On the impact of extramural English and CLIL on productive vocabulary

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Eva Olsson

Abstract

In this thesis, the possible impact of English encountered and used in two different contexts – in content and language integrated learning (CLIL) and through extramural English (EE) – on students' writing proficiency is investigated. More specifically, students' vocabulary use when writing different text types is explored; in particular, attention is drawn to progress in productive academic vocabulary. Three empirical studies were conducted: a cross-sectional study involving 37 students in grade 9 (aged 15–16), and two longitudinal studies, involving 230 students (146 CLIL/84 non-CLIL) in upper secondary school in Sweden. The nature and frequency of students' use of EE were investigated using two different surveys. Students' texts, covering different registers, were analysed, mainly by corpus-based methods. In the cross sectional study, the focus of text analyses was on register variation, whereas students' use of academic vocabulary was analysed in the longitudinal studies. Findings suggest that effects of EE may be greater at lower proficiency levels than at higher. The results also indicated that register variation was greater among those students in grade 9 who frequently used English in their spare time than among those with infrequent exposure to EE. At upper secondary level, the frequency of EE correlated with productive academic vocabulary only in the first year; for progress over time, high exposure to EE did not predict a more positive development. CLIL students used academic vocabulary to a larger extent than non-CLIL students already when they started their CLIL education, but they did not progress more; the gap between CLIL and non-CLIL students did not widen over three years.

Content

PART 2

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Study III Olsson, Eva & Sylvén, Liss Kerstin (2015)
        Extramural English and academic vocabulary. A longitudinal
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Eva Olsson

PART 1

Chapter 1 Introduction

In this thesis, certain factors that may influence students' writing proficiency in English, more specifically their vocabulary use when writing different text types, are explored. In particular, attention is drawn to students' progress in academic vocabulary use. The possible impact of English encountered and used in two different contexts on students' writing proficiency is investigated: English used outside school, *extramural English,* and in *content and language integrated learning*, CLIL, where school subjects are taught using English as the medium of instruction.

This chapter serves as an introduction to the thesis in its entirety, starting with a brief background.

Background

The international expansion of English as the lingua franca in academic and professional communication in an increasingly globalised world has drawn attention and interest to second language writing proficiency in English, not least in education (Matsuda, Ortmeier-Hooper & Matsuda, 2009). In communication across borders of different kinds, both cultural and political, English is by far the most widely used language. In academic, business and diplomatic contexts, English is dominant. Hence, in Sweden, as in many other countries, proficiency in English is regarded as highly valuable in society at large, as well as within the school system (Hyltenstam, 2004). In higher education, proficiency in English is a prerequisite as an increasing number of courses are given in English; thus, not only basic, communicative proficiency is needed, but also proficiency in academic English (Airey, 2009; Melander, 2010; cf. Nunan, 2003).[1]

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[1] The expansion of English may, of course, lead to domain loss and other negative consequences for other languages than English and for people speaking those languages; a discussion of such dimensions of English dominance is, however, beyond the scope of the present thesis (cf. Phillipson, 2009).

Students in Swedish school are, in general, highly motivated to learn English. In a national evaluation of English as a school subject among 15–16-year-old students (N=7000), more than 85% of students regarded English as an important school subject and they generally believed that they would need English in their future careers as well as in other kinds of international communication (Oscarson & Apelgren, 2005). Furthermore, Swedish teenagers seem more highly motivated to study and learn English than other languages (Henry, 2012).

English is a compulsory subject in Sweden from primary school and throughout secondary school. The syllabus for English in lower secondary school points to the necessity for students to learn English: proficiency in English is needed in higher education, when travelling and in social or work-related international contacts (Swedish National Agency for Education, 2011a). The syllabus stipulates that English education should aim at developing students' receptive and productive communicative skills in speech and writing in different situations and contexts. Further, students' proficiency in interaction with other people and in adapting language use to situation, purpose and recipients should be developed. In connection with writing, certain genres are mentioned: teaching should mainly focus on narratives, descriptions and instructions. At lower secondary level, students are expected to reach at least a proficiency level equivalent to level B 1.1 (independent user at threshold level) of the Common European Framework of Reference for Languages (CEFR; Council of Europe, 2011).

At upper secondary level too, the overall aim, expressed in the syllabus, is to enhance students' communicative skills, although there is a gradually increasing focus on academic language, as students should develop proficiency in using language related to the profile of their educational programme, such as the Natural or the Social Sciences (Swedish National Agency for Education, 2011b). Further, students' ability to communicate in formal contexts as well, using complex language structures, including contextually appropriate phrases and vocabulary, should be developed at upper secondary level. Students should, for instance, learn how to report, reason, summarise and argue in English. In all educational programmes at upper secondary level, students should at least reach a proficiency level equivalent to CEFR level B 1.2 (Independent user at strong theshold level) – a course at this level is compulsory. In preparatory programmes for higher education, an additional course is compulsory, where students should at least reach level B 2.1

(Independent user at vantage level). A course equivalent to level B 2.2 (Independent user at strong vantage level) is optional.

Attention is also paid to language in the syllabi of other subjects. In e.g. the syllabi of History and Biology, it is pointed out that students' proficiency in discussing, explaining and arguing for or against subject-related issues should be developed, and hence, relevant concepts and sources should be used. Normally, those subjects are taught in Swedish and, consequently, the guidelines apply to Swedish, i.e. students should delvelop their proficiency to, e.g., discuss issues in related to History in Swedish. However, in educational programmes where another language than Swedish is used as the medium of instruction, the same syllabi apply.

Generally, Swedish teenagers' level of proficiency in English is high in comparison with students in many other European countries, as shown in the extensive *European Survey of Language Competence*, ESLC, involving 53 000 students aged 13–16 from 14 European countries, where Swedish students' proficiency in English was among the highest (European Commission/SurveyLang, 2012). The frequent use of extramural English (EE), i.e. English encountered and used in the spare time, is often referred to as an important factor behind the high proficiency level among Swedish youth (Swedish National Agency for Education, 2012). The way language is used and how communication takes place have fundamentally changed since the introduction of the Internet, and so our conceptualisation of learning and teaching has also changed; learning may also occur in many different contexts outside school and through different media (Bhatia & Ritchie, 2009).

It seems that a majority of young Swedish people may indeed have access to and use English in their spare time if they so wish: the Swedish Media Council (2015) reported that 86% of 13–16-year-olds had access to a computer or a tablet of their own and as many as 98% of all 13–18-year-olds had their own mobile phone. A large majority of them had access to the Internet through their mobile phones as well as through computers or tablets. In the group aged 13–18, approximately 95% reported that they accessed the Internet every day, many of them for more than 3 hours a day, as reported by 70% of 16–year-olds. Of course, students may use Swedish or other languages than English when they access the Internet; even so, research findings indicate that many Swedish teenagers use English to a great extent in their spare time and that EE is beneficial for their language proficiency (cf. Sundqvist, 2009;

Sylvén & Sundqvist, 2012a). However, few studies have focused on the possible impact of EE on writing proficiency (but cf. Kuppens, 2010).

The great interest in learning English, as well as the importance ascribed to high English proficiency around the world, has led to the introduction of educational programmes where English is used as the language of instruction, e.g. in Spain, the Netherlands, Hong Kong, Singapore and also in Sweden (cf. Dalton-Puffer, 2011). In content and language integrated learning (CLIL), the basic assumption is that foreign or second language learning is enhanced when the target language is used to teach non-language subjects (Coyle, Hood & Marsh, 2010). In Sweden, approximately 27% of all upper secondary schools offered a CLIL programme in 2012, in most cases targeting English (Yoxsimer Paulsrud, 2014).[2] Internationally, CLIL education has mainly been shown to enhance L2 proficiency, but in Sweden, the positive effects of CLIL have not been confirmed (Dalton-Puffer, 2011; Sylvén, 2004, 2013). However, there has so far been little research on the effects of CLIL in Sweden. Further, few studies – not only in Sweden – have focused on the development of academic registers and, moreover, few studies have considered students' use of English in their spare time when evaluating the effect of CLIL education (but cf. Sylvén, 2004).

Purpose and aims

Given the background briefly outlined above (further developed in chapters 2 and 3), the overall purpose of this thesis is to explore the possible impact of two factors, extramural English and CLIL education, on students' writing proficiency in English, with particular regard to vocabulary use in different registers. Thus, the aim of the thesis is to contribute to a better understanding of the development of productive vocabulary in writing among students for whom English is a foreign language. The following main research questions are addressed:

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[2] CLIL programmes in Sweden follow Swedish curricula in contrast to IB (International Baccalaureate) programmes, also found in Sweden and using English as the language of instruction. IB programmes follow a curriculum that is specific for IB. In the present study, only CLIL classes participated, as comparisons were made with classes following the same curriculum but using Swedish as the language of instruction.

- What impact, if any, does extramural use of English have on students' writing proficiency in different registers, especially with regard to vocabulary use?
- What impact, if any, does CLIL education have on students' academic vocabulary use in writing?

Three empirical studies have been conducted, each focusing on the possible impact of EE and/or CLIL education on students' writing proficiency in certain registers, particularly on their vocabulary use. The three studies are:

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      "Everything I read on the Internet is in English". On the impact of extramural English on Swedish 16-year-old pupils' writing proficiency

Study II Olsson, Eva (2015)
      Progress in English academic vocabulary use in writing among CLIL and non-CLIL students in Sweden

Study III Olsson, Eva & Sylvén, Liss Kerstin (2015)
      Extramural English and academic vocabulary. A longitudinal study of CLIL and non-CLIL students in Sweden

Figure 1 gives a graphical overview of how the three studies are interconnected. As shown in Figure 1, the possible impact of extramural English on students' writing proficiency is investigated in studies I and III, whereas the possible impact of CLIL is investigated in studies II and III. Study I is a cross sectional study conducted at lower secondary level investigating the possible impact of extramural English on students' register variation when writing two different text types, a letter and a newspaper article. Studies II and III are longitudinal studies conducted at upper secondary level over three years, investigating differences in the progress of academic vocabulary use in writing between CLIL and non-CLIL students (study II), and the possible impact of extramural English on this development (study III). Further, in each of the three studies, more specific questions are addressed for the purpose of gaining more detailed knowledge contributing to the understanding of the main issues explored in the thesis, e.g. if there are differences between male and female students, or CLIL and non-CLIL students, with regard to the frequency and nature of their extramural use of English, as well as in their vocabulary use in writing. In study II, a methodological issue, how to investigate progress in academic vocabulary in students' writing, is also addressed, as the usefulness, in this respect, of two
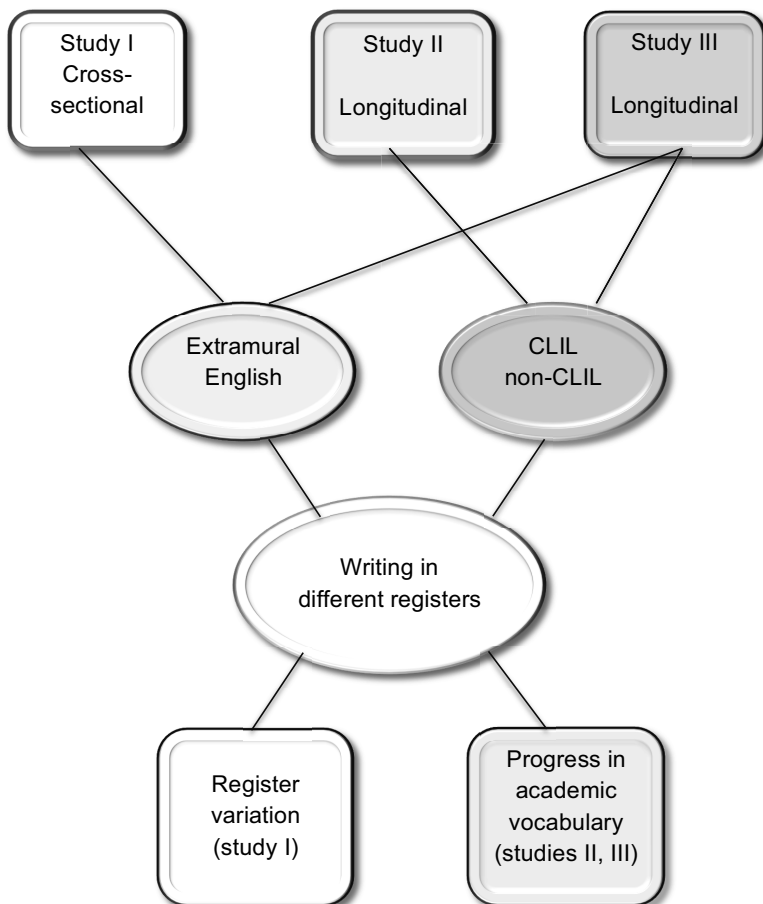
Figure 1. Overview of the studies included in the thesis

different academic vocabulary lists is explored. The specific questions addressed in each of the studies are accounted for in greater detail in chapter 5.

Studies II and III were part of the large-scale research project *Content and language integration in Swedish schools*, CLISS, funded by the Swedish Research Council (project no 2010-5376). The main purpose of CLISS was to investigate the impact of CLIL on academic language — both English and Swedish — and to study CLIL practices in the Swedish context from different perspectives, e.g. at policy level but also from teacher/student perspectives. For further information about the CLISS project, see Sylvén and Ohlander (2014), as well as Yoxsimer Paulsrud (2014), Lim Falk and Holmberg (2015), Sylvén and Thompson (2015), Thompson and Sylvén (2015), and Reierstam (2015).

Study I has been reported in a licentiate thesis, studies II and III in research articles; hence, the formats of presentation of the studies differ in scope and size, the licentiate thesis being more comprehensive than the research articles.

Outline of thesis

The thesis is divided into two parts, Part 1 and Part 2. In addition to introducing the overarching research questions (see above), the purpose of Part 1 is to account for the theoretical framework of the thesis, and to discuss the results of the empirical studies (I–III) in relation to the main research questions. In chapter 2, the theoretical framework of the thesis is outlined, central concepts are defined, and previous research of relevance is accounted for. Chapter 3 introduces the two contexts of learning in focus: CLIL and extramural English. In chapter 4, the methods and material used in the studies are described, including an account of how the studies interconnect and contribute to answering the main research questions. The main results of the three studies are summarised in chapter 5, and in chapter 6, the results are discussed in relation to the overarching research questions, along with some methodological issues. Chapter 7, finally, offers some concluding as well as forward-looking reflections, including some suggestions for future research into areas and issues treated in the thesis. At the end of Part 1, a Swedish summary is offered. In Part 2, the three empirical studies (I–III) are included, i.e. the licentiate thesis and the two research articles.

Chapter 2 Theoretical framework

In this chapter, the theoretical underpinnings of the thesis are outlined, first from a wider perspective, placing the thesis within the broad field of research on second language acquisition, subsequently narrowing the perspective to issues specifically addressed in the thesis: the development of second language writing proficiency and vocabulary.

Second language acquisition

The theoretical framework of this thesis is mainly found within theories of *Second Language Acquisition* (SLA), a subfield of *Applied Linguistics*. SLA is in itself a broad umbrella term including a variety of research fields interested in various aspects of second language acquisition – in contrast to Applied Linguistics, where not only second languages are in focus. In short, SLA theories try to explain how and under what circumstances or conditions second language acquisition occurs. The understanding of the term *second language* (L2) is, however, not clear-cut (cf. R. Ellis, 1994; Mitchell, Myles & Marsden, 2013). Sometimes the term is used only when referring to a language that is not the speaker's mother tongue (L1) but a language spoken in the area where the speaker resides, e.g. immigrants learning the language of the country they have moved to. However, an L2 could also refer to a language other than the L1 in bilingual regions, e.g. French in the English-speaking part of Canada. Very often the term L2 also includes foreign languages studied at school, e.g. German or French studied by Swedish students. In the present study, the broad definition is used, including foreign languages, unless otherwise noted.

The following definition of SLA is suggested by Ortega (2013:8): "SLA investigates L2 acquisition, or how humans can learn additional languages later in life, subsequent to having acquired a language or languages from birth". Thus, SLA is interested in acquisition that starts after the acquisition of the L1 (or L1s), implying that a great variety of starting ages are in focus in SLA studies and also that language acquisition in various contexts is studied.

The emergence of SLA as a research field of its own is commonly dated to the 1970s, when a field-defining article about *interlanguage,* learner language,

was published by Selinker (Selinker, 1972; Ortega, 2013; Gass, 2009). The article was a starting-point for theory building and research on interlanguage, where linguistic features in learner language at various stages are mapped and factors that influence L2 development are explored, focusing, for example, on the influence of the L1 (cf. Tarone, 2012). Quantitative and cognitive epistemologies, influenced e.g. by Chomsky (1968), dominated early SLA theory building and research (e.g. Selinker, 1972; cf. White, 2009; VanPatten & Williams, 2015).

From the 1990s, the importance of social factors in second language acquisition has been emphasised (Ortega, 2013; Tarone, 2007). For instance, drawing on Vygotsky (1978), the importance of a context of meaningful social interaction for L2 development is stressed (see Myles, 2010).

Since SLA is a broad and complex research field, a great variety of theoretical and methodological approaches are required, addressing different aspects of L2 acquisition. Myles (2010) defines six main questions or issues that SLA theory and research address. They relate to (1) the linguistic system underlying learners' performance and how learners construct this system at various stages of development, e.g. with regard to lexis, syntax and discourse; (2) the role of the L1, the L2 and universal formal properties of languages in the development of an L2 linguistic system; (3) the development of learners' capacity to process and use the L2; (4) the roles of individual differences and learning styles for L2 development; (5) how input, interaction and output facilitate and shape L2 development; and (6) how environmental/social contexts shape L2 development. The research questions explored in this thesis (see chapter 1) mainly relate to Myle's third question as the development of some aspects of students' writing proficiency is investigated, but they relate also to questions (4), (5) and (6) to some extent, since the possible impact of English encountered in two contexts, through EE and in CLIL education, where language input and use may differ substantially, is explored (see chapter 3). The analyses are based on individual data and hence, individual differences are addressed to some extent (see chapter 4).

Myles (2013) identifies three main groups of SLA theories that address one or several of the six areas of interest: *linguistic theories* that focus on formal properties of learner language, *cognitive theories* that focus on language cognition and processing, and further *interactionist, sociolinguistic and sociocultural theories* that focus on the social and interactional context of L2 learning. However, the boundaries between these groups of theories seem to be permeable; all three

dimensions – formal, cognitive and social – are involved when language is used. Therefore, research may be conducted within a strictly limited theory, or by applying two or more theories across the field, depending on the scope and aim of the particular study.

This thesis draws on theories from all of the three strands to some extent. Linguistic theories and notions are used for defining linguistic features in the analyses of students' writing, e.g. concepts from *Systemic Functional Linguistics* (Halliday, 2004), and from the *Appraisal* framework (Martin & White, 2005) – theories that may not only be used in research of SLA but in linguistic research in general. In the analyses of the vocabulary used in the students' writing, concepts defined by Nation (2013) are mainly employed. The linguistic concepts used in the thesis are defined in the sections on L2 writing proficiency, L2 vocabulary acquisition and academic vocabulary (see also chapter 4). Cognitive SLA theories are drawn upon in the conceptualisation and discussion of how second languages, specifically L2 vocabulary, can be acquired under various conditions, particularly with regard to the degree of learner attention to language, and also with regard to individual differences, e.g. in motivation (N. Ellis, 1994; 2015; R. Ellis, 2004, 2009, 2015; Hulstijn, 2005; 2015; Swain, 1995, 2000; Dörnyei, 2005). Further, sociolinguistic/sociocultural theories are of relevance as the possible impact of two different contexts of learning, CLIL and EE, on L2 development is investigated. Since variation and change in specific features of the learner's L2 knowledge may be caused by social and contextual factors (Tarone, 2007), students' L2 development is analysed in relation to the two contexts of learning, which are further described in chapter 3.

In the next section, some specific concepts and theoretical assumptions of particular relevance are introduced.

Explicit versus implicit learning

N. Ellis (1994:1) describes how we sometimes learn something without thinking about it – suddenly we are simply able to do things e.g. to walk or to recognise if someone is happy or not; we have learnt it *implicitly,* i.e. unconsciously. There are, however, many other proficiencies that cannot be learned implicitly, e.g., to speak Latin or how to play chess. They have to be learned consciously; learning is then *explicit.* N. Ellis argues that SLA research should explore what aspects of L2 can be learnt implicitly and what aspects

need explicit attention. However, implicit and explicit learning systems seem to interact when L2 proficiency is developed – they are not isolated systems (N. Ellis, 2015). Also Hulstijn (2005) claims that there are good theoretical and educational reasons to place issues related to implicit and explicit learning high on the SLA research agenda. Hulstijn (2005, 2015) argues that the explanation of differential success in the L1 and L2 is central to SLA theory construction; with a sufficient quantity of input, certain aspects of the L1, e.g. pronunciation and spontaneous speech, seem to be mastered by everyone, whereas L2 learners may reach different levels of proficiency. Other aspects of language proficiency, e.g. development of writing proficiency, focused on in this thesis, seem to require some explicit attention both from L1 and L2 learners (Hulstijn, 2015; see also the section L2 writing proficiency below).

Further, in line with Schmidt (1994), R. Ellis (2009, 2015) makes a distinction not only between *implicit* and *explicit learning* but also between *implicit* and *explicit knowledge*. When learning is addressed, it is the process that is in focus, whereas knowledge is concerned with the product of learning. The difference between explicit and implicit knowledge lies in the degree of awareness of regularities underlying the information one has knowledge of and in the ability to verbalise these regularities (Hulstijn, 2005:130; R. Ellis, 2004, 2015). Implicit knowledge is intuitive and *procedural*, i.e. it implies an ability to use the language through automatic processing without conscious reflection, whereas explicit knowledge is conscious and *declarative*, i.e. it relates to knowledge of rules and facts accessed through controlled processing (R. Ellis, 2009:11–12; cf. Ohlander, 1999). L2 learners may, of course, possess both procedural and declarative knowledge. However, the knowledge they develop at various stages may be inaccurate. In fact, procedural and declarative "rules" seem to change through the learning process. R. Ellis (2004, 2015) argues that it is possible for students to reflect upon things they have learnt implicitly; thus implicit learning may become explicit knowledge. He points out that in SLA research, the product, knowledge, has more often been examined than the learning process. By examining products, studies try to infer what kind of learning has taken place. In this thesis, productive use of language in writing is studied; thus, knowledge rather than learning is analysed. As the use of various linguistic features, primarily related to lexis, is analysed in students' writing, the use of such features are seen as signs that learning has taken place; a student could not possibly use vocabulary in writing without having acquired the words first, more or less successfully. Even if the exact

moment when learning might occur is not investigated in this thesis, it is nevertheless a study of the learning that has occurred.

There is a discussion among theorists in the field whether or not attention and awareness are necessary also in implicit learning, i.e. not only in explicit learning (Hulstijn, 2005; cf. DeKeyser, 2003; N. Ellis, 1994). This discussion is of relevance for this thesis as the level of language awareness may be low when students are engaged in spare time activities where English is used, e.g. watching a film, or when focused on subject content in CLIL classrooms. R. Ellis (2009) distinguishes between awareness as noticing and perceiving, and a more metalinguistic kind of awareness that involves an element of analysis. Schmidt (1994) argues that noticing also involves some degree of awareness, and so there is no completely implicit learning. On this view, implicit learning could rather be defined as learning without metalinguistic awareness when integration of new material into the learner's interlanguage system proceeds without conscious control. Others, e.g. N. Ellis (1994), claim that learning without awareness as noticing is possible and that much of our cognitive processing is actually unconscious. Thus, there is no complete consensus with regard to the definition of implicit learning although there is agreement on the notion that metalinguistic awareness is excluded in implicit learning (R. Ellis, 2009). Further, there seems to be agreement that explicit learning is a conscious and, in most cases, an intentional process. It is, however, difficult to determine if a student draws on implicit or explicit knowledge when performing a task, and probably both systems are used in students' language production (R. Ellis, 2009). A student may e.g. learn how to use a certain linguistic feature implicitly, and then, in a second phase, explicitly be able to draw conclusions about grammatical or other rules connected to this particular feature. R. Ellis argues that in performance, the two systems will never be completely distinct.

Studies comparing the effectiveness of implicit and explicit L2 learning have generally come to the conclusion that explicit learning seems to be more effective (R. Ellis 2009; cf. e.g. N. Ellis 1993). In addition, it has been suggested that explicit learning may be more effective with certain linguistic features; Gass, Svetics and Lemelin (2003) found that explicit attention to form and meaning had greater effect on lexis than on morphology or syntax. However, as pointed out by R. Ellis (2009, 2015), it is difficult to conduct studies that truly measure the effects of implicit learning as it may, e.g., be

difficult to verify the degree of awareness in a students' learning process; further, implicit learning may take longer than the time given in a study.

The discussion of explicit and implicit learning is of clear relevance for this thesis since learning from EE could be assumed to be implicit rather than explicit in comparison with education at school, although probably, both types of learning occur in both contexts. However, as pointed out already, it is impossible, in the analysis of students' writing, to establish with certainty the extent to which the language students use has been learnt explicitly or implicitly. Nevertheless, the concepts of implicit and explicit learning capture different ways of learning, where partly different underlying cognitive systems are activated, and hence, they contribute to our understanding of L2 learning.

Moreover, language *instruction* may also be implicit or explicit. Drawing on Housen and Pierrard (2006), R. Ellis (2009:16–18) defines implicit language instruction as delivered spontaneously in an otherwise communication-oriented activity, where target forms are presented in context without giving metalinguistic explanations. Explicit instruction, on the other hand, uses planned activities to pay attention to target form, often in isolation, and metalinguistic terminology is used to explain rules. Thus, in implicit instruction, the focus is not on awareness of linguistic rules but on providing students with language where linguistic features are present without bringing up the rules; instead, focus is often on meaning. In explicit instruction, metalinguistic awareness is central. Norris and Ortega (2001) identify three different positions in SLA theory on the issue whether or not explicit instruction actually has any true impact on learners' L2 development: *the non-interface position, the weak interface position* and *the strong interface position.* Krashen (1985, 1999), representing the non-interface position, argues that linguistic competence remains unaffected by instruction and that only input is needed and useful. In contrast, others claim that certain types of instruction, where the new L2 material is introduced in meaningful and salient ways, may speed up the acquisition process (cf. Smith, 1981; Doughty & Williams, 1998). The theoretical argument for the weak interface position holds that the goal of instructional interventions is to draw learners' attention to certain linguistic features, to make them notice such features in order to facilitate acquisition (cf. Smith, 1993). Research taking the strong interface position investigates how declarative knowledge – when the student can explain how a linguistic form is used – may be converted into implicit knowledge that is available for spontaneous L2 use, through the application of various instructional models

(cf. DeKeyser, 1997). These three theoretical positions related to the nature of L2 acquisition draw attention to the question how L2 learning can take place through implicit or explicit cognitive processing of new material, and to the issue of the extent to which implicit or explicit teaching will enhance L2 learning (Norris & Ortega, 2001; cf. e.g. N Ellis, 1994). However, implicit instruction is not necessarily followed by implicit learning, and explicit instruction not automatically followed by explicit learning. R. Ellis (2009:6) points out that "teachers might hope for such a correlation, but learners have minds of their own"; the outcome may not be what the teacher intended.

In a comparison of 49 studies, conducted between 1980 and 1998, of the effect of various types of implicit and explicit instruction, Norris and Ortega (2001) found that explicit, form-focused instruction seemed to result in more accurate and advanced L2 outcome in comparison with implicit approaches. Similar results were found in a more recent meta-analysis of 34 studies, where the effectiveness of both explicit and implicit instruction was compared in each of the studies included; Goo, Granena, Yilmaz and Novella (2015) found that explicit instruction seemed to be more effective than implicit L2 instruction. However, Pica (2009) points to methodological challenges in studies comparing explicit and implicit instruction as the analysed studies were often built on short-term treatment known to favour explicit knowledge rather than implicit, which would take longer to acquire and is more difficult to detect in isolated tests. Yet, as argued by Hulstijn (2005), it seems to be of great relevance for curriculum planners, teachers and learners to know how implicit and explicit teaching and learning tend to affect various linguistic L2 domain levels. Research findings on the effect of implicit and implicit instruction on L2 vocabulary are accounted for in the section on L2 vocabulary acquisition; as already mentioned, vocabulary use in writing is investigated in the studies included in the thesis.

Further, the relevance of the concepts of implicit and explicit instruction for this thesis mainly relates to instruction in the CLIL context, where language instruction could be more or less explicit. Some CLIL teachers may, for example, bring students' attention to linguistic features as they teach content, whereas others may only pay attention to subject content although they use the target language while teaching content. Even though a close study of CLIL instruction and practice is beyond the scope of this thesis, earlier research on CLIL, further accounted for in chapter 3, has found that there

tends to be more implicit than explicit language instruction in CLIL classrooms (c.f. Dalton Puffer, 2011).

Closely related to theories of implicit and explicit learning and instruction are theories of the roles of *input*, *output* and *interaction* in language acquisition. A fundamental idea in SLA theory is the need for L2 learners to have access to meaningful, comprehensible input (Pica, 2009). With ample input, spoken or written, at the right level, the input could supply the learner with evidence of the relationship between meaning and form, and hence, when input is repeated, its form and meaning relationships could become clear and available to the learner. Krashen (1976) claims that comprehensible and meaningful input on familiar topics is basically all that is needed for language acquisition, i.e. language input should be at a level just above the learner's current level of proficiency with content that is relevant to the learner. Such conditions could be met in language classrooms but also in classrooms where the language is used for the instruction of content. It is also possible that the conditions could be met outside school, e.g. in informal L2 contacts. Hence, the concept of input is central in the investigation of L2 development in two learning contexts undertaken in this thesis, particularly the nature of input accessed in EE and CLIL.

Further, Swain (1995, 2001) argues that students should also be given opportunities to modify their own production – output – for optimal learning, since output pushes learners to process language more deeply than when they process input. She argues that, in their efforts to communicate, students try to convey the intended meaning, and in doing so, they may become aware of – notice – what they are able to express and where they lack the competence needed to express the intended meaning. Consequently, the learner may seek information from peers, teachers or books, and so, generate new knowledge. Thus, output may stimulate language development as learners need to process language in more advanced ways in language production in comparison with the process needed for comprehension of input.

Moreover, the importance of negotiation of meaning in language acquisition is underlined by Long (1996). In interaction, the participants may use different strategies to clarify meaning when communication breaks down; they may request clarification or confirm the message, e.g. by repeating or paraphrasing a message. In educational contexts, teachers could provide tasks where such negotiation is triggered, e.g. in tasks where exchange of information is needed. Of course, this kind of negotiation could also occur in

communication outside school, e.g. in online forums where native and non-native speakers discuss topics of various kinds (cf. R. Ellis, 1991).

However, even if all students in a classroom would encounter the same input and be given the same opportunities to produce output and interact, some students would still master the L2 to a higher degree than others. In SLA research, the internal characteristics of a person are also studied to find the cause of observed differences. Learning motivation is an internal factor that has been in focus in a number of SLA studies (e.g Dörnyei, 2005; Gardner, 2006; Dörnyei & Ushioda, 2009; Lasagabaster, 2011; cf. Dewaele, 2009), since differences in motivation seem to partly explain variation in success among learners. Motivation may give insights into why people choose to do things, how long they carry on with it and the effort they put into the action (Dörnyei & Skehan, 2003). Gardner (2006) argues that the level of motivation is influenced by attitudes towards the learning situation. This is of considerable relevance for this thesis, where two different learning environments are in focus. If students in Sweden choose a CLIL programme targeting English, it is likely that their attitudes are positive, at least when they begin CLIL education, since it is an active choice made by the students (cf. Sylvén & Thompson, 2015). Also when choosing to engage in activities where English is used in the spare time, attitudes towards the situation can be assumed to be positive; students' involvement in various activities where they use English was investigated in studies I and III. Dörnyei points out that learner motivation relates both to real and imagined identities and self-concepts; the identity we strive for will influence what we do and our effort in doing it (Dörnyei, 2006). It is likely that the urge to be or to become a participant of an English-speaking community is a more highly motivating factor among students, who choose a CLIL option and/or who frequently use English in their spare time, in comparison with other students.

Further, research findings have indicated that conscientiousness, e.g. persistence and self-discipline, as well as openness to new experiences are factors that influence L2 learning (Busato, Prins, Elshout & Hamaker, 2000; Furnham & Chamorro-Premuzic, 2006). Moreover, negative attitudes or feelings, e.g. anxiety to communicate, seem to have negative effects on L2 learning, whereas communicative anxiety does not seem to be linked to performance in the L1 to the same extent, perhaps due to the fact that L1 production is automatised to a large degree (MacIntyre & Gardner, 1994). Dewaele (2009) reports that classroom-based language instruction seems to be

linked to higher levels of anxiety than instruction involving extracurricular use of the language. Further, a higher frequency of use and a higher level of self-perceived proficiency are often linked to low levels of anxiety (Dewaele, Petrides & Furnham, 2008). These findings are also of relevance in the present context since they indicate that anxiety-levels could presumably be low in extramural use of English, and so, in this respect, EE could provide beneficial learning conditions. Yet, as pointed out by Dewaele (2009), internal factors are not altogether stable as people change and interact in different contexts; hence, internal factors may vary according to context.

In summary, this thesis is based on the underlying assumption that language may be acquired both explicitly and implicitly. When engaged in spare-time activities, there is most likely very little explicit language instruction involved, but students may nevertheless learn implicitly, and also explicitly, if, e.g., they pay attention to and notice linguistic features in the input they encounter. Further, they may be pushed to develop their language output in communication with peers, e.g. when playing multiplayer computer games or when chatting. However, a large part of the time attention is probably not focused on linguistic features but on content in EE contexts. In education, both explicit and implicit language instruction are likely to occur. Teachers may explicitly teach how certain linguistic features are used and, at times, such instruction may result in learning. They may also provide students with input where the target forms are included, intending for implicit learning to occur. In CLIL instruction, attention to language may vary greatly and language instruction be more or less explicit, e.g. with regard to vocabulary and writing instruction. In chapter 3, the concept of CLIL and various CLIL practices are further described.

L2 writing proficiency

In the previous sections, certain general aspects of L2 acquisition were presented. In this section, attention is paid to the development of L2 writing proficiency, of specific relevance to this thesis (see chapter 1). Hyland (2009) basically identifies three approaches to writing research: focus on texts as products, focus on the writer and the process of writing, and focus on the role of the reader in writing. As already mentioned, the main focus of the studies included in this thesis is on texts as products, but the texts are also used as instruments to investigate something beyond them, more specifically, the

impact of EE and CLIL education on certain aspects of students' writing proficiency. Hence, not only the texts are in focus but also the writers, i.e. the students.

With regard to writing, the main body of research investigates L1 writing. The theoretical frameworks and methods used in L2 writing research are, by and large, derived from those used in various domains of L1 writing research, e.g. discourse analysis and text linguistics. In discourse analysis, global or macro features of a text are studied, e.g. how ideas are sequenced and how information is organised (cf. e.g. Aziz, 1988; Choi, 1988; Hinkel, 2001, 2003). In contrast, writing research at the micro level, e.g. of morphosyntactic and lexical features of text, may give detailed insight into language use. In many studies, discourse in L1 and L2 writing is compared (cf. e.g. Mohan & Lo, 1985; Taylor & Chen, 1991). In the studies included in this thesis, however, discourse analysis at the global level is not undertaken and comparisons are not made between L1 and L2. It is nevertheless relevant to bring forward some important findings from such research as they provide a background for the study of L2 writing at the micro level performed in the present studies.

As could be expected, Hinkel's (2011) overview of research comparing L1 and L2 writing shows that L1 writers are more proficient than those writing in their L2 – the opposite would have been highly surprising. Comparisons of L1 and L2 writers have shown that they organise and structure their texts in substantially different ways: for example, L2 writers tend to produce shorter texts and they more often leave their arguments and views unsupported. In addition, when L2 writers do support their claims, they do so more often than L1 writers, by expressing personal and emotional opinions. Further, writing research at the micro level has shown that vocabulary is less varied and less specific in texts by L2 writers than texts by L1 writers, also including more conversational and high-frequency forms (Hinkel, 2011). Further, nominalisations (e.g. *transportation, growth*) and abstract nouns are more rarely used by L2 writers. In addition, L2 writers more often use intensifiers that are common in everyday language (e.g. *totally, for sure*) but they do not use downscaling modifiers (e.g. *almost*) and adverbial modifiers as frequently as L1 writers (cf. Börjesson, 2014). Moreover, sentences and words are often shorter in L2 than in L1 writing. Hinkel (2011) concludes that, in fact, there are such profound differences between L1 and L2 writing that learning to write in an L2 is a fundamentally different process from learning to write in one's L1. However, it has been argued that L1 and L2 language knowledge

must not be seen as totally separate systems but as interrelated and partly overlapping ones: some aspects of writing proficiency seem to be transferable between languages (Kobayashi & Rinnert, 2012). Further, as pointed out by Hulstijn (2015), L2 learners' writing proficiency may vary considerably, as may L1 writers' proficiency, e.g. depending on their level of education and their age. Hulstijn argues that effort is needed by both L1 and L2 writers to achieve writing proficiency in various domains, and that well-educated L2 learners may become more proficient writers than L1 writers with little education. Hence, it seems difficult to generalise when making meta-analyses comparing L1 and L2 writing, but an overview of differences between L1 and L2 texts, such as Hinkel's (2011), may, nevertheless, indicate some areas where L2 learners tend to struggle.

In studies of language use at the micro level, quantitative methods are often used as the statistical significance of differences in the use of certain linguistic features is compared between groups, e.g. L1 and L2 groups (Hinkel 2011). This is of particular interest in the present work, as students' use of some of the linguistic features mentioned by Hinkel, e.g. their use of intensifiers and the average word and sentence length in the students' texts, is analysed in a detailed manner in study I. Comparisons are not made between L1 and L2 writers but between L2 groups with various amounts of extramural English, for the purpose of investigating if EE may contribute to a higher level of writing proficiency (see chapter 4).

However, writing proficiency is a multifaceted proficiency. Being a proficient storywriter, for instance, does not automatically imply high proficiency in academic writing. When reading, it is normally possible to identify the text type, e.g. if the text is a lab report or an argumentative essay; language use differs between text types. When writing in different situations, specific linguistic choices have to be made. Thus, to become a proficient writer, whether in an L1 or an L2, it is necessary to learn how to make such linguistic choices according to context. In *Systemic Functional Linguistics* (SFL), a theoretical framework describing the functions of language in different contexts (Halliday, 2004), linguistic choices applicable in certain situations are called *registers*: "A register is a functional variety of language – the patterns of instantiation[3] of the overall system associated with a given type of context" (Halliday, 2004:27). Schleppegrell (2004:45) defines register in the following

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[3] Halliday sees language system and text as related through a cline of instantiations, as *climate* and *weather* are related, although the perspectives vary from generalised to more specific (Halliday, 2004: 26-27).

way, rephrasing Halliday: "Register is the term for the configuration of lexical and grammatical resources which realizes a particular set of meanings". Register is a key feature in a functional analysis of language use. A register does not only include certain lexical choices, but also ways to express oneself in that particular context in terms of grammar or structure. Register variation can be regarded as responses to differences in the situational context. A writer would, e.g., choose different vocabulary and text structure when writing a business letter compared to a lab report. In SFL, *field* (what is talked about), *tenor* (the relationship between interlocutors), and *mode* (expectations how text types should be organised), may influence lexical and grammatical choices (Schleppegrell, 2004). In the present thesis, register is a key concept since students' writing in some different contexts is studied and compared. Register variation at the lexicogrammatical level is in focus, particular attention being paid to vocabulary (see section on L2 vocabulary acquisition below and chapter 4).

Martin and White's (2005) model for text analysis of the language of evaluation, *appraisal*, building on the SFL framework, is also used in one of the studies (study I). In the appraisal system, three interacting domains are in focus: *attitude, engagement* and *graduation*. Expressions for *attitude*, such as feelings, emotional reactions, judgement and evaluation, are in focus in the first category. *Engagement* is concerned with the sources of attitudes and different voices in discourse, whereas *graduation* focuses on the grading of phenomena. An analysis of appraisal may show, e.g., how the writer's attitude and stance are conveyed to the reader through the use of various linguistic resources. A more detailed description of the appraisal system and the use of it in this thesis are provided in study I (sections 2.3.2 and 6.1–2).

In research on register variation, corpus-based methods are particularly applicable, as linguistic features typical of a certain register may be identified in corpora covering material from different contexts (Biber, 2009). Studies of linguistic variation in a range of written and spoken registers have shown that there are few absolute boundaries between the two modes; rather, there are differences between various types of writing and speech (Biber, 2009; see also Biber, 1986). However, as pointed out by Biber, the production of written registers, which is in focus in this thesis, takes place under very different circumstances in comparison with many spoken registers. When writing, there is often more time to think than when speaking, and there are greater possibilities to revise and edit a written text (cf. Hulstijn, 2015).

Of particular relevance for the present thesis is research identifying linguistic features that are typical of academic registers, as students' use of academic vocabulary is analysed in studies II and III. The findings reported below refer to L1 writers but they are clearly of relevance for the present context as they indicate how language is generally used in academic contexts compared to other contexts. In written university registers, a greater diversity of vocabulary, a larger number of nouns, nominalisations (e.g. *assumption*) and linking adverbials (e.g. *for example*) were found than in spoken registers (Biber, 2009). Further, more frequent use of the passive voice (e.g. *was determined*), of relative clauses and prepositional phrases was also found in written university registers. In a comparison of adult-written academic texts and texts written by teenagers, Snow and Uccelli (2009) identified a number of features in the adult-written texts that were not found in the teenage-written texts, e.g. higher lexical density, modal verbs, a wide variety of connectives, stepwise logical argumentation, and a detached and authoritative stance. Snow and Uccelli's (2009) overview of typical features of academic language, including findings from other studies, also identified high lexical diversity, precision in lexical choices and connectives, frequent use of formal/prestigious expressions and abstract/technical concepts as typical traits in academic writing.

Hence, as there are great differences between language use in everyday, informal contexts and in academic contexts, it has been suggested that students, whether instructed in their L1 or L2, must be taught how to use academic language explicitly in order to master it, mainly because they will not encounter academic language in other contexts often enough to learn how to use it implicitly (Schleppegrell, 2004). Gardner and Davies (2014) also point to the importance of academic language knowledge. For example, academic vocabulary knowledge is imperative for academic reading ability, which is linked to academic success and, in the longer perspective, to societal and economic well-being (cf. Corson 1997). Gardner and Davies claim that insufficient academic vocabulary knowledge is one of the reasons behind the gap in academic achievement that seems to exist between different groups of students, where those who are economically disadvantaged and second language learners fall behind (cf. Townsend, Filippini, Collins & Biancarosa, 2012). In connection with bilingual education, Cummins (1979, 2008) suggests that fluency in everyday language, *basic interpersonal communicative skills* (BICS*)*, does not necessarily imply fluency in *cognitive academic language proficiency* (CALP). According to Cummins, metalinguistic insights are needed for

language use in academic contexts, but not necessarily in everyday communication. Hulstijn (2015) makes a similar distinction between *basic language cognition* (BLC) and *higher language cognition* (HLC). However, the purpose of Cummins' distinction is to stress the importance of CALP for educational success, whereas Hulstijn's focus is on underlying cognitive aspects of individual differences in language ability. According to Hulstijn, L2 learners may become as proficient as L1 users in HLC domains, where writing proficiency is included, provided that they have similar backgrounds e.g. with regard to level of education, age and intellectual abilities. It is rather within BLC domains, where, e.g., pronunciation and spontaneous speech are included, that L2 learners may never reach L1 proficiency.

In this thesis, students' use of academic language is in focus in studies II and III. The studies are limited to investigating the use of academic vocabulary although many aspects beyond vocabulary level also define academic registers, as the overview in this section will have shown. It is, however, beyond the scope of this thesis to cover all other aspects. In the next two sections, theoretical assumptions and research related to L2 vocabulary acquisition in general are accounted for. Particular attention is paid to the definition of academic vocabulary, as such vocabulary is in focus in two of the studies.

L2 vocabulary acquisition

The lexicon is probably the most important language component for L2 learners; without words, there is no language (Gass, 2013; Elgort & Nation, 2010). As pointed out by Gass, a message is likely to be understood even if there are some grammatical mistakes in a sentence, but if an important word is missing, the result may be complete misunderstanding; thus, lexical errors more often than grammatical ones disturb communication. Since language is built with words, vocabulary knowledge is closely connected with writing proficiency. Laufer and Nation (1995) showed that the vocabulary size of the writer is a major determinant for successful written production, particularly for L2 learners. Research findings have shown that very often scores for lexical measures, e.g. vocabulary size and range, correlate with holistic scores of writing quality (cf. e.g. Crossley, Salsbury & McNamara, 2012). Knowing a word could, however, imply knowledge at different levels: (1) the *form* of the word could be known, i.e. pronunciation/spelling; (2) the *meaning* of the word

could be known to various degrees, e.g. with regard to different meanings of the word or associations connected to the word; and (3) the *use* of the word could be known, e.g. the grammatical function of the word, its collocations, and in what registers it is used (Nation, 2001; cf. Gass, 2013). An important distinction of specific relevance for this thesis is also made between *receptive* and *productive* knowledge of vocabulary (Gass, 2013; Laufer & Paribakht, 1998). Having receptive knowledge implies that the word is understood when it occurs in speech or writing, whereas productive knowledge means that it can also be used in production of speech or writing. In this thesis, productive use of vocabulary is in focus. Normally, reception precedes production; it is easier to understand words than to use them in speech or writing (Elgort & Nation, 2010). Hence, a person's productive vocabulary is always smaller than the receptive vocabulary (Gass, 2013; Laufer, 1998). Further, research findings have indicated that students who score high on the Vocabulary Levels Test (VLT; Nation, 2001), measuring size and range, use more sophisticated vocabulary when writing (Laufer & Nation, 1995). Thus, even if a person's receptive vocabulary is larger than the productive, there is, of course, a correlation between the two. A number of research studies have tried to measure the size of different types of vocabulary: Schmitt and Meara (1997) found that L2 learners' receptive vocabulary consisted of 3900 words after 5–6 years of learning, whereas Laufer (1998) found that receptive vocabulary size was 3500 words and productive vocabulary size 2550 words after 6–7 years of L2 acquisition (cf. Merikivi and Pietilä, 2014). As could be expected, highly frequent vocabulary seems to be easier to retain and use in language production than more infrequent vocabulary, such as academic vocabulary (Laufer, 2005).

Nation's (2013) survey of studies of the vocabulary size of native speakers of English indicated that an educated adult native speaker of English knows under 20 000 words, and also that roughly 1000 words per year are added to a native speaker's vocabulary from the age of three to the age of 25 (cf. Goulden, Nation & Read, 1990; Zechmeister et al., 1995; Biemiller & Slonim, 2001). Nation points out that it seems to be very difficult for an L2 learner of English to learn as many words per year. This assumption has been confirmed, e.g. in a longitudinal study over five years of L2 vocabulary growth among Taiwanese English learners, aged 15 when the study started, where Webb and Chang (2012) found that the number of words that students learnt every year varied greatly – between 18 and 430.

Particularly in relation to L2 vocabulary, it is of relevance to know the range and size of vocabulary needed for various purposes. Nation (2006) found that a vocabulary of approximately 3–4000 word families is needed to get 95% text coverage in novels, spoken English, newspapers and children's movies, whereas 6–9000 word families are needed to cover 98%. He suggests that a reasonable level when choosing texts for learners in education is to aim at 98% coverage for written texts and 95% for spoken English (cf. van Zeeland & Schmitt, 2012a). If the learner understands 98% of a text, which implies that approximately one word in 50 is unknown, the text is manageable and the learner may be able to understand the meaning of the unknown words from context or by looking them up. If a "new" word is repeated 10–20 times in the text, it is likely that the learner will have learnt the word (Nation, 2013; cf. McQuillan & Krashen, 2008; Cobb, 2007, 2008). Vocabulary acquisition that occurs in this manner, when the learner is focusing on comprehension of content, e.g. while reading novels, without explicit focus on learning vocabulary, is often called *incidental vocabulary learning* (Laufer & Hulstijn, 2001). Linked to the discussion about implicit and explicit learning/instruction accounted for earlier, there is a similar discussion about incidental vocabulary acquisition. As already mentioned, Krashen (1989) argues that L2 vocabulary is acquired through exposure to input, and that instruction is not necessary or even useful. Others, e.g. Laufer (2005), argue that comprehensible input is insufficient for vocabulary acquisition. She claims that students who understand the overall meaning of a message do not pay attention to the precise meaning of individual words. Further, she refers to research by Grabe and Stoller (1997): Grabe himself learnt 350 words after reading 3 hours per day for 5 months, which is a considerable amount of time (cf. McQuillan & Krashen, 2008; Cobb, 2007, 2008). Laufer's point is that for vocabulary learning, formal instruction is more effective than incidental learning. Elgort and Nation (2010) also argue that in incidental learning, subtle nuances in the meaning or the use of vocabulary items may be lost, as there are limited opportunities to encounter a word in a sufficient number of contexts for the learner to fully grasp the meaning of it and how it is applied. They suggest that form-focused instruction will enhance the quality and depth of learners' vocabulary acquisition (cf. Schmitt, 2008).

There is also a body of research investigating how vocabulary acquisition can be enhanced in instruction. Vocabulary activities after reading a passage seem to result in the growth of both receptive and productive vocabulary

knowledge, whereas students who were given comprehension questions after reading the passage only increased their receptive vocabulary (Gass, 2013; cf. Paribakht & Wesche, 1997). Hence, it seems that activities focusing on vocabulary will enhance vocabulary knowledge to a larger extent than when only content is in focus. It has also been shown that the level of involvement affects retention of vocabulary: students who were asked to use the target vocabulary in writing, which is an activity requiring high involvement, retained more vocabulary than students who read a passage with vocabulary in the margin or students who read a passage and then filled in vocabulary in blanks (Hulstijn & Laufer, 2001; cf. Kim, 2008). These findings support the notion that output – language production – is important for language acquisition (Gass, 2013; Laufer, 2005; cf. Swain 1995). Further, explicit vocabulary instruction seems to be beneficial for the transformation of receptive vocabulary into productive. Laufer (2005) found that target vocabulary of which students already had receptive knowledge was used more often in production by students who had received explicit instruction of the target vocabulary than by those who had not. Recognising the importance of instruction does not, however, rule out incidental vocabulary learning: Schmitt (2008) points out that several studies (e.g. Pigada & Schmitt, 2006) have found considerable vocabulary gains from reading. The number of repetitions needed seems to vary greatly, depending, e.g., on the proficiency level of the learners, as learners at higher proficiency levels seem to acquire vocabulary more rapidly (Zahar, Cobb & Spada, 2001). Still, Schmitt (2008) argues that even if considerable vocabulary gains occur from reading, it seems difficult to reach a level of knowledge needed for productive use from exposure only.

As already mentioned, productive use of vocabulary is investigated in this thesis. In studies II and III, productive academic vocabulary is in focus. In the next section, the concept of academic vocabulary and how it may be defined is further elaborated.

Academic vocabulary

As accounted for in the section on L2 writing development, writing in academic registers may be particularly challenging for students, not least for L2 writers, as language use in academic contexts may differ substantially from language use in other contexts, such as speaking in everyday situations or when writing narratives. These differences apply both at the macro level, e.g.

in the way ideas are presented and sequenced, and at the micro level, e.g. with regard to lexical choices (Hinkel, 2011; cf. Snow & Uccelli, 2009). In studies II and III, lexical choices are in focus, more precisely, students' use of academic vocabulary in writing. However, the definition of academic vocabulary is neither universal nor clear-cut (Baumann & Graves, 2010). Broadly, academic vocabulary could be defined as vocabulary that occurs more frequently in academic contexts than in other contexts, e.g. in fiction. Further, academic vocabulary is often defined as either *domain-specific* or as *general*. Domain-specific vocabulary consists of content-specific words used in different disciplines, such as history or biology, whereas general academic vocabulary consists of words that appear across many or all disciplines but not as frequently in non-academic contexts (Baumann & Graves, 2010). Domain-specific academic vocabulary is sometimes called technical vocabulary (cf. Nation, 2013).

According to Gardner and Davies (2014), the value of domain-specific wordlists is indisputable, since such words are necessary for academic understanding. It is, for instance, difficult to understand or write a text about *nuclear power* unless you know such domain-specific words as *fission, turbines* and *generator*. However, there have been doubts as to whether there is actually any value in identifying vocabulary items that appear across different domains, since such words may have different meanings in different disciplines (cf. Hyland & Tse, 2007). Gardner and Davies claim that semantic variation may appear in any high-frequency wordlist, not only in academic wordlists, and that a core list of academic high-frequency vocabulary is invaluable in academic training. They argue that lists of general academic vocabulary, including words such as *available, reliable* and *specific*, may be of great value as such vocabulary appears across disciplines and could be used in different academic contexts.

In the present context, where the chief purpose is to analyse the development of students' writing proficiency in academic registers, focusing on academic vocabulary, both general and domain-specific vocabulary should be of obvious interest. Here, however, only general academic vocabulary is analysed. There are several reasons for this. First of all, general academic vocabulary is clearly useful as it can be used in different academic contexts, not only in one. Further, as the development of academic vocabulary is analysed in relation to the possible impact of extramural use of English and CLIL education, it seems more relevant to investigate general than domain-

specific academic vocabulary. General academic vocabulary may possibly occur in various EE contexts and, even more likely, in CLIL education, regardless which subjects students are specialised in (e.g. the Natural or the Social Sciences), whereas highly domain-specific vocabulary only occurs in very specific contexts.

As already mentioned, corpus-based methods are highly applicable when studying language use, e.g. vocabulary. Frequency-based lists of vocabulary from corpora, such as the *British National Corpus* (BNC; Nation, 2004) and the *Corpus of Contemporary American English* (COCA; Davies, 2012), are often used in teaching and in research of the size and range of students' vocabulary. Both the BNC and the COCA consist of language samples from a great variety of contexts. The BNC consists of 100 million words and the COCA of 450 million words of spoken English, fiction, popular magazines, newspapers and academic text. Based on the corpora, frequency-based lists show the occurrence of words, ranging from the most common to the most infrequent ones. L2 learners are, of course, more likely to encounter and learn frequently occurring vocabulary than infrequent words. Knowledge of words beyond the 3000 most frequent words is regarded as particularly important in academic contexts (Hyland & Tse, 2007). In study I, frequency-based wordlists are used for the purpose of investigating the extent to which students include vocabulary beyond the 3000 most frequent words in their texts.

Apart from general frequency-based lists, academic word lists have also been compiled from corpora, extracting vocabulary that occurs more frequently in academic contexts than in non-academic ones. In studies II and III, two corpus-based general academic vocabulary lists, the *Academic Word List* (AWL; Coxhead, 2000) and the *Academic Vocabulary List* (AVL; Gardner & Davies, 2014), are used as standards of reference for defining academic vocabulary. The AWL was extracted from a corpus of 3.5 million running words of written academic text about the Arts, Commerce, Law and Science, mainly from New Zealand but also from other English-speaking countries e.g. Great Britain. The AVL was compiled from the academic section of the COCA (Davies, 2012), which includes more than 120 million words out of the total of 425 million words in the COCA. The texts on which the AVL corpus is based were published in the USA, covering nine disciplines.

The principles behind the compilation of an academic word list are not universal, however. Different methods may be used, which, naturally, will have implications for the inclusion of vocabulary items. The AWL is based on

word families, whereas the AVL is *lemma*-based. A word family is defined as a stem plus affixed forms where suffixes and prefixes are added to the stem; e.g. *develop, developed, developing* and *developer* belong to the same word family (Bauer and Nation, 1993). Gardner and Davies (2014) argue that a word list based on lemmas (i.e. individual words plus inflections) is more useful, since a word family may contain a large number of words with distinct meanings. For instance, *reactivate* and *reacted,* two words with widely different meanings, belong to the same word family, but are considered as two separate lemmas. The AWL consists of 570 word families and the AVL contains 3000 lemmas. Another important difference between the two lists is the exclusion of vocabulary found in the General Service List (GSL; West, 1953) in the compilation of the AWL. The GSL includes frequent vocabulary, but, as pointed out by Gardner and Davies (2014), frequently used vocabulary in 1953 may not be as frequently used today; hence, the AWL may not be up to date. On the other hand, a number of vocabulary studies have used the AWL, which has shown consistent coverage of approximately 10% of vocabulary in academic texts in various disciplines (Coxhead, 2011). The AVL is more recent and, consequently, not yet as widely used, but based on what is known so far, the coverage of the AVL seems to be higher. The AVL covers 13.7% of the academic section of the BNC compared to the AWL, which covers 6.9% (Gardner & Davies, 2014). The different principles applied in the compilation of the lists may, of course, have implications for their usefulness in measuring development in academic vocabulary use in students' writing. As already mentioned, the two lists were used in study II as standards of reference: the vocabulary in students' essays was compared to the two lists. A more detailed description of the lists and how they are used in the studies are provided in chapter 4 (see also Study II).

*   *   *

In this chapter, the theoretical framework of the thesis has been outlined and research findings of relevance for the thesis have been accounted for. The theoretical underpinnings of the thesis are mainly found within SLA theories, where implicit versus explicit learning, knowledge and instruction are central concepts in studies of L2 development. In particular, attention has been drawn to the development of L2 writing proficiency and vocabulary, especially productive academic vocabulary. In the next chapter, the two contexts of

English learning in focus in this thesis – CLIL education and extramural use of English – are explored.

Chapter 3 English in two contexts

In L2 learning, a number of factors, learner-internal as well as external, often in combination, will affect the outcome, as accounted for in chapter 2 (cf. Elgort & Nation, 2010; Gardner, 2006). The learning environment seems to affect learning to a great extent; learners may be more or less enthusiastic and motivated to learn in different environments. For example, opportunities to encounter linguistic input at an appropriate level and to use the language in meaningful production may differ (Dörnyei, 2006; Dewaele, Petrides & Furnham, 2008). Two learning contexts are in focus in this thesis: CLIL education and extramural use of English. In this chapter, the two learning contexts are defined and described.

CLIL

In educational programmes based on content and language integrated learning, CLIL, an L2 is used, to a greater or smaller extent, as the language of instruction of non-language school subjects. Using an L2 may, of course, be challenging for students as well as teachers, but CLIL may also provide opportunities for more substantial language learning and teaching than in traditional foreign-language classrooms, as it is based on subject content (Genesee & Lindholm-Leary, 2013). In traditional language instruction, the time allotted for L2 lessons is often limited to a few hours per week, whereas in CLIL, the L2 is encountered and used in a larger number of lessons, as it is the language of instruction of various school subjects. Hence, the time aspect is an important factor underlying CLIL, as CLIL students encounter and use the L2 more often than in traditional education.

The term CLIL was established in the 1990s in connection with initiatives within the European Union for defining and describing visions and suggestions for an educational approach that would enhance language proficiency among the young generation in the European Union, promoting personal and professional mobility in the Union (Eurydice, 2006, cf. Cenoz, Genesee & Gorter, 2014). CLIL has been defined as "… a generic term to describe all types of provision in which a second language (a foreign, regional

of minority language and/or another official state language) is used to teach certain subjects in the curriculum other than language lessons themselves" (Eurydice, 2006:8; see also Genesee & Lindholm-Leary, 2013). The definition suggests that CLIL is a broad and comprehensive term, allowing for various organisational models. The vision of plurilingual European citizens, who communicate and work across Europe, seems to be the driving force behind CLIL but, as is clear from the above definition, another purpose of CLIL in Europe is to protect and promote the use of minority languages in danger of extinction, e.g. Basque and Irish (Dalton Puffer, 2011). There are also examples of content and language integrated education in Europe before the 1990s, when the EU suggested more widespread implementation of CLIL. In Germany, for example, along the Rhine, CLIL targeting French was offered in the 1960s, mainly for the purpose of promoting reconciliation between France and Germany (Breidbach & Viebrock, 2012). However, as English has become increasingly dominant in global communication, English is at present by far the most common target language in CLIL education in Europe, Sweden included (Dalton-Puffer, 2011; Yoxsimer Paulsrud, 2014; cf. Terlević Johansson, 2013). In Sweden, CLIL programmes were initiated on a small scale by individual teachers or schools as early as the 1970s (Sylvén, 2004; Dentler, 2007). In the 1990s, there was an increase in the number of schools that offered CLIL programmes, partly due to the curriculum introduced in 1994, which increased the autonomy of schools (Dentler, 2007). As already mentioned, approximately 27% of all upper secondary schools in Sweden offered a CLIL programme in 2012 (Yoxsimer Paulsrud, 2014).

However, the idea of integrating content and language instruction was not new when it was introduced in Europe. The origin, or rather the breakthrough, of this approach was the Canadian *immersion* programmes introduced in the 1960s, targeting French and English, with successful outcomes. Students in immersion programmes gained high competence in the target language without falling behind in their L1 or in subject content knowledge (cf. e.g. Bruck, Lambert & Tucker, 1974; Swain & Lapkin, 1982). Although immersion and CLIL share the same basic ideas of using the target language in subject content teaching, there are also some differences between the two versions of content and language integrated instruction. Teachers are, for instance, more often native speakers of the target language in immersion than in CLIL, and immersion more often starts at an early age compared with CLIL instruction (Lasagabaster & Sierra, 2010; Nikula, 2005). Still, immersion

and CLIL share many characteristics and neither of them are clearly defined concepts in every detail (Cenoz et al., 2014). In practice, both types of instruction show a great deal of variability. For example, the extent of L2 use may differ and, further, the nature or status of the target language depends on sociocultural factors in the context in which instruction is staged, as the target language may be a minority or a majority language, a foreign language or a second language. CLIL and immersion can be regarded as realisations of the same basic idea: non-language content is used as a vehicle for promoting second language proficiency (Genesee & Lindholm-Leary, 2013). Genesee and Lindholm-Leary (2013) as well as Cenoz et al. (2014) argue that different kinds of content-based instruction should be embraced by this comprehensive definition of CLIL; immersion could be regarded as a variety of CLIL. They also point out that teachers, students and researchers would all benefit when experiences and results from various CLIL/immersion contexts are shared. In this thesis, this comprehensive definition of CLIL is embraced.

More specifically, drawing on theories of L2 learning described in chapter 2 – mainly Krashen's (1982, 1985) theory underlining the importance of meaningful input for L2 acquisition, Swain's (1995, 2000) theory of the necessity of output for enhanced L2 development and Long's (1996) theory of the role of interaction – the assumption underlying CLIL is that language learning is enhanced when L2 input, output and interaction are integrated in non-language subject instruction (cf. Coyle, Hood & Marsh, 2010). Genesee and Lindholm-Leary (2013) argue that there are many good reasons for using content-based language instruction in contrast to traditional language instruction, where language learning and academic development are often separated, since language is taught in isolation and sometimes with the use of trivial topics. Through academic subject content, students are exposed to new and complex language, which, presumably, will help them connect meaning and language. Genesee and Lindholm-Leary argue that, in using a content-based approach, language learning becomes more substantial than otherwise, as students encounter variations of language use related to content.

On the other hand, research has shown that there is often a strong focus on content rather than language in content-based language instruction, and so students may not pay attention to linguistic issues. Teachers tend to be satisfied as long as students understand and can communicate content; consequently, there is little focus on accuracy or linguistic development (Genesee & Lindholm-Leary, 2013; Lyster, 2007; c.f. Swain, 1996). Also,

teachers who teach in an L2 often use language that is at a lower level than necessary, as a precaution, since they want to make sure that all students understand what is said. Further, limited language competence among CLIL teachers may restrict language use in the classroom (Dalton-Puffer, 2011). Dalton-Puffer points to evidence suggesting that CLIL instruction tends to be more teacher-oriented than ordinary instruction, since CLIL teachers' limited L2 competence makes them hesitant to leave prepared drafts of the lesson. Similar observations were made by Lim Falk (2008); in a study of Swedish CLIL classrooms, she found that there was little interaction in classrooms where English was used. Nikula (2010) reported, from a study in Finland, that the CLIL teacher, who taught some classes in the L1 and some in the L2, clearly used less varied and less subtle language in the L2 than in the L1. Even so, Nikula also found that students tended to be more engaged and active during CLIL lessons. She suggests that, as both teachers and students are L2 speakers in CLIL classrooms, they act on more equal terms. However, Bruton (2011) argues that low achievers may suffer more than necessary when subjects are taught in another language than their L1 (cf. Breidbach & Viebrock, 2012).

In view of the limited focus on language in CLIL, Lyster (2007) suggests that content and language integrated instruction would benefit from a stronger focus on language. He argues that CLIL instruction, to a large extent, seems to build on the assumption that incidental language learning will occur while focusing on content, referring to studies where teachers adhered to this belief (cf. Netten, 1991, Salomone, 1992). In Lyster (1998), some teachers claimed to have vague ideas about how they actually focused on language in the classroom, stating that their main focus was on content. Hence, Lyster (2007) sees some potential in content-based instruction that has yet to be realised, suggesting a more balanced approach, where instructional activities and interactional feedback counterbalance the communicative orientation. He argues that "[t]he effort required for learners to shift their attention to language form in a meaning-oriented context is predicted to leave traces in memory that are sufficiently accessible to affect the underlying system" (Lyster, 2007:4). Therefore, in line with, e.g., Norris and Ortega (2001), Lyster claims that a certain amount of explicit language instruction will enhance learning in content and language integrated classrooms.

With regard to vocabulary acquisition, Merikivi and Pietilä (2014) argue that optimal vocabulary learning could be expected when explicit and implicit

learning conditions are combined. They claim that such conditions could be met in CLIL education as formal instruction is combined with authentic input and opportunities to interact and practise. However, they also point out that such conditions could be met in non-CLIL contexts as well (cf. Laufer, 1998).

In spite of the limited focus on language in CLIL instruction reported in the studies just mentioned, research on the effects of CLIL on L2 proficiency mainly shows positive results for CLIL students compared with non-CLIL students. CLIL students tend to score higher in L2 testing than non-CLIL students, and their receptive and productive L2 vocabulary is larger, including low-frequency words to a greater extent (Dalton-Puffer, 2011). For instance, Merikivi and Pietilä (2014) investigated English receptive and productive vocabulary among CLIL and non-CLIL students in grades 6 and 9 in Finland, finding that CLIL students' vocabularies were larger. The difference between receptive and productive scores was larger in frequency bands beyond the 3000 most frequent words in both CLIL and non-CLIL groups. Merikivi and Pietilä conclude that the 3000 most frequent words seem to be available for production more readily than more infrequent words. Further, it has been shown that CLIL students in Finland tend to write longer, more complex and accurate sentences than non-CLIL students (Järvinen, 1999), and that their overall proficiency is higher in national tests covering reading, writing, listening, speaking and grammar (Valtanen, 2001).

In a study among Spanish students in upper secondary school, Ruiz de Zarobe (2008; 2010) found that CLIL students outperformed non-CLIL students with regard to choice and use of English vocabulary in speech as well as in writing. Further, the results indicated a more positive development among CLIL students over time, also with regard to other aspects of writing proficiency than vocabulary use, e.g. in the way texts were organised and in the use of grammar. Jexenflicker and Dalton-Puffer (2010) found that CLIL students' vocabulary range and accuracy were judged significantly stronger by raters than those of non-CLIL students in a study among 16-year-old students in Austria. The use of grammar and the organisation of the texts were also judged significantly stronger among CLIL students. Further, in a study in Hong Kong, Lo and Murphy (2010) reported that receptive vocabulary knowledge as well as productive vocabulary use in writing increased significantly more among English immersion students (aged 11–15) than among those who studied English as a foreign language in a traditional language class. There are also some indications that the degree of accuracy is

higher in CLIL students' writing than in other students' writing; their spelling is better, as is their use of tenses (Dalton-Puffer, 2011). It seems that CLIL students use not only a wider range of vocabulary, but also a more elaborate grammar, e.g. complex structures (Jexenflicker & Dalton-Puffer, 2010; Ruiz de Zarobe, 2010). Thus, CLIL instruction seems to promote different aspects of L2 writing proficiency.

However, some of the positive results just mentioned have been disputed by results from other studies. For instance, a longitudinal study performed by Admiraal, Westhoff and de Bot (2006) of CLIL and non-CLIL students in upper secondary school in the Netherlands showed that initial differences in proficiency level in English receptive vocabulary knowledge remained at the same level rather than increased; CLIL students scored higher from the start and CLIL instruction did not widen the gap. Further, Rumlich (2013) and Bruton (2011) claim that very few studies of CLIL have actually included pre-tests, making it difficult to draw any firm conclusions on the effects of CLIL. Bruton argues that the positive results for CLIL students' achievements that have been reported are not surprising since the students are often, some way or other, selected for CLIL programmes, where they receive more language exposure. Obviously, a serious methodological concern arises in any study of the effect of CLIL if initial differences between CLIL and non-CLIL groups cannot be controlled for. In such cases, it is impossible to decide if higher proficiency levels among CLIL students are achieved as an effect of CLIL or because CLIL students were higher achievers even as they started their CLIL education. In studies II and III, data collected at the start of the CLISS project provide baseline information; hence baseline differences are controlled for in statistical analyses of development over time.

In a Swedish context, research has so far not convincingly shown that CLIL instruction has the positive impact on the progress of L2 proficiency that some of the studies reported above have found (Sylvén, 2013). In fact, Hyltenstam's (2004) survey of Swedish CLIL research concludes that Swedish CLIL students' English proficiency does not seem to improve more than non-CLIL students' proficiency (cf. Washburn, 1997). There are, however, some findings, reported by Sylvén (2004), showing that Swedish CLIL students may also score higher on L2 vocabulary tests than non-CLIL students, but since certain background factors, especially parents' level of education and students' use of extramural English, seemed to influence vocabulary knowledge as well, no conclusions about the effect of CLIL could be drawn. In the longitudinal

study conducted at upper secondary level, Sylvén (2004) found that CLIL groups scored higher on vocabulary tests already in the pre-test, and further, that they improved their results more than non-CLIL groups; however, non-CLIL students with frequent use of EE scored as high as those CLIL students who more rarely used English outside school. Further, Edlund's (2011) study of Swedish CLIL and non-CLIL students in upper secondary school showed that CLIL students used more varied vocabulary than non-CLIL students. Comparisons were also made with a group of students from Great Britain, whose L1 was English: in fact the Swedish CLIL group varied their use of vocabulary to the same extent as the L1 group. However, no information about baseline proficiency among CLIL and non-CLIL students was available, as development over time was not investigated in this study.

Of special interest here are the baseline results from a study involving the same students as in studies II and III. Results from the Vocabulary Levels Test (VLT; Nation, 2001) showed that the CLIL students had a significantly larger receptive vocabulary than the non-CLIL students already at the start of their CLIL education (Sylvén & Ohlander, 2014). Alongside sections covering vocabulary items at different frequency levels, the VLT included a section with vocabulary items selected from the AWL (Coxhead, 2000). In this section too, CLIL students scored significantly better than non-CLIL students. Furthermore, findings from studies of attitudes towards English and motivation among the same students indicated that CLIL students' felt more confident in using English than non-CLIL students (Sylvén & Thompson, 2015; Thompson & Sylvén 2015). In studies II and III, productive vocabulary use in writing among the same students is investigated, comparing development in CLIL and non-CLIL groups.

Thus, summing up research findings with regard to CLIL, language instruction seems to be restricted in CLIL education and the level of language input CLIL students encounter in CLIL classrooms may also be limited, although obviously, there are variations. However, CLIL students not only encounter the L2 via their teachers; books and other material in the L2 are often used in CLIL. Further, students may use the L2 in oral and written production in CLIL, and so opportunities for language learning through output are offered. In addition, the high levels of motivation among CLIL students may enhance their learning. As the overview of research has shown, CLIL students tend to reach higher proficiency levels than non-CLIL students, although the absence of pre-tests in many studies should be noted.

In research of CLIL in Sweden, positive effects of CLIL have not been found to the same extent as in many other countries; other background factors, e.g. the presence and use of English in students' spare time, seem to be as important for L2 proficiency as CLIL instruction (see also Sylvén, 2013).

In the next section, the other L2 context in focus in this thesis, extramural use of English, is explored.

Extramural English

As already accounted for in the introductory chapter, young people in Sweden spend a considerable time using different media (Swedish Media Council, 2015). Clearly, the Internet has greatly increased learners' opportunities to encounter and use different languages, English most of all. Thorne, Black and Sykes (2009) argue that language study is no longer separated from social life, as learning may as well occur in interaction on the Internet, e.g. playing online games, as in school (cf. Bunting & Lindström, 2013). Further, Bhatia and Ritchie (2009) point to the enormous change in the way language is used and communication is carried out that the Internet has brought about. They argue that this revolution has impacted on our conceptualisation of learning and teaching, as both may occur in different contexts – not only at school (cf. Sylvén & Sundqvist, 2012b). Of course, English may be encountered through more traditional media as well, e.g. printed books, newspapers and TV. In studies I and III, students' use of English outside school is investigated, and the possible impact of extramural English (EE) on certain aspects of students' writing proficiency, as manifested in their essays, is analysed. Hence, the two studies investigate the extent to which EE seems to contribute to L2 writing proficiency, although obviously, in these limited studies, only a few aspects of writing proficiency can be investigated – here, mainly productive vocabulary (see chapter 4).

When young people choose to engage in an activity in their spare time where they use English, their level of motivation is likely to be high, as the choice to engage in such activities is, in most cases, probably their own (cf. Dörnyei, 2005; Gardner, 2006). Even if they do not engage in the activities for the main purpose of learning English – more often they may be interested in the content of a game, film or book, or in interaction with peers – EE may still provide a beneficial learning environment, as anxiety levels have been shown to be lower in extracurricular use of L2 than in school (Dewaele,

2009). When teenagers use English in their spare time, there is probably very little explicit language instruction involved. Even so, learning may occur, as students may, e.g., learn new vocabulary while focusing on the content of a film or a game. In such cases, learning could be either implicit or explicit: a student may learn new words without thinking about it or notice an unknown word and try to draw conclusions about its meaning from context, or look it up (cf. e.g. Hulstijn, 2005). As in all types of implicit or explicit learning, the input will determine what is possible to learn; obviously, vocabulary or grammatical patterns that are not encountered cannot be acquired.

A number of studies have indicated that the use of English through different media may indeed enhance L2 learning. Particular attention has been paid to the effect on learning of massively multiplayer online role-playing games (MMORPGs). Gee (2007, 2008) argues that the entertainment and pleasure experienced when playing games provide a good basis for learning (cf. Gee & Hayes, 2012). When playing MMORPGs or when taking part in other online communities, there are a number of factors that may enhance learning apart from the input different media provide. There is, e.g., interaction between players who need to produce output in the form of written, and often also oral, comments. Hence, it seems that MMORPGs may provide learners with linguistically rich and cognitively challenging environments, which is essential for learning (Peterson, 2010, 2012). In fact, Sylvén and Sundqvist (2012b) argue that there are similarities between factors that enable learning in CLIL education and through EE, e.g. high motivation among learners and ample, challenging and authentic input. Nevertheless, content is likely to differ greatly and, consequently, also the type of vocabulary that is possible to acquire in the two contexts.

Findings indicate that playing games, MMORPGs in particular, increases the willingness of the participants to communicate in the L2, as they become less anxious to take part in communication (Gee, 2007; Reinders & Wattana, 2014; cf. Krashen, 1981). Of specific interest here, as productive vocabulary is investigated in students' writing, are findings indicating that digital game players seem to increase their vocabulary (Ranalli, 2008; deHaan, Redd & Kuwad, 2010; Sylvén & Sundqvist, 2012a). Conversational language in particular seems to be enhanced by gaming (Peterson, 2011). Interestingly, deHaan et al. (2010) found that Japanese university students who watched a music video game recalled a larger number of vocabulary items than those who actually played the game; it seemed as if the intensity of the play lessened

attention to vocabulary among the players. Obviously, there are many different types of computer games, and so opportunities to learn vocabulary or develop other aspects of L2 may differ greatly. In addition, there are, of course, many other types of on-line communities where L2 learners interact with each other or with L1 participants, e.g. fanfiction communities, where L2 learners are engaged in composition activities, which hold the potential of developing their writing proficiency (Black, 2005; Thorne, Sauro & Smith, 2015). Further, technologies such as Skype and podcasting provide opportunities for practising oral communication, enhancing L2 speaking and listening proficiency, including vocabulary knowledge (Godwin-Jones, 2005).

Webb and Rogers' (2009a,b) study of vocabulary in TV programmes and film showed that a vocabulary of the 3000 most commonly used word families in English covered 95% of the vocabulary in programmes and films. Webb and Rogers conclude that input from TV and film generally seems to provide input at an appropriate level for L2 learners' incidental vocabulary acquisition to occur. Even so, coverage may vary between genres and films, which may affect comprehension and hence acquisition. Further, they argue that since language input is both visual and aural, incidental vocabulary acquisition from watching TV programmes and films may be as effective as acquisition from reading. However, the largest part of vocabulary accessed through TV and film consists of high-frequency words; Webb and Rodgers (2009a) point out that learners are less likely to come across academic vocabulary through popular media. Yet, studies have shown that films or TV shows with discipline-specific content, e.g. TV series or films set in hospitals or in court, provide opportunities to acquire domain-specific vocabulary, such as that used in medical or legal contexts (Webb, 2010; Csomay & Petrovic, 2012). Further, there are indications that captions in the L2 may enhance learning while watching films (Montero Perez, Van Den Noortgate & Desmet, 2013).

As already mentioned in chapter 2, reading in English is an activity where incidental vocabulary learning may occur: research has shown that particularly for receptive vocabulary knowledge, reading is beneficial (cf. e.g. Elgort & Nation, 2010). However, when reading in their spare time, whether online or using printed material, learners probably do not choose graded readers including vocabulary just above their own proficiency level, even though such readers are sometimes used in school (Nation, 2013). More likely, learners choose reading material out of interest in a specific content. Hence, the material may not be at the ideal level for vocabulary acquisition to occur; the

material may be too easy or too difficult. Further, it has been shown that many different factors may affect vocabulary acquisition from reading, e.g. age, L1, gender, levels of enjoyment and text characteristics (Elgort & Warren, 2014; cf. Eckerth & Tavakoli, 2012). Naturally, topic and genre affect what is learnt: frequent reading of novels will result in incidental acquisition of other words than if non-fiction books are read. It has also been shown that vocabulary may be acquired in a similar manner through aural input, e.g. from listening to stories in the L2 (Van Zeeland & Schmitt, 2013a,b).

In some of the research referred to above, language acquisition in a school context or in the spare time was not distinguished, as acquisition from a certain type of media was in focus. There is, however, also research where a broader approach was taken, including language encountered through different media, but separating spare time use of EE and instruction at school for the purpose of finding out how EE may enhance language proficiency; in the present thesis, this broader approach is taken.

Kuppens (2010) investigated the effect of EE accessed through TV programs/films, computer games and music on Flemish children's translation skills. He found that watching TV programmes and films, in particular, seemed to have a significant effect on translation skills. Further, several Swedish studies have indicated that EE has a significant impact on students' English proficiency. A large-scale evaluation of English as a school subject showed that students in Swedish schools who did not pass English generally used English in their spare time more rarely than student who passed (Oscarson & Apelgren, 2005). Oscarson and Apelgren concluded that English did not have the same function in everyday life for students who did not pass English at school as it had for those who passed. As mentioned in chapter 1, even very young children are frequent users of different media in Sweden. In a study investigating the use of EE and vocabulary knowledge among 11–12-year-old students, Sylvén and Sundqvist (2012a) found that gaming, in particular, correlated significantly with vocabulary knowledge. Moreover, the results indicated gender differences: boys played games more often and had a larger vocabulary than girls (cf. Sundqvist & Sylvén, 2014). In a study of slightly older students, aged 15–16, Sundqvist (2009) found a significant correlation between vocabulary size and EE. In particular, students who reported that they played video games or surfed the Internet had a larger vocabulary than other students. There was also a correlation between the amount of EE and oral proficiency. Further, Sundqvist and Wikström (2015)

found that students who played digital games for more than five hours a week not only had a larger vocabulary than other students – they also had higher grades in English.

As already reported in the previous section, Sylvén's (2004) study of CLIL and non-CLIL students' vocabulary size and range showed that the total amount of input of English had a major effect on vocabulary size. Although CLIL classes generally scored higher than non-CLIL classes, non-CLIL students with frequent use of English in their spare time were more successful than CLIL students with little exposure to English outside of school. Moreover, Sylvén found a difference in the use of EE and in test results between male and female students: male students used English in their spare time to a greater extent than female students, playing computer games, for instance, and they also scored higher on the vocabulary tests. Reading in English seemed to be particularly beneficial for vocabulary growth.

The overview of studies investigating L2 learning from EE has shown that EE accessed and used through various media holds the potential of enhancing L2 learning substantially, particularly with regard to vocabulary acquisition. However, there are also research findings, accounted for in chapter 2, indicating that incidental learning does not lead to precise vocabulary knowledge, and that transfer from receptive knowledge to productive may not occur (Laufer & Hulstijn, 2001).

*   *   *

In this chapter, the two learning environments in focus of the thesis, CLIL and EE, have been described, referring to theories introduced in chapter 2 and to relevant research on learning in the two contexts. Most research findings have indicated that both CLIL and EE seem to promote English proficiency. In the Swedish context, however, the effect of CLIL has not, so far, been confirmed. The effect of CLIL on students' productive academic vocabulary has not been investigated in any depth, nor has the possible impact of EE on students' academic vocabulary and register variation. Consequently, this thesis may contribute to filling a void in this regard. Further, few studies have considered EE when analysing the effect of CLIL education; in this respect too, this thesis may add to our understanding of how the two learning contexts relate.

Chapter 4 Method and material

Three empirical studies were conducted for the purpose of exploring the main research questions in this thesis:

- What impact, if any, does extramural use of English have on students' writing proficiency in different registers, especially with regard to vocabulary use?
- What impact, if any, does CLIL education have on students' academic vocabulary use in writing?

Figure 2 offers an overview of the design of the studies, how they are interconnected, and of the material used. The design is further described in this chapter. As shown in Figure 2, the possible impact of extramural English (EE) on students' writing proficiency is explored in studies I and III, whereas the possible impact of CLIL on academic vocabulary is investigated in studies II and III. In study I, data was collected from 37 students (aged 15–16) at a lower secondary school in Sweden during a period of one month. The second and third studies were part of the longitudinal research project Content and Language Integration in Swedish Schools (CLISS; for details, see Sylvén & Ohlander, 2014), running over three years. Data was collected from 230 students (aged 16–19) at three different schools on several occasions. It mainly consists of students' essays and background information about the students and their exposure to and use of English in their spare time. In Table 1, an overview of participants and data is given.

Table 1. An overview of participants and material

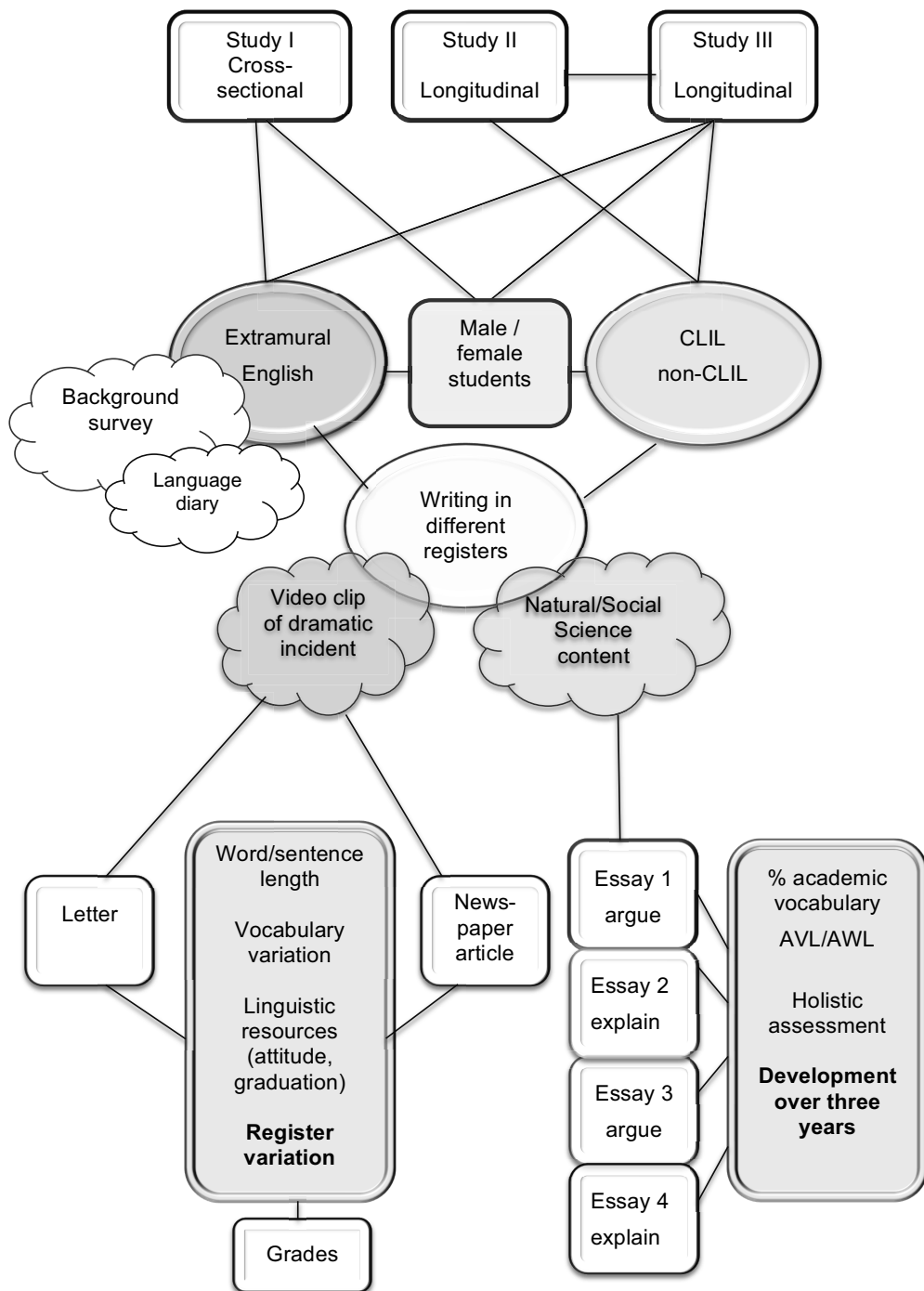|	No. of schools	No. of classes	No. of students	No. of essays	Background survey	Language diary	Additional data
Study I	1	2	37	74	x	x	Students' grades
Study II	3	8	230	525			School visits
Study III					x	x	

Figure 2. Overview of the design of the three studies

All three studies are comparative, using both qualitative and quantitative methods. In the following sections, the participants, the material and the methods of analysis are described.

Participants

Study I includes 37 students, 15 females and 22 males, from two classes in grade 9, the last compulsory school year, at a lower secondary school in Sweden. As English is a compulsory school subject, all students involved studied English at school for two hours a week. Since the study is limited in size and statistical comparisons at group level are made, only data from the 37 students (out of 47) who completed all parts of the study, i.e. two writing tasks, a background survey and at least one language diary (further described in the next few sections), has been used. Thus, comparisons are more valid than if data from students who had only taken part in some tasks had also been included. The school and the students are described in greater detail in study I (sections 3.2.1–2).

In studies II and III, which were part of the CLISS project, students at three upper secondary schools located in different parts of Sweden participated. The schools are called school A, B and C. School A is an international school, where English is used as the language of instruction in all subjects except in Swedish and other language classes. At schools B and C, students could choose if they wanted to follow a CLIL programme, where English was used as the language of instruction to a greater or lesser extent in most subjects, or if they wanted to follow a regular programme where Swedish is normally the language of instruction, except in language classes. In all, eight classes were involved in studies II and III: five CLIL classes and three non-CLIL classes. An overview of the participating classes is offered in Table 2. Among the 146 CLIL students, 100 were females and 46 males. Among the 84 non-CLIL students, 48 were females and 36 males. The students followed programmes that were preparatory for higher education with the Natural Sciences, the Social Sciences or Business Management and Economics as majors. All classes also studied English as a foreign language, and so non-CLIL students encountered English at school mainly during English language lessons, whereas CLIL students encountered English both in English language lessons and in CLIL lessons, where subjects such as History or Biology were taught through English.

Table 2. Participating classes in studies II and III

	CLIL (N=146)	Non-CLIL (N=84)
School A (N=67)	1 Natural Science class 1 Social Science class	
School B (N=66)	1 Natural Science class	1 Natural Science class
School C (N=97)	1 Social Science class 1 Business Management and Economics class	2 Business Management and Economics classes

As studies II and III were longitudinal, involving a larger number of students than study I, all students who completed any part of the study (e.g. two out of four essays, the language diary but not the background survey) were included. The number of students who completed different writing assignments and surveys is noted in the sections below, describing the material collected for the studies.

Collected text material

Since the purpose of this thesis is to explore how certain factors may influence students' writing proficiency, texts were collected from all the students. In study I, involving students in grade 9, texts covering two different text types, a letter and a newspaper article, were collected from each of the 37 students for the purpose of investigating if extramural English seemed to affect students' writing proficiency, more specifically, their *register variation* (see chapter 2, section on L2 writing proficiency). To investigate register variation, i.e. if students' language use differed between text types, the two text types, letter and newspaper article, were chosen since, for instance, everyday language can be expected to a greater extent in a letter than in a newspaper article. Further, both text types are studied and used in school.

The writing tasks were designed for the study and the writing sessions took place at school, during school days. After watching a short video-clip from the BBC about the miraculous landing of a plane on the Hudson River, students were asked to imagine that they had been on the plane or near the Hudson River and to write a letter to a friend about their experience. A few days later,

after watching the clip again, students were asked to imagine that they were reporters and to write a newspaper article about the incident. They were allowed 60 minutes on each occasion to write their texts on computers at school. The writing tasks had been tried out in a small pilot study involving five students. For details about the video-clip and the writing tasks, see study I (sections 3.1.1, 3.2.3 and Appendix 1).

In the studies conducted at the upper secondary level, i.e. in studies II and III, four writing assignments were given on topics related to the Natural and the Social Sciences for the purpose of investigating the possible impact of extramural English and CLIL on students' development of productive academic vocabulary. Since the use of academic vocabulary is in focus in studies II and III, content-based argumentative and expository essays, text types where academic language could be expected, were collected. Moreover, the four assignments[4] covered content areas and text types included in the curricula for English, as well as for the Natural and the Social Sciences:

1. For or against nuclear power (argumentative essay)
2. Matters of gender and equality (expository essay)
3. Ways to political and social change – violence or non-violence (argumentative essay)
4. Biodiversity for a sustainable society (expository essay)

The first assignment was given in students' first term in upper secondary school, thus providing baseline data. The second and third assignments were given in the second year and the last assignment in the third and final year. A written instruction was given, including one or two pages of factual texts, diagrams or pictures for inspiration. The assignments were administered by the CLISS team or by a teacher, and they were written on computers at school. 90–120 minutes were allowed for each assignment. A total of 525 essays were collected. 146 students completed the first assignment, 126 the second, 138 the third, and 115 the last one. 90 students completed both the first and the last assignments, and 70 of them all four. The assignments are described in more detail in study II.

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[4] The English assignments were mainly designed by Britt-Marie Apelgren in cooperation with Per Holmberg. The rest of the CLISS team commented on ideas and drafts. The essays are also used for other types of analyses than the present ones.

Methods of text analysis

The essays were analysed, mainly using corpus-based methods. Analyses of linguistic features and vocabulary in the texts were conducted for the purpose of comparing language use between groups of students, e.g. students with high versus low exposure to extramural English, and CLIL versus non-CLIL students.

In study I, including letters and newspaper articles written by students in grade 9, analyses of text length, sentence length, word length and variation of vocabulary were performed, since the use of longer words and sentences, as well as a varied vocabulary, has been found to indicate a higher proficiency level, as accounted for in the section on L2 writing proficiency in chapter 2 (cf. Grant & Ginther, 2000). Further, certain text types may also elicit the use of, e.g., longer words; hence, register variation could be analysed as well (cf. Biber, 1988). Software from Wordsmith Tools, version 5.0, was used in these analyses (www.lexically.net/wordsmith). As mentioned in chapter 2, vocabulary beyond the 3000 most frequently used words in English, based on their occurrence in the BNC, is often needed in academic contexts; consequently, the occurrence of such vocabulary could be a sign of more advanced language use than if students only use very common vocabulary. Thus, the use of vocabulary beyond the 3000 most common words in the students' texts was analysed for the purpose of investigating the range of students' vocabulary and differences in vocabulary use between text types. For these analyses, Vocabprofile from Lextutor was used (www.lextutor.ca).

In addition, detailed analyses of nuances in language use were made, using Martin and White's (2005) model for the analysis of appraisal (see section on L2 writing proficiency in chapter 2). In this part of the analysis, sixteen students' texts were analysed in some depth. These students were selected because they represented three different proficiency levels, based on their grades in English: Pass, Pass with distinction, Pass with special distinction. At each level, the students with the most and the least frequent use of English in their spare time were selected to enable comparison between students with the same grade in English but with various amounts of EE. The students' use of different linguistic resources to express *attitude*, i.e. affect, judgement and appreciation, and *graduation* of such expressions, e.g. through the use of modal adjuncts or lexical modifiers, was investigated. Comparisons were made between texts written by students with different grades and different amounts

of EE, as well as between text types. (For a detailed description of the appraisal analyses performed, see study I, sections 6.1–2).

In studies II and III, involving students at upper secondary level, the focus of the text analyses was on academic vocabulary. In study II, two different corpus-based academic vocabulary lists, described in the section on academic vocabulary in chapter 2, were used as standards of reference for defining academic vocabulary: the Academic Word List (AWL; Coxhead, 2000) and the Academic Vocabulary List (AVL; Gardner & Davies, 2014). The vocabulary in each student's essays was compared to the vocabulary of the two lists. The proportion of academic vocabulary covered by each of the lists was noted for each of the essays. If analyses based on the two academic word lists indicated similar development in students' use of academic vocabulary over three years, the validity of the results would be strengthened. If not, the usefulness of the two lists for the purpose of detecting progress in academic vocabulary use would need further scrutiny. Thus, the text analyses in study II were to some extent exploratory, shedding light not only on students' use of academic vocabulary, but also on methodological issues as the usefulness of the two academic wordlists was compared.

Two different web-based tools were used in study II: for the analysis of vocabulary covered by the AWL, the above-mentioned Vocabprofile was used (http://www.lextutor.ca), and for the analysis of vocabulary covered by the AVL, an interface, available at http://www.wordandphrase.info/academic/. Comparisons of the proportion of academic vocabulary in essays by CLIL and non-CLIL students were made as well as statistical analyses of development over time (see the section on statistical methods of analysis below). In addition, detailed comparisons of the coverage of the AWL and the AVL of vocabulary in one student's first and last essays were made for the purpose of illustrating differences and similarities between the two lists. The essays selected for this case study were chosen because they included an average proportion of academic vocabulary; thus, the student was not an extreme case.

To strengthen the validity of study II, i.e. finding evidence as to whether or not development traceable in the essays had taken place between the first and the last assignments, four experienced assessors were asked to assess, holistically, language use in 30 students' first and last assignments and to compare essays by the same writer. The selection of texts was made after sorting all students' first assignments according to the proportion of academic vocabulary (as covered by the AWL), and then picking every third essay.

Hence, the sample included texts with various amounts of academic vocabulary. The development indicated in the assessment was compared to the development indicated by the analyses of academic vocabulary based on the AWL and the AVL. Thus, the results of different analyses were triangulated.

A second round of assessment was then conducted to find out whether or not the proportion of academic vocabulary seemed to influence the judgment of the essays. This time, the assessors were asked to compare the same 30 students' last assignments to an essay including an average proportion of academic vocabulary, and to judge if each of the essays was weaker, at the same level, or stronger than the text of comparison. The proportion of academic vocabulary was compared between texts judged as stronger than the text of comparison and the rest of the texts, thus indicating whether or not academic vocabulary seemed to be of importance for the holistic impression of the essays. The methods used in the assessment were inspired by Pollitt's (2012) method of adaptive comparative judgement.

As already mentioned, CLIL and non-CLIL students' use of academic vocabulary was compared in study II. As accounted for in chapter 3, some earlier findings have indicated that male and female students' development of vocabulary may differ, as may their use of extramural English (cf. e.g. Sylvén, 2004). Therefore, in study III, involving the same students and writing assignments as in study II, comparisons of academic vocabulary use were made between male and female CLIL and non-CLIL students. In addition, the possible impact of extramural English on academic vocabulary use was analysed, using statistical methods. The methods used for the analysis of extramural English are described in the next section. In study III, only the AVL was used as standard of reference, as results from study II had indicated that it seemed to be a more valid tool for defining academic vocabulary than the AWL in the present context (see study II and chapter 5).

Methods of analysing extramural English

As one of the aims of the thesis is to investigate the possible impact of extramural English (EE) on students' writing proficiency, their use of English in their spare time was mapped. In studies I and III, two different instruments were used in the investigation of students' use of EE: a background survey, including questions about the frequency of students' use of EE, and a

language diary, where the students noted how long they had been engaged in EE activities. Both the background survey and the language diary were tried out in a pilot study including a small group of students in grade 9, to make sure that the instruments were manageable for students and to ensure that they seemed to provide valid and reliable information (cf. Brown, 2001).

In the background surveys, students were asked to mark how often they were normally engaged in different types of reading or writing in English, e.g. how often they read books or comics and how often they wrote blogs or text messages. There were also questions investigating how often students listened to English, e.g. through music or films, how often they spoke English, or played computer games. The two surveys used in studies I and III are not identical but very similar, as only minor details differ, for instance, in the question covering film-watching, a distinction was made between films with Swedish or English subtitles in study I but not in study III (see appendices in studies I and III). The students marked how often they were engaged in the suggested activities involving English: never or almost never, once or a few times a month, once or a few times a week, or every day. To enable statistical analyses, a ratio scale (from 0 to10) was used in the analysis of survey answers (see study I or III).

 In the study involving grade 9 students (study I), the survey was given online and completed by 37 students. In the study involving students in upper secondary school (study III), the questions related to extramural English were included in a larger survey, covering detailed questions about students' language background and also questions about their use of Swedish in their spare time, thus covering various areas of interest in the CLISS project. However, only the questions related to English were used in study III. The students filled in a paper version of the survey at the very start of the CLISS project, during their first term in upper secondary school. Some students joined the project at a later stage and filled in the survey in their last year. Since almost three years had passed by then, these students' survey answers were not included in the analysis, as the use of English at the initial stage was investigated. Still, a large part of the students – 150 of them – completed the survey in their first year, 101 of the CLIL students and 49 of the non-CLIL students. Thus, the analysis of the frequency of EE in study III is based on 150 surveys.

In contrast to the background survey, which measured the frequency of EE, the language diary measured time spent on EE. In the diary, the students

noted how long they had been engaged in various activities where they used English during a day. The same activities as in the survey were suggested, but the students could also note if and for how long they had used English in other ways. The language diary was inspired by one created by Sylvén (2006), further developed by Sundqvist (2009). The students in grade 9 filled in a paper version of the diary on seven occasions at school. The students in upper secondary school filled in an online version of the survey during 5–7 days in their second year[5]. However, in both studies, some students did not complete the diary on each occasion since they were missing from school or, in the case of the online version, forgot about it. Data from students who completed the diary for at least one day was included. In study I, the diary was completed by all 37 students; in study III, 139 students, 83 CLIL and 56 non-CLIL, filled in the online version of the diary. In the analysis, the number of minutes per day spent on various activities involving English was calculated, as was the average total time per day for each student. Since two different instruments were used for investigating students' use of EE, measuring both duration and frequency, a detailed analysis of EE was enabled.

Statistical methods of analysis

In studies where comparison of language use is made between different groups, as in the studies included in this thesis, statistical methods are often used (cf. e.g. Hinkel, 2011). Here, statistical methods were used for investigating the statistical relationship between EE, CLIL and certain linguistic features in the students' texts, such as the occurrence of academic vocabulary. In this section, the statistical methods used in each of the studies are accounted for. In study I, PASW Statistics 18.0 was used, and in studies II and III, SPSS version 21.

In study I, students' use of EE was compared between male and female students, and also between students with different grades in English. The average scores for the frequency and time spent on EE were calculated for these groups, as was the standard deviation, to show the dispersion within groups. In this way, similarities and differences between groups in the use of EE could be described. Since only 37 students participated in the study, some groups were small, and so the statistical significance of differences between groups was not analysed in study I. In the students' letters and articles, average

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[5] The web-based language diary was administered by Liss Kerstin Sylvén, who also compiled the replies.

scores for the linguistic features accounted for in the section on methods of text analysis (e.g. text length, word length and variation of vocabulary) were calculated and comparisons were made between text types and between students with various amounts of EE. Further, the correlation between scores for these linguistic features and scores for EE was analysed using Spearman's correlation analysis, as normal distribution could not be assumed. In the detailed analysis of expressions for appraisal in a sample of students' letters and articles, the use of different linguistic features for expressing attitude and graduation was compared between students with the same grade in English but with frequent or infrequent use of EE. Thus, in study I, statistical methods were mainly used for describing differences and similarities in language use between students with various amounts of EE.

In study II, CLIL and non-CLIL students' use of academic vocabulary in the four writing assignments was in focus. The proportion of academic vocabulary in students' essays, as identified by the AWL and the AVL, was compared between CLIL and non-CLIL groups, and the statistical significance of differences between groups was analysed using T-test. For the analysis of progress in productive academic vocabulary over time and the possible impact of CLIL on this development, regression analyses were conducted. In regression analyses, initial differences in scores are controlled for; thus, the development of productive academic vocabulary in CLIL and non-CLIL groups could be compared.

In study III, the proportion of academic vocabulary in male and female CLIL and non-CLIL students' essays was compared. Further, their use of extramural English was compared, both with regard to the frequency of EE and the time spent on such activities. In addition to the T-test, Anova with Tukey's post hoc analysis was used to determine the significance of differences between groups. The correlation between the frequency of EE and the proportion of academic vocabulary in the essays was analysed using Spearman's correlation analysis. The possible impact of EE on the development of productive academic vocabulary over time was investigated using regression analysis.

Summing up, statistical methods were useful for the purpose of exploring the issues addressed in the main research questions. However, a number of variables may influence the validity, reliability and generalisability of results and conclusions, some of which are addressed in the next section.

Reliability, validity and generalisability

The thesis aligns with the model of construct validity suggested by Bachman (1990): building on Messick (1989), Bachman defines construct validity as a unifying concept where all aspects that need to be validated in a test procedure are included (Bachman, 1990:254). Messick (1989:13) summarises the concept of validity as "an integrated evaluative judgement of the degree to which empirical evidence and theoretical rationales support the *adequacy* and *appropriateness* of *inferences* and *actions* based on test scores or other modes of assessment". As further developed by Kane (2006; 2013), Bachman (2005) and Bachman and Palmer (2010), the definition indicates that when validity is examined, it is rather the degree of validity that is investigated: a claim can be more or less valid, depending on empirical evidence and theoretical support. The way assessment scores are used, e.g. the claims that are made, is central to validation (Kane, 2013).

In the three studies, students' texts provided data intended to give some indication of certain aspects of students' writing proficiency in English. The writing tasks were designed for the purpose of eliciting different types of text. In study I, students' register variation was investigated, and so students were asked to write text types where partly different language use could be expected, a letter and a newspaper article. In studies II and III, where the use of academic vocabulary was investigated, assignments where academic language could be expected were given. The validity and reliability of the writing tasks for these purposes were supported by the choice of topics and by the suggested text types, which are typical of school-related writing at lower and upper secondary school. In the analyses of the texts, the theoretical underpinnings of the methods used – the distinction between everyday language and academic language (Cummins, 1979, 2008; Coxhead, 2000; Gardner & Davies, 2014) and the concept of register variation (Halliday, 1989, 2004; Schleppegrell, 2004), in particular – support the validity of the text analyses and thus, also the validity of the studies on which the thesis is based.

Further, the results of the text analyses were triangulated for strengthening the validity of the studies. As already accounted for in the section on methods of text analysis, both quantitative and qualitative analyses of various linguistic features in the students' texts were performed in study I; consequently, the comparison of language use between groups with various amounts of EE was based on detailed analyses of the texts. In studies II and III, two different

academic vocabulary lists were used as standards of reference in the analysis of academic vocabulary in students' essays for the purpose of validating results. Further, the holistic assessment of essays was carried out with a view of indicating progress in students' writing proficiency in an additional manner.

Students' use of EE was also analysed in a detailed manner, using two different instruments, i.e. the background survey and the language diary, for strengthening the validity of the measurement of EE. In all statistical analyses, great care was taken to indicate the level of significance of results, as that is an indication of the statistical strength of the results.

When comparing and synthesising the results of the three studies designed to investigate the overall research questions, the analysis was supported by theories of implicit and explicit learning, knowledge and instruction (e.g. R. Ellis, 2009) accounted for in chapter 2. As the main research questions address the possible impact of CLIL and EE on certain aspects of writing proficiency, the results of the three studies are discussed in chapter 6, in relation to learning conditions in these two environments.

The thesis includes studies where both cross-sectional and longitudinal methods were used. Barkaoui (2014: 66–67) claims that the chief advantage of longitudinal research is that it enables investigation and explanation of change over time. In longitudinal studies, in contrast to cross-sectional research, it is possible to examine how individuals change over time, if individuals change in the same or different ways and also to analyse causes or predictors of similarities or differences in such changes. However, sample size (number of individuals and number of observations), the duration of the study and the spacing of observations all influence the choice of statistical analysis as well as the reliability and validity of analyses (Barkaoui, 2014; Gustafsson, 2010). Ortega and Iberri-Shea (2005) argue that very long studies, e.g. covering six years, are sometimes necessary for the detection of certain changes. In many studies, though, such long duration is not possible for practical reasons. The longitudinal studies (II and III) covered three school years – the whole upper secondary stage – which can be regarded as a considerable time span.

One type of longitudinal studies identified by Ortega and Iberri-Shea (2005) is the programmatic longitudinal design, which is often used for evaluation of L2 curricular options. Typically, this design involves a large sample and a long period of observation, often scaled on institutional time e.g. covering a certain stage in the educational system (e.g. primary school), and data collected with wide time gaps, e.g. one or two collections per year. Ortega

and Iberri-Shea argue that this type of longitudinal investigation is highly valuable in SLA research as important issues of practices in L2 programs are addressed. The longitudinal studies (II and III) were designed along similar lines, as the impact of a specific L2 option, CLIL, was in focus.

In the first study, a small number of students, 37, participated. Studies II and III included a larger number of students: 230. However, the fact that a limited number of them, 90, wrote the first and the last assignments and 70 of them all four assignments, limits the possibility to generalize inferences.

In chapter 6, the implications of the methods used are further discussed.

Ethical considerations

The ethical guidelines of The Swedish Research Council were followed in the studies included in this thesis. After receiving oral and written information about the purpose of the studies, the students who wanted to participate signed an agreement to do so. They were informed that they had the right to withdraw from the study at any time. Study I was limited in scope and did not include ethically sensitive elements. The plan for the large-scale CLISS project, where many different studies were conducted, was reviewed and approved by the regional ethical review board at the University of Gothenburg (http://www.**epn**.se/goeteborg/).

In the collection and analysis of data, the anonymity of individuals and schools was protected, names being replaced by numbers.

Chapter 5 Three studies: main results

Three studies were conducted for the purpose of investigating the possible impact of extramural English and CLIL on students' writing proficiency, with a special focus on productive vocabulary. In this chapter, the objectives of each of the studies are specified and the main results of each study summarised, followed by a synthesis of the results.

Study I

The basic purpose of the first study was to investigate the possible impact of extramural English (EE) on 16-year-old pupils' writing proficiency in English, with particular focus on register variation. 37 students participated in the study. The main research questions were:

- What impact does extramural English have on 16-year-old pupils' writing proficiency?
- What differences are manifested in two different text types, letters and newspaper articles, between pupils whose frequency of exposure to extramural English differs?

To explore these main areas of interest, three investigations were conducted. First of all, the nature and frequency of students' use of EE were investigated, including comparisons between male and female students as well as between students who obtained different grades in English. A background survey and a language diary, described in chapter 4, were used in the analysis of EE. Further, each pupil wrote a letter and a newspaper article – two different text types. Certain linguistic features in the texts – e.g. text length, word length and variation of vocabulary – were analysed using corpus-based methods in view to find out if there were differences in language use between text types and between students with various amounts of EE. Finally, an analysis of students' use of different linguistic resources for expressing appraisal was conducted, investigating if there were differences in the use of such resources between students with different amounts of EE and between text types.

The analysis of EE indicated great individual differences between students with regard to the frequency and time spent on EE. Male students used English more frequently in their spare time than female students. Further, it was shown that students with frequent use of EE more often obtained high grades in English than those with infrequent use of EE. None of the students who reported infrequent use of EE obtained the highest grade in English.

The corpus-based analysis showed that students with great exposure to EE wrote longer sentences and varied their vocabulary more than those with infrequent use of EE when writing the letter, a text type where informal, everyday language may be used. However, it was also shown that students with a large amount of EE used longer and more unusual words in their articles than in their letters. Thus, the results indicate that register variation is greater in this group than among students with infrequent use of EE.

Further, the analysis of students' use of linguistic resources for expressing appraisal showed that students with frequent EE involvement used a greater variety of such resources than students with infrequent EE. For instance, they more often used modal adjuncts, the use of which may require more complex sentence structure, hence, a higher level of proficiency. Further, students with frequent EE involvement more often used different linguistic resources in the two text types, thus, also in this respect, demonstrating greater register variation than students with more infrequent EE.

In summary, the results of study I indicate that EE seems to have a positive impact on students' writing proficiency, not least with regard to register variation.

Study II

The primary aim of this study was to investigate and compare the development of English academic vocabulary use in writing between CLIL and non-CLIL students. A secondary aim was to compare the usefulness of two academic vocabulary lists, the AWL (Coxhead, 2000) and the AVL (Gardner & Davies, 2014) for analysing and describing development in academic vocabulary use in students' writing. The following research questions were addressed:

- What difference, if any, is there in the progress of academic vocabulary use in writing between CLIL and non-CLIL students?

- Do two different academic vocabulary lists, the AWL and the AVL, indicate similar development in students' use of academic vocabulary? How useful are the lists as standards of reference for analysing development of academic vocabulary?

In the study, which included 230 students at upper secondary level, the proportion of academic vocabulary in four writing assignments, covering topics related to the Natural and the Social Sciences and written over three years, was analysed using the AWL and the AVL as standards of reference. Regression analyses were conducted for studying if there was any difference in the progress of productive academic vocabulary between CLIL and non-CLIL students over three years.

Further, comparisons were made between the development of academic vocabulary indicated in analyses based on the AWL and the AVL. To determine, in an additional manner, if development between the first and the last assignment had been positive or negative, thirty students' first and last assignments were holistically assessed. In a case study, one student's use of academic vocabulary was analysed in a detailed manner, illustrating similarities and differences between the two word lists.

The results showed that CLIL students used academic vocabulary to a greater extent than non-CLIL students already at the beginning of upper secondary school, i.e. when starting their CLIL education. However, with initial differences controlled for, CLIL students' use of academic vocabulary did not progress more than among non-CLIL students over three years. The results indicate that even if CLIL students follow education that is at least partly in English, they do not automatically increase their productive academic vocabulary more than non-CLIL students.

In the comparison of the academic word lists, the AWL and the AVL, analyses based on the two lists indicated completely opposite development of academic vocabulary in the students' essays over three years. The AWL pointed to a negative development, i.e. students actually used a smaller proportion of academic vocabulary in the last assignment than in the first, whereas the AVL showed a positive development, i.e. students used a larger proportion of academic vocabulary in the last assignment than in the first. Only the positive development indicated by the AVL was supported by the holistic assessment of a sample of essays; the students' last assignment was judged stronger than the first in 27 out of 30 cases. Furthermore, the results

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suggested that the proportion of academic vocabulary seemed to have influenced the assessment to some extent, as essays judged as strong included a larger proportion of academic vocabulary than essays judged as weak.

The detailed analysis of one student's first and last essays implied that the more extensive coverage of academic vocabulary in the AVL, partly due to the methods used in the compilation of words, allows for a more detailed analysis of academic vocabulary than when the AWL is used. The results thus indicate that for the purpose of studying progress in academic vocabulary use in students' writing, the AVL seems to be a more valid standard of reference than the AWL.

In summary, the results of study II indicate that CLIL students may be more proficient writers, with regard to academic vocabulary, than non-CLIL students already when they start their CLIL education. However, they do not seem to automatically increase their use of academic vocabulary more than non-CLIL students over time. The results also suggest that the AVL seems to be a more useful instrument than the AWL for detecting development in productive academic vocabulary in students' writing.

Study III

In this study, involving the same CLIL and non-CLIL students as in study II, and the same writing assignments, the frequency and nature of students' use of English in their spare time were investigated, primarily for the purpose of exploring the possible impact of EE on their progress in academic vocabulary use. A second aim was to investigate what differences, if any, there were in the use of EE and in the progress of productive academic vocabulary among CLIL and non-CLIL students that seemed to be related to gender. The following research questions were addressed:

- Are there any differences between CLIL and non-CLIL students with regard to the frequency and the nature of activities where they use English in their spare time or with regard to time spent on such activities?
- Are there any differences in this respect between male and female CLIL and non-CLIL students?
- Are there differences in the progress of academic vocabulary between male and female CLIL and non-CLIL students?

- What impact does extramural English have on the progress of academic vocabulary use in writing?

Students' use of English in their spare time was explored using a background survey and a language diary, described in chapter 4 and similar to the instruments used in study I. Statistical comparisons were made between male and female CLIL and non-CLIL students' use of EE and their use of academic vocabulary. In this study, only the AVL was used as standard of reference. Regression analyses were conducted for the purpose of investigating if any of the four groups, male and female CLIL and non-CLIL groups, showed a more positive development in productive academic vocabulary than the others, and if EE seemed to play a part in this development.

The results showed that CLIL students used English in their spare time significantly more than non-CLIL students, both with regard to the frequency of EE and the time spent. CLIL students spent, on average, two hours more per day on activities where they used English in their spare time than non-CLIL students. The results indicate that EE should be taken into account when analysing the effect of CLIL, as CLIL students not only encounter and use English more often at school but also outside school.

Further, the results indicate that there are differences in the use of EE that seem to be related to gender. The analysis showed that male CLIL students were involved in EE significantly more often than female CLIL and non-CLIL students.

The analysis of productive academic vocabulary in students' essays showed that male CLIL students used the largest proportion of academic vocabulary in all four assignments, compared with the other groups (i.e. female CLIL students, male and female non-CLIL students). The difference between male CLIL students and female non-CLIL students was the most striking. However, with initial differences controlled for, none of the groups progressed more than the others in their use of academic vocabulary.

A statistically significant correlation was found between the frequency of EE and the proportion of academic vocabulary only in the first assignment, which was written in the first year. Thus, the results suggest that EE may have a greater impact at lower proficiency levels than at higher. Further, the regression analysis indicated that EE does not appear to have any considerable effect on progress in productive academic vocabulary over time.

In summary, the results of study III indicate that CLIL students use English in their spare time considerably more often and for a longer time than non-CLIL students. The results also suggest that there are differences in the use of EE related to gender: in particular, male CLIL students seem to use EE more often than female students. However, more frequent use of EE does not necessarily imply a more positive development of academic vocabulary over time; frequent use of EE does not seem to have any considerable impact on progress in productive academic vocabulary.

In Table 3, a summary of the three studies included in the thesis is offered.

Table 3. Overview of the studies included in the thesis

	Study I	Study II	Study III
Title	"Everything I read on the Internet is in English". On the impact of extramural English on Swedish 16-year-old pupils' writing proficiency	Progress in English academic vocabulary use in writing among CLIL and non-CLIL students in Sweden	Extramural English and academic vocabulary. A longitudinal study of CLIL and non-CLIL students in Sweden
Main purpose	To investigate the impact of EE on writing proficiency, specifically on register variation	To investigate the impact of CLIL on progress in productive academic vocabulary and to compare the usefulness of two academic word lists for this purpose	To investigate the impact of EE on productive academic vocabulary and to compare the use of EE as well as the use of academic vocabulary between male and female CLIL and non-CLIL students
Research questions	What impact does extramural English have on 16-year-ols pupils' writing proficiency? What differences are manifested in two different text types, letters and newspaper articles, between pupils whose frequency of exposure to extramural English differs?	What difference, if any, is there in the progress of academic vocabulary use in writing between CLIL and non-CLIL students? Do two different academic vocabulary lists, the AWL and the AVL, indicate similar development in students' use of academic vocabulary? How useful are the lists as standards of reference for analysing development of academic vocabulary?	Are there any differences between CLIL and non-CLIL students with regard to the frequency and the nature of activities where they use English in their spare time or with regard to time spent on such activities? Are there any differences in this respect between male and female CLIL and non-CLIL students? Are there differences in the progress of academic vocabulary between male and female CLIL and non-CLIL students? What impact does extramural English have on the progress of academic vocabulary use in writing?

	Study I	Study II	Study III
Methods of analysis	Quantitative and qualitative analyses of linguistic features in students' texts. Analysis of EE based on surveys.	Analysis of academic vocabulary in students' essays based on academic word lists. Statistical comparisons CLIL/ non-CLIL groups. Regression analysis to compare development of academic vocabulary between CLIL/non-CLIL groups.	Analysis of EE based on surveys. Analysis of academic vocabulary. Statistical comparisons at group level: male/female/CLIL/non-CLIL. Regression analysis to investigate the impact of EE on the progress in productive academic vocabulary.
Main findings	Results indicate a positive impact of EE on writing proficiency and register variation. Pupils with frequent use of EE used a more varied vocabulary, a greater variety of linguistic recourses for expressing appraisal and they adapted language use according to text type to a larger extent than pupils with infrequent use of EE.	CLIL students' used academic vocabulary to a greater extent already when they started CLIL education, but they did not increase their use of such vocabulary more than non-CLIL students. The AVL seems to be a more useful instrument for detecting development in productive academic vocabulary in students' writing than the AWL.	CLIL students used EE considerably more often and for a longer time than non-CLIL students. Male CLIL students in particular used EE more often than female students and they also used a larger proportion of academic vocabulary in their essays. Frequent use of EE does not, however, seem to have any considerable impact on the development of productive academic vocabulary over time.

Synthesis of results

The overall purpose of this thesis is to investigate the influence of English encountered and used in two different contexts, through EE and in CLIL education, on certain aspects of students' writing proficiency. More specifically, the possible impact of EE on students' writing proficiency in different registers, particularly with regard to vocabulary, is in focus, as is the possible impact of CLIL on productive academic vocabulary.

The results of studies I and III suggest that EE may have a greater impact on writing proficiency, particularly with regard to vocabulary, at lower proficiency levels than at higher ones, where academic language is needed. The results of study I, in grade 9, showed that EE may indeed contribute to students' register variation, e.g. with regard to variation of vocabulary. However, frequent use of EE does not appear to have any considerable effect

on the progress of academic vocabulary, as indicated by the results of study III, at upper secondary level.

The results of study II revealed that CLIL students do not seem to increase their use of academic vocabulary more over time than non-CLIL students: the initial gap between CLIL and non-CLIL students did not widen. The results suggest that students who choose a CLIL option in upper secondary school are at a higher proficiency level, at least with regard to productive academic vocabulary, already when they start their CLIL education, compared with students who choose regular programmes.

In the next chapter, the results of the studies are discussed.

Chapter 6 Discussion

In this chapter, the results of the study of the possible impact of CLIL and extramural English on students' writing proficiency, with particular focus on vocabulary use in different registers, are discussed.

First, some methodological issues with possible implications for the results are addressed.

Methodological issues

As accounted for in chapters 4 and 5, both cross-sectional and longitudinal methods were used in the studies included in this thesis. Ortega and Iberri-Shea (2005:26–27) describe cross-sectional studies as "static snapshots of learner's capacity for action in the L2 at a given point in time". They argue that learning an L2 is a complex process that takes time; thus, research about progress or change should be longitudinal. However, it is also pointed out that there are both challenges and strengths of longitudinal research methods, scarcely ever discussed. In the present three studies, both cross-sectional data – snapshots – and longitudinal data, collected over time, were used. In the first study, all material was collected during a month and only one text of each text type was collected from each of the 37 students. Consequently, the number of essays was small but, on the other hand, several different analyses were performed, providing an in-depth exploration of each essay, allowing for triangulation of results. Development of proficiency over time was, however, not measured in study I. Even so, development was addressed in another way, since the possible impact of EE on students' writing proficiency, as manifested in their two texts, was investigated. Since learning takes time, the effect of EE must also be assumed to develop over time; one does not become a considerably more fluent L2 writer after watching a film or two. In some way, therefore, study I addresses development over time, although implicitly. Studies II and III were longitudinal, covering three years, and so analyses of change over time could be conducted.

A special challenge, likely to arise in any longitudinal study, is pointed out by Ortega and Iberri-Shea (2005): when different tasks and topics are used,

time-induced and task-induced variability are hard to separate. The assignments given to students in study II, also used in study III, covered various topics, related to different school subjects, as accounted for in chapter 4 (see also Study II). The analyses of the texts indicated that some tasks, the third assignment in particular, seemed to elicit academic vocabulary to a somewhat lesser extent than the other assignments. In the third assignment, where students were asked to write an argumentative essay about *Ways to political and social change – violence or non-violence*, both CLIL and non-CLIL students used a considerably smaller proportion of academic vocabulary than in the previous and following assignments (see Study II, Figure 1). Since it was beyond the scope of the study to ask students to comment on reasons for specific language use in their essays – although this would in itself have been an interesting investigation – it is impossible to know if it was the topic, the instruction or the background information of that particular assignment that induced less frequent use of academic vocabulary than in the other assignments. Using the same or very similar tasks would probably have diminished the risk of topic-induced variability. However, as pointed out by Ortega and Iberri-Shea (2005), using the same or very similar tasks in all four assignments would have been extremely demotivating for students and thus, the validity of studies II and III would have been more severely threatened. In addition, practice effect, i.e. change in performance due to repetition, may also occur, threatening the validity when the same task is used several times (Barkaoui, 2014).

Using four writing assignments instead of, e.g., two – one at the start of the project and one at the end – was one way of strengthening the validity of studies II and III, as a sequence of measurements will show development more clearly than just two measurements. Further, a totally invalid task, generating extreme scores, would be noticed in a sequence but perhaps not with only two measurements. Since four assignments were used in studies II and III, the divergence of the third assignment could be noticed. Even though great attention was paid to the first and last writing assignments, providing baseline and final data – thus enabling an analysis of development – the other two assignments strengthen the validity of the studies as they provide two additional points of comparison. The use of the first and the last assignments in the analysis of development was also based on the fact that both assignments covered topics related to the Natural Sciences while the other two assignments covered topics related to the Social Sciences.

As mentioned in chapter 4, the topics and text types in all assignments used in the three studies were topics and text types that are covered in the syllabi for lower and upper secondary school. Thus, students could be expected to be familiar with similar writing tasks as the ones used in the studies, and so the validity of the assignments for the purpose of measuring productive vocabulary was strengthened. Unfamiliar tasks would have weakened validity, adding factors difficult to control for in the analysis.

The topics and text types in the assignments were unknown to the students until the tasks were administered. Consequently, some classes might have covered similar themes during lessons, others not. Looking at individual tasks, this may have been of importance for content coverage, particularly in studies II and III. If, for instance, a class had just studied nuclear power and argumentative essays, a writing task where students were asked to argue for or against nuclear power would probably be easier to write for students in that particular class than for others. In addition, it is plausible that students of the Natural Sciences would find it easier to write about topics related to such subjects, whereas Social Sciences students might be expected to find it easier to write about topics related to the Social Sciences than to the Natural Sciences. To compensate, to some extent, for differences in content knowledge, all task instructions included some kind of background information: introductory factual texts, diagrams, statistics or pictures were provided. Thus, it should be possible for all students to write texts about all topics, even if they did not have extensive prior knowledge of the relevant content. Nevertheless, attention must be paid to the fact that classes might have been prepared to a greater or lesser extent for the tasks when evaluating the results. On the other hand, studies are, of course, impossible to carry out in controlled laboratory settings where students are exposed to exactly the same input or information before taking the test. Students experience all kinds of things in and outside school that may influence their performance; obviously, unknown factors may have influenced the results presented in this thesis.

The choice to analyse general academic vocabulary rather than domain-specific vocabulary in the students' essays was, to some extent, a way of avoiding bias for students who had specialised in subjects related to any of the specific topics of the assignments. As accounted for in chapter 2, general academic vocabulary is the type of vocabulary that appears in many different kinds of academic texts, not only, or particularly, in certain domains. Thus, the

analysis of general academic vocabulary indicates general academic proficiency rather than domain-specific proficiency. However, even though the software used for vocabulary analyses identifies such vocabulary, there is no control of the correctness or appropriateness of the use of vocabulary, and it was beyond the scope of this thesis to perform error analyses. Hence, in the analysis of academic vocabulary, the occurrence of a word in a text, even if used in an incorrect way, was counted. Naturally, learners of English make mistakes when writing, but even if a word is not used correctly, the mere occurrence of the word may still be a sign of development – the student may be in the process of learning how to use it. Consequently, the analyses of academic vocabulary, conducted in studies II and III, indicate progress in productive academic vocabulary with regard to occurrence of such vocabulary, but not necessarily with regard to its correct use. However, as accounted for in chapter 5 and study II, the holistic assessment of students' essays showed that essays judged as strong included a larger proportion of academic vocabulary than those judged as weak. Thus, it seems that the mere occurrence of academic vocabulary in a text has some bearing on the holistic impression of its quality with regard to language use.

As mentioned in chapter 3, the definition of academic vocabulary is neither clear-cut nor universal. In study II, one of the aims was to compare the usefulness of two corpus-based academic vocabulary lists for analysing progress in academic vocabulary among learners of English. Of course, none of the lists were created for this specific purpose, but for providing students and teachers with lists of highly useful vocabulary in academic contexts across domains. However, such lists are often used in research, e.g. for investigating levels of academic vocabulary (cf. e.g. Baumann & Graves, 2010). The results of study II indicate that the AVL (Gardner & Davies, 2014) seems to be a more useful instrument than the AWL (Coxhead, 2000) for analysing development of academic vocabulary over time. The main reason for this is probably that the AVL is more extensive and has a higher coverage than the AWL, but possibly also because more refined methods were used in the compilation of the AVL. In the analysis of short texts, the standard of reference for defining academic vocabulary must be extensive enough for any development to be detected. The case study included in study II, where the academic vocabulary covered by the AWL and the AVL in one students' first and last essays was listed and compared, showed that only the AVL indicated the fairly obvious increase in academic vocabulary use between the two

occasions. In the analysis of the whole material, including all students' essays, the AVL, but not the AWL, indicated that both CLIL and non-CLIL students progressed in their use of academic vocabulary between the first and the last writing assignments. A progression was further confirmed by the assessment of 30 students' first and last essays, where four assessors holistically judged the language used in the essays: In 27 cases (90%), the last essay was judged as better than the first. As mentioned above, the second round of assessment, where the 30 students' first assignments were compared to a text including an average percentage of academic vocabulary, indicated that the proportion of academic vocabulary seemed to influence the judgment of the essays: those including a high proportion of such vocabulary were judged better than the text of comparison. The assessments were included in the study to validate the method used for analysing academic vocabulary in the students' essays; the results of the assessments showed that for this specific purpose, the AVL seems to be a more valid instrument than the AWL. Hence, only the AVL was used as a standard of reference in study III. Even so, no claims, with reference to the results of this study, can be made concerning the validity of either of the lists for other purposes. Also, further studies are needed to confirm the results of study II.

In a longitudinal study, there is often the problem of dropouts – in studies II and III, some students changed classes or schools and were therefore unable to continue in the CLISS project. Others decided to leave the project for unknown reasons; participation in the project was voluntary and informants were free to opt out at any time. A number of students did not turn up on all occasions when assignments were given due to illness or for other reasons. As accounted for in chapter 4, 146 students completed the first assignment and 115 the last one. To check if students who opted out after the first assignment differed in their use of academic vocabulary compared with students who continued in the project, the proportion of academic vocabulary in the first assignment was compared between dropouts and students who continued within the project. 15 students wrote only the first assignment, three of them non-CLIL students and 12 CLIL students. In this assignment, the group of 15 students who opted out used 7.2 % academic vocabulary in comparison with the rest, 131 students, who used 6.8% (standard deviation = 2.6 in both groups). The difference between groups is not statistically significant. Thus, the comparison indicates that the group of students who left the project at an early stage seem to have been at a similar level as those who

stayed on, with regard to academic vocabulary use. Consequently, the results of studies II and III, indicating progress in productive academic vocabulary over three years in both CLIL and non-CLIL groups, do not seem to have been biased by low-achievers opting out.

A further issue to consider in a longitudinal study is the risk of participant fatigue and attrition when frequent measuring is employed (Barkaoui, 2014). This risk was to some extent apparent in studies II and III: apart from the four English assignments, the language diary and the background survey used here, the CLISS project also administered four Swedish writing assignments, vocabulary tests in English and Swedish, reading comprehension tests and surveys of students' attitudes. Students may, of course, have felt more or less motivated for other reasons than those already mentioned. According to Crooks, Kane and Cohen (1996), low motivation among students to do well on assessment tasks may make it difficult to interpret their performance; they may be more proficient than the results show. Even if some students in the CLISS project may have felt low levels of motivation when writing the assignments, it is still possible to claim that the collected texts show, at least, the lowest level of their proficiency. In other words, they are at least as proficient as the texts show, but they might be more proficient under other circumstances. On the other hand, some CLIL students may have been eager to do their very best when writing the English assignments since they had chosen an educational option where English is used as a language of instruction: by performing well, their identity and their choice would be confirmed. Obviously, the degree of motivation will affect performance.

Finally, some attention should be paid to the methods used for investigating extramural use of English (see chapter 4); the measurement of EE is not uncomplicated. When asking students how often they were engaged in various activities, the intention was that they should report their normal behaviour. However, behaviour may change and the survey was only completed once. There is also a risk that some students may have exaggerated their use of EE when completing the survey, or that they wrote answers that they thought would be appropriate or expected rather than truthful (cf. Dörnyei, 2000). Nevertheless, most students could be expected to know if they were normally engaged in an activity very often or almost never. Therefore, the data from the survey could be regarded as a fairly reliable instrument for the measurement of EE. The language diary provides a more precise measurement, since minutes spent on activities were noted, but it is

not necessarily more reliable. The days reported might not have been normal days and, further, some students may not have paid attention to time while engaged in EE activities. Particularly in the study involving grade 9 students, the counting of minutes seemed somewhat problematic; some of them did not note how many minutes they had spent engaged in different activities. However, the analysis of students' reported time spent on EE showed that many of them spent a considerable part of their spare time engaged in activities where they used English. Indeed, for some of them, there could not have been much time left for other activities, an issue further discussed in the next section. Anyway, the high average frequency of EE and large amount of time spent on such activities reported by students in studies I and III are in line with results of the large-scale investigations conducted by the Swedish Media Council (2015) of media habits among Swedish youth. Hence, the results of the analyses of students' use of EE in this study are hardly extraordinary.

The impact of EE on writing proficiency

One of the overall aims of this thesis is to investigate the possible impact of extramural English on students' writing proficiency. In this section, the results of studies I and III are discussed, as students' use of EE was explored in these studies, as well as their language use in different types of writing. In short, the results, reported in chapter 5, suggest that extramural use of English may have a greater impact at lower proficiency levels than at higher.

As accounted for in chapter 4, students' exposure to EE was investigated using two different instruments, a background survey and a language diary, measuring the frequency of EE and time spent on such activities (cf. previous section). The analysis showed that there were great individual differences in the use of EE between students at both lower and upper secondary level, and also that students at upper secondary level used EE to a larger extent than students in grade 9. Students in grade 9 spent, on average, 2.9 hours a day on EE whereas non-CLIL students at upper secondary level spent 5.6 hours and CLIL students as much as 7.6 hours. It should be noted, however, that the data from grade 9 was collected three years before the data at upper secondary level; access to media generally increased in the meantime, as reported by the Swedish Media Council (2015). In both studies (I and III), male students were found to use EE more frequently than female students; for instance, males

more often played computer games. Almost all students reported that they watched films or TV programmes in English daily or a few times a week, and many students were regularly engaged in speaking, writing and reading in English in their spare time. The analyses of EE show that English seems to play a very important role in many students' lives, as they spend a large part of their spare time involved in activities where they use English. As already suggested, spending many hours on EE activities means that there may be little time left for other activities, such as homework, which, of course, could have negative effects on school results. However, with regard to proficiency in English, there are, as reported in chapter 3, research findings suggesting great proficiency gains from EE, not least with regard to vocabulary (e.g. Sylvén, 2004; Sundqvist, 2009; Kuppens, 2010). Apparently, EE may provide a beneficial learning environment, as motivation to use English is often high and anxiety levels low in extracurricular use of L2 (Dewaele, 2009).

In studies I and III, the possible impact of EE on some aspects of writing proficiency in different registers was investigated. In study I, grade 9 students wrote two different text types, a letter and a newspaper article, where use of partly different language registers could be expected. The results showed that students frequently involved in EE wrote longer sentences and varied their vocabulary more than students with less frequent use of EE in a text type where everyday language, including highly frequent vocabulary, could be used. As the use of longer sentences and a varied vocabulary have been found to indicate a higher proficiency level (e.g. Grant & Ginther, 2000; Hinkel, 2011), the results suggest that it is within registers including high-frequency vocabulary and informal contexts that EE has the greatest impact. Of course, in many EE contexts, encounters with high-frequency vocabulary could be expected. As shown by Nation (2006) and by Webb and Rogers (2009a,b), a vocabulary of 3000 word families would cover a large part of the vocabulary used in, e.g., fiction, TV programmes and films. Consequently, exposure to EE could be expected to influence students' language use in informal contexts above all.

Moreover, the results of study I showed that students frequently involved in EE displayed more elaborate language as they used a larger variety of linguistic resources, e.g. modal adjuncts and lexical modifiers, than students with less EE. Thus, the results indicate that EE may also promote proficiency to express precise meaning and to use more complex sentence structures.

However, a close analysis of sentence structure was beyond the scope of this study.

Further, when writing the newspaper articles – a text type where a less personal stance is taken, and a different vocabulary could be expected than in a personal letter – students with frequent use of EE seemed to have access to such a register to a larger extent than students more rarely involved in EE. Students with high scores for EE used more infrequent vocabulary, beyond the 3000 most commonly occurring words, and they also varied their use of linguistic resources more, when expressing attitude and graduation (cf. Halliday, 2004; Martin & White, 2005). Thus, greater register variation was found among students with frequent use of EE. Hence, the results of study I indicate that EE may influence acquisition of vocabulary beyond the 3000 most frequent words, i.e. vocabulary often used in academic contexts (Hyland & Tse, 2007), and also that register variation is enhanced among students with frequent exposure to English outside school.

The results of study I were to some extent confirmed in study III, where students who frequently used EE included a larger proportion of academic vocabulary when writing the first assignment in their first term at upper secondary level. However, in the analyses of the following assignments, i.e. assignments 2–4, no correlation was found between the proportion of academic vocabulary and the frequency of EE. Further, frequent use of EE did not predict a more positive development of academic vocabulary over time: students with frequent EE did not progress more in their use of academic vocabulary than did students with infrequent EE. As pointed out by Webb and Rodgers (2009a,b), the chance of encountering academic vocabulary is very small in many EE contexts, as the largest part of the vocabulary used in TV shows, films and fiction is found within the 3000 most frequent word families. Nevertheless, students who read non-fiction or watch certain types of TV programmes, e.g. about history or wild animals, are, of course, more likely to encounter both domain-specific and general academic vocabulary. Watching or reading news may also provide opportunities to encounter such vocabulary. However, the survey conducted in study III showed that only a limited number of students read newspapers in English on a regular basis.

As accounted for in chapter 2, Elgort and Nation (2010) point out that new vocabulary needs to be repeated a number of times before it is learnt implicitly. Consequently, more infrequently occurring vocabulary may not be

repeated often enough in EE for learning to occur, whereas acquisition of highly frequent vocabulary could be expected through exposure to EE. Further, new vocabulary must be encountered in various situations before the learner will be able to use it in his or her own language production. Both Schmitt (2008) and Laufer (2005) argue that even if considerable vocabulary gains may result from exposure, e.g. from reading, it seems difficult to reach a level of knowledge needed for productive use from exposure only; they claim that explicit instruction is needed. The results of study III suggest that mere exposure to EE does not seem to particularly promote the development of academic vocabulary, possibly because EE offers encounters and use of such vocabulary only to a very limited extent. As receptive vocabulary comes before productive vocabulary, EE may have a stronger impact on receptive academic vocabulary than on productive – only students' productive use of vocabulary was investigated here. The results of study III may imply that instruction at school is of great importance for the acquisition of academic vocabulary, and particularly for the development of productive academic vocabulary. Even if students may encounter and learn some academic vocabulary in their spare time – findings in study I and baseline results in study III indicate that they do – the longitudinal results of study III nevertheless suggest that at higher proficiency levels, EE does not seem to have any considerable impact on academic vocabulary. Such vocabulary is, of course, more likely to be required and used in educational contexts.

The impact of CLIL on academic vocabulary

In CLIL education, school subjects are, at least partly, taught through an L2. Hence, students in CLIL programmes targeting English could be expected to encounter and practise using English academic vocabulary more often at school than students following regular education. However, the results of study II showed that there was an initial difference, as CLIL students used academic vocabulary to a greater extent than non-CLIL students already when they began CLIL education. The higher initial levels of proficiency among CLIL students compared to non-CLIL students indicated here, as well as in Sylvén and Ohlander (2014) with regard to general vocabulary knowledge, confirm the assumption that very often students who are already high achievers with a special interest in English choose CLIL. Yoxsimer Paulsrud (2014) points out that the CLIL students in her study did not state that they

had chosen a CLIL programme because they wanted to improve their English; instead, they reported that they had chosen CLIL because they were already good at English. In this connection, it is relevant to discuss CLIL and non-CLIL students' use of English in their spare time, as EE has been shown to enhance Swedish students' proficiency in English (cf. e.g. Sylvén, 2004; Sundqvist, 2009).

In study III, there was a correlation between EE and the use of academic vocabulary in the first writing assignment, as already noted, indicating that EE may promote acquisition of academic vocabulary to some extent. The results of study III also showed that CLIL students used English significantly more often in their spare time than non-CLIL students when they started at upper secondary level, and that they used EE for a significantly longer time in the second year. Thus, the results suggest that it is students who are confident using English, often doing so in their spare time, who choose the CLIL option. In a study of attitudes towards English among the same students as in studies II and III, it was found that the CLIL students felt more confident using English than the non-CLIL students (Sylvén & Thompson, 2015). At the same time, the CLIL students' frequent use of English in their spare time, as reported in the background survey, shows that they have a special interest in English, and so opting for an educational programme where English is used as the language of instruction may be one way of exploiting this interest. The results indicate that for many CLIL students, English seems to play a very important part in their lives as they not only choose an education where English is used, but many of their social contacts in their spare time are also in English. Hence, the possible impact of EE should, indeed, be taken into account when evaluating effects of CLIL.

Therefore, initial differences in the use of academic vocabulary between CLIL and non-CLIL students were, to some extent, expected. In the three writing assignments following the initial one, the CLIL students also used a larger proportion of academic vocabulary than did the non-CLIL students. Even so, this does not necessarily imply that CLIL instruction is more effective than other types of instruction. When initial differences were taken into account, the analysis showed that the CLIL students did not progress more than the non-CLIL students did in their use of academic vocabulary, despite the fact that they encountered and used English more often at school as well as in their spare time. However, as the CLIL students were at a higher proficiency level already when they started their CLIL education, it might be

more difficult for them to increase vocabulary than for students starting at a lower level. Nevertheless, this finding was somewhat unexpected, as results from other studies have found that CLIL education is particularly beneficial for L2 development (see e.g. Dalton-Puffer, 2011). On the other hand, Admiraal et al. (2006) found, in their study among Dutch secondary school students over six years, that CLIL students did not increase their receptive vocabulary more than non-CLIL students even though CLIL students' scores were higher from the start and throughout the six years. Thus, the findings of study II are in line with those of the Dutch study. The level of English proficiency is generally high among students in both the Netherlands and Sweden in comparison with students in many other European countries (European Commission/SurveyLang, 2012). It seems that CLIL may not have as strong an impact on students' English proficiency in the Netherlands and in Sweden as in countries where students are generally at a lower proficiency level (cf. Sylvén, 2013).

Sylvén (2013) argues that the frequent use of extramural English among Swedish youth may have such an impact on students' proficiency that the contribution of CLIL instruction is not as significant as in countries where English is not frequently used outside school. Still, the results of study III showed that EE does not seem to enhance progress in academic vocabulary use. However, only the possible effect of EE on productive academic vocabulary was investigated here; EE may have a greater impact on other aspects of English proficiency. Another suggested reason why CLIL in Sweden has not turned out to impact students' proficiency to the same extent as in other countries is the absence of official regulation of CLIL in Sweden, resulting in highly diversified CLIL practices (Sylvén, 2013). There are, for example, no specific CLIL-related curricular guidelines. Merikivi and Pietilä (2014) point to substantial differences between CLIL in Sweden and Finland. In contrast to Sweden, CLIL programmes in Finland have been shown to enhance L2 proficiency, possibly because CLIL is recognised and encouraged in the Finnish national curriculum and CLIL research stimulated. Further, pre- and in-service training in CLIL teaching is offered in Finland, whereas such training is close to non-existent in Sweden. Moreover, there are requirements stipulating that CLIL teachers in Finland should have reached at least C1 level on the CEFR proficiency scales (Council of Europe, 2011); in Sweden there are no such requirements. It seems likely that such differences may indeed

influence the quality and comparability of CLIL education between different countries.

The relation between Swedish CLIL teachers' language proficiency and students' learning outcome has not yet been investigated. However, results from classroom studies have indicated that CLIL teachers' use of English may be restricted (Lim Falk, 2008). In Yoxsimer Paulsrud's (2014) study of two Swedish schools offering CLIL programmes, some students considered their teachers' English proficiency level inadequate, whereas most of the teachers felt confident in their own language use. As mentioned in chapter 3, Lyster (2007), as well as Genesee and Lindholm-Leary (2013), claims that there is often a strong focus on content in content-based language instruction; thus, neither students nor teachers may pay very great attention to linguistic issues. Consequently, the input that students receive during lessons may be limited, and so the impact of content-based instruction on academic language knowledge may be limited as well. Even if English academic vocabulary is more likely to occur in educational contexts, particularly in CLIL, than in EE, the frequency of exposure to such vocabulary may vary, as may the explicit attention paid to it in different classrooms.

However, it was beyond the scope of this thesis to analyse, in any detail, CLIL practices at the three schools involved. Language use at them differed – in particular between school A, on the one hand, and schools B and C, on the other. School A is an international school, where English was used as the language of instruction in all subjects and lessons, with the exception of other foreign language classes (e.g. Spanish). At schools B and C, both Swedish and English were used as languages of instruction, although to a varying extent and in different ways. In Olsson and Sylvén (forthcoming), the CLIL practices at the three schools are analysed in detail, e.g. with regard to language use and instruction. Further, the development of academic vocabulary among students at the three schools is compared. However, the results of studies II and III indicate that there seems to be a potential for development in CLIL education in Sweden, as students' productive academic vocabulary did not progress more among CLIL students than among students who followed regular education in Swedish.

Chapter 7 Concluding remarks

In this chapter, the main findings of the thesis are summarised and concluded. Some pedagogical implications of the results are suggested. Further, some proposals for future research are offered.

The possible impact of two different learning environments, extramural use of English (EE) and CLIL education, on Swedish students' writing proficiency in English has been studied in this thesis, with a special focus on their development of vocabulary use in some different registers. The results suggest that EE seems to promote language proficiency at lower proficiency levels in particular; however, it does not seem to have a great impact on the progress of productive academic vocabulary. Further, the results suggest that CLIL education seems to attract students who are at a higher proficiency level than those who choose regular education. It was shown that the CLIL students used academic vocabulary to a greater extent than the non-CLIL students already when they started their CLIL education, but their use of such vocabulary did not progress more. However, both CLIL and non-CLIL groups increased their use of academic vocabulary over three years.

In CLIL education as well as in extramural English, both explicit and implicit learning of vocabulary may occur. Students may, for instance, learn vocabulary incidentally as they read, play a game or listen to a teacher; or they may look up or ask about new vocabulary that they do not understand. It is likely that a large part of the vocabulary acquired, whether from CLIL or EE, can be used receptively by students, i.e. they may understand the meaning of the words but not use all of them in language production, as productive knowledge is more complex and takes longer to develop (see chapter 2).

In EE, there is probably very little explicit language instruction. On the other hand, EE may provide plenty of meaningful input and opportunities for interaction, e.g. in certain types of online computer games, where productive language proficiency could be enhanced. The results presented in this thesis confirm the notion that EE is highly beneficial for students' writing proficiency in English, e.g. with regard to register variation and variation of vocabulary. It seems that students with frequent exposure to and use of English in their spare time can access and use a greater variety of linguistic

resources than students who more rarely use English outside school. However, neither the present nor earlier studies can show where, when or how the actual acquisition of vocabulary occurs in EE; they only show that students who frequently use EE also have a larger vocabulary (e.g. Sylvén & Sundqvist, 2012a). Frequent exposure and use of English outside school seem to enhance learning at school as well, possibly because students tend to acquire new vocabulary more rapidly if they already have a large vocabulary (cf. Zahan, Cobb & Spada, 2001). Thus, learning that occurs in one context may boost learning in other contexts as well. Through this interplay, students' proficiency seems to be enhanced.

However, as already noted, the results indicate that it is at lower proficiency levels, in particular, that the impact of EE is considerable. The analysis showed that frequent use of EE did not predict a more positive development of academic vocabulary over time. Since academic vocabulary is not usually a prominent feature of most everyday media or in casual conversation outside school, students are not very likely to come across and acquire such vocabulary in their spare time, especially not in comparison with highly frequent vocabulary. Still, if, for example, students choose to read non-fiction or to watch documentaries, they may, of course, encounter academic vocabulary in their spare time as well.

It is challenging for all students to acquire the vocabulary required in academic studies, not least for L2 learners. In CLIL targeting English, one of the aims is, in many cases, to prepare students for higher education, where high proficiency in English is often regarded as a prerequisite. The results of study II showed that the CLIL students did not increase their use of academic vocabulary more than did the non-CLIL students, despite the fact that they encountered and used English more often in as well as outside school. The findings thus suggest that in Swedish CLIL education, academic vocabulary may not be sufficiently encountered or used by students for CLIL students' productive academic vocabulary to progress more than among students who follow regular education. The results may be taken to indicate that there is too little explicit focus on language matters per se in CLIL instruction for more enhanced learning to occur than in regular instruction, even if English is used in the classroom (cf. Lyster, 2007). As shown by Laufer (2005), for instance, explicit attention to target vocabulary may greatly enhance productive knowledge and use of vocabulary among students.

However, as already pointed out, the CLIL students started at a high proficiency level (with regard to academic vocabulary use) and continued to develop from there, and so the results show that they succeeded well, even if they did not progress more than other students. In fact, both CLIL and non-CLIL groups increased their use of English academic vocabulary over the three years. As EE was found not to boost progress in productive academic vocabulary, the results seem to suggest that instruction at school is indeed important. All students involved in this thesis studied English as a foreign language at school. The curriculum for English at upper secondary level stipulates a gradually increased focus on academic language related to the main profile of the relevant educational programme, such as the Natural or the Social Sciences (Swedish National Agency for Education, 2011b; see chapter 1). Using topics related to their main subjects, students should, for instance, learn how to report, reason, summarise and argue in English. Thus, students are likely to encounter, practise and use academic language in the English language class, although to a varying extent, since there are no further detailed regulations or guidelines regarding the amount of time to be allocated to academic language instruction or how the instruction should be carried out. It was not within the scope of this thesis to analyse in detail regular English instruction, i.e. English language as a school subject, at the schools involved. However, school visits gave at hand that all classes, CLIL as well as non-CLIL, practised academic language to some extent during English lessons, e.g. in writing argumentative or expository essays. As both CLIL and non-CLIL students increased their use of academic vocabulary, it is likely that English lessons contributed to this development.

Even though Swedish students in general display higher English proficiency levels than students of the same age from most European countries (European Commission/SurveyLang, 2012), English instruction in Sweden, whether in CLIL or regular education, should, of course, be continually evaluated and developed. The findings of this thesis may, it is hoped, contribute to a raised awareness of academic language and how L2 students may become proficient users of such language. Such awareness seems necessary when planning education at policy or school level. High proficiency in some registers does not automatically imply high proficiency in, e.g., academic registers. Other registers than academic ones may be at least as important for students to acquire, but since students are less likely to encounter academic language in their spare time, it seems reasonable that

school should provide students with ample opportunities to develop such language, not only in the L1 but also in English. With regard to CLIL education, the results suggest that academic vocabulary may need more focused attention and that opportunities for students to practice using academic vocabulary in language production should increase – at least if the goal is that CLIL students should progress more in this respect than students in regular education.

The fact that Swedish students frequently use English, often for hours every day, in their spare time is, of course, an enormous advantage in school as well – at least with regard to their English proficiency. Not only do students become more proficient through their use of EE, but very often they also become interested in English and in cultures (real or virtual) where English is used. In addition, some of them choose the CLIL option, where they can study other school subjects in English. It is necessary to bring students' experiences and knowledge acquired outside school into the classroom, although preferably not by arranging the same types of activities that the students are already engaged in. The challenge lies in linking students' current knowledge to potential trajectories of development.

Future research should address this challenge, e.g. by further investigating what aspects of language learning need explicit attention. The study of how L2 proficiency in academic registers is developed, and how this development may be scaffolded in education, should be pursued, not least with regard to register variation and academic vocabulary growth. Such research may be of relevance not only for L2 education targeting English, such as CLIL, but also for regular education, where multilingual students often follow education in a language which is not their L1; language and content are connected regardless of what language is used and what subject is taught.

The impact of EE on students' language proficiency should also be further investigated. For example, a close analysis of language use in different EE contexts, e.g. in certain types of computer games, could be made for the purpose of tracking how and where students may encounter and learn certain linguistic features outside school, and if they choose to use those features in school related-work as well. It could, for instance, be of interest to investigate in some greater detail how students expand and vary their use of sentence connectors and intensifiers.

In conclusion, it is hoped that this thesis will have shed some additional light on the possible impact of EE and CLIL on students' development of

productive vocabulary – and also that further research on related issues will follow.

Sammanfattning på svenska

Syftet med denna avhandling är att undersöka hur elevers exponering för och användning av engelska i två olika kontexter – på fritiden och i språk- och ämnesintegrerad undervisning – inverkar på deras förmåga att skriva på engelska, med särskilt fokus på deras vokabuläranvändning. Dels undersöks hur elevers användning av engelska på fritiden påverkar deras förmåga att skriva olika texttyper, dvs. deras registervariation, dels hur språk- och ämnesintegrerad undervisning, där engelska används som undervisningsspråk, inverkar på elevernas utveckling av produktiv akademisk vokabulär, dvs. deras användning av akademisk vokabulär när de skriver.

Bakgrund

Engelska dominerar alltmer som internationellt kommunikationsspråk, "lingua franca", t.ex. inom högre utbildning, ekonomi och politik. Därför har god förmåga att skriva på engelska kommit att ses som en mycket viktig kompetens (Matsuda, Ortmeier-Hooper & Matsuda, 2009). Eftersom internet i allt större utsträckning används för olika typer av kommunikation, som ofta sker på engelska, är förmåga att skriva på engelska en förutsättning för att kunna delta. Därmed är denna kompetens viktig även ur ett demokratiskt perspektiv. Eftersom engelska används som undervisningsspråk i högre utbildning, inte minst i kurslitteratur, i Sverige och i andra länder där befolkningen i allmänhet inte har engelska som sitt förstaspråk, är det av intresse att undersöka hur elever i sådana länder tillägnar sig förmåga att använda akademisk engelska.

Elever i svensk skola har i allmänhet goda kunskaper i engelska jämfört med elever i de flesta andra europeiska länder (European Commission/ SurveyLang, 2012). En vanlig förklaring till svenska elevers höga kompetensnivå i just engelska, internationellt och i jämförelse med deras förmåga i andra främmande språk, är deras flitiga användning av engelska på fritiden (Skolverket, 2012). Den ökande användningen av och tillgängligheten till engelska i samhället via internet och andra media innebär att språkinlärning

inte bara äger rum i skolan utan även på andra, ofta nätbaserade, arenor (Bhatia & Richie, 2009).

Till följd av det stora intresset för engelska, och den betydelse hög kompetens i engelska tillskrivs, har språk- och ämnesintegrerade gymnasieprogram där engelska används som undervisningsspråk etablerats på många håll i världen, så även i Sverige (Dalton-Puffer, 2011). Effekten av språk- och ämnesintegrerad undervisning på elevers förmåga att använda akademisk vokabulär har dock inte mer ingående undersökts. Inte heller har fritidsengelskans inverkan på elevers förmåga att skriva i olika register studerats. Det övergripande syftet med denna avhandling är att belysa dessa frågor.

Teoretisk inramning

Avhandlingens teoretiska ram utgörs främst av teorier om andraspråksinlärning inom ett forskningsfält som på engelska benämns *Second Language Acquisition* (SLA) (se t.ex. Gass, 2009; Myles, 2013, Ortega, 2013). Centrala begrepp i SLA, liksom i avhandlingen, är *implicit och explicit lärande*, *implicit och explicit kunskap* liksom *implicit och explicit undervisning* (R. Ellis, 2009). Dessa begrepp används inom SLA för att förklara och diskutera hur språkinlärning kan ske.

Vissa förmågor lär man sig utan att tänka på det, t.ex. att gå, vilket enligt N. Ellis (1994) är exempel på implicit lärande. Annat måste man medvetet bestämma sig för att lära sig, t.ex. att spela schack – ett exempel på explicit lärande, då lärandet mer medvetet fokuseras. En anledning till att man inom andraspråksforskning diskuterar implicit/explicit lärande är att det tycks krävas olika kognitiva processer att lära sig ett första- respektive andraspråk. Att lära sig sitt förstaspråk verkar i stor utsträckning innebära implicit lärande, i alla fall vad avser muntlig förmåga, eftersom barn som befinner sig i en miljö där förstaspråket talas lär sig tala detta till synes utan någon större medveten ansträngning, medan språk som lärs in senare i större utsträckning, men inte enbart, innebär en explicit lärandeprocess (Hulstijn, 2005, 2015). Inom SLA görs också en distinktion mellan implicit och explicit kunskap: om man kan använda språket utan att fundera över bakomliggande regler besitter man implicit kunskap (R. Ellis, 2009). Om man kan förstå och förklara varför man använder en viss form eller ett visst ord är kunskapen explicit. Den explicita kunskapen kan vara mer eller mindre fyllig, och även mer eller mindre korrekt,

men den innebär att man har en viss medvetenhet på en metaspråklig nivå. Även undervisning kan vara implicit eller explicit. I explicit undervisning uppmärksammar läraren eleverna på ett visst grammatiskt fenomen eller viss vokabulär, ofta med hjälp av metaspråk, t.ex. genom användning av grammatisk terminologi. I implicit undervisning kan läraren exempelvis låta elever läsa texter där viss vokabulär eller grammatik förekommer utan att särskilt uppmärksamma dem. Hulstijn (2005) hävdar att det är av stor vikt att forskningen försöker kartlägga vilka aspekter av andraspråket som verkar kunna läras implicit och vilka som kräver mer explicit undervisning. Tidigare forskning har visat att explicit undervisning kan ge bättre resultat, dvs. större effekt, vad gäller språkinlärning, men mot detta kan ställas att det är svårare att mäta effekter av implicit lärande (Norris & Ortega, 2001, Pica 2009). Själva lärprocessen undersöks inte i denna avhandling, men däremot diskuteras möjligheterna till implicit och explicit lärande i de två kontexterna, dvs. genom användning av engelska på fritiden och i språk- och ämnesintegrerad undervisning.

Distinktionen mellan explicit och implicit lärande respektive undervisning görs också i teorier och forskning om hur man tillägnar sig vokabulär. Krashen (1989) menar att specifik undervisning om vokabulär inte behövs, utan att riklig språklig exponering på en nivå som ligger något över elevens egen, och med ett innehåll som upplevs som meningsfullt, är tillräckligt för att nya ord ska läras in. Andra, t.ex. Laufer (2005), menar att detta inte räcker och att explicit undervisning om vokabulär är nödvändig. Laufer hävdar att om den huvudsakliga betydelsen i det man hör eller läser förstås lägger man inte märke till ordens precisa betydelse och hur de används. Dessutom är det tidskrävande att lära sig ord implicit genom exempelvis läsning. Att "kunna" ett ord kan innebära olika grader av förmåga att använda ordet: Vissa ord kan man enbart *receptivt*, dvs. man förstår dem när man hör eller läser dem men kan inte själv använda dem. Andra ord kan man även använda *produktivt*, dvs. i tal och skrift. Det receptiva ordförrådet är alltid större än det produktiva och receptiv förmåga föregår produktiv (Elgort & Nation, 2010; Gass, 2013).

I avhandlingen undersöks elevers produktiva vokabulär i skrift. Ordförrådet har naturligtvis en avgörande betydelse för förmågan att uttrycka sig i skrift – utan ord inget språk (Laufer & Nation, 1995). Språkbruk är dock i hög grad kontextberoende – olika språkliga *register* är gångbara i olika situationer (Halliday, 2004). Det innebär att en skribent gör en mängd olika val beroende på kontext och syfte med texten, exempelvis vilka ord som

används, hur läsaren möts och hur texten organiseras. I avhandlingen undersöks elevernas registervariation när de skriver olika texttyper.

Vad gäller akademiskt register menar Cummins (1979, 2008) och Schleppegrell (2004) att skillnaderna mellan vardagsspråk och det mer akademiska språk som krävs i en skolkontext, både för förståelse av ämnen och för att uttrycka kunskap, är så stora att det akademiska språket kräver explicit undervisning vare sig eleverna studerar på sitt första- eller andraspråk. De framhåller att elever i andra sammanhang inte stöter på akademiskt språk i sådan omfattning att de kan lära sig hur det används implicit. I denna avhandling undersöks en speciell aspekt av elevernas akademiska språkbruk, nämligen i vilken omfattning de använder akademisk vokabulär när de skriver.

Akademisk vokabulär kan dock definieras på olika sätt; en distinktion görs ofta mellan *domänspecifik* och *allmänakademisk vokabulär* (Baumann & Graves, 2010). Domänspecifik vokabulär är ämnesspecifika ord som används i vissa discipliner, t.ex. i historia eller biologi, medan allmänakademisk vokabulär är ord som förekommer i många olika discipliner men mer sällan i icke-akademisk kontext. I avhandlingen analyseras endast allmänakademisk vokabulär eftersom utveckling över tid undersöks bland elever som följer program med olika ämnesinriktning. När generell förmåga att skriva akademiska texter ska mätas över tid är det relevant att mäta just allmänakademisk vokabulär eftersom den kan användas i olika ämneskontexter. I undersökningen används två olika akademiska ordlistor i analysen av akademisk vokabulär i elevtexter, nämligen *Academic Word List* (AWL; Coxhead, 2000) och *Academic Vocabulary List* (AVL; Gardner & Davies, 2014). Båda listorna har skapats ur akademiska textkorpusar med delvis olika urvalsmetoder, varför listornas vokabulär endast delvis överlappar. Principerna för urvalet av ord och de följder dessa val får för listornas användbarhet för att mäta akademisk vokabulär i elevtexter diskuteras grundligt i en av de studier som ingår i avhandlingen (studie II).

Engelska i två kontexter

I avhandlingen undersöks, som redan nämnts, vilken betydelse som elevers exponering för och användning av engelska i två olika kontexter, på fritiden och i språk- och ämnesintegrerad undervisning, har på deras förmåga att skriva på engelska, med särskilt fokus på deras vokabuläranvändning.

I språk- och ämnesintegrerad undervisning är tanken att språkinlärningen ska bli mer effektiv när målspråket, t.ex. engelska, används i undervisning av andra skolämnen, såsom fysik och historia, jämfört med traditionell språkundervisning (Coyle, Hood & Marsh, 2010). Dels kan undervisningens innehåll bli mer substantiellt när det är ämnesbaserat, dels anses tidsaspekten betydelsefull, eftersom målspråket används under ett större antal lektioner än vid traditionell språkundervisning. Redan på 1960-talet bedrevs språk- och ämnesintegrerad undervisning med goda resultat i det tvåspråkiga Kanada (se t.ex. Bruck, Lambert & Tucker, 1974). Sedan 1990-talet förespråkar EU språk- och ämnesintegrerad undervisning i syfte att öka befolkningens språkliga kompetens och rörlighet på arbetsmarknaden (Eurydice, 2006).

År 2012 erbjöd omkring 27% av alla svenska gymnasieskolor språk- och ämnesintegrerad undervisning, i de allra flesta fall med engelska som målspråk, men även andra språk, t.ex. tyska, förekommer, om än i mycket begränsad omfattning (Yoxsimer Paulsrud, 2014). I Sverige används ibland den svenska förkortningen SPRINT när man talar om språk- och ämnesintegrerad undervisning; dock används i avhandlingen genomgående den engelska förkortningen CLIL (Content and language integrated learning).[6]

Resultat från de få svenska studier som undersökt effekter av CLIL-undervisning har inte visat att CLIL-elevers engelskkunskaper utvecklas mer än andra elevers; andra faktorer såsom användning av engelska på fritiden tycks lika betydelsefulla (Sylvén, 2004, 2013; jfr Hyltenstam, 2004; Yoxsimer Paulsrud, 2014). Däremot visar resultat från ett antal internationella studier att CLIL-elever ofta når en högre kompetens i målspråket än elever i traditionell språkundervisning (jfr t.ex. Ruiz de Zarobe, 2008, 2010; Dalton-Puffer, 2011). CLIL-elever har t.ex. ofta ett större ordförråd, de organiserar sina texter bättre och deras språkbruk är mer korrekt jämfört med elever i traditionell undervisning. Dock har få studier undersökt effekter av CLIL-undervisning på akademiskt ordförråd (Dalton-Puffer, 2011). Inte heller har fritidsengelskan tagits i beaktande i någon större utsträckning när effekten av CLIL undersökts (jfr dock Sylvén, 2004).

En viss kritik har riktats mot vad som anses vara ogrundade slutsatser om CLIL-undervisningens positiva effekter (Bruton, 2011). Bruton påpekar att

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[6] Till skillnad från s.k. IB-program (International Baccalaureate), där elever också undervisas på engelska i Sverige men efter en specifik läroplan för IB, följer elever i CLIL-program svensk läroplan. I denna avhandling ingår inga IB-klasser eftersom jämförelser görs mellan klasser som använder olika undervisningsspråk men följer samma läroplan, dvs. den svenska.

CLIL-studier ofta saknar ingångsdata, dvs. man känner inte till elevernas språkliga kompetensnivå när de började CLIL-undervisning. Om man inte har ingångsdata blir det naturligtvis svårt att dra några slutsatser om effekten av CLIL-undervisning. I en longitudinell studie i Nederländerna fann Admiraal, Westhoff och de Boot (2006) att CLIL-elevers receptiva engelska ordförråd var större än icke-CLIL elevers redan när de påbörjade CLIL-undervisningen och att de låg högre även fortsättningsvis. Skillnaden mellan CLIL- och icke-CLIL-elever ökade dock inte; resultaten visade alltså att CLIL-undervisningen inte bidrog till en starkare utveckling av receptiv vokabulär. I denna avhandling undersöks CLIL- och icke-CLIL elevers utveckling vad gäller produktiv akademisk vokabulär över tid, närmare bestämt under tre år.

Lyster (2007) menar att språk- och ämnesintegrerad undervisning ofta har ett starkt fokus på ämnesinnehållet och att elever förväntas lära sig språket implicit. Han hävdar att elevernas kompetens skulle utvecklas ännu mer om undervisningen i högre grad uppmärksammade språket, dvs. om både språk och ämne fokuserades. Resultat från studier gjorda i CLIL-klassrum visar att lärarens språkbruk tenderar att vara mer begränsat när ett andraspråk används och att interaktionen i klassrummet är mindre än när förstaspråket används (se t.ex. Lim Falk, 2008; Nikula, 2010). Trots detta har, som redan nämnts, ett antal studier visat att CLIL-elever ofta når en högre kompetens i målspråket än elever som följer traditionell språkundervisning (se t.ex. Dalton-Puffer, 2011).

Även engelska som används på fritiden tycks gynna elevers språkutveckling (se t.ex. Sylvén, 2004, 2013; Sundqvist, 2009; Kuppens, 2010). Troligtvis väljer ungdomar att ägna sig åt fritidsaktiviteter där engelska används därför att de är intresserade av aktiviteten i sig eller av innehållet i t.ex. ett spel, en film eller en bok; oftast är deras främsta syfte antagligen inte att lära sig engelska. Dock verkar många aktiviteter där engelska används på fritiden leda till att elevernas språk utvecklas, vilket delvis kan bero på att de upplever en lägre grad av olust och oro när de använder språket på fritiden än i skolan (Dewaele, 2009), samtidigt som motivationen att ägna sig åt aktiviteten är hög (Dörnyei, 2005; Gardner, 2006).

I undervisning i skolan kan graden av explicit språkundervisning variera – i fritidsengelskan förekommer troligtvis explicit språkundervisning i mycket liten utsträckning, men lärandet kan ändå vara både implicit och explicit. Vid läsning kan exempelvis nya ord läras in implicit, dvs. utan att man tänker på det, eftersom orden förstås av sammanhanget. Ibland lägger man däremot

märke till nya ord och slår upp dem eller tar reda på vad de betyder på annat sätt, vilket innebär att lärandet är explicit (jfr Hulstijn, 2005). Många fritidsaktiviteter där engelska används erbjuder möjligheter att interagera och använda språket i tal och skrift, vilket också är viktigt för språkutveckling (se t.ex. Swain, 1995).

Ett antal svenska studier har visat att fritidsengelskan har positiva effekter på elevers engelskkunskaper, exempelvis vad avser ordförrådet och muntlig förmåga (Sundqvist, 2009; Sylvén & Sundqvist, 2012a). Även internationella studier har visat att vissa dataspel, där ett andraspråk används, kan inverka positivt på den språkliga kompetensen (Ranalli, 2008; de Haan et al., 2010). Emellertid har inte fritidsengelskans eventuella inverkan på elevers utveckling av akademiskt språk undersökts.

Vad som är möjligt att lära sig på fritiden eller i skolan hänger naturligtvis samman med vilket slags språk som används i de aktiviteter eller i den undervisning där eleven deltar; det är omöjligt att lära sig ord och grammatiska mönster som man aldrig stöter på. Det tycks dessutom som om nya ord måste upprepas ett antal gånger eller uppmärksammas explicit för att en elev ska kunna använda nya ord i egen språklig produktion (Laufer & Hulstijn, 2001). I avhandlingen undersöks, som tidigare nämnts, hur fritidsengelskan påverkar elevers förmåga att skriva i några olika register, liksom hur CLIL-undervisning påverkar deras utveckling av akademisk vokabulär. Dessutom undersöks i vilken mån CLIL-elevers användning av engelska på fritiden skiljer sig från icke-CLIL-elevers – när effekten av CLIL undersöks bör effekten av elevers användning av fritidsengelska vägas in, eftersom den kan vara betydande.

Metod och material

Tre empiriska studier genomfördes för att undersöka hur elevers förmåga att skriva på engelska påverkas av användning av engelska på fritiden och av CLIL-undervisning. En studie genomfördes bland 37 elever i årskurs 9 där data samlades in under en månad. Två longitudinella studier genomfördes bland 230 gymnasieelever under tre år. Av dessa elever gick 146 CLIL-program medan 84 följde vanlig ämnesundervisning på svenska (utom när de studerade främmande språk). Data bestod av insamlade elevtexter samt av en bakgrundsenkät och en språkdagbok, där eleverna redogjorde för sin användning av engelska på fritiden.

Elevtexter

Elevtexter baserade på givna skrivuppgifter samlades in för att undersöka elevernas förmåga att skriva på engelska i några olika register. I undersökningen bland elever i årskurs 9 skrev eleverna två texter var, ett brev/e-mail och en nyhetsartikel, utifrån på ett filmklipp om en dramatisk nödlandning. Brev/e-mail och nyhetsartiklar är texttyper som förekommer i svensk- och engelskundervisning på högstadiet och som i viss utsträckning kräver olika språkbruk, dvs. registervariation. I den longitudinella studien bland gymnasieelever gavs fyra skrivuppgifter under de tre gymnasieåren, den första redan första terminen och den sista i årskurs tre. Skrivuppgifternas innehåll anknöt till kursplanerna för skolans natur- och samhällsvetenskapliga ämnen: eleverna skrev om kärnkraft, jämställdhet, politiskt våld och biologisk mångfald. Uppgifterna var av utredande eller argumenterande karaktär, dvs. texttyper som tas upp i både svensk- och engelskämnets kursplaner.

Textanalyser

Samtliga insamlade texter analyserades för att kunna jämföra språkbruk i texter skriva av elever som i olika utsträckning använde engelska på sin fritid och för att kunna jämföra texter av CLIL- och icke-CLIL-elever. I de insamlade texterna i grundskolans årskurs 9 analyserades textlängd, meningslängd, ordlängd och ordvariation med hjälp av ett webbaserat textanalysverktyg, Wordsmith Tools, version 5.0 (www.lexically.net/wordsmith). Dessa analyser gjordes eftersom dessa mått brukar ge en indikation om nivån på den skriftspråkliga förmågan, dvs. dessa mått korrelerar ofta med annan, holistisk bedömning av språkanvändning i texter (se t.ex. Grant & Ginther, 2000). För att undersöka om eleverna enbart använde högfrekventa ord eller även mer ovanliga ord, dvs. omfånget på deras produktiva ordförråd, analyserades texterna med hjälp av ett annat webbaserat verktyg, Vocabprofile från Lextutor (http://www.lextutor.ca). I denna analys noterades i vilken utsträckning eleverna använde vokabulär utanför de 3000 vanligast förekommande orden i engelska (baserat på ordens förekomst i *BNC, British National Corpus*). Dessutom analyserades, med hjälp av Martin och Whites (2005) modell för analys av *appraisal* (värderande språk), elevernas användning av olika språkliga resurser för att uttrycka attityd och för att nyansera språket. Jämförelser av språkbruk gjordes dels mellan elever med

hög respektive låg frekvens av fritidsengelska, dels mellan de två texttyperna för att undersöka registervariation.

I den longitudinella undersökningen på gymnasiet var, som redan nämnts, syftet att jämföra i vilken utsträckning CLIL- och icke-CLIL-elever använde akademisk vokabulär i sina texter, samt att undersöka förändring i denna användning över tid. Ett ytterligare syfte var att undersöka om fritidsengelskan tycktes ha någon inverkan på utvecklingen av akademisk vokabulär. De två tidigare nämnda korpusbaserade akademiska ordlistorna, *Academic Word List* (AWL; Coxhead, 2000) och *Academic Vocabulary List* (AVL; Gardner & Davies, 2014), användes i dessa analyser, dvs. orden i elevtexterna jämfördes mot de två listorna och andelen ord som identifierades som akademiska i någon av de två ordlistorna noterades. I analysen baserad på AWL användes tidigare nämnda Vocabprofile från Lextutor och i analysen baserad på AVL ett till denna lista kopplat analysverktyg, tillgängligt via http://www.wordandphrase.info/academic/. Jämförande analyser kunde därmed göras av utveckling över tid baserade på två olika mätinstrument.

För att illustrera och jämföra hur de två ordlistornas urval av ord påverkade utfallet genomfördes en fallstudie där en elevs användning av akademisk vokabulär analyserades i detalj. Denne elevs texter valdes ut eftersom andelen akademiska ord i dem låg nära genomsnittet – de var således inga extremfall.

För att validera resultaten av de korpusbaserade analyserna jämfördes och bedömdes 30 elevers första och sista skrivuppgift holistiskt av fyra erfarna bedömare. I urvalet ingick texter med varierande andel akademiska ord. De fyra bedömarna noterade vilken av varje elevs två skrivuppgifter, dvs. den första eller den sista, de ansåg starkast, utan att känna till att de två uppsatserna var skrivna av samma elev eller när de skrivits. I en andra bedömningsomgång jämfördes samma 30 elevers sista skrivuppgift med en text vars andel akademiska ord låg nära medelvärdet. Denna bedömning gjordes för att undersöka om texter som bedömdes som starkare än jämförelsetexten innehöll en större andel akademiska ord än den. Med andra ord var syftet att validera om andelen akademiska ord tycktes ha någon betydelse för den holistiska bedömningen.

Analys av fritidsengelska

För att undersöka elevernas användning av engelska på fritiden användes två instrument: en bakgrundsenkät och en språkdagbok. I bakgrundsenkäten markerade eleverna hur ofta de brukade använda engelska på fritiden i olika typer av aktiviteter, t.ex. hur ofta de läste, såg film eller spelade dataspel där engelska användes. I språkdagboken, som fylldes i under 5–7 dagar, noterade eleverna i vilken typ av aktiviteter de använt engelska de aktuella dagarna och under hur lång tid aktiviteterna pågick. I bakgrundsenkäten mättes alltså frekvensen av fritidsengelska och i dagboken tid.

Statistiska analyser

De tre studierna är jämförande studier. Eftersom både elevtexter och elevers användning av fritidsengelska analyserades på flera sätt, med hjälp av olika instrument, triangulerades resultaten. I de statistiska analyserna användes PASW Statistics 18.0 och SPSS version 21. Resultat från de olika textanalyserna jämfördes på gruppnivå mellan elever som rapporterat hög respektive låg frekvens av fritidsengelska, mellan kvinnliga och manliga elever och mellan CLIL- och icke-CLIL-elever. För parvisa jämförelser på gruppnivå genomfördes T-test och när flera grupper jämfördes användes ANOVA med Tukey post hoc. Dessa analyser visar förutom medelvärden också spridning inom grupperna och om skillnader mellan grupper är statistiskt signifikanta. Spearmans korrelationsanalys användes för att undersöka i vilken utsträckning frekvens av fritidsengelska samvarierade med textlängd, meningslängd, ordlängd och ordvariation i texterna skrivna av elever i årskurs 9. Korrelationen mellan användning av fritidsengelska och andelen akademiska ord i gymnasieelevernas texter undersöktes också. För att analysera och jämföra utveckling av akademisk vokabulär över tid genomfördes regressionsanalyser. I regressionsanalys beaktas ingångsvärden när skillnader i slutresultat analyseras, vilket innebär att analysen visar om en grupp utvecklas mer än en annan och i vilken utsträckning olika bakgrundsfaktorer tycks påverka utvecklingen.

Resultat av de tre studierna

Studie I

I denna studie undersöktes vilken inverkan högstadieelevers användning av engelska på fritiden kunde ha på deras förmåga att skriva på engelska, särskilt avseende registervariation. Språkbruket i två olika texttyper, brev och nyhetsartikel, där delvis olika språkbruk kunde förväntas, undersöktes i detalj, liksom elevernas användning av engelska på fritiden. Resultaten visade att det fanns stora individuella skillnader i användning av engelska på fritiden mellan elever och att manliga elever använde engelska på sin fritid betydligt oftare än kvinnliga. Vidare visade resultaten att elever som frekvent använde engelska på fritiden ofta hade högt betyg i engelska. Ingen av de i studien ingående eleverna som rapporterat att de sällan använde engelska på fritiden hade högsta betyg. De korpusbaserade textanalyserna visade att de elever som ofta använde engelska på fritiden skrev längre meningar och varierade sitt ordval mer än elever som mer sällan använde engelska utanför skolan. Detta var särskilt tydligt i brevet, en texttyp där ett vardagligt språk kan förväntas. Dessutom använde dessa elever längre ord och fler ovanliga ord när de skrev nyhetsartikeln, vilket påvisar registervariation. Även analysen av hur olika språkliga resurser användes för att uttrycka attityd och för att nyansera språket visade att elever med stor användning av engelska på fritiden tycktes ha tillgång till en rikare språklig palett, som dessutom i hög grad anpassades efter texttyp. Elever med hög frekvens av fritidsengelska ändrade alltså sitt språkbruk när de skrev olika texttyper; de uppvisade registervariation i högre utsträckning än andra elever.

Studie II

Huvudsyftet med denna studie var att undersöka och jämföra i vilken utsträckning CLIL- och icke-CLIL elever använde akademisk vokabulär i skriftlig produktion samt hur denna användning utvecklades över tid. Ett ytterligare syfte var att undersöka och jämföra användbarheten av två olika akademiska ordlistor, AWL (Coxhead, 2000) och AVL (Gardner & Davies, 2014) för analys av progression av akademisk vokabulär i elevtexter.

Resultaten visade att CLIL-eleverna använde en större andel akademisk vokabulär än icke-CLIL-eleverna redan när de började CLIL-utbildningen, och att de använde en större andel akademiska ord i sina uppsatser även

fortsättningsvis. Dock ökade inte CLIL-elevernas användning av sådan vokabulär mer än bland de elever som följde undervisning på svenska. Resultaten visade också att AVL tycks vara en mer användbar ordlista än AWL när utveckling av akademisk vokabulär i elevtexter ska undersökas. Analyser av akademisk vokabulär över tid baserade på de två ordlistorna visade – märkligt nog – motsatt utveckling. Dock överensstämde endast den positiva utveckling som AVL visade med resultatet av den holistiska bedömningen av ett urval av texterna. I 27 fall av 30 bedömdes den sist skrivna uppgiften som starkare än den första, vilket indikerar en positiv utveckling.

Studie III

Ett syfte med denna studie var att undersöka om elevers användning av engelska på fritiden tycktes påverka deras produktiva akademisk vokabulär. Ett annat syfte var att undersöka om det fanns skillnader mellan kvinnliga och manliga CLIL- och icke-CLIL-elevers användning av engelska på fritiden och i deras utveckling av akademisk vokabulär.

Resultaten visade att CLIL-elevernas användning av engelska på fritiden var signifikant större än icke-CLIL-elevernas. Manliga elever, framför allt manliga CLIL-elever, använde engelska oftare än kvinnliga elever, och deras uppsatser innehöll en större andel akademiska ord. Manliga CLIL-elevers användning av akademisk vokabulär utvecklades emellertid inte i högre grad än de andra elevernas. Frekvensen av fritidsengelska samvarierade med förekomsten av akademisk vokabulär i den första skrivuppgiften men inte i övriga skrivuppgifter, vilket indikerar att det är på lägre kunskapsnivåer som fritidsengelskans positiva inverkan är som störst. Analysen av utveckling över tid visade att frekvent användning av engelska på fritiden inte tycktes innebära att utvecklingen av akademisk vokabulär blev starkare. Varken CLIL-utbildning eller frekvent användning av engelska på fritiden verkar alltså leda till en högre grad av progression av produktiv akademisk vokabulär.

Diskussion

Liksom i tidigare studier visar avhandlingens resultat att användning av engelska på fritiden har en positiv inverkan på elevers förmåga att använda engelska, i synnerhet på lägre kunskapsnivåer. Tidigare studier har visat att fritidsengelskan har god inverkan på svenska elevers receptiva ordförråd, men

även på deras muntliga förmåga (Sundqvist, 2009; Sylvén & Sundqvist, 2012a). Avhandlingens resultat visar alltså att även skriftlig förmåga gynnas. Resultaten av studie I, som genomfördes bland elever i grundskolans årskurs 9, visade, som nämnts, att elever som ofta använde engelska på sin fritid varierade sitt ordval mer än elever som mer sällan använde engelska på fritiden, och att deras ordförråd även innehöll vokabulär utanför de 3000 vanligaste orden i engelska. De använde också ett mer nyanserat språk, anpassat efter texttyp. Eftersom elever med hög frekvens av fritidsengelska uppvisade större grad av registervariation tyder det på att de har en större språklig medvetenhet och tillgång till en rikare repertoar av språkliga resurser än elever som mer sällan använder engelska på sin fritid. Det går emellertid inte att slå fast att det är på grund av fritidsengelskan som eleverna är goda skribenter – de lär sig naturligtvis engelska i skolan också – men analysen visar att mängden fritidsengelska samvarierar med de kvalitéer som mättes i texterna. Det är troligt att intresse för de aktiviteter där engelska behövs på fritiden leder till att språket används och tränas där, vilket i sin tur kan leda till ökat lärande och intresse även i skolan. Det kan också tänkas att ett intresse för engelska i skolan leder över till ett intresse att använda språket utanför skolan; en positiv växelverkan tycks i alla fall leda till ökad kunskap och förmåga.

Även i den större undersökningen bland gymnasieelever visade resultaten att fritidsengelskan verkade betydelsefull också för elevernas förmåga att skriva mer akademiska texttyper. I den första skrivuppgiften, där eleverna skulle argumentera för eller emot kärnkraft, fanns en samvariation mellan förekomst av akademisk vokabulär och frekvens av fritidsengelska. Detta resultat indikerar, liksom resultaten i årskurs 9, att fritidsengelskan även kan bidra till att utveckla elevers kompetens bortom vardagsspråket. Dock fanns i de efterföljande skrivuppgifterna i gymnasiestudien ingen samvariation mellan fritidsengelska och förekomsten av akademisk vokabulär. När utvecklingen över tid undersöktes visade resultatet att frekvensen av fritidsengelska inte var en avgörande faktor för hur utvecklingen blev. Resultaten indikerar alltså att elevers användning av engelska på fritiden framför allt verkar ha en stor inverkan på lägre stadier och kunskapsnivåer än på högre.

När engelska används på fritiden är fokus troligtvis i stor utsträckning på innehållet snarare än språket, och det lärande som då äger rum kan förmodas ske implicit, men även explicit lärande kan förekomma. Det språkliga innehållet i *input* avgör vad som är möjligt att lära sig – ett ord eller en

grammatisk form måste förekomma i *input* för att lärande ska kunna ske. Webb och Rodgers (2009a,b) noterar att möjligheten att möta akademiskt språk är liten i många sammanhang där engelska används på fritiden, t.ex. i filmer, men det beror givetvis på vad eleven ägnar sig åt på sin fritid. De elever som läser faktaböcker, ser på TV-program med vetenskaplig inriktning (t.ex. dokumentärer eller naturprogram) eller ser/läser nyheter på engelska har naturligtvis stora möjligheter att möta akademisk vokabulär. Dock visar resultaten att ungdomar i allmänhet – i alla fall de som ingick i studien – inte tycks möta akademisk vokabulär i sådan omfattning på sin fritid att det har någon väsentlig inverkan på utvecklingen av deras produktiva akademiska vokabulär.

I denna avhandling undersöktes just produktiv vokabulär, inte receptiv. Det är möjligt och troligt att fritidsengelskan har större inverkan på receptiv förmåga eftersom receptiv förmåga alltid föregår produktiv förmåga och det tar tid att utveckla produktiv förmåga (Elgort & Nation, 2010). Laufer (2005) menar att det är svårt att implicit, t.ex. genom läsning, tillägna sig en så detaljerad kunskap om hur ord används att man kan använda dem i olika sammanhang i språklig produktion. För att kunna använda ett ord i språklig produktion måste man ha stött på det i sådan omfattning att man kan dra slutsatser om hur det används. Resultaten i denna avhandling visar alltså att akademisk vokabulär tycks förekomma i alltför liten utsträckning i den engelska eleverna möter och använder på fritiden för att det ska påverka den produktiva förmågan på ett avgörande sätt.

Vad gäller CLIL-undervisningens eventuella inverkan på elevers utveckling av produktiv akademisk vokabulär visade resultaten att CLIL-eleverna redan när de började CLIL-utbildningen använde en större andel akademiska ord än icke-CLIL-eleverna. Resultatet överensstämmer med de resultat som Sylvén och Ohlander (2014) rapporterade i en studie av receptiv ordkunskap bland samma elever. Resultatet bekräftar bilden av att det ofta är elever med hög kompetens i engelska och med hög motivation som väljer CLIL-program (jfr Yoxsimer Paulsrud, 2014; Sylvén och Thompson, 2015). Resultaten i studie II visade att CLIL-gruppen även i de efterföljande uppsatserna använde en större andel akademiska ord än gruppen av icke-CLIL-elever. Dock visade analysen av utveckling över tid att när hänsyn togs till skillnader i ingångsvärden ökade inte CLIL-elevernas användning av akademisk vokabulär mer än bland elever som följde undervisning på svenska. Detta resultat var oväntat eftersom man kan förvänta sig att elever som följer ämnesutbildning

på engelska ska utveckla sitt akademiska ordförråd mer än elever som följer utbildning på svenska. Det bör dock påpekas att det kan vara svårare att utöka det akademiska ordförrådet från en redan relativt hög nivå; som nämnts låg CLIL-gruppen högre redan från början. Emellertid fann även Admiraal et al. (2006) att CLIL-elever i Nederländerna inte utvecklade sitt receptiva ordförråd mer än andra elever, även om de hade högre resultat i varje enskild uppgift. Det kan möjligen vara så att CLIL-undervisning inte har samma betydelse för elevers språkutveckling i länder där eleverna generellt ligger på en relativt hög nivå när de börjar CLIL-utbildningen (jfr Sylvén, 2013). Europeiska undersökningar har visat att elever i Sverige och i Nederländerna har en högre kompetens i engelska än elever i de flesta andra europeiska länder (European Commission/SurveyLang, 2012). Resultat från CLIL-studier genomförda i länder där eleverna generellt ligger på en lägre kunskapsnivå i engelska än i Sverige, såsom i Spanien, visar oftast att CLIL är gynnsamt (Ruiz de Zarobe, 2008, 2010; jfr Sylvén, 2013).

I en undersökning bland gymnasieelever fann Sylvén (2004) att de icke-CLIL-elever som i stor utsträckning använde engelska på fritiden nådde lika goda resultat på ordkunskapstest som CLIL-elever med liten användning av engelska på fritiden. I studie III undersöktes skillnader mellan CLIL- och icke-CLIL-elevers användning av engelska på fritiden. Som redan påpekats visade resultaten att CLIL-elever, i synnerhet manliga, använde engelska signifikant oftare och under längre tid än icke-CLIL-elever, samt att manliga CLIL-elever också använde en större andel akademiska ord i sina texter än andra elever. Trots det utökade de inte sin användning av akademisk vokabulär i större utsträckning än andra elever.

Resultaten visade emellertid att både CLIL- och icke-CLIL-elever använde en större andel akademiska ord i årskurs tre än i årskurs ett. Det tyder på att skolan och eleverna lyckats väl, men eftersom CLIL-elevernas progression inte var starkare än icke-CLIL-elevernas tyder resultaten också på att det kan finnas en utvecklingspotential inom svensk CLIL-utbildning, särskilt om tanken med CLIL-utbildning är att elever ska utveckla förmåga att använda akademiskt register på engelska i större utsträckning än i vanlig undervisning. CLIL-undervisning kan emellertid bedrivas på olika sätt och det kan finnas skillnader i CLIL-praktiker som är avgörande för hur utfallet blir. Det låg dock utanför denna avhandlings ram att undersöka hur CLIL bedrevs på de olika skolorna. Tidigare studier har, som redan nämnts, visat att det ofta är ett starkt fokus på ämnesinnehåll i CLIL-undervisning och att språket inte tas upp

explicit i någon större omfattning, vilket skulle kunna förklara den begränsade utvecklingen av språklig kompetens (Genesee & Lindholm-Leary, 2013; Lyster, 2007). Studier har också visat att lärare använder ett mer begränsat språk när de undervisar på ett andraspråk jämfört med när de undervisar på förstaspråket, och att de har svårare att avvika från den förberedda lektionsplaneringen (Nikula, 2010; Lim Falk, 2009). I en kommande studie (Olsson & Sylvén, under arbete) analyseras klassrumsdata insamlade på de tre gymnasieskolor som ingick i studie II och III för att undersöka skillnader och likheter mellan CLIL-praktiker, samt om eventuella skillnader i så fall leder till olika resultat vad avser elevernas förmåga att skriva akademiska texter på engelska.

Slutord

Avhandlingens resultat visar att fritidsengelskan tycks ha en mycket positiv inverkan på elevers förmåga att skriva, i synnerhet på lägre kunskapsnivåer. Resultaten indikerar vidare att akademisk vokabulär inte verkar förekomma i sådan omfattning i de kontexter där elever använder engelska på sin fritid att de därigenom utvecklar denna typ av vokabulär. Därmed framstår skolan som den arena där engelskt akademiskt språk tränas – det är förstås naturligt att det är just i skolan som akademiskt språk behövs, tränas och används, oavsett om man väljer att gå ett CLIL-program eller inte. God förmåga att uttrycka sig på engelska även i kontexter där ett mer akademiskt språkbruk används anses nödvändig i dagens samhälle. Detta kommer till uttryck i gymnasieskolans kursplaner för engelskämnet, där det t.ex. nämns att eleverna ska utveckla sin förmåga att på engelska diskutera och argumentera kring samhällsfrågor (Skolverket, 2011). Resultaten som presenterats i avhandlingen tyder på att skolorna lyckats väl eftersom alla i studien ingående grupper utökade sin produktiva akademiska vokabulär. Men de tyder också på att det finns en utvecklingspotential i svensk CLIL-undervisning eftersom CLIL-elevers användning av akademisk vokabulär inte förefaller utvecklas mer än icke-CLIL-elevers, trots att de använder engelska i större utsträckning både i skolan och på fritiden. Avhandlingens resultat indikerar att implicit exponering inte tycks öka progressionen av akademisk vokabulär nämnvärt när eleverna nått en viss kunskapsnivå. Förhoppningsvis kan denna avhandling bidra till en ökad medvetenhet om hur och i vilka kontexter elevers kompetens och förmåga att använda akademisk engelska utvecklas, för att skolans

undervisning ska kunna planeras på ett sätt som ytterligare befrämjar elevernas språkutveckling.

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