



## **Lexical transfer in the written production of a CLIL group and a non-CLIL group**

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### **ABSTRACT**

Previous research on the difference in terms of lexical transfer between CLIL (Content and Language Integrated Learning) and non-CLIL students has revealed that CLIL students produce fewer lexical transfer errors than non-CLIL students. This study aimed at comparing the lexical transfer production of two groups of students (CLIL and non-CLIL) and determining whether language proficiency was a key factor when predicting differences between both groups (Bruton, 2011a). The sample for the research consisted of 36 students in grade 7. Subjects' language proficiency was assessed through the English Unlimited Placement Test, whereas their lexical transfer production was tested through a written composition in English. The results indicated that there was no significant difference in language proficiency between both groups and that the difference in lexical transfer lied in the influence exerted by a few participants on the results.

**KEYWORDS:** Content and Language Integrated Learning (CLIL), English as a Foreign Language (EFL), language proficiency, lexical transfer (borrowings, lexical inventions, calques).

### **RESUMEN**

Diferentes estudios sobre transferencia léxica en el contexto AICLE han revelado que los alumnos AICLE producen menos errores de transferencia léxica que sus compañeros en ILE. Trabajando sobre una muestra de 36 alumnos en 1ºESO, este estudio tiene como objetivo comparar la producción de transferencia léxica en dos grupos de alumnos (AICLE e ILE) y determinar si la competencia lingüística es un factor determinante a la hora de predecir diferencias entre ambos grupos (Bruton, 2011a). Se utilizó el *English Unlimited Placement Test* para medir la competencia lingüística de los alumnos y una composición escrita en inglés para evaluar la producción de errores de transferencia léxica. Los resultados muestran que no hay una diferencia significativa entre ambos grupos en cuanto a competencia lingüística. Aquellos alumnos en ILE producen más errores de transferencia léxica que los alumnos AICLE, pero un análisis individual por participantes reveló que esta diferencia residía en los errores cometidos por tres alumnos en ILE.

**PALABRAS CLAVE:** AICLE (Aprendizaje Integrado de Contenido y Lengua Extranjera), Inglés como Lengua Extranjera (ILE), competencia lingüística, transferencia léxica (préstamos, invenciones léxicas, calcos).

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## 1. INTRODUCTION

Research in the field of second language acquisition (SLA) is currently experiencing a renewed interest in language transfer due to the increasing implementation of CLIL programmes in educational contexts. This revival is mainly caused by recent findings which have proved a decreased influence of lexical transfer in those students who are immersed in CLIL programmes (Agustín Llach, 2009; Celaya, 2008; Celaya & Ruiz de Zarobe, 2010), that is, programmes in which the curricular content is taught and learned through the medium of a foreign language (Dalton-Puffer, 2011), in this particular case, English.

The main purpose of this study is to contribute to previous research on lexical transfer by comparing the written production of a CLIL and non-CLIL group of students in Andalusia<sup>1</sup> (Spain), where CLIL has been used for several years. In doing so, we will also address the debate created in this region about the benefits of CLIL between Lorenzo, Casal and Moore (2010, 2011) and Bruton (2011a, 2011b). While Lorenzo and his colleagues highlight the significant foreign language score differences between CLIL and non-CLIL groups, Bruton claims that the outstanding reported benefits of CLIL methodology are rooted in various factors favouring CLIL students such as their higher language proficiency. In this sense we want to determine whether language proficiency is a crucial factor in the possible differences in lexical transfer we could find between the CLIL and non-CLIL students of our study.

## 2. LITERATURE REVIEW

### 2.1. CLIL

Nowadays CLIL methodology is gaining more and more ground in European educational systems as a direct response to the recognized need for plurilingual competence in our present-day society (European Commission, 1995), but what are the pedagogic implications of CLIL in foreign language learning?

#### 2.1.1. *What is CLIL? Rationale and benefits of CLIL*

Since its coinage in 1994 at the University of Jyväskylä (Finland), the term CLIL (Content and Language Integrated Learning) has been increasingly taking on greater relevance in the field of foreign language education (Dalton-Puffer & Nikula, 2006; Deller, 2005; Marsh, 2002; Pérez Cañado, 2012) and has been widely used to refer to “situations where subjects, or parts of subjects, are taught through a foreign language with dual-focused aims, namely the learning of content and the simultaneous learning of a foreign language” (Marsh, 2002:2).

Most of the definitions provided on CLIL remark the fact that CLIL is a *dual-focused* educational approach since its major focus is on a continuum of both language and content, without an implied preference for either (Coyle, 2007). CLIL has its roots in bilingual education, that is to say, immersion programmes in Canada and content-based instruction (CBI) in USA, which have been in operation for decades. According to Coyle, Hood and Marsh (2010: 6), however, “what separates CLIL from some established approaches such as content-based language learning, or forms of bilingual education, is the planned pedagogic integration of contextualized content, cognition, communication, and culture into teaching and learning practice”.

Thus CLIL contexts are described in the literature as “significant learning environments” (Lorenzo *et al.*, 2010: 427) or “immersion-like, input-rich environments for language acquisition” (Dalton-Puffer, 2009: 198). The main rationale behind the implementation of CLIL methodology has been summarised in these following four points (Navés, 2009: 25):

1. CLIL creates conditions for naturalistic language learning by reproducing the way in which first languages are acquired.
2. CLIL provides a purpose for language use in classroom.
3. CLIL has a positive effect on language learning by putting the emphasis on meaning rather than form.
4. CLIL increases the amount of exposure to the target language.

The growing relevance of CLIL lies in the positive results yielded in the studies carried out measuring its impact on students’ foreign language learning. The specialised literature dealing with CLIL research has identified that CLIL proves to be beneficial to students in both language and content outcomes by contributing to raising learner achievement in the foreign language not only for good students, but also for those students with less language-learning aptitude (Wiesemes, 2009). CLIL teaching also contributes to raising students’ motivation and confidence in the target language while decreasing their anxiety (Pérez Cañado, 2012). Moreover, CLIL enables students to develop better speaking skills (Dalton-Puffer, 2008), improve receptive and productive vocabulary (Dalton-Puffer, 2011) and decrease L1 transfer (Agustín Llach, 2009). Nonetheless, there are certain language competence aspects which tend to remain unaffected in CLIL such as syntax, writing, informal language, pronunciation, and pragmatics (Lasagabaster, 2008).

### **2.1.2. CLIL in Andalusia**

CLIL was first implemented in Andalusia in 2005 when the Andalusian regional government launched the *Plan de Fomento del Plurilingüismo* (Plurilingualism Promotion Plan), whose main aim is to foster a multilingual society in order to adhere to European policy on

plurilingualism (the *1+2 principle*, European Commission, 1995). Research conducted on CLIL in this community has mainly taken place in Seville (Casal & Moore, 2009; Lorenzo *et al.*, 2010; Lorenzo, Casal, Moore & Alfonso, 2009) and Granada (Madrid, 2011; Ramos García, 2011; Ramos García, Ortega Martín & Madrid, 2011; Roa, Madrid & Sanz, 2011; Villoria, Hughes & Madrid, 2011). Casal and More (2009) and Lorenzo *et al.* (2009) undertook a large-scale evaluation and consultancy project designed to provide an overview of the implementation of CLIL in 61 schools (both primary and secondary schools) of Andalusia regarding school organization, effects on learners' competence development and level of satisfaction in parents, teachers and learners. The project made clear the supremacy of CLIL in terms of both linguistic outcomes and competence levels, as CLIL students outperformed their mainstream peers, and evinced the positive reception this new teaching method had had among the participants.

Similar positive results in favour of CLIL were obtained in the different studies carried out in the large-scale project led by Madrid (Madrid & Hughes, 2011) in Granada. This project compared CLIL and non-CLIL students in regard to L1 competence, subject-content knowledge, cultural knowledge, and foreign language competence. The sample used for these studies consisted of students at the end of their primary education (grade 6) and compulsory secondary education (grade 10) who belonged to different school contexts: public, private and semiprivate schools<sup>2</sup>. The condition of being a public, private and semiprivate school is in our opinion an important variable in the project for this could entail important differences among participants lying in, for instance, private English classes or time spent in English-speaking countries.

Based on the premise that students enrolled in a CLIL programme are exposed to their L1 less than students in a monolingual programme, Ramos García *et al.* (2011) investigated the effects of CLIL on L1 competence. After comparing the results obtained by CLIL and non-CLIL students in a test evaluating their competence in Spanish, Ramos García and her colleagues concluded that CLIL methodology was not detrimental to students' linguistic competence in their mother tongue. Madrid (2011), for example, focused on the effects of CLIL methodology on subject-content learning (Social Sciences) and observed that bilingual students obtained similar or sometimes higher levels of achievement in the subject than monolinguals.

In the same project Ramos García (2011) measured the effects of CLIL on cultural aspects related to the foreign language finding out that the cultural knowledge of bilingual students was higher than monolingual students as demonstrated in the cultural test employed in the study. However, we cannot completely attribute this cultural knowledge to the CLIL methodology since, as the author acknowledges, the cultural knowledge (films, writers, customs, traditions, etc.) associated to a language "is not exclusively acquired by means of that language" (p. 235). Students could have a wide knowledge about English and American culture to answer questions such as *Who is the President of the United States?*, without this

being the direct result of CLIL teaching. Finally, Villoria *et al.* (2011) researched the effects of CLIL on L2 competence and, for this purpose, they designed an English test and an interview to measure the students' competence in the four skills (listening, reading, writing and speaking). The authors found out *significant* differences in the general level of English both in primary and secondary education between bilingual and monolingual students in favour of the bilingual groups. Their results indicated that performance levels in the four skills were much higher in CLIL students in comparison to non-CLIL students, where the former significantly outperformed the latter in all skills.

In spite of all the positive findings reported, the benefits of CLIL methodology have come into question. Several years after the implementation of the Plurilingualism Promotion Plan, Lorenzo *et al.* (2010) carried out a study to evaluate the benefits obtained so far in the CLIL programmes developed in the region of Andalusia in which they found out significant gains in favour of CLIL and astounding foreign language score differences between CLIL and non-CLIL groups regarding language competence: "when the results of the linguistic evaluation had been compiled, it emerged that the CLIL learners were clearly outperforming their mainstream peers. Global average scores were 62.1 per cent for the bilingual groups in comparison with 38 per cent for the control groups" (Lorenzo *et al.*, 2010: 426).

Nevertheless, Bruton (2011a, 2011b) has recently questioned those figures in his review of different studies conducted on CLIL, thereby contributing to the controversy created around the benefits of CLIL teaching. In response to the findings by Lorenzo *et al.* (2010), he states that: "If the supposed language gain scores of the Lorenzo *et al.* (2010) results are to be believed, CLIL can result in quite spectacular relative FL learning gains, more than 20 per cent points over non-CLIL comparison groups, in a very short time, one and a half academic years" (Bruton, 2011a: 236). In this respect Bruton argues that their study as any study undertaken in CLIL has "serious limitations". According to Bruton, there are normally certain factors in the context of CLIL research which definitely tip the scales in favour of CLIL students, for instance, they belong to a higher socio-economic status, they may well take extra English classes outside school, they are more motivated in the foreign language, and, more importantly, they tend to be of higher proficiency in the target language than their non-CLIL counterparts. For that reason, one of the objectives of this study is to research whether there is a significant difference in language proficiency between CLIL and non-CLIL students as Bruton (2011a) remarks, and whether language proficiency could be a decisive factor affecting the other variable of our study: the degree of lexical transfer produced by the students.

## 2.2. L1 Transfer

The issue of language transfer has occupied researchers in the field of SLA for a long time and, as Alonso Alonso (2002: 86) states, it continues being the "tough nut to crack".

Language transfer, as defined by Jarvis (2000: 252), is the result of “L1 influence which refers to any instance of learner data where a statistically significant correlation [...] is shown to exist between some feature of learners’ IL (interlanguage) performance and their L1 background”.

L1 transfer has been studied under the influence of different factors such as language dominance (Costa & Santesteban, 2004; Navés, Miralpeix & Celaya, 2005; Paradis, 2001), psychotypology<sup>3</sup> (Cenoz, 2001; Lasagabaster & Doiz, 2003), age (Celaya & Torras, 2001; Gost & Celaya, 2005; Lasagabaster & Doiz, 2003; Navés *et al.*, 2005), or level of proficiency (Cenoz, 2001; Navés *et al.*, 2005; Poulisse & Bongaerts, 1994; Sanz, 2000; Woodall, 2002). Regarding the target language, research addressing this issue has shown that not all areas of language are equally prone to transfer. SLA studies carried out on language transfer have concluded that the area of the target language which tends to show an overwhelming predominance of L1 influence is lexis or vocabulary (Agustín Llach, 2010), generally known as lexical transfer.

### 2.2.1. Lexical transfer

Lexical transfer is defined as “the influence of word knowledge in one language on a person’s knowledge or use of words in another language” (Jarvis & Pavlenko, 2008: 72). This type of transfer represents a picture of learners’ interlanguage and is a necessary and inevitable feature of foreign language learning (Agustín Llach, 2011: 66). Discussions on the topic have identified two types of lexical transfer in vocabulary: *transfer of form* and *transfer of meaning* (Ringbom, 2001). Transfer of form consists of borrowings and lexical inventions. Borrowings (also known as ‘complete language shift’) are defined as L1 words that are not tailored to the target language but simply inserted into L2 syntax (James, 1998), for example, *\*my sister is cocinera* (English cook)<sup>4</sup>; whereas lexical inventions (or ‘relexification’) are, according to Dewaele (1998), lexemes which are morphophonologically adapted to the target language but which do not exist in that language such as *\*my favourite equip is Real Madrid* (Spanish *equipo*, English *team*), *\*my city has over 60.000 habitants* (Spanish *habitantes*, English *inhabitants*), or *\*my family is unic* (Spanish *única*, English *unique*). Ringbom (2001) argues that borrowings and lexical inventions are the result of different types of L1 influence. A borrowing stems from a type of influence which works independently of the L2 system, while a lexical invention (or *coinage* for Ringbom) requires a higher degree of command of the L2. The third transfer-based error which belongs to the area of transfer of meaning is the calque or ‘literal translation’. This influence takes place when the learner literally translates a word or expression from the L1 into the L2, for instance, *\*my favourite subject is education physics* (literal translation from Spanish *educación física*, English *physical education*) or *\*one building has four plants* (Spanish *planta*, English *floor*).

### **2.2.2. Previous studies on lexical transfer in CLIL and non-CLIL contexts**

Nowadays lexical transfer is receiving increasing attention in bilingual settings such as the Basque Country or Catalonia<sup>5</sup> (Spain), contexts in which CLIL has been progressively adopted to incorporate English as a third language. The main reason for this interest relies on the premise that one of the benefits of this teaching method is the decrease in L1 transfer observed in the written production of CLIL students (Agustín Llach, 2009; Celaya, 2008; Celaya & Ruiz de Zarobe, 2010). Recent studies comparing both approaches, i.e. CLIL teaching and regular foreign language classroom contexts, have posited that considerable differences exist in lexical transfer between CLIL and non-CLIL groups in favour of CLIL learners. In Catalonia, for example, Celaya (2008) compared the lexical transfer produced by two groups of CLIL learners in grade 5 and 7 with their non-CLIL peers and found that non-CLIL students use borrowings more frequently than CLIL students. In the case of lexical inventions, she obtained similar percentages for both groups. However, the analysis of the lexical transfer errors made by Celaya (2008) was limited to differences in raw numbers and percentages between both groups, without conducting statistical analysis to state whether those differences were significant or not.

Similar findings were obtained by Celaya and Ruiz de Zarobe (2010) in a recent research undertaken in both bilingual contexts (Catalonia and the Basque Country) and by Agustín Llach (2009) in the Basque Country and La Rioja<sup>6</sup>. Celaya and Ruiz de Zarobe (2010) compared two groups of CLIL and non-CLIL students in grade 7 and 10 with regard to the production of borrowings and lexical inventions in a written composition. In this study, they found that non-CLIL learners produce more borrowings than CLIL learners, whereas the difference in lexical inventions is slight between both groups. As happened with Celaya (2008), Celaya and Ruiz de Zarobe (2010) did not perform any statistical analysis, reporting differences in raw numbers and percentages. Agustín Llach (2009) examined the lexical transfer errors produced by two groups of CLIL and non-CLIL female students in grade 6. Her findings also confirmed that non-CLIL learners transfer from their L1 more frequently than their CLIL counterparts when measured in three different categories: borrowings, lexical inventions, and calques. Thus, when describing the L1 transfer made by CLIL learners Agustín Llach (2009) observed that they tend to rely more on calques, secondly on lexical inventions, and finally on borrowings. Unlike Celaya (2008) and Celaya and Ruiz de Zarobe (2010), Agustín Llach conducted statistical analyses to determine any significant difference in the results obtained. These analyses confirmed that the difference in lexical transfer errors between both groups was significant. In terms of type of lexical transfer error, the difference was significant for borrowings, but not for lexical inventions and calques.

Researchers on lexical transfer in the context of CLIL research have argued that these positive findings in favour of CLIL methodology lie in the fact that CLIL learners have a wider range of vocabulary in the target language (Celaya, 2006) and they are exposed to larger amounts of language, so they are expected to develop higher levels of language

proficiency and consequently to be less influenced by their mother tongue when writing in English (Agustín Llach, 2009). The main purpose of the present study is to investigate the differences between CLIL and non-CLIL students in terms of lexical transfer production in Andalusia, where we have identified a lack of research on this area.

### 3. RESEARCH QUESTIONS

Based on the literature review, this study aims at giving an answer to the following research questions:

- I. Is there a difference in the number of lexical transfer errors (i.e. borrowings, lexical inventions and calques) between CLIL and non-CLIL students?
- II. Is level of proficiency in the target language a key factor influencing the difference in L1-influenced lexical errors between CLIL and non-CLIL students?

### 4. METHOD

#### 4.1. Participants

The total sample for the study consisted of 36 students (see Table 1) with 18 students in the CLIL group and other 18 students in the non-CLIL group. Both groups of students were aged 12.3, were in grade 7 (1<sup>st</sup> year of Compulsory Secondary Education) and attended the same secondary school in Andalusia. All subjects started learning English in grade 3 (3<sup>rd</sup> year of Primary Education), but due to the different teaching methods they had followed the two groups of students differed in the amount of exposure to the target language they had had. While the CLIL group, enrolled in CLIL programmes since grade 5 (5<sup>th</sup> year of Primary Education), had received 873 hours of instruction in English by the time of data collection, the non-CLIL group had had a total of 755 hours. In the CLIL group, apart from the weekly four hours of English class, learners received instruction of Science and Maths in English, and they also had an English lecturer one hour per week. None of the participants received extra English classes outside school at the time of data collection.

	Number of students	Age	Grade	Hours of instruction
CLIL group	18	12.3	7	873
Non-CLIL group	18	12.3	7	755

**Table 1.** Participants' age, grade and hours of instruction in English

## 4.2. Instruments and procedure

The data for the research were collected during regular classes. In class 1, a background questionnaire was given to students to collect data about personal information such as their age, their age of onset of second language learning, their motivation, and their own perception of their vocabulary in English (see Appendix 1). Students were reassured that this information was only to be known by the researcher and for that reason they were urged to fill in the questionnaire with total sincerity. Once they had completed the questionnaire, students were asked to write a composition in English about the topic given ('Talk about yourself', Appendix 2, similar to that used by Celaya, 2008; Celaya & Torras, 2001) and, for this purpose, they were given some guidance on the points they should deal with when writing, for instance, their family, their hobbies, their friends, their hometown or anything else they considered worth mentioning. The aim of this composition was to measure students' lexical transfer production regarding borrowings, lexical inventions, and calques. Both groups of students had a maximum of 20 minutes to write about 60-80 words on the topic given and they were not allowed to ask questions or use dictionaries.

Two days later we proceeded to administer the English Unlimited Placement Test<sup>7</sup> (henceforth EUPT) to students, so that we could determine whether they had the same or different proficiency in the target language. This placement test contains 120 written multiple-choice questions, 20 at each level from Starter to Advanced (covering CEF levels A1 to C1). Here there are two examples of questions taken from the test:

16. Last night I \_\_\_\_\_ to the cinema.  
A) went                      B) did go                      C) was

27. Do you sell stamps?  
Yes, we do. How \_\_\_\_\_ do you want?  
A) any                      B) many                      C) much

In this case, as we were dealing with seventh graders who were beginning their secondary education and, consequently, were thought to have a low command of English, subjects only had to complete the first 40 items of the test, which cover the levels going from Starter to Elementary (A1-A2). In order to measure their actual language proficiency, students were asked to leave those questions they did not know unanswered, preventing them from answering at random.

For all cases (i.e. background questionnaire, written composition and placement test), students were given clear instructions in Spanish on what they had to do and how, thus ensuring that no misunderstanding would affect the data collection.

### 4.3. Data analysis

The written compositions were scrutinized twice to spot the lexical transfer errors produced by the participants. Repeated lexical transfer errors in the same composition were not counted, that is, if a student produced three times the same error this would be only counted once. Next, the total number of open class words (i.e. nouns, adjectives, verbs, and adverbs) was counted for each of the groups (CLIL and non-CLIL group) and the number of *borrowings*, *lexical inventions*, and *calques* was measured against the total number of open class words, obtaining percentages that represented the use of each case of lexical transfer.

A chi-squared test was performed to state the significance of the difference in L1-influenced lexical errors between both groups of students. This test is the most commonly used to test differences between proportions or frequency data (Porte, 2002). In this sense, we compared the observed frequencies of lexical transfer errors per number of open class words in the two groups. Then, we focused on the number of errors made by individual participants to make sure that the difference between both groups was not inflated because some subjects were somehow contributing more to the results than others. We consider that by presenting group values the different studies conducted on lexical transfer have ignored whether it is possible that the difference in terms of lexical transfer errors between CLIL and non-CLIL groups could be the result of a small number of participants making a high percentage of these errors. Thus, a second chi-squared test was conducted in which we excluded the data of those students committing a higher number of errors than their peers.

Finally, we ran an independent sample *t*-test to determine whether there was any significant difference in the level of proficiency in the target language between the two different groups of subjects.

## 5. RESULTS

As can be seen in Table 2, CLIL students (3.1%) have produced fewer lexical transfer errors than non-CLIL students (6.8%). Thus, the non-CLIL group has presented a higher percentage of borrowings (2.7%) and lexical inventions (3.1%) than the CLIL group (0.4% and 0.9% respectively). The only case in which CLIL students have produced more instances of lexical transfer from Spanish to English than non-CLIL students has been in the use of calques (1.7% vs. 0.9%). The following instances of lexical transfer are examples taken from the data of the study (borrowings, lexical inventions and calques are presented in italics):

#### a) Borrowings

My favourite number is 7 for my *idolo* CR7 (English *idol*)

My sister is very *pija* and stupid (English *posh*)

I play *fútbol sala* in a small team (English *indoor soccer*)

## b) Lexical inventions

I have got one *tortuge* (Spanish *tortuga*, English *tortoise*)

My family is fantastic and very *divert* (Spanish *divertida*, English *funny*)

My mother is very beautiful, *simpatic* and intelligent (Spanish *simpática*, English *nice*)

## c) Calques

My hometown has got 60.000 people. It is a good *site* to live (Spanish *sitio*, English *place*)

My hobbies are the football and *go bike* (Spanish *ir en bici*, English *to bike*)

My family is fantastic; they are *big* people (Spanish *grande*, English *great*)

	Total number of open class words	Lexical transfer errors			
		Borrowings (%)	Lexical inventions (%)	Calques (%)	Total number of errors (%)
<b>CLIL group</b>	644	(3) 0.4%	(6) 0.9%	(11) 1.7%	(20) 3.1%
<b>Non-CLIL group</b>	509	(14) 2.7%	(16) 3.1%	(5) 0.9%	(35) 6.8%

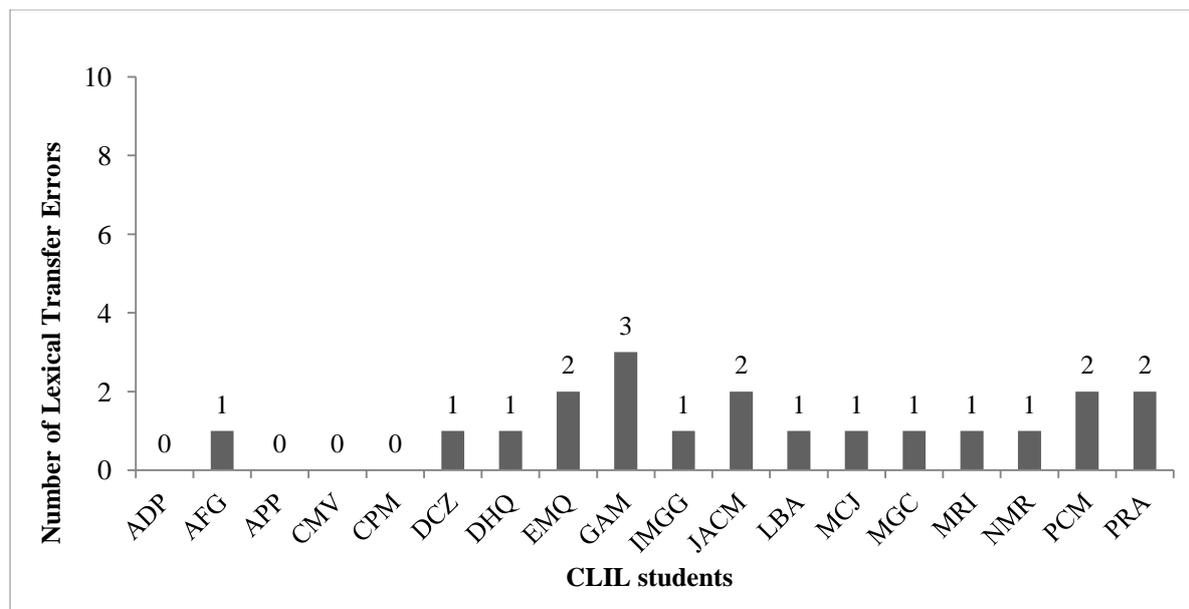
**Table 2.** Raw numbers (in brackets) and percentages of borrowings, lexical inventions, and calques in CLIL and non-CLIL group

A chi-squared test was conducted to state the significance of the difference in lexical transfer errors between both groups. This test has allowed us to compare the observed frequencies of lexical transfer errors per number of open class words presented in Table 3. In the CLIL group there are 20 lexical transfer errors out of every 644 open class words (624 correct open class words), whereas students in the non-CLIL group have produced 35 lexical transfer errors out of every 509 open class words (474 correct open class words). With this test we want to know whether the frequency of lexical transfer errors per number of open class words in the CLIL group is significantly different from the frequency presented in the non-CLIL group. The test has indicated that the difference between CLIL and non-CLIL learners in terms of lexical transfer errors is significant ( $\chi^2=8.087$ ,  $df=1$ ,  $p<.0045$ ).

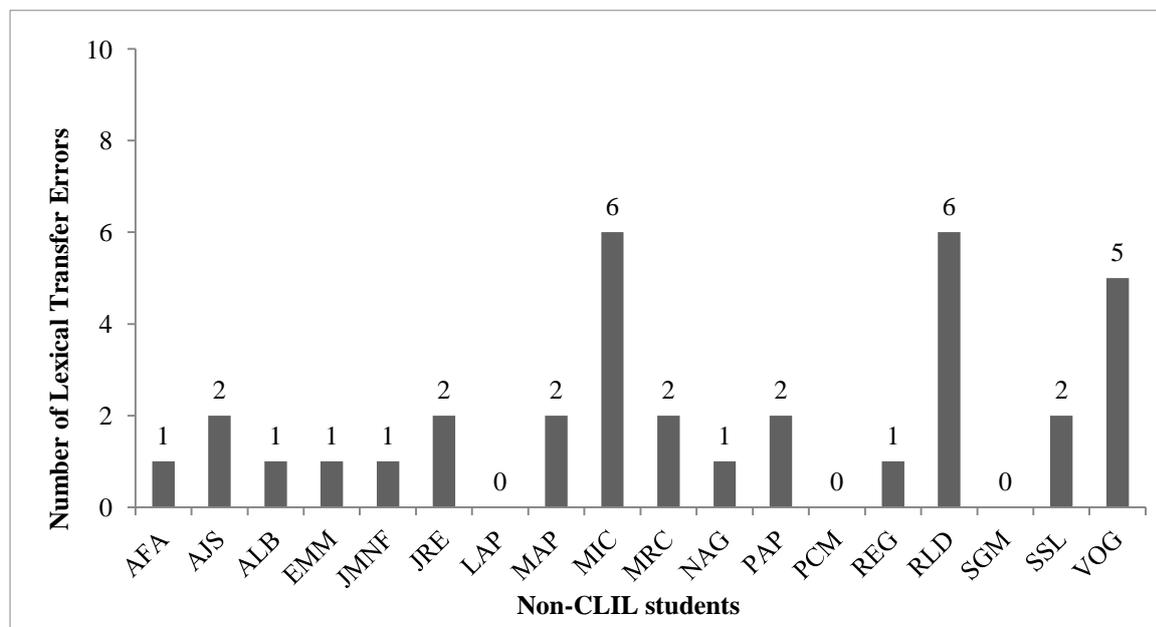
However, if we focus on the number of errors made by individual participants, our data (see Appendix 3) reveal an interesting finding about the production of lexical transfer errors. As we can observe in Figure 1, the CLIL group is fairly homogeneous concerning the number of lexical transfer errors produced by each individual participant.

	Number of students	Number of correct open class words	Number of lexical transfer errors	Total number of open class words
<b>CLIL group</b>	18	624	20	644
<b>Non-CLIL group</b>	18	474	35	509

**Table 3.** Frequency data of lexical transfer errors per number of open class words in CLIL and non-CLIL group



**Figure 1.** Number of lexical transfer errors in the CLIL group by individual participant



**Figure 2.** Number of lexical transfer errors in the non-CLIL group by individual participant

In contrast, as shown in Figure 2, the situation is completely different in the non-CLIL group. While most of the students have made one or two errors, there are three students who stand out as presenting a higher number of lexical transfer errors than the rest of their peers: MIC (6 errors), RLD (6 errors) and VOG (5 errors), making a total of 17 errors. This figure represents 48.57% of the number of lexical transfer errors produced by the whole group.

For that reason, a second chi-squared test was performed to see whether the difference between the CLIL and non-CLIL group lies in the influence of the errors made by these three students. In this test we omitted the data which belonged to the aforementioned students (see Table 4). Consequently, the frequency of lexical transfer errors in the non-CLIL group varied, that is, becoming 18 lexical transfer errors out of every 441 open class words (423 correct open class words). The second chi-squared test has revealed that the difference between both groups of students is not statistically significant ( $\chi^2=0.447$ ,  $df=1$ ,  $p<.4896$ ) if we exclude the students in the non-CLIL group who have made more lexical transfer errors.

	Number of students	Number of correct open class words	Number of lexical transfer errors	Total number of open class words
<b>CLIL group</b>	18	624	20	644
<b>Non-CLIL group</b>	15	423	18	441

**Table 4.** Frequency data of lexical transfer errors per number of open class words in CLIL and non-CLIL group, excluding the three non-CLIL students who make a higher number of these errors

Group	CLIL group	Non-CLIL group
<b>Mean</b>	21.389	18.944
<b>SD</b>	5.700	4.359
<b>N</b>	18	18
<b>Mean Difference</b>	2.444	
<b>T-Score</b>	1.445	
<b>Eta Squared</b>	0.055	
<b>P</b>	0.158	

**Table 5.** Means of proficiency level of CLIL and Non-CLIL students in the EUPT

As far as language proficiency is concerned, the results in Table 5 show that CLIL students ( $M= 21.39$ ) have obtained better results in the placement test than their non-CLIL counterparts ( $M= 18.94$ ). However, this observed difference in language proficiency between

both groups (MD= 2.44) has revealed to be *non-significant* ( $p < 0.158$ ). Therefore, we cannot state that the CLIL students of our study are more proficient in the target language than the students following a conventional English as a foreign language programme.

## 6. DISCUSSION

The present study has focused on comparing the influence of Spanish on the written production in English of CLIL and non-CLIL students and explaining whether the difference in the production of lexical transfer errors could be attributable to a possible difference in language proficiency between both groups.

With regard to the first research question, our findings regarding lexical transfer are in agreement with previous studies on the topic (Agustín Llach, 2009; Celaya, 2008; Celaya & Ruiz de Zarobe, 2010), that is to say, CLIL students have produced fewer instances of lexical transfer errors than their non-CLIL peers. The non-CLIL group has presented a higher percentage of borrowings and lexical inventions than the CLIL group, whereas CLIL students have produced more cases of calques. Curiously enough, for CLIL learners the picture is identical to the one drawn by Agustín Llach's (2009) study. When CLIL students fall back on their L1, we have observed that they tend to rely more on calques, secondly on lexical inventions, and finally on borrowings. In the case of non-CLIL learners, they rely on lexical inventions and borrowings, and more slightly on calques. Therefore, these findings show that either by adapting the Spanish word to the English morphology or phonology or by directly inserting the Spanish word into English non-CLIL students tend to rely on their L1 more frequently than do CLIL students when they find a gap in their vocabulary and do not know the English word for what they want to say.

This difference in lexical transfer production between CLIL and non-CLIL students has been significant in a first chi-squared test. Nevertheless, an analysis on the production of lexical transfer errors by individual participants has revealed that by excluding the data of the three students in the non-CLIL group who have made a higher number of errors, the difference in lexical transfer between both groups goes from being significant to non-significant in a second chi-squared test. This means that the difference in lexical transfer production between bilingual and monolingual students has been the result of the influence exerted by the errors made by these three non-CLIL students. Without these errors, we could not talk about any difference between the two groups.

Regarding language proficiency, the results are consistent with previous studies on L2 competence in CLIL contexts (Casal & Moore, 2009; Lorenzo *et al.*, 2010; Lorenzo *et al.*, 2009; Villoria *et al.*, 2011), indicating that CLIL students generally tend to have a better command of English than non-CLIL students. The results have indicated that CLIL students have done better in the placement test than their non-CLIL peers, but this difference has been

non-significant. In regard to our second research question we can argue that in this particular case language proficiency seems not to be a key factor when predicting differences in lexical transfer between the CLIL and non-CLIL students of our study.

With the previous considerations in mind, what is the interpretation we can make of our results concerning CLIL? Although the results have been in favour of CLIL students in terms of lexical transfer production and language proficiency, we cannot claim that CLIL methodology has contributed to making a significant difference in L1-influenced lexical errors and L2 competence between the CLIL and non-CLIL students of our sample. The explanation or possible explanations for this finding may be multifarious. On the one hand, the difference in number of hours of instruction in English between CLIL and non-CLIL students (118 hours) may not have been enough for any effects of CLIL to emerge. We could also argue that the quality of language instruction the students have received in CLIL, issue which lied beyond the scope of our investigation, has not led to any significant difference between both groups with regard to the variables studied. To shed light on this finding, we will need further research and, for that reason, this will be proposed in our conclusion.

## **7. CONCLUSION**

As has been discussed previously, this study responded to the need to contribute to previous research on lexical transfer production in CLIL and EFL contexts. Being aware that the major limitation of the study is the small sample size, we consider that the results have to be taken with caution. However, despite this limitation, they may be suggestive of further avenues to explore in future. In this sense, our findings have reported significant implications for CLIL research regarding language proficiency and lexical transfer production.

As far as language proficiency is concerned, the study has shown that CLIL methodology, which has been directly associated with a higher number of hours of exposure to English (873 vs. 755 in the non-CLIL group), has not made a significant difference in level of proficiency in the target language between CLIL and non-CLIL students. To confirm the supremacy of CLIL in terms of linguistic outcomes, it would be necessary in future research to know whether this difference in language proficiency becomes significant as both groups of learners progress at school and the difference in amount of exposure to the target language between them increase.

This study has also made clear that when comparing CLIL and non-CLIL students in terms of lexical transfer production there have been students who have contributed to the results more than others, thus tipping the balance against one group of students, in this case, the non-CLIL group. The results have indicated that there is no significant difference between the two groups of our study when we exclude the data of those non-CLIL students making a higher percentage of lexical transfer errors. In this respect, we consider that further research

needs to address this issue in order to find further evidence that the difference between CLIL and non-CLIL students regarding lexical transfer is a direct consequence of the different type of language instruction received (i.e. CLIL vs. EFL) and not the result of the influence exerted by a few participants on the results.

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## NOTES

1. This region extends across the south of Spain with a population of over 8 million inhabitants.
2. See Roa *et al.* (2011) for more details on the distribution of participants into different groups according to their educational stage and school context.
3. According to Kellerman (1977, quoted in Agustín Llach, 2009: 113), learners tend to transfer those structures or lexical items they think to be transferable because of their similarity with structures in the target language.
4. The examples provided are taken from our data. These data have not been edited.
5. The Basque Country is a region situated in the north of Spain where Spanish and Basque are co-official languages. Catalonia is in the north-east of Spain and the two co-official languages spoken in this community are Spanish and Catalan. In contrast to the Basque Country and Catalonia, Andalusia is a monolingual community.
6. La Rioja is a monolingual community in the north of Spain. It borders the Basque Country to the north.
7. Available at: <[http://www.cambridge.org/gb/elt/catalogue/subject/project/custom/item6039738/English-Unlimited-Placement-test/?site\\_locale=en\\_GB&currentSubjectID=382378](http://www.cambridge.org/gb/elt/catalogue/subject/project/custom/item6039738/English-Unlimited-Placement-test/?site_locale=en_GB&currentSubjectID=382378)>

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## APPENDIX 1: BACKGROUND QUESTIONNAIRE

Fill in this questionnaire:

1. **Name:** \_\_\_\_\_ (Write down only your initials)
2. **Age:** \_\_\_\_\_
3. **Sex:** \_\_\_\_\_
4. **Mother tongue:** \_\_\_\_\_
5. **When did you start studying English?:** \_\_\_\_\_
6. **Do you take extra English classes outside school?:** \_\_\_\_\_. **If your answer is ‘yes’, how many hours a week do you take?:** \_\_\_\_\_
7. **Do you feel motivated to learn English?:**  
Yes No
8. **How would you define your vocabulary in English?** (Choose one option)  
Excellent                  Good                  Fair                  Poor

## APPENDIX 2: WRITTEN COMPOSITION IN ENGLISH

**Name:** \_\_\_\_\_ (Write down only your initials)

**Time:** 20 minutes

**Number of words:** 60-80 words

**Write a composition in English on the following topic:** ‘Talk about yourself’. Here there are some points you should comment on:

- Describe yourself (i.e. physically, emotionally, etc.)
- Your hobbies
- Your family
- Your friends
- Your school, your hometown, etc.
- And anything else you consider worth mentioning

## APPENDIX 3: DATA FROM CLIL AND NON-CLIL STUDENTS

Students	Group	Borrowings	Lexical inventions	Calques	Total number of lexical transfer errors	Language proficiency in EUPT
ADP	CLIL	0	0	0	0	14
AFG	CLIL	1	0	0	1	21
APP	CLIL	0	0	0	0	21
CMV	CLIL	0	0	0	0	20
CPM	CLIL	0	0	0	0	17
DCZ	CLIL	0	0	1	1	34
DHO	CLIL	0	1	0	1	24
EMQ	CLIL	0	1	1	2	33
GA	CLIL	1	1	1	3	16
IMGG	CLIL	1	0	0	1	20
JACM	CLIL	0	1	1	2	17
LBA	CLIL	0	0	1	1	23
MCJ	CLIL	0	0	1	1	16
MGC	CLIL	0	1	0	1	25
MRI	CLIL	0	0	1	1	15
NMR	CLIL	0	0	1	1	19
PCM	CLIL	0	1	1	2	27
PRA	CLIL	0	0	2	2	23
AFA	Non-CLIL	0	1	0	1	16
AJS	Non-CLIL	0	2	0	2	17
ALB	Non-CLIL	0	1	0	1	21
EMM	Non-CLIL	0	1	0	1	20
JMMF	Non-CLIL	1	0	0	1	27
JRE	Non-CLIL	0	1	1	2	19
LAP	Non-CLIL	0	0	0	0	19
MAP	Non-CLIL	1	1	0	2	21
MIC	Non-CLIL	3	2	1	6	14
MRC	Non-CLIL	0	1	1	2	22
NAG	Non-CLIL	0	1	0	1	15
PAP	Non-CLIL	0	2	0	2	15
PCM	Non-CLIL	0	0	0	0	14
REG	Non-CLIL	0	0	1	1	30
RLD	Non-CLIL	5	0	1	6	17
SGM	Non-CLIL	0	0	0	0	21
SSL	Non-CLIL	1	1	0	2	18
VOG	Non-CLIL	3	2	0	5	15