SCRUB: He is **scrubbing** it.
a. cutting shallow lines into it
b. repairing it
c. washing it energetically
d. drawing simple pictures of it

BASIS: This was used as the **basis**.
a. answer
b. place to take a rest
c. next step
d. main part

NULL: His influence was **null**.
a. had good results
b. was unhelpful
c. had no effect
d. was long-lasting

IMPALE: He nearly got **impaled**.
a. charged with a serious offence
b. put in prison
c. stuck through with a sharp instrument
d. involved in a dispute

BRISTLE: The **bristles** are too hard.
a. questions
b. short stiff hairs
c. folding beds
d. bottoms of the shoes

BACTERIUM: They didn't find a single **bacterium**.
a. small living thing causing disease
b. plant with red or orange flowers
c. animal that carries water on its back
d. thing that has been stolen and sold to a shop

OCTOPUS: They saw an **octopus**.
a. a large bird that hunts at night
b. a ship that can go under water
c. a machine that flies by means of turning blades
d. a sea creature with eight legs

Du hast es geschafft!

Danke, dass du bei meiner Studie teilgenommen hast!

Beantworte bitte zum Abschluss des heutigen Teils noch diese kurzen Fragen:

1) Wie fühlst du dich heute?

☹   ☹   😐   ☺   ☺

gar nicht gut   nicht so gut   okay   ziemlich gut   großartig

2) Wie leicht war es heute für dich, dich auf die Aufgaben zu konzentrieren?

☹   ☹   😐   ☺   ☺

sehr schwierig   ziemlich schwierig   okay   ziemlich leicht   sehr leicht

3) Hast du während der Tests Veränderungen in Aufmerksamkeit und Konzentration bemerkt?

☐   ja   ☐ nein

4) ☐   männlich   ☐   weiblich

5) Alter: _____

6) Was ist deine Muttersprache? _____

7) Welche Sprache/n sprichst du zuhause?   ☐   Deutsch

                                              ☐   Englisch

                                              ☐   andere: _____

8) Wie lange lernst du schon Englisch?   ☐   seit dem Kindergarten

☐   seit der Volksschule

☐   seit der 1. Klasse Gymnasium

9) In welchem Zweig bist du?   ☐   Unterstufe – Gymnasium

☐   Oberstufe – Langform mit Französisch

☐   Oberstufe – Langform mit Griechisch

☐   ORG mit naturwissenschaftl. Schwerpunk

☐   ORG mit Instrumentalmusik

☐   ORG mit bildnerischem Gestalten u. Werken

10) Lernst du neben Englisch noch andere Sprachen?

☐   Nein   ☐   Ja, _____

11) Hast du schon für längere Zeit in einem anderen Land gewohnt?

☐   Nein   ☐   Ja, in _____ für _____ Monate

12) Wie beschäftigst du dich außerhalb der Schule mit der englischen Sprache?

Ich höre englischsprachige Musik
        ☐ täglich   ☐ mehrmals die Woche   ☐ gelegentlich   ☐ nie
Ich sehe englischsprachiges Fernsehen (Filme, DVD, Serien, etc.)
        ☐ täglich   ☐ mehrmals die Woche   ☐ gelegentlich   ☐ nie
Ich lese englischsprachige Literatur (Bücher, Zeitungen, Magazine, etc.)
        ☐ täglich   ☐ mehrmals die Woche   ☐ gelegentlich   ☐ nie
Ich führe englischsprachige Unterhaltungen (mit Freunden, Verwandten, etc.)
        ☐ täglich   ☐ mehrmals die Woche   ☐ gelegentlich   ☐ nie

13) Wie wichtig ist es für dich, die englische Sprache zu lernen?
                ☐   1   ☐   2   ☐   3   ☐   4   ☐   5
        sehr wichtig   gar nicht wichtig

14) Wie schätzt du deine **Englischfähigkeiten** in den folgenden Bereichen ein?

Beurteile dich selbst nach Schulnoten:

Sprechen	☐	1	☐	2	☐	3	☐	4	☐	5
Schreiben	☐	1	☐	2	☐	3	☐	4	☐	5
Hörverstehen	☐	1	☐	2	☐	3	☐	4	☐	5
Leseverstehen	☐	1	☐	2	☐	3	☐	4	☐	5
Wortschatz/Vok.	☐	1	☐	2	☐	3	☐	4	☐	5
Grammatik	☐	1	☐	2	☐	3	☐	4	☐	5

Danke für dein Mitwirken bei meiner Studie!

Klasse: _____

Liebe Schülerin, lieber Schüler!

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

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

Dieser Code dient dazu, die Ergebnisse anonym zu halten.

Deine Ergebnisse beeinflussen deine Englisch Note <u>nicht</u>!

Hinweise zum Ausfüllen:

Auf den nächsten Seiten findest du eine **Liste mit Wörtern**. Zu jedem dieser vorgegebenen Wörter sollst du **4 weitere Wörter**, die dir beim Lesen der vorgegebenen Wörter einfallen oder spontan in den Sinn kommen, niederschreiben.

Du hast dafür **15 Minuten** Zeit, also **30 Sekunden pro Wort**.

Falls du ein Wort nicht kennst oder dir zu einem Wort nichts mehr einfällt, schreibe einfach ein x-beliebiges Wort nieder, das dir spontan einfällt, und versuche unbedingt **so wenig Kästchen wie möglich leer zu lassen**.

Hier ist ein Beispiel:

0	**animal**	*elephant*	*tiger*	*farm*	*wild*

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

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

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

Du hast es geschafft! Vielen Dank für dein Mitwirken bei meiner Studie!

Abstract

The primary purpose of this study is to investigate and analyze the vocabulary knowledge and lexical growth of Austrian students attending three different years at a grammar school. The first objective of this study is to investigate students' receptive and productive vocabulary knowledge and to examine whether students who are equipped with a larger receptive vocabulary also feature a broader productive lexical knowledge. Secondly, it was intended to gain a deeper understanding of how students' lexical repertoire grows within the Austrian education system, and how which extracurricular factors might influence that growth.

The subjects of this empirical fieldwork were 275 students of an Austrian grammar school attending year 8, 10, and 12, who were asked to take two tests, the Vocabulary Size Test and the Lex30 Word Association Test. Additionally, information about the students' personal, academic, and linguistic background was gathered by a questionnaire.

This study's data support the view that receptive and productive vocabulary knowledge do seem to develop concurrently, as students who featured a large receptive vocabulary size also showed a broader productive lexical knowledge. Furthermore, the results suggest that acquiring foreign languages other than English and Latin, studying abroad and time spent listening to English music, watching television, movies, or series in English, reading English literature, and holding conversations in English positively influence the expansion of students' lexical repertoire. Finally, it was concluded that in the tested students' environment it is most beneficial to invest time into reading in the English language, if a lasting, substantial and rapid expansion of both the receptive and productive vocabulary knowledge is desired.

Abstract (German)

Das Ziel dieser Studie ist es, den englischen Wortschatz österreichischer Schüler/innen aus drei unterschiedlichen Jahrgängen (4./6./8. Klasse) einer Allgemeinbildenden Höheren Schule zu untersuchen und dessen Erweiterung zu analysieren. Zu Beginn wird der aktive, der passive Wortschatz sowie das Gleichgewicht dieser beiden lexikalischen Repertoires untersucht. Es wird der Vermutung, dass Schüler/innen mit größerem passiven Wortschatz auch einen größeren aktiven Wortschatz aufweisen, nachgegangen. Zudem wird versucht einen tieferen Einblick in das Wachstum des Englischen Wortschatzes der getesteten Schüler/innen zu erlangen und gleichzeitig auch Faktoren, welche dieses Wachstum anregen könnten, zu identifizieren.

Die Teilnehmer dieser empirischen Studie bilden eine Gruppe von 275 Schüler/innen, welche sich zwei Testungen, dem Vocabulary Size Test zum passiven Vokabular und dem Lex30 Word Association Test zum aktiven Vokabular, unterzogen haben. Überdies wurden die Teilnehmer gebeten, einen Fragebogen zur ihrer Sprachbiographie auszufüllen.

Die Ergebnisse der Studie belegen die Theorie, dass sich der aktive Wortschatz in ähnlichem Tempo wie der passive Wortschatz vergrößert, da Schüler/innen mit größerem passiven lexikalen Wissen auch mit einem größeren aktiven Wortschatz ausgestattet sind. Außerdem wurde festgestellt, dass das Erlernen weiterer Fremdsprachen (abgesehen von Englisch und Latein), Erfahrungen im Ausland, die Beschäftigung mit englischer Musik, englischen Filmen oder Serien, englischer Literatur oder Gesprächen in der englischen Sprache eine bedeutende Rolle im Bezug auf die Erweiterung des englischen Wortschatzes spielt. Schlussendlich wurde festgehalten, dass für die getestete Gruppe, unter deren Umständen, es am effizientesten und nützlichsten ist, sich mit englischer Literatur zu beschäftigen, sollte eine rasche, aber dauerhafte Vergrößerung des englischen Wortschatzes angestrebt werden.