

Extramural English and academic vocabulary. A longitudinal study of CLIL and non-CLIL students in Sweden

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In content and language integrated learning (CLIL), where school subjects are taught through an L2 – in this case English – students often reach higher L2 proficiency levels than students who follow regular education. There are also indications that English encountered and used outside of school, e.g. through books, computer games or films, may be as influential as CLIL instruction for vocabulary growth. However, there is little research on the development of academic vocabulary in this connection, and few studies have considered students' use of English outside school, when evaluating the effect of CLIL instruction. In this study, male and female CLIL and non-CLIL students' use of English in their spare time is investigated and compared (N=230). Further, the possible impact of extramural English on students' progress in academic vocabulary use in writing is investigated. The results indicate that CLIL students use English in their spare time to a significantly greater extent than non-CLIL students. Male CLIL students, who used English outside school most frequently, also included the highest proportion of academic vocabulary in their essays. However, they did not progress more than other students; extramural English does not seem to have any significant impact on progress of academic vocabulary over time.

Keywords: academic writing, CLIL, academic vocabulary, extramural English, EFL

1 Introduction

Research on the effects of *content and language integrated learning (CLIL)*, where school subjects are taught through a second or foreign language (L2), indicates that CLIL students' L2 proficiency levels are often higher compared to students who follow regular, non-CLIL, education (Coyle, Hood & Marsh 2010; Dalton-Puffer 2011). Furthermore, there are indications that *extramural English (EE)*, English encountered outside school, e.g. through TV/films or books, may be as influential for vocabulary size and range as CLIL instruction in English (Sylvén 2004). In fact, research has shown that English encountered through different media, e.g. multiplayer online computer games, provides learners with ample

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opportunities for L2 learning (Peterson 2010, 2012; Sundqvist & Sylvén 2014). But does extramural use of English also have an impact on students' proficiency in academic registers? Or is there too large a discrepancy between the language that students encounter through media and the language they meet at school and in exams (cf. Simensen 2010)?

In this study, involving CLIL and non-CLIL students at three upper secondary schools in Sweden, the frequency and nature of students' use of English in their spare time are investigated for the purpose of exploring the possible impact of EE on their progress in academic vocabulary use in writing. In addition to CLIL vs non-CLIL, comparisons are made between male and female students.

2 English in Sweden

In Sweden, as in many other countries, proficiency in English is highly valued within the school system and in society at large (Hyltenstam 2004). At school, English is mandatory from primary school throughout the nine years in compulsory school. Since almost all students proceed to upper secondary school, a majority of students continue to study English until the age of 18 or 19 (Swedish National Agency for Education 2011, 2014). An increasing number of university courses are given in English and large parts of the relevant literature are in English; hence, high proficiency in academic English is necessary in higher education (Airey 2009; Melander 2010; cf. Nunan 2003).

Studies have shown that, generally, Swedish teenagers' level of proficiency in English is high: The extensive *Survey of Language Competence*, ESLC, conducted in 2011 and involving 53 000 students aged 13–16 from 14 European countries, showed that Swedish students' scores were among the highest (European Commission/SurveyLang 2012). Commenting on the results of the ESLC, the Swedish National Agency for Education (2012) points to Swedish students' exposure to EE as a factor that may influence their level of proficiency.

Most Swedish children have come across a great deal of English already before they begin school; watching TV and films, playing computer games or listening to music, they encounter English. Swedish TV channels normally provide Swedish subtitles when broadcasting films and programmes in English and thus, viewers listen to English as they watch TV.

The Swedish Media Council (2015a) reported that as many as 5% of children under the age of 1 accessed the Internet on a daily basis (according to their parents), and at the age of 8, 38% of the children used the Internet every day. A report involving 9–18 year-olds showed that 86% of 13–16-year-old teenagers had access to a computer or a tablet of their own and almost all had their own mobile phone as well (Swedish Media Council 2015b). In the group aged 13–18, 95% reported that they accessed the Internet every day, many of them for more than 3 hours. Differences in media habits between girls and boys tend to diminish, but there are some remaining differences, e.g. with regard to computer games: approximately 45% of 13–16-year-old boys reported that they played computer games more than 3 hours a day compared to 5–10% of the girls.

The surveys conducted by the Swedish Media Council do not provide information about languages encountered using different media. Nevertheless, the information is of interest in the present context since, clearly, English is highly accessible to almost all Swedish teenagers, also in their everyday activities outside school.

3 Vocabulary learning in different contexts

Thorne, Black and Sykes (2009: 814–15) argue that participation in Internet interest communities and online gaming will blur boundaries of the institutional identity of a “student”, as language study is no longer separated from social life; competences develop in interaction with other participants not only in school. Indisputably, L2 learning may occur in many different contexts in and outside school. Sometimes, focus is on content and then L2 learning may occur incidentally. If attention is drawn to certain linguistic features, explicit learning may occur (Ellis 2009). Both types of learning may occur in the spare time as well as at school; Hulstijn (2005: 133) argues that several factors may interact in learning processes, contributing to more or less explicit or implicit learning, e.g. the frequency and salience of the input, and learners’ individual knowledge and learning styles. Vocabulary acquisition may occur anywhere on the continuum from extensive exposure of meaning-focused input to engagement-rich explicit exposure (Schmitt 2008: 346). In this section, a brief overview is given of studies investigating L2 learning in two different contexts: through English encountered and used in students’ spare time (section 3.1) and in CLIL education (section 3.2).

3.1 *The impact of EE on L2 vocabulary*

Students may encounter English in many different situations in their spare time. In this study, both receptive use of English, i.e. listening and reading, and productive use of English, i.e. speaking and writing, are of interest.

Reading in English is an activity that can be enjoyed both online and via printed material. Several studies have indicated that reading may indeed enhance L2 vocabulary knowledge, particularly if the reading material is at an appropriate level, including only a small percentage of vocabulary that is new to the reader (Nation 2006, 2013; cf. McQuillan & Krashen 2008; Cobb 2007, 2008; Coady 1997). Elgort and Warren (2014) found that many different factors affected L2 vocabulary acquisition from reading, e.g. age, L1, gender, level of enjoyment and text characteristics (cf. Eckerth & Tavakoli 2012). Further, vocabulary may be acquired through verbal input of the L2, e.g. when listening to stories (Van Zeeland & Schmitt 2013a, 2013b).

Many online activities combine reading and writing, e.g. chatting, blogging or playing games. Gee (2008) argues that the entertainment and pleasure experienced when playing games provide a good basis for learning. Particular attention has been paid to the effect on learning of massively multiplayer online role-playing games (MMORPGs) (Peterson 2010, 2012). Findings have indicated that playing such games may be beneficial for L2 vocabulary growth (Ranalli 2008; deHaan, Redd & Kuwada 2010; Sylvén & Sundqvist 2012a, 2012b). Conversational language, in particular, seems to be enhanced (Peterson 2011).

Watching TV programmes and films may also be beneficial for L2 vocabulary acquisition (Webb & Rogers 2009a, 2009b). Studies have shown that films or TV shows with discipline-specific content, e.g. TV series or films set in a hospital or in a court, provide opportunities to acquire domain specific vocabulary, such as vocabulary used in medical or legal contexts (Webb 2010; Csomay & Petrović 2012). Furthermore, Kuppens (2010) found that watching TV programmes and films seemed to have a significant effect on Flemish children’s translation skills.

Several Swedish studies have indicated that EE appears to have a considerable impact on English proficiency and moreover, results have indicated gender differences: Sylvén and Sundqvist (2012a) found that 11-12-year-old boys played games more often than girls and had a larger vocabulary (cf. Sundqvist & Sylvén 2014; Sundqvist & Wikström 2015). In Sundqvist's (2009) study among slightly older students, aged 15-16, a strong correlation between vocabulary size and EE was found. In a study involving students of the same age, Olsson (2012) found that students who reported frequent exposure to EE used a greater variety of linguistic resources, such as modal adjuncts, when writing, and, further, used vocabulary beyond the 3000 most commonly found words in the British National Corpus (BNC; Nation 2004) more often compared to students with lower amounts of EE.

Of particular interest for the present study, since it involves CLIL and non-CLIL students (N=363), are results reported by Sylvén (2004), indicating that the total amount of input of English has a major effect on vocabulary size. Although CLIL classes generally scored higher than non-CLIL classes on vocabulary tests, non-CLIL students with frequent use of EE were more successful than CLIL students with little exposure to EE. Also, Sylvén (2004) found that male students used EE to a greater extent than female students and they also scored higher on vocabulary tests.

As this brief overview has shown, extramural use of English through various media holds the potential of enhancing L2 vocabulary substantially, but very little research has addressed the possible impact of EE on academic vocabulary; thus, this study is indented to fill, at least partially, this void.

3.2 CLIL and its impact on L2 vocabulary

The attention paid to learning outside school does not imply that school is not important; on the contrary, in an ideal situation, learning in and outside school interlink to enhance learning and personal development. The great importance ascribed to high proficiency in English around the world has led to the establishment of content and language integrated educational programmes with English as the target language in many European countries, e.g. Spain and the Netherlands, and in other parts of the world, e.g. Hong Kong and Singapore (Lasagabaster & Sierra 2010; Dalton-Puffer 2011; Lin 2015). In Sweden, approximately 27% of all upper secondary schools offered a CLIL option in 2012 (Yoxsimer Paulsrud 2014: 71). Although English is by far the dominant language in European CLIL, there are also CLIL programmes targeting other languages, e.g. French (Pérez, Lorenzo & Pavón 2015) and German (Terlević Johansson 2013).

In CLIL, the assumption is that L2 learning is enhanced when used as the medium of instruction for academic subject content (Coyle et al. 2010; Cenoz, Genesee & Gorter 2014). As already mentioned, several studies indicate that language learning is indeed enhanced among CLIL students compared to students who study English in traditional foreign language classrooms (for an overview, see Dalton-Puffer 2011). For instance, a comprehensive evaluation of CLIL in Spain, including tests of proficiency to read, write, listen and speak the target language, showed that CLIL students clearly outperformed students in mainstream education (Lorenzo, Casal & Moore 2010). Further, findings have indicated that CLIL students' receptive and productive L2 vocabulary tends to be larger, including a greater extent of low-frequency words (Jexenflicker & Dalton-Puffer 2010; Lo & Murphy 2010). For instance, Merikivi and Pietilä's study (2014)

of English receptive and productive vocabulary sizes among CLIL and non-CLIL students in grades 6 and 9 in Finland showed that CLIL students' vocabularies were larger. In a study among Spanish students in upper secondary school, CLIL students outperformed non-CLIL students with regard to choice and use of English vocabulary in speech as well as in writing (Ruiz de Zarobe 2008, 2010).

However, when evaluating the effect of CLIL, initial differences must be considered (Bruton 2011; Rumlich 2013). Some studies have indicated differences in proficiency levels between CLIL and non-CLIL groups already at the start of the CLIL instruction, e.g. with regard to receptive and productive vocabulary knowledge (Sylvén 2004; Admiraal, Westhoff & de Boot 2006; Sylvén & Ohlander 2014; Olsson 2015). Further, the initial gap between CLIL and non-CLIL students reported by Admiraal et al. (2006) did not widen over time; CLIL students' vocabulary did not increase more than non-CLIL students'. Similar results were reported by Olsson (2015) in a study involving the same students as in the present study: CLIL students' use of English academic vocabulary was greater already when they started upper secondary school, and their use of academic vocabulary did not increase more than among non-CLIL students over three years. In the present study, male and female CLIL and non-CLIL students' use of academic vocabulary is compared, and in this connection, the role of EE is explored.

4 Academic vocabulary

Academic language knowledge is imperative in a school context, both for the cognitive processing of subject content and for the ability to express knowledge in a precise and specific way (Cummins 1980; Schleppegrell 2004). Academic vocabulary is an important part of academic language, although there are, of course, other aspects that are equally important, e.g. with regard to syntax and the organisation of text. In this study, however, only productive academic vocabulary is investigated as it was beyond the scope of the study to investigate other aspects of academic language. Academic vocabulary is often divided into subgroups: *domain-specific vocabulary* (e.g. *biodiversity, organism, volcano*), used in specific disciplines, and *general academic vocabulary* (e.g. *demand, consequence, increase*), which can be used across domains (Nation 2013). The focus of this study is on general academic vocabulary, since such vocabulary is highly useful in different contexts, across disciplines. The *Academic Vocabulary List* (AVL; Gardner & Davies 2014) contains 3000 general academic words compiled from the academic section of *the Corpus of Contemporary American English* (COCA; Davies 2012). The academic section of COCA includes more than 120 million words from texts covering nine disciplines published in academic journals, topic-specific magazines and newspapers in the USA. To be included in the AVL, a word had to be at least 50% more frequent in the academic corpus than in the non-academic part of COCA and it also had to occur in at least seven out of the nine disciplines (Gardner & Davies 2014). Thus, highly frequent words in non-academic contexts were excluded, as was highly domain-specific vocabulary. The AVL covers 13.8% of the academic section in COCA and 13.7% of the academic section of the *The British National Corpus* (BNC; Nation 2004). The AVL's higher coverage of academic vocabulary compared to other academic word lists, e.g. the *Academic Word List* (AWL; Coxhead 2000) allows for a detailed analysis of students' progress in academic vocabulary use over time.

The AVL appears to be extensive enough to detect development in academic vocabulary also in fairly short texts, such as students' essays (Olsson 2015); hence the AVL was chosen as the standard of reference in the present study. The use of the AVL in the analysis of students' essays is described in section 6.3.

5 Aims and research questions

As the overview of previous research has shown, both EE and CLIL education may enhance L2 proficiency; however, few studies have focused on academic language. Further, few studies have considered students' use of EE when evaluating the possible effect of CLIL instruction. Therefore, the first aim of this study is to investigate CLIL and non-CLIL students' exposure to and use of EE, addressing the following research questions:

- 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 and/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?

A second aim is to investigate if there are differences related to gender in the progress of CLIL and non-CLIL students' use of academic vocabulary in writing, and to investigate whether or not EE seems to have an impact on students' academic vocabulary. More specifically, the following research questions are addressed:

- 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?

6 Method and material

This study is part of the longitudinal research project *Content and Language Integration in Swedish Schools, CLISS*, funded by the Swedish Research Council. The main purpose of CLISS is to investigate the effect of CLIL on academic language – both English and Swedish – and to look into CLIL practices in the Swedish context from different perspectives, e.g. at policy level and also from teacher/student perspectives. For further information about the various aspects studied in CLISS, see Sylvén and Ohlander (2014).

In the following sections, methods and material used in the present study are accounted for.

6.1 The students

In Sweden, CLIL is an option offered at approximately 27% of all upper secondary schools (Yoxsimer Paulsrud 2014). Students in municipalities where a school offering CLIL is located can choose if they want to follow a regular

programme or a CLIL programme. In this study, a total of 230 students, aged 16-19, from three upper secondary schools participated: 146 students (46 male and 100 female) who followed CLIL programmes where English was used as the language of instruction during some or most lessons, and 84 non-CLIL students (36 male and 48 female) who followed regular programmes where Swedish was used as the language of instruction except for language classes. All programmes were preparatory for higher education and they all included English as a compulsory subject. Thus non-CLIL students were exposed to and used English during English language lessons, whereas CLIL students used English during English language lessons as well as during CLIL-lessons in other subjects.

6.2 *Extramural English: method of analysis*

The students' extramural use of English was investigated using two different instruments: a background survey and a web-based language diary. The background survey measured the frequency of extramural use of English, while the language diary measured the time spent on extramural activities where English was used. It should be noted that the measurements of time and frequency do not necessarily correlate; for instance, a student may be engaged in very few activities but for a very long time or in many different activities for a very short time.

The background survey was completed during the first term in upper secondary school by 101 CLIL students (22 male and 79 female) and 49 non-CLIL students (21 male and 28 female). The language diary was completed in the second year by 83 CLIL students (20 male and 63 female) and 56 non-CLIL students (26 male and 30 female).

In the background survey, the students were asked to mark how often they were engaged in different activities where they used English in their spare time (see Table A1 in Appendix A). They marked if they were engaged in the respective activity a) every day, b) once or a few times a week, c) once of a few times a month, or d) never or almost never. To sum up the frequencies of extramural activities in English – to enable statistical comparisons – a scale from 0 to 10 was used¹ (Olsson 2012):

- 10 = every day
- 4 = once or a few times a week
- 1 = once or a few times a month
- 0 = never or almost never

The web-based language diary (based on Sylvén 2006; Sundqvist 2009; Olsson 2012) was completed during 5-7 days. The students were asked to note for how long they were engaged in spare time activities where English was used, e.g. watching TV, reading blogs or speaking with someone. In the analysis of the language diary, an average number of minutes per day was calculated for each student's engagement in different activities, as well as the total number of minutes spent per day on activities where English was used.

6.3 *Academic vocabulary use: material and method of analysis*

For the analysis of academic vocabulary use, 525 student essays based on four different writing assignments were used. The students were asked to write argumentative and explanatory essays, covering topics mainly related to the Natural and the Social Sciences – subjects studied by all classes involved in this study, although in different languages as CLIL instruction was at least partly in English and non-CLIL instruction in Swedish. The following topics were given in the assignments: 1) *For or against nuclear power*, 2) *Matters of gender and equality*, 3) *Ways to political and social change – violence or non-violence*, 4) *Biodiversity for a sustainable society*. The first assignment was given during students' first term in upper secondary school, assignments 2 and 3 in the second year, and the fourth assignment in the students' third and final year. For more information about the writing assignments, see Olsson (2015).

The *Academic Vocabulary List* (AVL; Gardner & Davies 2014) was used as a standard of reference to identify academic vocabulary in the students' essays (see Olsson 2015). An interface, available at <http://www.wordandphrase.info/academic/>, was used in the analysis, and the percentage of vocabulary (tokens) included in the AVL was noted for each of the essays.

6.4 *Statistical analyses*

SPSS (version 21) was used for statistical analyses of students' use of EE and in analyses of academic vocabulary. Comparisons were made between male and female CLIL and non-CLIL students; the statistical significance of differences between groups was analysed using T-tests and ANOVA with Tukey's post hoc test. Further, the correlation between EE and academic vocabulary was analysed using Spearman's correlation analysis. Progress in the use of academic vocabulary was analysed using a statistical regression analysis.

6.5 *Limitations and considerations*

As already mentioned, the background survey was completed in the first year and the language diary in the second year, hence all analyses conducted in the study relate to students' use of EE in the first or the second year, although obviously, students' EE habits might have changed during the three years. Measuring EE is not uncomplicated; even if students could be expected to remember if they were normally engaged in an activity where they used English very frequently or almost never, it is possible that some students answered in a manner that they found appropriate rather than truthful, e.g. by exaggerating their use of English. Further, when completing the language diary, there is a risk that some students might not have paid attention to time when engaged in various activities where they used English; thus, the indicated time may not always be the actual time spent. Moreover, we do not know if the days reported in the diary were normal days (in the sense that what was reported more or less mirrored the day to day activities of the individual) or not. In the analysis of the correlation between time spent on EE and the proportion of academic vocabulary in the first assignment, it should be noted that the essay was written a year before the diary was completed, which may dispute the reliability of this particular analysis to some extent. Further, in comparison at group level, group sizes were

not even as the female CLIL group included a larger number of students than the other groups. These caveats must be borne in mind when interpreting the results.

7 Results

The results of the analysis of students' use of extramural English are presented first (sections 7.1–7.2), followed by the results of the analysis of academic vocabulary in male and female CLIL and non-CLIL students' essays (section 7.3), and the analysis of the possible impact of extramural English on progress of academic vocabulary (section 7.4).

7.1 Frequency of extramural English

The results presented in this section are based on the analysis of the background survey. All questions related to EE in the survey are shown in Table A1 (Appendix A). First, an overview of differences and similarities in EE use between CLIL and non-CLIL students, on the one hand, and between male and female students on the other, is offered. In Tables 1 and 2, average frequency scores for students' use of EE are shown (see section 6.2)². The scores roughly show the number of times per ten days that students were normally engaged in the suggested activities. In Table 1, results are shown for CLIL and non-CLIL students and in Table 2 results for male and female students.

TABLE 1. Frequency of EE: CLIL and non-CLIL students.

	CLIL		Non-CLIL		t-value	p-value
	N=102 Mean	Standard dev.	N=49 Mean	Standard dev.		
Writing	13.4	9.9	8.8	9.4	2.71	.007*
Reading	13.3	8.0	10.0	7.2	2.92	.004*
Computer games	1.5	2.6	2.6	4.0	2.05	.042*
Films	6.8	3.3	7.2	3.3	0.79	.433
Total	35.0	18.5	28.6	17.4	2.29	.024*

*statistically significant difference

TABLE 2. Frequency of EE: male and female students.

	Male students		Female students		t-value	p-value
	N=43 Mean	Standard dev.	N=108 Mean	Standard dev.		
Writing	12.8	9.8	11.5	10.0	.72	.474
Reading	13.7	8.6	11.3	7.6	1.66	.099
Computer games	5.0	3.9	0.6	1.7	9.76	.000*
Films	7.6	3.3	6.7	3.3	1.46	.147
Total	39.1	18.8	30.1	16.7	2.84	.005*

*statistically significant difference

As illustrated in Table 1, CLIL students write and read significantly more often in English than non-CLIL students. On the other hand, non-CLIL students play computer games in English significantly more often than CLIL students. However, there are no great differences between groups with regard to their frequency of watching films in English. When the frequencies of all activities are summed up, the results indicate that CLIL students use EE significantly more often than non-CLIL students.

As shown in Table 2, there are no statistically significant differences between male and female students with regard to their frequency of writing, reading or watching films in English. However, male students play computer games significantly more often than female students. When the total frequencies of EE are summed up, the results indicate that male students use English significantly more often than female students. Thus, there are differences in the use of EE between CLIL and non-CLIL students but also between male and female students: CLIL students use English more often than non-CLIL students and male students more often than female students.

In sections 7.1.1-3, the analysis of the background survey is pursued in more depth. Pie graphs illustrate how often students are engaged in such activities where striking differences or similarities between groups were found in the analysis. Here, comparisons are made between four groups: male CLIL students, female CLIL students, male non-CLIL students and female non-CLIL students. Thus differences between male and female students within the CLIL and non-CLIL groups are shown. However, when divided into four groups, the number of students in each group is limited, and further, the four groups differ in size – the female CLIL group being the largest (see section 6.2). These limitations must be borne in mind when examining the results.

7.1.1 Extramural writing

Since vocabulary use in writing is in focus in this study, spare time activities where students are involved in different types of writing are of particular interest. Four questions in the background survey related to writing in English. Figures 1 and 2 show how often students write messages on Facebook or Twitter (Figure 1) and how often they write letters, e-mails or text messages (Figure 2). Students also reported how often they write a diary or blog and how often they are engaged in other types of writing in English.

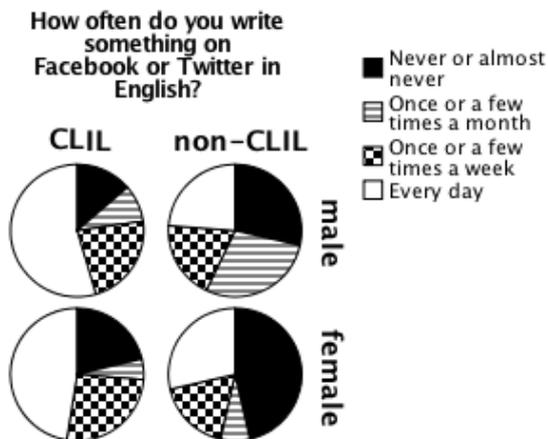


FIGURE 1. Frequency of writing on Facebook/Twitter.

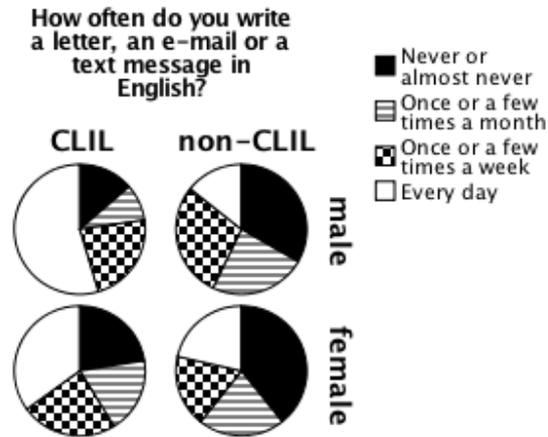


FIGURE 2. Frequency of writing letters, e-mails or text messages.

Figure 1 shows that both male and female CLIL students post messages in English on Facebook or Twitter more often than non-CLIL students. In the CLIL group, 55% of the male students and 48% of the female students do it every day, compared to 24% of the male students and 29% of the female students in the non-CLIL group. A larger part of the students in the non-CLIL group than in the CLIL group report that they never or almost never write English messages on Twitter or Facebook. As shown in Figure 2, CLIL students also write letters, e-mails or text messages in English more often than non-CLIL students. Among the CLIL students, 55% of the male students and 35% of the female students write such messages every day, compared to 14% of the male non-CLIL students and 21% of the female non-CLIL students. A larger part of the non-CLIL students, whether male or female, never or almost never write letters, e-mails or text messages in English, while the proportion of CLIL students who never or almost never do so is smaller. The results may indicate that CLIL students' social networks are international to a great extent.

Further, the analysis of the background survey indicates that writing a diary or a blog in English is a fairly infrequent activity in all groups (see Table A1 in Appendix A). Moreover, a large majority of the students are not at all engaged in other writing activities, besides the ones already mentioned. However, 29% of the male non-CLIL students and 14% of the male CLIL students write other things on a daily basis, compared to 4% of female CLIL and non-CLIL students. Those who noted the nature of these writing activities mentioned homework, chatting, YouTube, literary projects, poems, song lyrics and essays.

Table B1 in Appendix B shows average scores for the four groups when the frequencies of the different writing activities in English are summed up using the scale described in section 6.2. Statistical analyses (ANOVA and Tukey's post hoc) indicate that differences between groups are statistically significant ($F[3, 147]=3.09$, $p=.029$). Male CLIL students write significantly more often in English compared to female non-CLIL students ($p=.034$). Other differences between groups are non-significant.

7.1.2 Extramural reading

Since reading is a factor that has been shown to influence vocabulary knowledge in a positive way, reading habits among students are also of interest in this study (cf. Nation 2013). The survey questions related to reading applied to any mode of reading: online reading or reading a printed book or paper.

Figure 3 shows how often students read books in English. Students were also asked how often they read newspapers/magazines or comics and how frequently they were engaged in other types of reading than the already mentioned. Figure 4 shows the frequency of other types of reading.

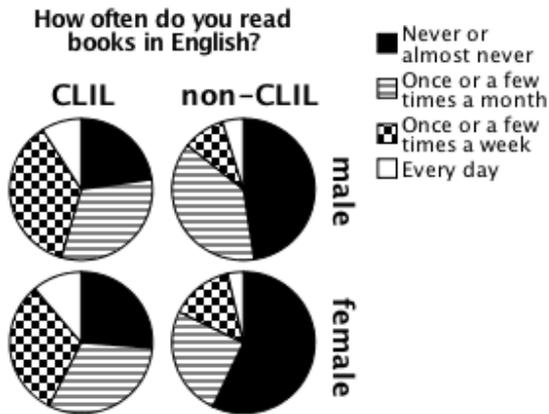


FIGURE 3. Frequency of spare time reading of books in English.

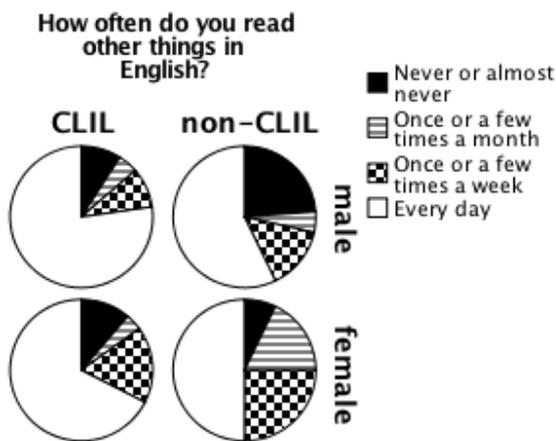


FIGURE 4. Frequency of other types of spare time reading in English.

As shown in Figure 3, CLIL students read books in English more often than non-CLIL students. As many as 46% of the male and 42% of the female CLIL students read books every day or every week, compared to 14% of the male and 18% of the female non-CLIL students. Among non-CLIL students, as many as 57% of the female students and 48% of male students never or almost never read books in English, compared to 23% of the male and 26% of the female CLIL students.

Further, the analysis of the survey indicates that male students, particularly male CLIL students, read newspapers or magazines in English more often than female students. In fact, half of the female students never or almost never read newspapers or magazines in English. A majority of the students never or almost never read comics, but among those who do so every day, a larger proportion are male students.

Figure 4 shows how often students are engaged in other sorts of reading than the types already accounted for. In the survey, this question included given suggestions of "other things": *I read other things in English, for instance manuals, musical lyrics, texts on the Internet etc.* As illustrated in Figure 4, a majority of the students are engaged in these types of reading, although CLIL students to a

somewhat greater extent than non-CLIL students. In the CLIL group, 77% of the male students and 68% of the female students read other things in English every day compared to 57% of the male students and 50% of the female students in the non-CLIL group. Since the students were not required to specify what kind of reading they were involved in here, the exact nature of their reading is unknown.

Table B2 in Appendix B shows average scores when the frequencies of the different reading activities are summed up. Statistical analyses (ANOVA and Tukey's post hoc) show that differences between groups are significant ($F[3, 147]=4.89, p=.003$). Male CLIL students read significantly more often than non-CLIL female students ($p=.002$). The difference between female CLIL students' and female non-CLIL students' reading habits is also statistically significant ($p=.045$).

7.1.3 Computer games and films in English

The frequency of students' engagement in two other activities where they use English – besides writing or reading – are reported here: playing computer games and watching films. Figures 5 and 6 show how often students are engaged in these two activities.

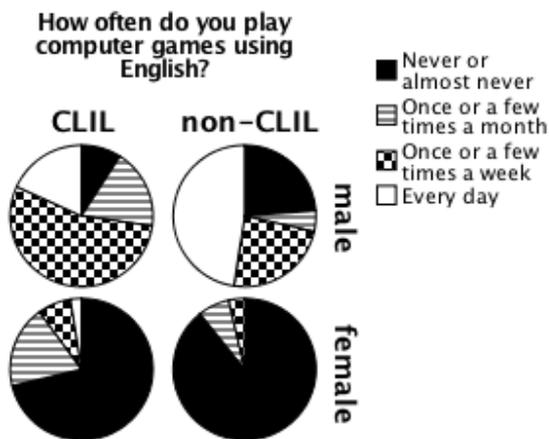


FIGURE 5. Frequency of playing computer games in English.

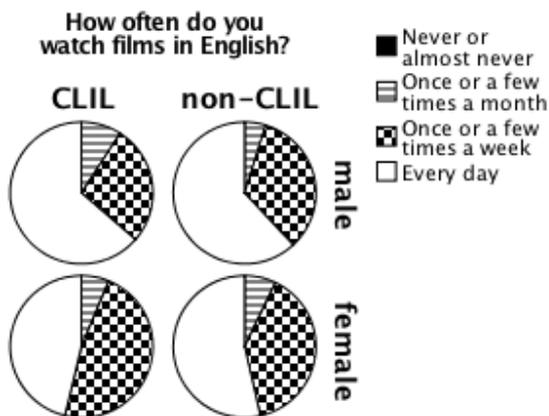


FIGURE 6. Frequency of watching films in English.

Figure 5 indicates that male students play computer games considerably more often than female students. However, there are also differences between the two male groups: almost half of the male non-CLIL students, 48%, play computer games every day while only 18% of the male CLIL students do so. Further, 55% of the male students in the CLIL group and 24% of the male students in the non-CLIL group play computer games once or a few times a week. Among the female CLIL students, only 3% play computer games every day, while no female non-CLIL students do so. A majority of the female students, 89% in the non-CLIL group and 71% in the CLIL group, never or almost never play computer games. Further, as indicated in Figure 6, a majority of the students watch films in English every day, and male students to a somewhat greater extent than female students. The “never or almost never” option was not chosen by anybody.

Table B3 in Appendix B shows average scores for playing computer games and watching films in English using the scale described in 6.2. Statistical analyses (ANOVA and Tukey post hoc) indicate that there are significant between-group differences in the frequency of playing computer games ($F[3, 147]=34.27, p=.000$). Both CLIL and non-CLIL male students play computer games significantly more often than CLIL and non-CLIL female students ($p=.000$). No statistically significant differences were found between groups in the frequency of watching films.

In Table B4 in Appendix B, the average frequency scores when all different types of EE are summed up, using the scale, are shown for the four groups. Statistical analyses (ANOVA and Tukey’s post hoc test) show that differences between groups are significant ($F[3, 147]=5.995 p=.001$). Male CLIL students use English significantly more frequently than both female non-CLIL students ($p=.000$), and female CLIL students ($p=.041$).

7.2 Time spent on extramural English

In this section, the results of the analysis of the web-based diary are accounted for. In the diary, the students noted for how long they were engaged in various activities where they used English in their spare time. Table 3 shows the reported average number of minutes per day spent on such activities by CLIL and non-CLIL students respectively. In Table 4, the average number of minutes per day reported by male and female students is shown.

TABLE 3. EE minutes/day: CLIL and non-CLIL students.

	CLIL		Non-CLIL		t-value	p-value
	N=84 Mean	Standard dev.	N=56 Mean	Standard dev.		
Writing min/day	33.7	57.6	12.4	25.1	2.60	.010*
Reading min/day	200.8	115.2	156.1	138.4	2.07	.040*
Speaking min/day	30.6	53.5	7.1	11.8	3.22	.002*
Listening min/day	177.9	107.4	142.7	98.7	1.96	.052
Computer games min/day	16.2	37.1	18.4	38.9	.34	.737
Total EE min/day	459.2	259.4	336.7	241.8	2.82	.006*

*statistically significant difference

TABLE 4. EE minutes/day: male and female students.

	Male students N=46 Mean	Standard dev.	Female students N=93 Mean	Standard dev.	t-value	p-value
Writing min/day	22.5	39.0	25.1	51.1	.31	.759
Reading min/day	197.6	146.7	172.3	111.3	1.13	.260
Speaking min/day	18.6	31.1	20.5	45.2	.26	.799
Listening min/day	167.1	109.9	162.2	103.8	.26	.796
Computer games min/day	18.6	38.2	16.0	37.7	.38	.703
Total EE min/day	424.4	262.3	396.1	250.6	.62	.534

*statistically significant difference

As shown in Table 3, the total amount of time CLIL students spent on EE was 459 minutes per day on average, compared to 337 minutes per day for non-CLIL students; the difference is 122 minutes per day. Even though the standard deviation indicates that the variation within CLIL and non-CLIL groups is great, the between-group difference is nevertheless statistically significant ($t=2.82$, $p=.006$). CLIL students spent significantly more time writing, reading and speaking in English than non-CLIL students. The only activity where non-CLIL students spent more time than CLIL students was computer gaming; however, the difference is not great and it is not statistically significant.

Table 4 shows that there are no statistically significant differences between male and female students in time spent on EE. The figures showing standard deviation are high, indicating that there are great variations within groups, whereas between-group differences are small.

To complete the analysis of time spent on EE, comparisons were made between four groups (male CLIL, female CLIL, male non-CLIL and female non-CLIL). Statistical analyses (ANOVA and Tukey's post hoc) show that there are no statistically significant differences between groups.

To summarise the analyses of students' use of EE, the results show that CLIL students use English significantly more often and for a significantly longer time than non-CLIL students. Further, male students use EE more frequently than female students. More specifically, male CLIL students are engaged in activities where they use English to a significantly greater extent than female non-CLIL students but also more often than female CLIL students.

7.3 Academic vocabulary use

In this section, the results of the analysis of academic vocabulary in students' essays are accounted for. In Table 5, the average percentage of academic vocabulary covered by the AVL in each of the four writing assignments is shown³. Results are shown for male and female CLIL and non-CLIL students. Figure 7 provides a visual representation of Table 5, indicating the development over three years.

TABLE 5. Academic vocabulary (%) in essays by male and female CLIL and non-CLIL students.

	CLIL male N=46		CLIL female N=100		non-CLIL male N=36		non-CLIL female N=48	
	Mean AVL %	Stand. Dev.	Mean AVL %	Stand. Dev.	Mean AVL %	Stand. Dev.	Mean AVL %	Stand. Dev.
Essay 1	8.1	2.8	7.1	2.4	7.0	2.6	4.7	1.4
Essay 2	11.4	4.2	8.5	2.4	9.3	3.1	6.8	3.1
Essay 3	11.6	3.6	7.2	2.8	7.7	2.7	5.8	2.8
Essay 4	13.7	3.6	11.5	3.3	11.5	4.0	10.0	2.9

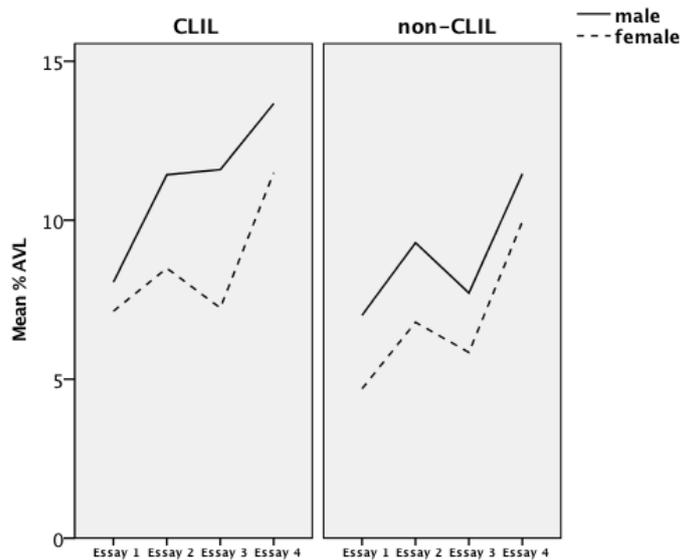
**FIGURE 7.** Development of academic vocabulary use over three years.

Table 5 and Figure 7 show that male CLIL students used the largest proportion of academic vocabulary in all four assignments. Further, female CLIL students' essays and male non-CLIL students' essays include similar proportions of academic vocabulary in all four assignments. The four assignments written by female non-CLIL students include the lowest proportion of academic vocabulary.

Figure 7 illustrates that all groups progressed between the first and the last assignments. However, there is a dip in progress in the third assignment. Different topics and instructions may have elicited academic vocabulary to a greater or lesser extent; apparently many students used a smaller proportion of academic vocabulary in the third assignment than in the second, but nevertheless, a larger proportion than in the first. In the last assignment, all groups used a larger proportion of academic vocabulary than in the previous three assignments.

Statistical analyses (ANOVA and Tukey's post hoc) show that there are statistically significant differences between groups in all four assignments⁴. The most striking difference is found between the male CLIL group and the female non-CLIL group; the male CLIL group's use of academic vocabulary was significantly greater in all four assignments ($p=.000$ in the first three assignments,

$p=.009$ in the last). Also female CLIL students and male non-CLIL students used academic vocabulary to a significantly greater extent than female non-CLIL students in the first assignment ($p=.000$ / $p=.003$). In the second assignment, the difference between male non-CLIL students and female non-CLIL students is significant ($p=.032$), and so is the difference between male and female CLIL students ($p=.001$). In the third assignment, male CLIL students used a significantly larger proportion of academic vocabulary compared to all the other groups ($p=.000$). Other differences between groups are not statistically significant.

However, to find out if one group progresses more than another over time, initial differences must be controlled for. As regards differences in progress in academic vocabulary between CLIL and non-CLIL students, Olsson (2015) reported that CLIL students did not progress more than non-CLIL students. The study involved the same students and writing assignments as in the present study. Here, differences in progress between male and female CLIL and non-CLIL students are in focus. A regression analysis shows that, with baseline differences controlled for, male students do not progress more in their use of academic vocabulary than female students ($B=.68$, $t=.97$, $p=.337$). When a product variable is added to the analysis, combining the variables male/female and CLIL/non-CLIL, results indicate that none of the four groups – male CLIL students, female CLIL students, male non-CLIL students or female non-CLIL students – has a more positive development of academic vocabulary than the other groups ($B=1.71$, $t=1.18$, $p=.242$). As shown in Figure 7, differences between groups do not increase over time.

7.4 Extramural English and academic vocabulary use

The results reported in sections 7.1–7.3 have implications also for the analysis of the possible impact of extramural English on academic vocabulary. The results show that the group of students with the largest amount of EE, i.e. the male CLIL students, use the largest proportion of academic vocabulary in all four assignments. This could indicate that EE might have an impact on students' use of academic vocabulary. However, the results of the regression analysis presented in section 7.3 show that male CLIL students do not progress more in their use of academic vocabulary than the other groups. These results indicate that EE does not seem to have any considerable impact on progress in academic vocabulary, as the group of students using the highest amount of EE does not progress more in their use of academic vocabulary than other groups using less EE. In fact, none of the groups had a significantly more positive development of academic vocabulary than the other groups. Hence, further analyses were needed, beyond group level, to clarify the correlation between EE and academic vocabulary.

The analysis indicates that there is a correlation between the total frequency of EE and the proportion of academic vocabulary in the first assignment ($r=.25$, $p=.007$). The frequencies of extramural reading and writing also correlate with the proportion of academic vocabulary in the first assignment (EE reading: $r=.25$, $p=.007$; EE writing: $r=.21$, $p=.026$). However, in the other three writing assignments, there is no significant correlation between the frequency of EE and academic vocabulary. Nor is there a significant correlation between the proportion of academic vocabulary in any of the texts and the time spent on EE, with regard neither to time spent on particular activities nor to the total time. Thus, the results indicate that it is only when students start upper secondary school that students with frequent use of EE also use academic vocabulary to a

greater extent than students with infrequent use of EE. At higher proficiency levels, i.e. in year two and three, students' frequent use of EE does not seem to result in more frequent use of academic vocabulary; the correlation between EE and the proportion of academic vocabulary is no longer statistically significant.

For the purpose of further investigating the possible impact of EE on development of productive academic vocabulary over time, i.e. between the first and the last assignment, a regression analysis was conducted. The results show that the frequency of EE does not predict a positive development in academic vocabulary use; a negative impact is actually indicated in the analysis ($B=-.05$, $t=-2.77$, $p=.007$). Neither does the time spent on EE predict progress in academic vocabulary use between the first and the last assignments ($B=.00$, $t=-.00$, $p=.997$). Further, in a multiple regression analysis, where the scores for time and frequency of EE are used as independent variables, the same results are obtained as in the separate analyses.

To summarise the analysis of the possible impact of EE on academic vocabulary, the results indicate that EE may have an impact on academic vocabulary at lower proficiency levels, as a statistically significant correlation was found between EE and the proportion of academic vocabulary in the first assignment. However, the results of the regression analysis, where initial differences are taken into account, indicate that for development of academic vocabulary over time, EE does not seem to have an impact at all.

8 Discussion

In this study, male and female CLIL and non-CLIL students' use of English in their spare time was compared, and the possible impact of EE on progress of academic vocabulary use was analysed.

The results clearly indicate that CLIL students encounter and use English more often than non-CLIL students not only at school, but also in their spare time. In fact, CLIL students reported that they spent 122 minutes more per day than non-CLIL students engaged in activities where they used English. A difference of two hours a day suggests that the difference between CLIL and non-CLIL students' exposure to EE may in the longer perspective be very large. Students who choose a CLIL programme have been reported to have a more positive attitude towards English already when they begin CLIL education (Rumlich 2013; Sylvén & Thompson 2015). Hence, CLIL students could be expected to use English more often in their spare time, as they feel more confident using English than students who attend regular classes. The frequent use of English among CLIL students may indicate that they adhere to or strive for a more "international" identity; choosing a CLIL programme may be one way of affirming one's identity as a bilingual (or multilingual) citizen of the (English-speaking) world (cf. Sylvén & Sundqvist 2012b). The results show that it is of relevance to consider the impact of extramural use of English when evaluating CLIL since the difference between CLIL and non-CLIL students in the frequency of EE was great. In the present study, there was no statistically significant difference in the parents' level of education between CLIL and non-CLIL groups; the difference in EE does not appear to be related to the educational background of parents.

However, both CLIL and non-CLIL students seem to spend a considerable amount of time on EE: more than 5 hours a day were reported by the non-CLIL

group and more than 7 hours by the CLIL group. It is, of course, possible that some activities might have taken place simultaneously; students may, for instance, have listened to music while reading or writing – even so, the amount of EE is striking. Nevertheless, the results of the extensive surveys reported by the Swedish Media Council (2015a, 2015b) corroborate the results of the present study; Swedish youth are frequent users of different media.

Yet, the results of this study show that students who frequently use EE do not progress more in academic vocabulary use than students with lower amounts of EE. Although male CLIL students used EE significantly more often than female non-CLIL students and also used a significantly larger proportion of academic vocabulary in the four writing assignments, their development was not significantly more positive. However, in the analyses of the correlation between EE and the proportion of academic vocabulary in each of the four writing assignments, a correlation was found in the first assignment; when students started upper secondary school, those who often used English in their spare time included academic vocabulary in their essays to a greater extent than other students. The results indicate that the effect of EE may be greater at lower proficiency levels or in other registers than academic, as no correlation was found in the other three assignments. Several studies have shown that EE seems highly beneficial for younger learners' proficiency (Sundqvist 2009, Kuppens 2010; Sylvén & Sundqvist 2012a; Olsson 2012). Furthermore, it is possible that EE has a greater impact on the development of receptive academic vocabulary as receptive knowledge is developed before productive (Elgort & Nation 2010); only productive use was investigated in the present study. Moreover, no other aspects of academic writing proficiency than the use of academic vocabulary was investigated here.

However, the results of the present study give rise to the question if students could be expected to encounter and use *academic* vocabulary when they watch films, play computer games or use English in other ways in their spare time? Obviously, it depends on the type of film, game or book students engage themselves in, but it is more unlikely to encounter academic vocabulary than more frequent everyday vocabulary in many TV shows, films and in fiction (cf. Webb & Rogers 2009a, 2009b). In fact, the regression analysis conducted in the present study showed that the use of EE actually predicted a somewhat negative development of academic vocabulary between the first and the last year. Assuming that the type of vocabulary encountered through EE is mainly non-academic, one explanation to this finding may be that this is also the type of vocabulary the learners feel confident in using. Obviously, if some students spend 7 hours (or more) a day on EE, it is probable that they do not spend as much time on homework, whereas those who spend less time on EE might spend more time on homework, e.g. reading schoolbooks where – in CLIL students' books – English academic vocabulary is frequently used.

The results of this study also showed that none of the CLIL groups, neither the male nor the female group, increased their use of academic vocabulary more than the two non-CLIL groups. These results are not in line with some findings from studies in other countries; several studies have shown that CLIL students are often more proficient in using the target language than non-CLIL students (cf. e.g. Dalton-Puffer 2011), although Admiraal et al. (2006) also found that the gap between CLIL and non-CLIL groups did not widen over time. It could be argued that the effect of CLIL seems to be weaker in countries such as Sweden and the Netherlands where, according to results from English proficiency tests

(European Commission/SurveyLang 2012), teenagers' proficiency levels are higher than, e.g., in Spain, a country where CLIL seems to have a very positive impact (Sylvén 2013). Perhaps the effect not only of EE but also of CLIL is greater at lower proficiency levels. However, in the present study, CLIL practices at the participating schools were not analysed. There are, of course, many different ways of implementing CLIL and so, further research is necessary. The degree to which language is in focus may for instance differ between classrooms, which will implicate on learning.

However, all groups in this study, male and female CLIL and non-CLIL groups, increased their use of academic vocabulary over three years – indeed, anything else would have been unexpected after three years of education, since all students, also non-CLIL classes, studied English as a foreign language. The results indicate that education at school seems to be very important for the development of academic vocabulary. At school, academic vocabulary is encountered and used regularly, although to a greater or lesser extent in different classrooms. However, if one of the purposes of CLIL is to enhance development of academic registers in the target language more than in regular education, there seems to be a potential for development in CLIL education in the Swedish context since neither male nor female CLIL groups increased their use of English academic vocabulary more than non-CLIL groups even though CLIL students encountered and used English more often at school as well as in their spare time. The results indicate that CLIL students may not encounter and practice academic vocabulary to such an extent that their productive academic vocabulary develops more than among non-CLIL students.

9 Concluding remarks

The results of this study indicate that English seems to play an important part in Swedish CLIL students' lives, as they apparently use the language in different activities in their spare time for hours every day, as well as in school. However, Swedish non-CLIL students also encounter and use English in various situations, although to a more limited extent.

Further, the results indicate that EE does not seem to enhance, automatically, development of general academic vocabulary; such vocabulary may in fact be rarely encountered in the spare time. It would be of great relevance in future research to study the impact of EE on other aspects of writing proficiency than academic vocabulary, e.g. fluency or the use of grammar. Moreover, it would be relevant to study students' everyday exposure to EE in greater detail, e.g. what genres and types of vocabulary are encountered.

In addition, further research on CLIL seems to be needed. One of the purposes of CLIL is to prepare students for higher education but the results of this study do not show that CLIL students, whether male or female, progress more in their use of academic vocabulary than non-CLIL students. However, CLIL can be practised in a variety of ways; it was not within the scope of this study to investigate CLIL practices at the three schools involved in the study. Consequently, further research on the effect of different CLIL practices is needed to shed some more light on the interrelations between CLIL, extramural English and academic language.

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Endnotes

- ¹ This scale was based on the following calculation: every day = 30 times a month, a few times a week = 12 times a month, a few times a month = 3 times a month, never or almost never 0 times a month. Division by 3 (to get a neater scale) results in the scale used: 10, 4, 1, and 0. Thus, the scale roughly shows the number of times a student is engaged in EE activities in ten days.
- ² Four questions in the background survey were related to different writing activities and four to different reading activities: the average scores shown for writing and reading are based on the sum of four activities. One question in the survey was related to computer gaming and one to film watching; thus, those scores are based on one activity.
- ³ In Olsson (2015) results from comparisons between two groups, CLIL and non-CLIL were reported.
- ⁴ (Assignment 1: $F[3, 142]=9.680$ $p=.000$, assignment 2: $F[3, 122]=9.472$ $p=.000$, assignment 3: $F[3, 133]=18.098$ $p=.000$, assignment 4: $F[3, 111]=3.910$ $p=.011$).

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Appendices

APPENDIX A.

TABLE A1. Questions related to EE in the background survey. The % of male and female CLIL and non-CLIL students who marked the different alternatives are shown.

		CLIL male	CLIL female	non- CLIL male	non- CLIL female
		Column %	Column %	Column %	Column %
How often do you write something on Facebook or Twitter in English?	Never or almost never	13.6%	21.3%	28.6%	46.4%
	Once or a few times a month	9.1%	5.0%	28.6%	7.1%
	Once or a few times a week	22.7%	26.3%	19.0%	17.9%
	Every day	54.5%	47.5%	23.8%	28.6%
How often do you write a letter, an e-mail or a text message in English?	Never or almost never	13.6%	22.5%	33.3%	39.3%
	Once or a few times a month	9.1%	18.8%	23.8%	21.4%
	Once or a few times a week	22.7%	23.8%	28.6%	17.9%
	Every day	54.5%	35.0%	14.3%	21.4%
How often do you write a diary/blog in English?	Never or almost never	81.8%	65.0%	95.2%	82.1%
	Once or a few times a month	0.0%	12.5%	0.0%	3.6%
	Once or a few times a week	9.1%	11.3%	0.0%	10.7%
	Every day	9.1%	11.3%	4.8%	3.6%
How often do you write anything else in English in your spare time?	Never or almost never	86.4%	88.8%	61.9%	92.9%
	Once or a few times a month	0.0%	2.5%	0.0%	3.6%
	Once or a few times a week	0.0%	5.0%	9.5%	0.0%
	Every day	13.6%	3.8%	28.6%	3.6%
How often do you read books in English?	Never or almost never	22.7%	26.3%	47.6%	57.1%
	Once or a few times a month	31.8%	31.3%	38.1%	25.0%
	Once or a few times a week	36.4%	31.3%	9.5%	14.3%

	a week				
	Every day	9.1%	11.3%	4.8%	3.6%
How often do you read newspapers or magazines in English?	Never or almost never	31.8%	47.5%	38.1%	53.6%
	Once or a few times a month	18.2%	32.5%	38.1%	39.3%
	Once or a few times a week	27.3%	15.0%	14.3%	7.1%
	Every day	22.7%	5.0%	9.5%	0.0%
How often do you read comics in English?	Never or almost never	54.5%	67.5%	66.7%	96.4%
	Once or a few times a month	27.3%	21.3%	19.0%	3.6%
	Once or a few times a week	4.5%	7.5%	0.0%	0.0%
	Every day	13.6%	3.8%	14.3%	0.0%
How often do you read other things in English?	Never or almost never	9.1%	11.3%	23.8%	7.1%
	Once or a few times a month	4.5%	3.8%	4.8%	17.9%
	Once or a few times a week	9.1%	17.5%	14.3%	25.0%
	Every day	77.3%	67.5%	57.1%	50.0%
How often do you play computer games in English?	Never or almost never	9.1%	71.3%	23.8%	89.3%
	Once or a few times a month	18.2%	18.8%	4.8%	7.1%
	Once or a few times a week	54.5%	7.5%	23.8%	3.6%
	Every day	18.2%	2.5%	47.6%	0.0%
How often do you watch films in English?	Never or almost never	0.0%	0.0%	0.0%	0.0%
	Once or a few times a month	9.1%	6.3%	4.8%	7.1%
	Once or a few times a week	27.3%	47.5%	33.3%	39.3%
	Every day	63.6%	46.3%	61.9%	53.6%

APPENDIX B.

TABLE B1. Frequency of EE writing among male / female CLIL / non-CLIL students.

	CLIL male		CLIL female		Non-CLIL male		Non-CLIL female	
	Mean	Stand.dev	Mean	Stand.dev	Mean	Stand. dev	Mean	Stand. dev
EE writing	15.5	10.2	12.8	9.8	10.0	8.8	7.9	9.9

TABLE B2. Frequency of EE reading among male / female CLIL / non-CLIL students.

	CLIL male		CLIL female		Non-CLIL male		Non-CLIL female	
	Mean	Stand.dev	Mean	Stand.dev	Mean	Stand. dev	Mean	Stand. dev
EE reading	16.2	8.0	12.5	7.8	11.1	8.6	8.1	5.7

TABLE B3. Frequency of playing computer games and watching films among male / female CLIL / non-CLIL students.

	CLIL male		CLIL female		Non-CLIL male		Non-CLIL female	
	Mean	Stand.dev	Mean	Stand.dev	Mean	Stand. dev	Mean	Stand. dev
Computer games	4.2	3.2	0.7	1.8	5.8	4.4	0.2	0.8
Watching films	7.5	3.4	6.6	3.3	7.6	3.2	7.0	3.4

TABLE B4. Total frequency of EE among male / female CLIL / non-CLIL students.

	CLIL male		CLIL female		Non-CLIL male		Non-CLIL female	
	Mean	Stand.dev	Mean	Stand.dev	Mean	Stand. dev	Mean	Stand. dev
Total EE	43.5	18.5	32.6	16.6	34.4	18.4	23.2	15.1

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