Linguistic Outcomes of English Medium Instruction Programmes in Higher Education: A Study on Economics Undergraduates at a Catalan University

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Abstract: Globalisation and international mobility in the 21st century has led to the internationalisation of the English language (Crystal, 2003). Research regarding linguistic gains at university levels is however extremely scarce. This study aims to address this gap of knowledge and provide some answers as to how much linguistic gain can be expected after one year of English medium instruction. Two groups of undergraduate students enrolled in different levels of English medium instruction (EMI) were given a pre and post-test over a 1-year period. Results were analysed statistically; significant gains were found only in the semi-immersion group in the grammatical domain; although, there was a trend for improvement as well as higher scores for full immersion students. It might be interpreted that in order for linguistic gains to be seen in adults there needs to be some focus on form and language guidance (Muñoz, 2007; Pérez-Vidal, 2007). Thus, an integrated content and language (ICLHE) approach is more effective than a solely content based EMI model for university level content courses, if linguistic gains are the desired outcomes of the programme.

Keywords: English-medium instruction, EMI, content language integrated learning, CLIL, higher education

Introduction

This preliminary study examines the effects of English medium instruction (EMI). The article supplies an overview of the rise of English as a Lingua Franca in Higher Education (HE), focusing in particular on the European Union setting and the policies that support multilingualism in education. To set the background to the study, two fields are reviewed. Firstly, Content and Language Integrated Learning (CLIL), which is considered a predecessor of EMI, because it has been in place for some years across primary and secondary education levels, as

well as across European countries. Secondly, research from Second Language Acquisition (SLA) is discussed to highlight the importance of periods of intense exposure in SLA development. The emerging field of Integrated Content and Language in Higher Education (ICLHE) is outlined, providing the distinction between ICLHE and EMI. Existing qualitative research describing EMI at different European universities is provided, including perspectives from both lecturers and students. Empirical research regarding linguistic gains in EMI students is presented before describing the current exploratory study.

English in Higher Education and the European Union

It is estimated that approximately 400 million of the world's population speak English as their native language; while more, approximately 430 million, speak it as their second language (L2). The British Council estimated one billion people were studying English as a foreign language in the year 2000 (Crystal, 2003). English is often the first choice when choosing to learn a second language. English is commonly used among professionals who do not speak the same first language, thus giving it the status of a Lingua Franca (House, 2013). The driving force behind the rise of English as an international language is globalisation, mobility, and international business. The ability to communicate in English is an asset, allowing professionals to work in the international context, leading to increased career opportunities as well as higher earning capacity. University students in Spain identify one of the reasons they want to study in English as "feeling the need to have the linguistic and cultural skills to function effectively in an international social context and labour market" (Fortanet-Gómez, 2013). The rise of English in the stated context goes hand in hand with English being used as the dominant language of research in HE in Europe and around the world.

The European Union set out a new agenda with regard to multilingualism and interculturalism in the educational sphere in 1999: The Bologna Process was released with the goal to develop a coherent and cohesive European higher education arena (EHEA). This would ease mobility and hiring for employers and professionals, as well as make university exchanges more possible for students. This process encouraged universities to attract international students, to develop economic and cultural collaborations with other countries including the mobility of students and faculty, and made it possible for citizens to develop intercultural skills (European Commission, 1999). Nine years later, the European Commission stressed the importance of intercultural dialogue and the need for more effort to achieve proficiency in the mother tongue plus two languages an objective for all citizens, in stating that "[a] key instrument in this respect is the Barcelona objective--**communication in mother tongue plus two languages.** More effort is needed towards achieving this objective for all citizens" (European Commission, 2008, p. 5, emphasis in original).

After these policy changes, study abroad and exchange programmes such as the well-known Erasmus became even more popular, attractive, and attainable for students, encouraging them to spend part of their university period at a participating university. The rise of English as a Lingua Franca came about through a cyclical process, where the increased use of English fuelled the importance of English in HE, which in turn encouraged national policy changes to support the educational system, which then goes back to strengthen the position of English as a lingua franca (Juan-Garau & Salazar-Norguera, 2015; Pérez-Vidal, 2014; Smit & Dafouz, 2012). This is exemplified by HE institutions reactions to English language, to which we will now turn.

Universities began to offer part or whole degree programmes in languages other than the official or traditional languages of the country, most noticeably English (Llurda, Cots, &

Armengol, 2013). The mobility of citizens and the release of the Bologna process required the development of new language policies, whether it be to encourage or protect minority, neighbouring or national languages or to incorporate English or both. The first universities to implement changes in language instruction were mainly concentrated in the northern European countries, Holland, and Sweden, among others, and as time went on EMI became established as a trend throughout Europe. A recent survey of EMI programmes at European universities by Wächter and Maiworm (2008) revealed 2,400 programmes taught entirely through the English language. They approximate about 2% of all European students participating in these programmes.

The main objectives of the internationalisation of European universities are, firstly, to attract the most knowledgeable scholars in the given field, and to increase the number of international students, which increases revenue and international recognition. Secondly, to offer internationalisation at home (IaH) for national students, who can reap the benefits of international exposure while studying at their local university (Llurda et al. 2013; Strotmann et al., 2014; Thøgersen, 2013).

The amount of total exposure to English through EMI often varies from university to university. Nastansky (2004) identified three models adopted when implementing English taught programmes in university settings. Firstly, a programme in which the amount of English use remains the same throughout the programme. The second model increases the amount of English taught courses as the degree goes on, and the third, adopted in Germany, involves decreasing the amount of English taught courses as the degree goes on.

The types of changes in university policies discussed in this section have circular effects which can be summarised by the following quote, "[w]hile the global status of English impels its adoption in higher education, the adoption of English in higher education further advances its global influence" (Coleman, 2006, p. 4).

Review of the Literature

The following sections provide a background to EMI in HE and put the study into context. CLIL is defined and discussed as a European approach to multilingual education that has been in use at primary and secondary levels for some time now. Following this, the rationale and development behind CLIL as an educational model is detailed, leading to a definition. Finally, a description and examples of ICLHE and EMI are given. The article then goes on to highlight the research findings from both CLIL as well as EMI. The review closes with a summary of what type of linguistic gains we can expect to find in EMI based on the current knowledge in the field.

CLIL Education

In the 1990's, various types of multilingual education were in place throughout Europe, due in part to trends in internationalisation and globalization (Marsh, Pavón-Vázquez, Frigols Marin, 2013). Already by the late 1980's, terminology referring to "content-based second/foreign language instruction" was appearing in the literature (see Brinton, Snow, & Wesche, 1989; Snow, Met, & Genessee, 1989). In 1994, a report from the Continuing Education Centre of the University of Jyväskylä in Finland expanded on the Teaching Content through English (TCE) programme in that institution during 1992-1993 (Rasanen & Marsh, 1994). In that same year, Marsh (1994) pointed out that "[i]n CLIL the learning of language and other subjects is mixed in one way or another. This means that in the class there are two main aims, one related to the subject, topic or theme and one linked to the language" (p. 6). Then, in 1995, the European

Commission issued a white paper, *Teaching and learning: Towards the learning society*, where multilingualism was encouraged as part of being European:

> Languages are also the key to knowing other people. Proficiency in languages helps to build up the feeling of being European with all its cultural wealth and diversity and of understanding between the citizens……it is becoming necessary for everyone, irrespective of training and education routes chosen, to be able to acquire and keep up their ability to communicate in at least two Community languages in addition to their mother tongue. (European Commission, 1995, p. 47).

Three years later, Nikula and Marsh were making the case to consider content and language integrated learning (CLIL) the main "umbrella" term to encompass pedagogies that integrate language and content, in which English or another foreign language is used as the means of instruction (1998, p. 4-6).

In sum, CLIL is a methodological educational tool in response to the internationalisation of Europe and the consideration of multilingualism as an asset, as referred to in the previous section; it is a multifaceted approach, encompassing social, linguistic, educational and cognitive levels (Pérez-Vidal, 2009).

An example of CLIL is elementary students in Switzerland receiving some of their courses in German or French, two of the nation's official languages (Stohler, 2006), or Dutch secondary students having content courses such as History or Geography taught through English as a foreign language (Admiraal, Westholf, & Bot, 2006). Another example of an existing content learning model was in place in the Basque Country's multilingual schools. These schools provided education to Basque children in their mother tongue, which had been reduced to a minority language due to political reasons (Cenoz, 2009). This Spanish region, along with Catalonia and Galicia, implemented similar approaches in the 1980s and continue to embrace multilingual education methodologies such as CLIL (Celaya & Pérez-Vidal, 2001; Lasagabaster & Ruiz de Zarobe, 2010). These examples illustrate the use of CLIL not only to instruct a foreign language, but also to maintain and spread regional languages.

CLIL Rationale

Second language education has developed over time. Trends in the field have changed from traditional formal instruction (FI) methods, where students are exposed to the secondary language for an hour or two per week, to more innovative, communicative, immersion, and content based methods (Richards & Rodgers, 2014). FI has been popular for many years and is still common practice in many countries and schools around the world. One of the main features of FI classrooms is that a large portion of time is spent focusing on form, providing less opportunity for learners to communicate and interact using the language (Richards & Rodgers, 2014, p. 175-176). The teacher is typically the language expert and primary user, while students learn the language directly, often through grammar exercises. Materials used in the classroom are catered to the student, meaning inauthentic material. Further, the range of communicative contexts the learner is exposed to is limited to the classroom setting. Additionally, there is very limited contact with native speakers or authentic input from the target language (TL) (Pérez-Vidal, 2011; Richards & Rodgers, 2014, p. 90).

At the higher education level, following the revolution taking place in EFL in general with the communicative approach to language teaching, changes in the teaching of academic English emerged in England in the 1980's and 1990's, aiming to enhance students' knowledge

and to aid them in achieving advanced levels in specific subject areas. This became known as English for specific purposes (ESP) and is used to address the specific language needs of the student (Hutchinson & Waters, 1987, p. 6-7). The approach was later adopted in many non-English speaking countries and eventually became known as English for academic purposes (EAP) (Jordan, 1997).

This can be seen as one of the first responses to the internationalisation of universities and student mobility, and the beginning of the rise of English in Academia. ESP provided students with the tools they needed to communicate in English depending on their field, be it law, medicine, tourism, academics, and so on while EAP supported students studying in a multilingual context, especially at the tertiary level (these were usually foreign students studying in English speaking countries) (Fortanet-Goméz, 2013). While these models were being adopted in HE, it was not the only development at the time. The communicative approach brought both meaning and communication elements into language teaching, the adoption of this approach inspired changes in materials and classroom procedures at other levels of education (Pérez-Vidal, 2009). The same concept was the rationale for the common place idea that study abroad stays spur linguistic development. This is supported by Muñoz (2012), who concluded that intensive exposure may lead to a turning point in L2. For Muñoz's study, 142 undergraduate students in Spain were questioned, with results showing that 85% identified an intensive learning context, for example a study abroad, as the turning point in the quality of their English level. In line with these findings, Pérez-Vidal (2014) found that, after a study abroad period (intensive input exposure), university students make gains in fluency, accuracy, and use of formulaic language (see also Serrano, Llanes, & Tragant, 2011; Valls-Ferrer & Mora, 2014). These results can be attributed to increased motivation, which is known to be an important factor in SLA.

Another approach to multilingual education is content-based instruction (CBI), which emerged in the United States in the 1970's and 1980's in response to the students' low proficiency English levels at all levels of education. Schools implemented courses where students were encouraged to think and learn in the TL. CBI instruction differs from FI in that language activities are always specific to the content taught, the focus changes from being not only on the TL but also on the actual content. Through focusing on content, learners are encouraged to use the language as a tool for communication rather than study about it (Snow, 2001).

Following this, a bilingual education model emerged, French immersion, developed in response to French becoming the official second language in Canada. The original immersion structure involves instructing the first three years of children's school experience exclusively in French. Input then tapers off until half of the curriculum is taught in French and half in English by the time students are in the final year of primary school. However, over the years there has been many alternatives to the original system. Varying among provinces and schools, some start immersion in the 4th or 5th grade, while others only have a few years of intense immersion before returning to an English curriculum (Genesee, 2014). Findings from immersion research are positive and the model is considered a success (Swain, 2000). Research has demonstrated that while learners develop high levels of proficiency in French, they also master content subjects as well as their monolingual peers. Additionally, their cognitive as well as mother tongue development is not impeded (Shapson, 1984). Research into the linguistic outcomes of French immersion shows that immersion students outperform their FI counterparts on all tasks, and are better compared to francophone students of their grade. Thus, they tend to achieve near native like receptive skills, reading, and listening; however, speaking and writing skills remain non-native like (Swain & Lapkin,1982).

The development of CLIL in Europe was able to benefit greatly from and adapt research findings from the Canadian immersion experience, thus FonF (Focus on Form) was combined with a focus on communication and content. In CLIL, content subjects such as math, science, or history are taught through a second or foreign language. A recent definition, taken from Dalton-Puffer (2011), reads, "CLIL can be described as an educational approach where curricular content is taught through the medium of a foreign language, typically to students participating in some form of mainstream education at the primary, secondary, or tertiary level" (p. 183).

There are some key characteristics of CLIL that foster linguistic benefits. Firstly, programmes run alongside conventional FI programmes and thus increase amount of exposure to the TL. Secondly, authentic material is used triggering authentic interaction. Finally, using a foreign language to learn content stimulates interaction, and communication becomes meaningful because the language is used as a tool for real communication (Pérez-Vidal, 2009). These factors expand the number of domains and functions in which the students must use the TL (Escobar, 2004).

Defining ICLHE and EMI Education

ICLHE is considered to have the same focus as CLIL but in the HE arena. Specifically, language outcomes are on the agenda as well as content. Whereas, EMI is focused on content only and no L2 language support is given, the other obvious difference is that EMI is explicitly English while ICLHE is used for many other languages (Smit & Dafouz 2012).

The distinction between ICLHE and EMI is further exemplified through the following two studies, one at an Italian university and the other at a Swedish university. Costa (2012) found Italian lecturers switch from using the language for purely communication (content) to look at it objectively (FonF) (Costa, 2012). For example, terms are explained in the L1 or language structure becomes the focus. The researcher concluded that language was seen as second to content, and that lectures were "mainly meaning focused but with incursions into language focus and thus moving gradually into ICHLE" (Costa, 2012, p. 42). Whereas, in the Swedish study, Airey (2012) considered most programs to be EMI, as they have no focus on language. It was even noted that in some cases professors do not feel comfortable correcting students' mistakes (Unterberger, 2012), especially concerning grammatical errors over lexical ones (Airey, 2012; Costa, 2012).

ICLHE is an emerging field of research; it has grown quickly in response to the circular process described previously. Researchers are beginning to explore this subfield of multilingual education. Due to this, research to date is mainly descriptive and exploratory, much like the present study. Qualitative research has been carried out, examining the different models adopted as each country and university is a different case and adapts EMI to fit their own unique needs. This is why it is helpful to draw on previous quantitative studies on CLIL to understand language outcomes. What is interesting is that holding a university degree that was taught in English seems to hold value in the minds of many. It is considered an asset when looking for work (Pérez-Vidal, 2014). Thus, by extension the general public is equating finishing a degree through EMI with having a high level of English proficiency. It would be interesting and well worth it to evaluate real linguistic outcomes of EMI. This is what the current study purports to do by filling this gap in research and collecting data on EMI in HE.

Research Findings

As mentioned previously, EMI is still a new field and it is useful to draw upon the CLIL experience for insight to what could be expected in the HE context. Empirical research has

shown that CLIL students outperform FI students in receptive vocabulary tasks (Jiménez & Ruiz de Zarobe, 2009). In fact, gains are noted as well in many receptive language skills, such as receptive vocabulary (as mentioned before), reading, speaking (in regards to fluency and risk taking), writing (in regards to fluency and lexical syntactic complexities), some morphological phenomenon, and emotive and affective outcomes. Skills that have not been shown to improve in CLIL environments are syntax, productive vocabulary, informal/non-technical language, writing (in regards to accuracy and discourse skills), and pronunciation (Ruiz de Zarobe, 2011).

The positive effects of CLIL on linguistic skills are often attributed to the increased exposure to the TL, as SLA principles described above support. Linguistic gains are reported after providing learners with intense periods of increased input rather than spacing out exposure over longer periods. Investigating English immersion children in Quebec, Spada and Lightbown (1989) found the group exposed to an intensive block of hours performed better and were more advanced on all tasks when compared to a group exposed to a shorter amount of hours over a longer period. Intensive language programs for young learners also support these findings. Housen (2012) studied 105 Dutch, French, and Greek speaking students across 5-year levels, including primary and secondary school in the European school in Brussels. Results showed an increase of development at the point of increased input in this case in both intensive and formal language instruction classes. In a second study, on English L2 proficiency among 72 Italian L1 students in year 3 and 4, in three different European schools in Italy, Belgium, and the UK, demonstrated that English extracurricular activities provided more contact with the TL and the additional L2 input made a significant difference in fluency, grammar, and lexicon. Studies on adults follow the same trend. Serrano and Muñoz (2007) found gains in all linguistic domains as measured in a group exposed to intensive classes (25 hours per week), compared to a group exposed to just 4 hours of instruction per week.

As seen, gains accrue in children and adolescents' linguistic levels when levels of input are increased. Thus, it could be expected to see similar gains in university students' linguistic skills. In fact, students who elected to study their university courses in English reported perceived linguistic gains as one of the motivating factors for enrolling in EMI (Tazl, 2011). However, there has been little empirical evidence to support this claim. Existing research paints a picture of what exactly EMI is and how stakeholders are reacting and adapting to it. Some academic fields find EMI to be more natural than others. In a study of Physics professors in Sweden, Airey (2012) found lecturers preferred teaching in English and even felt English is the professional language for physicists. This is echoed in Unterberger (2012), where German professors surveyed also found English to be the natural choice for instruction in the Engineering field. In the same survey, some reported EMI lectures were easier than L1 lectures.

Students perceived more gains than losses in studying in an additional language, according to a questionnaire involving 93 Hebrew and Arabic students studying through English and 47 Russian and Arabic students studying through Hebrew (Smith, 2004). In a survey at a Belgian university that encompassed the view points of staff and students of five different faculties, a total of 627 participants found that lecturers favored EMI while students preferred to study in their L1. Both groups felt that their English skills improve as a by-product of teaching or studying in English; although, students placed more emphasis on this, as they hoped and expected to improve their language skills, which echoes Smith's findings above. This caused them to expect native-like lecturers, whereas lecturers focus on content and accept far from native-like levels from students, provided that communication is not hindered (Sercu, 2004).

Most professors report more prep time and a harder workload when teaching in English (Airey, 2011; Tazl, 2011). Impressions from students showed that in the first year of taking EMI

courses, they found the workload much harder and felt they would perform better if the courses were in their native language. However, professors felt the students struggled more with content than language (Tazl, 2011).

Turning to the focus of this study, there is reason to believe that students' linguistic levels will improve when enrolled and participating in EMI courses. All students in EMI programmes have studied English before they enter the programme; due to this factor, starting EMI can be considered a period of increased exposure to the target language. Increased exposure has been shown to lead to gains in language abilities in both children and adolescents. This leads us to expect some linguistic improvements in HE students; more noticeable gains are expected in receptive language tasks, and less gains in writing and grammar tasks as found in CLIL and immersion learners. As far as could be established, only one study exists examining the development of linguistic abilities after an EMI treatment. Loranc-Paszylk (2007) measured undergraduate students' performance on a reading task. Two groups (N=39) differed in both the type of language instruction they received as well as the amount of EMI exposure. The first was an ICLHE programme in International Relations and the second an English Philology programme (FI, FonF). The task used was the CAE reading proficiency test. The author concluded that, even though the ICLHE group had 60% less exposure to English, the performance of each group was comparable. The author concluded that reading skills acquired through just one discipline are transferable and help L2 performance overall. For example, when students chose to write their final projects in English, those who had higher reading scores performed better in their writing tasks.

In summary, the study outlined above points to linguistic gains on reading tasks by ICLHE students. However, in the current review of research in EMI there seem to be no studies examining linguistic gains based on the performance of lexico-grammatical, listening, and writing tasks, even though there is a perceived value in EMI. More research is needed in order to support these perceptions. Given that these questions remain unanswered, this study aims to address them.

Research Questions

This preliminary study examines linguistic gains measured through four tasks: an oral comprehension (listening) task, a written composition, a cloze task, and a grammar task. The research questions are:

1. Do students who take 100% of their degree through EMI experience linguistic gains over a one-year period?
2. Do students who take 50% or less of their degree through EMI experience linguistic gains?
3. Is there a difference in linguistic gains between the two groups based on the amount EMI hours, immersion vs. semi-immersion?

Materials and Methods

The study took place at the Economics Department of a Catalan university, most of the participants were bilingual Spanish and Catalan speakers, and English was a third or additional language for them. The Economics department offers four undergraduate degrees, International Business (IBE), Economics (ECO), Management (MGMNT), and Business Management and Administration (ADMIN). All are four-year degree programmes. All courses are taught through EMI for the International Business degree (IBE), equalling 1500 EMI hours per academic year.

Whereas, the ECO, MGMT, and ADMIN programmes offer various intensities of EMI. Track 3 and 4 offer no EMI courses in the first two years, while the second track offers 275 hours in the first year and 525 in the second year. The first track offers the most EMI courses equalling 625 in the first year and 650 in the second year. In summary, the tracks range from offering 0 to 650 hours of EMI per academic year. Figure 1 below shows a chart with the maximum amount of EMI hours per degree. In the case of this study, the classes can be considered to be EMI rather than ICLHE; there reportedly is no focus on form and no translation or dialogue in Catalan or Spanish. Lecturers provide all materials in English, such as power points and readings, according to information gathered from trainers on the programme.
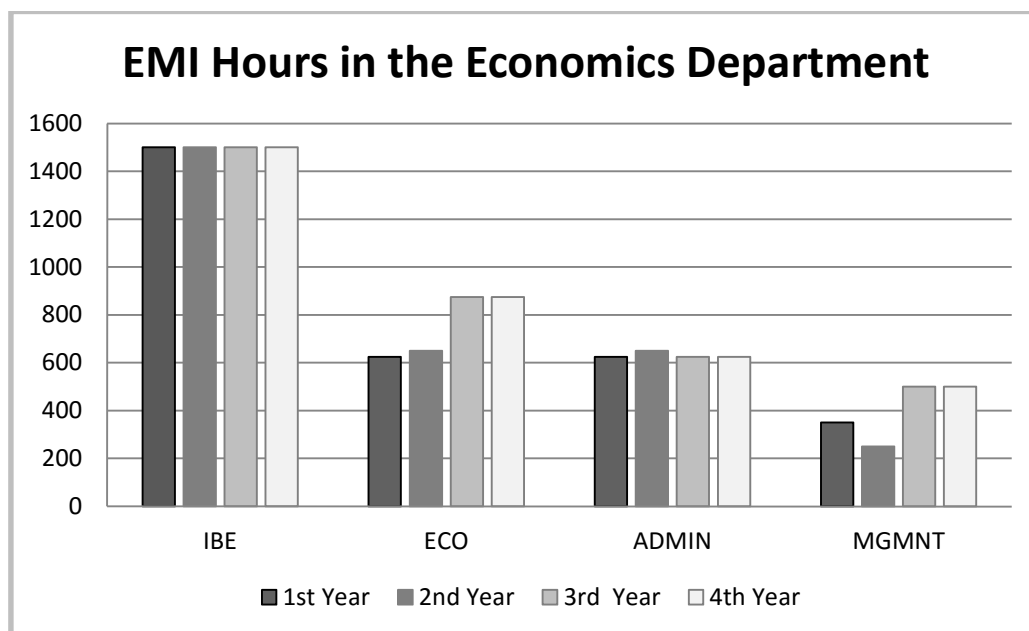

Figure 1. Chart illustrating EMI hours in the Economics department by degree.

Design and Participants

The study adopts a longitudinal pre-test post-test experimental design over one academic year, involving two data collection times and two separate groups of participants, immersion, henceforth IM, and semi-immersion, henceforth SIM. Data collection took place during the Fall and then again at the end of the academic year. Further details are omitted to preserve the anonymity of the data.

The IM group: Participants (N=7) are first year IBE students (mean age=18, 2 female, 3 male). L1= Spanish or Catalan. Their initial level of English was reported to be B1 or B2. Participants in the IM group have an exposure of 100% of their courses taught through EMI, which by the end of the academic year amounts to 1500 hours.[1]

The SIM group: Participants (N=9) first year ECO, MGMNT, or ADMIN students. Three female, six male, mean age=18. L1= Spanish or Catalan. Initial English level was reported to

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[1] Due to the small number of students who returned for the second test, we have five individuals who completed both tests and four cross sectional participants, two females, two males, age 18. This was necessary to have similar numbers in each group and increase reliability of the statistics tests. Using two cross sectionals was not considered to alter the data due to the very similar profile of individuals.

be B1 or B2. This group has 18 to 41 percent of their courses taught through EMI, amounting in between 275 to 625 hours of EMI in the first year. All participants had a minimum of 275 EMI hours over the course of the year.

Data Collection

Students were recruited and asked to fill out an online questionnaire concerning language background, English abilities, past English language studies, and current exposure inside and outside the classroom. The participants were asked to complete a battery of tasks. The administration of the battery lasted two hours and took place outside of class time. There are two sections in the battery of tasks, a written component including three tests, listening comprehension, a cloze test, and a sentence manipulation task. The second section was an oral task.[2]

Listening task. The listening task is designed to measure participant's aural abilities. An authentic live BBC radio interview is used; the instructions are given as follows:

> *You will hear a recorded interview with the female group ETERNAL. Listen carefully to the recording and answer the following questions. You will have three minutes to study the questions before hearing the recording for the first time. You can start answering all questions immediately after the first listening. The recording will be played twice, and there will be another three minutes at the end for you to complete your answers. Now listen to the recording.*

The participants are then required to answer a series of fill in the blanks, multiple choice, and true and false questions.

Lexico-grammatical tasks. In the cloze task, participants must fill in the blanks where there is only one correct lexical choice, measuring their lexico-grammatical abilities. The instructions are given as follows, the story contains twenty blanks:

> Fill **EACH** of the numbered blanks in the following passage with **ONE** suitable word.

The lady who liked adventure

> *It was one of those impulse buys that can happen while shopping. Mary Bruce was in London looking for a nice dress .... (1) she noticed a showroom with a light aircraft for .... (2) at a terribly reasonable price.*

The grammar task consists of twenty sentence manipulations where the participant must change the structure of the sentence according to the prompt, this task is designed to measure syntactic abilities. The instructions are as follows:

Instructions:

> **Finish each of the following sentences in such a way that it is as similar as possible in meaning to the sentence printed before it.**

EXAMPLE: Despite Jack's strange clothes, everybody ignored him.

ANSWER: Nobody took ....

ANSWER: Nobody took <u>notice of Jack's strange clothes</u>.

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[2] Not analysed in this study.

Writing task. The written composition task requires the participant to write an essay in response to the following statement:

In the space of the following 30 minutes write an essay about the following topic. Organize your ideas and make use of as wide a range of constructions and vocabulary as possible.

Someone who moves to a foreign country should always adapt the customs and way of life of his/her new country, rather than holding onto his/her own customs.

Writing an essay on a subjective topic leaves the participant free to write their opinions and thoughts requiring no specific content knowledge on the topic, while more advance students are free to write more complex compositions (Barquin, 2012). The writing task was analysed on three measures, Coordination, Accuracy, and Fluency (CAF), explained in more detail in the following sections.

Analysis

All data was evaluated quantitatively. The following sections describe the analysis of each task in turn.

Written task. Written compositions were analysed using the Childes Computerized Language Analysis (CLAN) system. This was chosen to insure accurate non-biased results. The compositions were manually typed into word documents, the spelling and grammar auto-correct was disabled, and all errors were left untouched. Once formatted into CLAN files, the researcher coded each error according to the CAF measures (further explained below). Errors were coded as either grammatical, lexical, or pragmatic. Grammatical errors involved errors with function words, verb tense, prepositions, pronouns, and determiners. Lexical errors could be wrong lexical choice, lexical transfer, or idiosyncratic (creative non-words). Pragmatic errors included problems with referent (pronouns with no reference) incorrect use of idioms, expressions, or formulaic language. The compositions were also coded for correct use of discourse connectors or idiomatic expressions, for sentences and clauses (dependent, independent, or coordinating). See Appendix A for complete chart showing the codes used and brief description of each error.

When assigning errors, the researcher tried to assign a single code to each error, the one that suited best. Although, it is possible that in some cases an error could be assigned two codes. Punctuation errors were not counted and spelling errors were only counted when they changed the word or resulted in another type of error. Inter-rater reliability was used where if there was a discrepancy it would be further analysed and agreement made between the researchers.

Once coded, two tests were performed on the data using CLAN. The first, a frequency test used to calculate the number of times each of the codes appeared in a composition. The second, a test that calculates the number of lexical items used (tokens), the different types of lexical items used (types), and the ratio between the two, resulting in a Type/Token Ratio (TTR). All values were recorded and further values were calculated in Excel for CAF measures. The calculated ratios were then input into SPSS. Non-parametric Wilcoxon signed-ranks texts were used. The sample is quite small and this results in abnormally distributed data, so a parametric test could not be considered. The Wilcoxon test compares the means of two variables and detects if there is a significant difference between the two. In our case the results from the first and second test time were used for each measure. The result is significant if the P value is <.05.

Complexity measures. Complexity measures involve two calculations, the first being the coordination index, calculating the number of coordinated clauses divided by total number of clauses minus sentences times 100, which gives a percentage of coordination. An increase in percentage signals an increased use of coordinated clauses, a decrease indicates increased use of dependent and subordinate clauses. Secondly, there is the Guiraud's index of lexical diversity, which takes into account the length of text in regards to the TTR, and supplies a more balanced value for lexical complexity (Vermeer, 2000). These measures were adopted from Pérez-Vidal (2014), previously used by Celaya & Pérez-Vidal (2001), following Wolfe-Quintero, Inagaki, and Kim (1998).

Accuracy measures. Accuracy measures involve calculating errors per word, and errors per clause, based on the errors that were coded into the CLAN system. As explained, the errors could be lexical, grammatical, or pragmatic in nature. The result of this measure is expressed in a numeric value and describes the rate of accurate lexical choice, verb use, and correct morphology. As the value decreases it signifies that fewer errors are detected.

Fluency measures. The measure for fluency is a calculation of words per clause and words per sentence, following the concept that longer clauses and sentences are more fluent than shorter simpler clauses and sentences. To obtain this value the count test was performed on the data using the CLAN programme as outlined before.

Listening task. The listening tasks were corrected manually and errors were recorded in an Excel table. One point was awarded for a correct response and no point was awarded for an incorrect response. The score from test one was subtracted from the score from test two in order to obtain the amount of gain for each participant. This data was then transferred to SPSS for further statistical analysis.

Lexico-grammatical tasks. The cloze and grammar tasks were corrected in order to obtain qualitative data. The correction method assumed one correct answer for each question, so one point was given for a correct response and no point was given for an incorrect response. As for the listening the value of the gain was calculated by subtracting the first test score from the second and the data was analysed in SPSS.

Results

The results of the tests were examined first by looking at the descriptive statistics to see if there were any overall mean differences on each task between time one (T1) and time two (T2). Results found are broken down by task: listening, lexico-grammatical, and writing. After reviewing the descriptive statistics, the non-parametric Wilcoxon signed ranks test was carried out to detect if there were any significant gains between the two tests, for each of the tasks examined.

Listening Task

Descriptive statistical analysis of the listening task, as shown in Table 1, reveals a lower value on T2 for both IM and SIM groups, by 1 point. This signifies a weaker performance on the listening task, at the second examination period.

Table 1. *Listening Task*

Mean Value	Time 1	Time 2
Immersion (N=7)	58.9	57.1
Semi Immersion (N=9)	49.5	48.1

Lexico-Grammatical Tasks

The results of the lexico-grammar task displayed in Table 2 reveal that means of the grammar task show an improvement of 12.6 points from T1 to T2 for the IM group. While the SIM group shows an average improvement of 11.6. This is a positive result and signals a trend for improvement in grammar tasks.

Table 2. *Grammar Task*

Mean Value	Time 1	Time 2
Immersion (N=7)	44.5	57.1
Semi Immersion (N=9)	32.0	43.6

Table 3 shows that the means from the cloze task also point towards average improvements, a greater improvement for the IM group going up 14.1 points from 33.4 to 47.5 and a slight improvement for the SIM group from 32.0 to 32.3.

Table 3. *Cloze Task*

Mean value	Time 1	Time 2
Immersion (N=7)	33.4	47.5
Semi Immersion (N=9)	32.0	32.3

Table 4. *Complexity, Accuracy, and Fluency (CAF) Measures in Immersion Group*

Immersion Group	Min.	Max.	Mean	Stand. Dev.
Guiraud's index				
Time 1	6.60	9.03	7.61	.90
Time 2	6.55	9.13	7.90	.99
Coordination index				
Time 1	.00	160.00	75.03	63.71
Time 2	.00	166.67	38.03	60.60
Words per Sentence				
Time 1	16.71	27.38	20.71	4.23
Time 2	16.58	36.43	22.25	6.61
Words per Clause				
Time 1	11.50	16.85	13.24	2.26
Time 2	9.25	28.33	14.83	6.42

Errors per Word				
Time 1	.06	.16	.10	.03
Time 2	.06	.12	.09	.02
Errors per Clause				
Time 1	.80	1.85	1.31	.42
Time 2	.88	1.78	1.25	.41
Number			7	

The analysis of the IM group's writing task yields the following results, as displayed in Table 4. For complexity, a slight improvement on the Guiraud's index (<1.) is found. There is a decrease of 37 in the coordination index, suggesting more subordinate (dependent) and independent clauses used at T2. In regards to fluency measures, there is a 1-point increase in both words per sentence and words per clause. Finally, for accuracy measures there is a slight improvement (<.1), as less errors were detected in the calculation for errors per word or errors per clause at T2.

Table 5. *Complexity, Accuracy, and Fluency (CAF) Measures in Semi-Immersion Group*

Semi-Immersion Group	Min.	Max.	Mean	Stand. Dev.
Guiraud's index				
Time 1	6.33	9.69	7.54	.94
Time 2	7.89	9.43	8.35	.54
Coordination index				
Time 1	.00	300.00	86.65	88.35
Time 2	.00	133.33	52.74	47.28
Words per Sentence				
Time 1	18.33	23.73	19.96	1.92
Time 2	15.43	31.86	23.01	6.64
Words per Clause				
Time 1	9.96	16.25	12.76	1.99
Time 2	8.53	15.19	11.95	2.27
Errors per Word				
Time 1	.08	.19	.13	.04
Time 2	.09	.17	.13	.02
Errors per Clause				
Time 1	.92	2.56	1.66	.64
Time 2	.83	2.13	1.52	.40
Number			9	

A similar trend is noted in the SIM group, as shown in Table 5. There is a higher mean value on the Guiraud's index at T2 (<1.). A 33.91 difference between T1 and T2 was measured on the coordination index, suggesting more use of independent and subordinate (dependent) clauses. Regarding fluency, there is a 3-point difference between the two means for words per sentence, suggesting longer sentences in the second test. However, when looking at words per clause, the mean decreases slightly there (<1.). On accuracy, measures the means remain

virtually the same for both T1 and T2, suggesting almost no change in regards to errors per word or errors per clause, for the SIM group.

Wilcoxon Signed-Ranks Test

In order to detect if the improvements noted on examination of the descriptive statistics were in fact statistically significant the Wilcoxon signed ranks test was performed on the data and displayed in Tables 6 and 7. This test was selected to compare the difference of mean values from T1 to T2 on each of the tasks measured.

Table 6. *Immersion Group*

Median Differences Between Test One and Test Two	Wilcoxon Signed Rank Test Significance Value	
Listening	.10	
Grammar	.79	
Cloze	.50	
Fluency	1.0 words per clause	.87 words per sentence
Accuracy	.31 errors per word	.87 errors per clause
Complexity	.24 coord. index	.61 Guiraud's index

Note. Value is significant if p=<.05.

The results for the first three tasks, listening grammar, and cloze, all reflect values where p=>.05 (Table 6). The CAF measures also reflect values where p= >.05, for all tasks. The interpretation is that the IM group shows no significant gains in any of the language domains measured.

Table 7. Semi-immersion group

Median Differences Between Test one and Test Two	Wilcoxon Signed Rank Test Significance Value	
Listening	.77	
Grammar	**.01***	
Cloze	.82	
Fluency	.14 words per clause	.21 words per sentence
Accuracy	.95 errors per clause	.58 errors per clause
Complexity	.06 coord. index	.05 Guiraud's index

Note. *Value is significant if p=< .05.*
*Significant

The SIM group results (Table 7) show no significant improvements for the cloze or listening task, between T1 and T2. A significant gain was detected in the grammar task (p=.01). Regarding the CAF measures there were non-significant results for fluency and accuracy. However, the Guiraud's index (p=.05) is very close to a significant finding.

Discussion

Referring back to research question one (do students who take their entire degree through EMI experience linguistic gains over a one-year period?), results for the IM group, who receive their entire degree programme through English were positive. Mean gains in lexico-grammatical tasks were observed, and also on all CAF measures on the writing task. No improvements were noted on the listening task. Although the means pointed towards an improvement when tested, statistically significant gains were not detected using non-parametric tests. Thus, it can be asserted that there is a trend for improvement in lexico-grammatical and writing tasks in students who study their entire degree programme through EMI.

Regarding the second research question (do students who take less than half of their degree through EMI experience linguistic gains?), the results for the SIM group point to a trend towards improvement on all tasks save the listening task. Further, when analysed, statistically significant linguistic gains were detected in both lexico-grammatical tasks as well as lexical complexity in the writing task. These findings suggest students enrolled in semi immersion EMI courses do experience linguistic gains in the domains of complexity of writing and grammar, as well as a general trend towards linguistic improvement.

Addressing the third research question (is there a difference in linguistic gains between the two groups based on the type of programme; that is, the amount of EMI hours, immersion vs. semi-immersion?), the data point towards similar mean gains from T1 to T2 in both the IM and the SIM groups. The mean values reflect more average improvements in the IM group but when tested statistically significant gains were detected in the SIM group only.

Some reasons as to why this could be is that participants have achieved a B1 or B2 level in English and may have plateaued. Without putting a lot of effort and having some formal instruction, many adults experience difficulty reaching advanced levels in a second language. Students may feel they have a good enough level and that they can get by, giving them little incentive to enhance their English language skills, as Wilkinson (2004) stated, "language is a tool once they have the minimum needed there is little incentive to enhance skills" (p. 453).

The second factor that may inhibit linguistic gains is the question of input, and interaction. As we saw earlier from Tazl's (2011) and Airey & Linder (2004) students as well as lecturers behave slightly different in EMI classes. Students tend to interact less and ask less questions, also lecturers stick to the plan more and tend to follow the slides, with less interaction storytelling and other such nuances. This may affect the amount of interaction with English and therefore their output abilities. In addition, many professors are lecturing in their second or additional language and are not language specialists. Thus, there is little or no correction of students' errors in class or in assignments; instead, focus is entirely on content so students have little feedback on their language skills. As Sercu (2004) summed up:

> If lecturers cannot provide appropriate language input, if students are not provided with adequate opportunities for interaction in the foreign language, if students do not already possess a command of the language that allows them to benefit from English-medium instruction, the hoped for enhancement of students' language skills may remain forth-coming. (p. 548)

Some limitations of the study and suggestions for further research are: the current study was a preliminary study and it would be well worth it to repeat the same analysis on a larger number of students. It would be interesting to measure the students over a longer period of

time, their entire degree programme perhaps. It would be interesting to observe the lectures in order to have a clear picture as to exactly what kinds of interactions are going on and exactly what the input is.

Conclusion

This preliminary study has provided a background and review of the relatively new field of EMI in the European context. The study examined the linguistic outcomes of two groups of EMI undergraduate students in a Catalan university. Findings show a trend towards improvement for both groups of students measured through a listening task, two lexico-grammatical tasks, and a composition task where accuracy complexity and fluency were measured. A significant gain in grammar skills is evidenced in the semi-immersion (SIM) group, but not in the immersion group (IM), which only shows a tendency toward improvement. Regarding the lack of progress in the listening test, the lecturers are non-native speakers of English. Due to this, the students do not have native accent input and this could be a factor as to why their listening comprehension of native speakers does not improve. However, they improve on grammar of which they receive more target like input through readings, presentations and lectures.

This preliminary study contributes to the field by highlighting a trend for linguistic improvement after EMI treatment. However, further research is needed to confirm the trend noted.

References

Admiraal, W., Westhoff, G., & de Bot, K. (2006). Evaluation of bilingual secondary education in the Netherlands: Student's language proficiency in English. *Educational Research and Evaluation, 12* (1), 75-93. http://dx.doi.org/10.1080/13803610500392160

Airey, J. (2011). Talking about teaching in English: Swedish university lecturers' experiences of changing teaching language. *Iberica, 22*, 35-54.

Airey, J. (2012). "I don't teach English": The linguistic attitudes of physics lecturers in Sweeden. *AILA Review, 25*, 64-79. http://dx.doi.org/10.1075/aila.25.05air

Airey, J. & Linder, C. (2004, August). Language, bandwidth and the shared space of learning. Paper presented at the *EARLI SIG 9 Conference: Phenomenography and Variation Theory Go to School*. Gothenburg, Sweden: University of Gothenburg.

Airey, J. & Linder, C. (2007). Disciplinary learning in a second language: A case study from Swedish university physics. In R. Wilkinson & V. Zegers (Eds.), *Integrating content and language, researching content and language integration in higher education* (pp. 161-171). Nijmegen: Valkhof Pers.

Barquin, E. (2012). *Writing development in a study abroad context* (Doctoral dissertation). Universitat Pompeu Fabra, Spain.

Brinton, D. M., Snow, M. A., & Wesche, M. (1989). *Content-based second language instruction*. New York, NY: Newbury House.

Celaya, M. L., Torras, M. R., & Pèrez-Vidal, C. (2001). Matriz de criterios de medición para la determinación del perfil de competencia lingüística escrita en inglés [Measuring criteria matrix to determine written linguistic competency profile in English]. *Revista Española de Lingüística Aplicada (RESLA),14*, 87-99.

Cenoz, J. (2009). *Towards multilingual education: Basque educational research from an international perspective.* Bristol, UK: Multilingual Matters.

Costa, F. (2012). Focus on form in ICLHE lecturers in Italy. Evidence from English-medium science lectures by native speakers of Italian. *AILA Review, 25*, 30-47. http://dx.doi.org/10.1075/aila.25.03cos

Crystal, D. (2003). *English as a global language* (2nd ed.). Cambridge, UK: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511486999

Coleman, J. C. (2013). English-medium teaching in European higher education. *Language Teaching, 39,* 1-14. http://dx.doi.org/10.1017/S026144480600320X

Cook, V. (2013). *Second language learning and language teaching* (4th ed.). New York, NY: Routledge.

Dalton-Puffer, C. (2011). Content and language integrated learning: From practice to principles? *Annual Review of Applied Linguistics, 31*, 182-204.

Escobar Urmeneta, C. (2004). Content and language integrated learning: Do they learn content? Do they learn language? In J. Anderson, J. M. Oro Cabanas, J. Varela Zapata (Eds.), *Linguistic perspectives from the classroom: Language teaching in a multicultural Europe.* Santiago de Compostela, Spain: Universidade de Santiago de Compostela.

European Commission. (1995). *Teaching and learning: Towards the learning society* [White paper on education and training]. Retrieved from http://ec.europa.eu/

European Commission (2008). *Multilingualism: an asset for Europe and a shared commitment* [Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions]. Retrieved from http://eur-lex.europa.eu

Fortanet-Gómez, I. (2013). *CLIL in higher education: Towards a multilingual language policy*. Bristol, UK: Multilingual Matters.

Genesee, F. (2014). Is early second language learning really better? *Babylonia, 1*(2014), 26-30.

Genesee, F. (2015). Myths about early childhood bilingualism. *Canadian Psychology/ Psychologie Canadienne, 56*(1), 6-15. http://dx.doi.org/10.1037/a0038599

House, J. (2013). Developing pragmatic competence in English as a lingua franca: Using discourse markers to express (inter)subjectivity and connectivity. *Journal of Pragmatics, 59*(Part A), 57-67. http://dx.doi.org/10.1016/j.pragma.2013.03.001

Housen, A (2012). Time and amount of L2 contact inside and outside the school – Insights from European schools. In C. Muñoz (Ed.), *Intensive exposure experiences in second language learning* (p. 111-140). Bristol, UK: Multilingual Matters.

Hutchinson, T., & Waters, A. (1987). *English for specific purposes.* Cambridge, UK: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511733031

Jiménez-Catalán, R. & Ruiz de Zarobe, Y. (2009). The receptive vocabulary of EFL learners in two instructional contexts: CLIL versus non-CLIL instruction. In R. Jiménez-Catalán, R. & Y. Ruiz de Zarobe (Eds.), *Content and language integrated learning: Evidence from research in Europe* (pp. 81-92). Bristol, UK: Multilingual Matters.

Jordan, R. R. (1997). *English for academic purposes: A guide and resource book for teachers*. Cambridge, UK: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511733062

Juan-Garau, M., & Salazar-Norguera, J. (Eds.). (2015). *Content based language learning in multilingual educational environments.* Cham, Switzerland: Springer International Publishing.

Lasagabaster, D., & Ruiz de Zarobe, Y. (Eds.). (2010). *CLIL in Spain: Implementation, results and teacher training*. Newcastle, UK: Cambridge Scholars.

Lightbown, P. M., & Spada, N. (1991). Étude des Effets à Long Terme de l'Apprentissage Intensif de l'Anglais, Langue Seconde, au Primaire. *The Canadian Modern Language Review, 48*(1), 90-117.

Loranc-Paszylk, B. (2007). Evaluation of foreign language achievement based upon a CLIL programme in tertiary education: A Polish perspective. In R. Wilkinson & V. Zegers (Ed.), *Integrating content and language in higher education.* Maastrich, Netherlands: Maastricht University Language Centre.

Llurda, E, Cots, J. M, & Armengol, L. (2013). Expanding language borders in a bilingual institution aiming at trilingualism. In H. Haberland, D. Lønsmann, & B. Preisler (Eds.), *Language alternation, language choice and language encounter in international tertiary education*. Dordrecht, Netherlands: Springer Science+Business Media.

Marsh, D. (1994). *Bilingual education & content and language integrated learning*. International Association for Cross-cultural Communication, Language Teaching in the Member States of the European Union. Paris, France: University of Sorbonne.

Marsh, D., Pavón-Vázquez, V., & Frigols-Martín, M. A. (2013). *The higher education languages landscape: Ensuring quality in English language degree programmes*. Valencia, Spain: VIU.

Muñoz, C. (2007). CLIL: Some thoughts on its phsycholinguistic principles. *Revista Española de Lingüística Aplicada, Extra*(1), 17-26.

Muñoz, C. (2012). The significance of intensive exposure as a turning point in learners' histories. In C. Muñoz (Ed.), *Intensive exposure experiences in second language learning* (pp. 141-160). Bristol, UK: Multilingual Matters.

Nastansky, H. (2004). National strategy in the internationalisation of higher education: The German perspective. In. R. Wilkinson (Ed.), *Integrating content and language: Meeting the challenge of a multilingual higher education*. Maastricht, Netherlands: Universitaire Pers Maastricht.

Nikula, T., & Marsh, D. (1998). Terminological considerations regarding content and language integrated learning. *Bulletin Suisse de Linguistique Appliquée, 67*, 13-18. (ERIC Document Reproduction Service No. ED422727)

Pérez-Vidal, C. (2009). The integration of content and language in the classroom: A European approach to education (the second time around). In E. Dafous & M. C. Guerrini (Eds.), *CLIL Across Educational Levels*. Madrid, Spain: Richmond Publishing.

Pérez-Vidal, C. (2011). Language acquisition in three different contexts of learning: Formal instruction, study abroad, and semi-immersion (CLIL). In Y. Ruiz de Zarobe & F. Gallardo del Puerto (Eds)., *Content and foreign language integrated learning: contributions to multilingualism in European contexts.* Bern, Switzerland: Peter Lang.

Pérez-Vidal, C. (2014). Study abroad and formal instruction contrasted: The SALA project. In C. Pérez-Vidal (Ed.), *Language acquisition in study abroad and formal instruction contexts*. Amsterdam, Netherlands: John Benjamins Publishing.

Rasanen, A., & Marsh, D. (Eds.). (1994). Content instruction through a foreign language. A report on the 1992-1993 TCE Programme [Research and Fieldwork No. 18]. Jyväskylä, Finland: University of Jyväskylä, Continuing Education Centre. (ERIC Document Reproduction Service No. ED383193)

Richards, J. C., & Rodgers, T. S. (2014). *Approaches and methods in language teaching* (3rd ed.). Cambridge, UK: Cambridge University Press.

Ruiz de Zarobe, Y. (2011). Which language competencies benefit from CLIL? An insight into applied linguistics research. In Y. Ruiz de Zarobe, J. M. Sierra, & F. Gallardo del Puerto (Eds), *Content and foreign language integrated learning: contributions to multilingualism in European contexts.* Bern, Switzerland: Peter Lang.

Sercu, L. (2004). The introduction of English-medium instruction in universities. A comparison of Flemish lecturers' and students' language skills, perceptions, and attitudes. In. R. Wilkinson (Ed.), *Integrating content and language: Meeting the challenge of a multilingual higher education*. Maastricht, Netherlands: Universitaire Pers Maastricht.

Shapson, S. (1984). Bilingual and multicultural education in Canada. In S. Shapson & V. D'Oyley (Eds.), *Bilingual and multicultural education: Canadian perspectives* (pp. 1-13). Clevedon, Avon: Multilingual Matters.

Serrano, R., & Muñoz, C. (2007). Same hours, different time distribution: Any difference? *System, 35*(3), 305-321.

Smit, U., & Dafouz, E. (2012). Integrating content and language in higher education: An introduction to English-medium policies, conceptual issues and research practices across Europe. *AILA Review, 25,* 1-12. http://dx.doi.org/10.1075/aila.25.01smi

Smith, K. (2004). Studying in an additional language – What is gained, what is lost, and what is assessed? In. R. Wilkinson (Ed.), *Integrating content and language: Meeting the challenge of a multilingual higher education*. Maastricht, Netherlands: Universitaire Pers Maastricht.

Snow, M. A. (2001). Content-based and immersion models for second and foreign language teaching. *Teaching English as a second or foreign language*, *3*, 303-318.

Snow, M. A., Met, M., & Genesee, F. (1989). A conceptual framework for the integration of language and content in second/foreign language instruction. *TESOL Quaterly, 23*(2), 201-207.

Stohler, U. (2006). The acquisition of knowledge in bilingual learning: An empirical study on the role of content in language learning. *VIEWZ (Vienna English Working Papers), 15*(3), 41-46. http://dx.doi.org/10.2307/3587333

Strotmann, B., Bamond, V., Lopez-Lago, J. M., Bailen, M., Bonilla, S., & Montesinos, F. (2014). Improving bilingual higher education: Training university professors in content and language integrated learning. *Higher Learning Research Communications,* *4*(1), 91-97. http://dx.doi.org/10.18870/hlrc.v4i1.198

Swain, M. (2000). French immersion research in Canada: Recent contributions to SLA and applied linguistics. *Annual Review of Applied Linguistics, 20*, 199–212

Swain, M., & Lapkin, S. (1982). *Evaluating bilingual education: A Canadian case study.* Clevedon, Avon: Multilingual Matters.

Tazl, D. (2011). English-medium masters' programmes at an Austrian university of applied sciences: Attitudes, experiences and challenges. *Journal of English for Academic Purposes, 10*(4), 252-270. http://dx.doi.org/10.1016/j.jeap.2011.08.003

Thøgersen, J. (2013). Stylistic and pedagogical consequences of university teaching in English in Europe. In H. Haberland, D. Lønsmann, & B. Preisler (Eds.), *Language alternation, language choice and language encounter in international tertiary education*. Dordrecht, Netherlands: Springer Science+Business Media.

Unterberger, B. (2012). English-medium programmes at Austrian business faculties. A status quo survey on national trends and a case study on programme design and delivery. *AILA Review, 25*(1), 80-100.

Valls-Ferrer, M., & Mora, J. C. (2014). L2 fluency development in formal instruction and study abroad: The role of initial fluency level and language contact. In C. Pérez-Vidal (Ed.), *Language acquisition in study abroad and formal instruction contexts* (pp. 111-136). Amsterdam, Netherlands: John Benjamins Publishing.

Vermeer, A. (2000). Coming to grips with lexical richness in spontaneous speech data. *Language Testing, 17*(1), 65-83.

Wächter, B., & Maiworm, F. (2008). *English-taught programmes in European higher education: The picture in 2007.* Bonn: Lemmens.

Wilkinson, R., Zegers, V., & Van Leeuwen, C. (2006). *Bridging the assessment gap in English-medium higher education*. Bochum: AKS Verlag.

Wolfe-Quintero, K., Inagaki, S., & Kim, H. Y. (1998). *Second language development in writing: Measures of fluency, accuracy, & complexity*. Honolulu, HI: University of Hawaii Press.

Appendix A

Grammatical Error Codes	All types were counted as grammatical errors
GrE:trans	Grammatical error as a result of L1 transfer, using a wrong structure due to L1 transfer.
GrE:fw	Inappropriate use of a function word (pronouns, determiners, prepositions, conjunctions) or omission in obligatory contexts.
GrE:adv/j	Comparatives and superlatives, when an adverb/adjectives used inappropriately, or in the wrong form.
GrE:n	Missing noun, wrong form (morphology).
GrE:v	Tense, aspect, auxiliary verb missing, omission of a verb that is needed in the sentence structure, wrong form (morphology).
GrE:wo	Error due to wrong word order, one or several elements that are misplaced in the sentence, lack of inversion in questions.
GrE:ag	Lack of agreement between subject and verb or between determiner and noun.
GrE:neg	Errors with negatives, double negatives, confusion between no/not, negative particle errors.
Lexical Error Codes	All types were counted as lexical errors
LexE:idio	Idiosyncratic form used by the learner, creative morphology or made up non-words.
LexE:trans	Words directly borrowed from the L1 whether modified or not, false friends.
LexE:cho	Wrong lexical choice, mistakes with commonly confused words, use of words in inappropriate text.
LexE:omi	Omission of a lexical item, the learner cannot retrieve.
Pragmatic Error Codes	All were counted as pragmatic errors
PragE:ref	Erroneous use of reference markers, ambiguous references.
PragE:idio	Idiosyncratic usage not clearly ungrammatical, problems with formulaic language and idioms.
PragE:con	Wrong discourse connector.
F:	Discourse connectors of the kind 'to sum up', 'for example' and idiomatic expressions used correctly.
Syntactic Complexity	
S	Sentence, any string between full stops (as the writer has written it). When writers miss punctuate the researcher identifies sentences according to syntactic structures.
C	Independent clauses.
DepC	Dependent clauses.
Coord	Coordinating clauses.

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