A Study of Self-Reported Opinions of L1-based Communication Strategies in CLIL and NON-CLIL Secondary-school Learners of L3 English

Estudio de las opiniones de alumnos de secundaria AICLE y NO-AICLE acerca del uso de la L1 como estrategia comunicativa en inglés como L3

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This study examines the effect of Content-and-Language-Integrated-Learning (CLIL) and proficiency level in the foreign language (FL) on bilingual Basque/Spanish secondary school learners' self-reported opinions of the use of first language (L1)-based communication strategies (CSs) in four different age/proficiency CLIL and NON-CLIL groups of third language (L3) English learners. The Quick Placement Test (QPT) was used to test general proficiency and a questionnaire taken from Martínez-Adrián, Gallardo-del-Puerto and Basterrechea (2019) was administered so as to explore learners' self-reported opinions of their use of L1-based CSs. Results show that CLIL and more proficient learners reported to use L1-based CSs to a lesser extent than NON-CLIL and less proficient learners. Additionally, borrowings are common among beginner CLIL learners and students in a transitional proficient stage between an elementary and intermediate level whereas none of L1-based CSs are typical either of more experienced CLIL learners or of more proficient ones.

Keywords: *CLIL; L1 influence; Communication strategies; L3 English; EFL*

Este estudio explora el impacto del Aprendizaje-Integrado-de-Contenidos-y-Lenguas-Extranjeras (AICLE) y de la competencia en la lengua extranjera en las opiniones de estudiantes de secundaria sobre el uso de estrategias comunicativas basadas en la primera lengua (L1). Los participantes estudian inglés como tercera lengua (L3) y difieren en curso y exposición a la metodología AICLE. Se utilizó un test de nivel para examinar su nivel de lengua, y se administró el cuestionario tomado de Martínez-Adrián, Gallardo-del-Puerto y Basterrechea (2019) para analizar sus opiniones. Los resultados muestran que los estudiantes AICLE y con más nivel en la lengua meta dicen usar la L1 con menos frecuencia que los no AICLE y menos competentes. Asimismo, la estrategia de *préstamo* es típica de los estudiantes AICLE principiantes y de aquellos entre un nivel básico e intermedio, pero ninguna estrategia basada en la L1 es típica ni de los estudiantes AICLE más avanzados ni de los más competentes.

Palabras clave: *AICLE; influencia de la L1; estrategias comunicativas; adquisición del inglés como L3; inglés como lengua extranjera*

1. INTRODUCTION

Communication strategies (henceforth CSs) are widely known as all those devices foreign language learners employ when they face certain communication problems because of a

deficient knowledge of the foreign language (henceforth FL) lexicon (Poulisse, 1987). Among CSs, L1-based CSs have been found to be widely employed by low-proficient learners (Bialystok & Fröhlich, 1980; Bialystok, 1983; Jourdain, 2000; Wannaruk, 2003).

The use of the L1 as a CS during oral and written production in second language (L2) learners has been extensively researched (see Celaya, 1992; Poulisse & Bongaerts, 1994; Cenoz, 2001, 2003; Navés, Miralpeix, & Celaya, 2005; Muñoz, 2007). Recently, L1-based CSs have called the attention of researchers in Content-and-Language-Integrated-Learning (CLIL) contexts, 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 (Dalton-Puffer, 2011). Thanks to the more intense and natural input provided in these educational contexts, learners have been found to attain a higher command of the target language (TL) (Lasagabaster, 2008; Martínez-Adrián & Gutiérrez-Mangado, 2015a) and to resort to their L1 to a lesser extent than their NON-CLIL counterparts (see Celaya, 2007; Agustín Llach, 2009; Celaya & Ruiz de Zarobe, 2010; Martínez-Adrián & Gutiérrez-Mangado, 2015b). In addition to oral and written data, another line of research examining CSs has focused on written questionnaires. In particular, the target of these investigations has been primary-school children (i.e. Basterrechea, Martínez-Adrián & Gallardo-del-Puerto, 2017; Martínez-Adrián, Gallardo-del-Puerto & Basterrechea, 2019; Gallardo-del-Puerto, Basterrechea & Martínez-Adrián, in press) and a call has been made as regards secondary-school learners. Likewise, to the best of the authors' knowledge, research comparing CLIL learners' self-reported opinions on L1-based CSs use to their mainstream counterparts is non-existent.

Apart from this, even if the effect of proficiency has been explored in the case of (pseudo)longitudinal studies analysing oral and written production where more advanced learners are found to use their L1 less frequently than less proficient learners (Agustín Llach, 2011; Arratibel-Irazusta & Martínez-Adrián, 2018), little is known about the impact of this variable on learners' self-reported use of CSs (Gallardo del Puerto et al., in press)

The present paper will try to fill these gaps by investigating the self-reported opinions of CLIL and NON-CLIL learners in the 2nd and 4th year of compulsory secondary education. By administering a self-report questionnaire, the potential effect of CLIL and FL proficiency on L1 use will be elucidated. This paper is organised as follows. Section 2 presents different approaches to the study of CSs with special focus on L1-based CSs and reviews the literature, specifically focusing on the effect of CLIL and proficiency on L1 use. Section 3 addresses the research questions, while the study is described in section 4. The fifth section presents the results, which are subsequently discussed in section 6. The last section finishes this paper with the main conclusions drawn from this study.

2. LITERATURE BACKGROUND

2.1 *Taxonomies of CSs*

There are two main theoretical perspectives from which CSs in L2 acquisition can be studied. On the one hand, the psycholinguistic perspective considers CSs as the underlying cognitive processes in order to overcome a gap in communication in the TL (Faerch & Kasper, 1983; Poulisse, 1993). On the other hand, the interactional perspective treats CSs as social interactions where both the speaker and the listener are involved (Tarone, 1977; Tarone & Yule, 1987).

Several taxonomies of CSs have been developed in the literature. However, Tarone's taxonomy (1977), Faerch and Kasper's taxonomy (1983) and the Nijmegen group's

taxonomy (Poulisse, 1990) have received more attention. The questionnaire administered to the participants of the present paper to investigate self-reported opinions about the use of CSs was taken from Martínez-Adrián et al., (2019), who adapted it from Purdie and Oliver's (1999) questionnaire on learning strategies. Out of the 40 statements included in Martínez-Adrián et al. (2019), 11 randomized items were devoted to CSs. In particular, guessing, miming, morphological creativity, dictionary, predicting and paraphrasing were selected from the questionnaire by Purdie and Oliver (1999). In addition, the remaining items were adopted from the taxonomies by Tarone (1977) and Poulisse (1990). Tarone's (1977) taxonomy divided CSs into five different types: avoidance (topic avoidance, message abandonment), paraphrase (approximation, word coinage, circumlocution), conscious transfer (literal translation, language switch), appeal for assistance and mime. Poulisse's (1990) classification distinguishes two main CSs: conceptual and linguistic strategies, depending on whether the language or the meaning is altered. As for the former, two types of CSs are distinguished: analytic (circumlocution, description, paraphrase) and holistic (superordinate, coordinate, subordinate). There are also two types of linguistic strategies: morphological creativity and transfer (borrowing, foreignising and calque).

The present paper focuses on the latter. To start with, borrowings are insertions of L1 words in the L2 production without any attempt to adapt them to the TL (Poulisse, 1990), as observed in (1):

(1) I got *pelo* brown
    I got hair brown
   'I have got brown hair'
    (Celaya & Torras, 2001: 7)

Foreignisings are adaptations of L1 words to the TL structure so that they sound or look like the intended TL (Poulisse, 1990), as illustrated in (2):

(2) *I am good deportist*
    I am good sportsman/sportswoman
   'I am a good sportsman/sportswoman'
    (Celaya & Torras, 2001:7)

Finally, calques are L2 words as the consequence of L1 literal translation (Poulisse, 1990), as shown in (3):

(3) *I have a table study in my bedroom*
    I have a desk in my bedroom
   'I have a desk in my bedroom'
    (Celaya & Torras, 2001:7)

2.2 *Research on CSs*

The study of CSs in FL learning has been mainly conducted by means of oral and written production in both CLIL and NON-CLIL settings (i.e. Celaya & Torras, 2001; Cenoz, 2003; Navés et al., 2005; Celaya, 2007; Muñoz, 2007; Agustín Llach, 2009; Celaya & Ruiz de Zarobe, 2010; Martínez-Adrián & Gutiérrez-Mangado, 2015b). Self-report questionnaires have also been employed to explore the use of CSs (Purdie & Oliver, 1999; Martínez-Adrián et al., 2019). Nevertheless, the use of written questionnaires has been considered by some researchers an unreliable instrument due to the possible multiple interpretations an item might be given (Khan & Victori, 2011 in Martínez-Adrián et al., 2019). In contrast, research

conducted by Purdie and Oliver (1999 in Martínez-Adrián et al., 2019) with primary-school learners of L2 English in a natural context proved the validity of this instrument with young learners. These authors analysed the self-reported opinions on the use of learning and CSs of English as a second language (ESL) learners. A lower use of CSs in favour of other type of learning strategies was reported. In the case of English as a foreign language (EFL) settings, little research has been done in terms of EFL learners' self-reported use of CSs (Martínez-Adrián et al., 2019) and in particular, studies comparing CLIL to NON-CLIL learners are inexistent, and those focusing on the (pseudo)development of strategy use across proficiency are still limited (Gallardo-del-Puerto el al., in press).

The review of studies provided in the following subsections based on research examining the variable 'type of setting' (CLIL and NON-CLIL contexts) and secondly on the effect of proficiency on L1-based CSs use will illuminate the discussion of the results obtained in the present study regarding L1-based CSs.

2.2.1 *L1-based CSs and type of setting (CLIL vs NON-CLIL)*
The vast majority of studies examining the effect of CLIL have analysed written and oral L2/L3 production both in primary and secondary education. Some studies compare CLIL to NON-CLIL learners, while others are studies of one or several groups of CLIL learners.

In the case of studies comparing CLIL to NON-CLIL learners on the use of L1-based CSs in primary students' written compositions, Celaya (2007) concluded that CLIL learners produced fewer borrowings than regular learners did at grades 5 (n=48) and 7 (n=22). However, surprisingly, the percentages for both groups regarding lexical inventions were similar. This dovetails with Agustín Llach (2014) who reported that borrowings were very rare among the 72 CLIL learners examined at grade 4. Similarly, Agustín Llach (2009) observed less instances of L1 lexical influence in CLIL learners' (n=30) compositions in grade 6 when contrasted to their mainstream EFL peers (n=30) although the differences were significant only in the case of borrowings. Interestingly, calques were the most frequent L1-based CSs in both contexts. Likewise, in a recent longitudinal and cross-sectional study from 4th to 6th grade of primary education, Agustin Llach (2016) found that CLIL students in grade 6 (n=68) produced significantly less instances of borrowings than their NON-CLIL counterparts (n=61) but produced more lexical creations for all the three data collection times, although the difference did not reach statistical significance.

In secondary education, Celaya and Ruiz de Zarobe (2010) examined 75 students and found that CLIL groups in Grades 7 and 10 produced fewer borrowings in a written task than their NON-CLIL counterparts but a clear pattern did not emerge for foreignisings. Additionally, Manzano Vázquez (2014) found that NON-CLIL learners (n=18) produced higher instances of borrowings and lexical inventions than their CLIL counterparts did (n=18), whereas CLIL learners relied on calques to a higher extent.

Regarding oral production in primary education, Gallardo-del-Puerto (2015) conducted a cross-sectional study comparing CLIL to NON-CLIL learners in 4th and 6th grade. In 4th grade, statistically significant differences were not found in L1 transfer lapses between CLIL (n=20) and NON-CLIL learners (n=20). As for the types of L1-strategies, NON-CLIL learners produced significantly more borrowings, whereas calques were found to be significantly more common among CLIL learners. As for foreignisings, statistical differences were not found between both groups. In 6th grade, the production of transfer lapses was found to be significantly higher in NON-CLIL learners (n=24) when compared to the CLIL ones (n=22). In terms of qualitative differences, the same tendencies observed in grade 4 were found in grade 6.

In secondary education, Martínez-Adrián and Gutiérrez-Mangado (2015b) analysed the production of 44 students and found that CLIL learners used borrowings and foreignisings to

a lesser extent, although the differences were not statistically significant. Additionally, Gallardo-del-Puerto and Gómez Lacabex (2013) reported that CLIL learners (n=14) further relied on target-language-based knowledge whereas NON-CLIL learners (n=14) were more likely to resort to their L1 in order to complete the task.

In addition to oral and written production, other studies have examined self-reported opinions. Martínez-Adrián et al. (2019) analysed 139 self-reported opinions and found that the effect of CLIL was overruled by the one of proficiency because learners reported to resort less frequently to L1-based CSs rather than to L2-based CSs, the latter ones being typical of more advanced learners.

In the light of the results examined in the abovementioned studies, CLIL appears to minimize L1 use as a result of a greater proficiency and vocabulary knowledge attained. As for the types of L1-based CSs, while fewer instances of borrowings are found in CLIL learners, calques appear to be more common among them. However, no conclusive results are found in the case of foreignisings.

Despite the fact that quite recent research has been conducted on the use of L1-based CSs in CLIL settings during oral and written production, investigations with self-report questionnaires are thin on the ground particularly those comparing CLIL to NON-CLIL learners.

2.2.2 *L1-based CSs and proficiency*

Several (pseudo)longitudinal studies have been conducted so as to shed more light on the development of strategy use, some exploring oral and written production data and others self-reported opinions.

As regards pesudolongitudinal investigations dealing with written tasks, Agustín Llach (2011) in her study with 283 learners observed how the production of borrowings decreased significantly from less proficient learners in 4th grade to higher proficient learners in 6th grade. On the other hand, more advanced learners showed significantly more instances of calques than less proficient learners did. Regarding coinages, their increase in higher proficient learners was very low. In line with this research, Celaya (2007) reported a decrease of borrowings and an increase of lexical inventions from 48 students in grade 5 to 22 students in grade 7. Similarly, Celaya and Ruiz de Zarobe (2010) examined 75 participants and found that learners aged 12 used more borrowings than learners aged 16. Additionally, a considerable amount of studies analysing written compositions reported a greater resort to the strategy of 'foreignising' among more advanced learners (Celaya, 2007; Agustin Llach, 2011; Agustín Llach, 2014). Nevertheless, no inferential statistical analyses were carried out in the last three aforementioned studies in order to exclude the effect of probability. As for pseudolongitudinal studies dealing with oral tasks, Caballero and Celaya (2019) observed how 24 students in Grade 3 resorted to a higher extent to the strategy of borrowing than those in Grade 6 (n=21), although the differences were not statistically significant. In secondary education, Arratibel-Irazusta and Martínez-Adrián (2018) examined 48 participants and found that less proficient CLIL learners produced more transfer lapses (borrowings and foreignisings) than more advanced learners in an oral task, being the differences only significant in the case of foreignisings. On the other hand, research targeting 51 CLIL university learners have found that calques significantly decreased with proficiency in oral production (Barea Neira, 2018).

In the case of longitudinal studies examining written production data, Agustín Llach (2016) found that borrowings increased in a written assignment with age over the last three years of primary education (n=129). These results counter previous research findings (Celaya, 2007; Celaya & Ruiz de Zarobe, 2010). Regarding lexical inventions, Agustín Llach

(2016) observed an increase in its production with grade although the differences were not statistically significant.

Other studies have investigated the self-reported use of CSs across proficiency. Gallardo-del-Puerto et al. (in press) examined three different low proficiency CLIL groups of 139 young learners by means of a written questionnaire. In the case of L1-based CSs, a marginal statistical difference was found in the case of foreignisings, being this strategy more commonly reported among lower proficient learners. This result supports the existing evidence observed in CLIL learners' oral production (Gallardo-del-Puerto, 2015; Arratibel-Irazusta & Martínez-Adrián, in press) and contradicts previous investigations with written production (Celaya, 2007; Agustín Llach, 2011; Agustín Llach, 2014) in which foreignisings were found to be characteristic of more advanced learners.

All in all, the general finding that emerges is that as proficiency increases, EFL learners do not resort to L1-based CSs with such frequency. As for the types of L1-based CSs, learners that are more proficient produce fewer borrowings both in oral and written production. However, findings concerning the use of foreignisings and calques are quite contradictory, since their increased use with proficiency found in some investigations (Celaya, 2007; Celaya & Ruiz de Zarobe, 2010; Agustín Llach, 2011; Agustín Llach, 2014) is not supported by more recent research (Gallardo-del-Puerto, 2015; Arratibel-Irazusta & Martínez-Adrián, 2018; Barea Neira, 2018).

Although the studies reviewed in this section reveal a growing body of research in the development of strategy use, (pseudo)longitudinal studies addressing the relationship between the self-reported use of L1-based CSs and FL proficiency are still scarce and a call for more research has been made.

3. RESEARCH QUESTIONS

As observed in the review of studies conducted in CLIL contexts, the main bulk of studies dealing with CSs has been carried out by means of oral and written tasks. However, research on learners' self-reported opinions regarding their use of CSs is in its infancy. More specifically, to the best of our knowledge, research comparing CLIL to NON-CLIL learners' self-reported opinions as FL proficiency increases is non-existent. Thus, this paper aims to fill this gap by comparing CLIL and NON-CLIL learners' self-reported opinions from 2nd to 4th year of secondary education by means of a written questionnaire. Specifically, based on previous empirical findings regarding the effect of CLIL and FL proficiency on the use of L1-based CSs (in terms of amount and types preferred), the following questions are addressed:

1. Are there any differences between CLIL and NON-CLIL learners with respect to their self-reported use of L1-based CSs?

2. Are there any differences between less and more proficient learners with respect to their self-reported use of L1-based CSs?

4. METHODOLOGY

4.1 *Participants*

The participants were 78 Basque/Spanish bilingual students from a state-funded high school in Navarre learning English as a L3 in 4 intact classrooms.

Participants were divided into four groups considering their type and their current year of instruction, which determines the number of hours of exposure: (1) a CLIL 1 group (n=23) of 12/13-year-old learners in the 2nd year of compulsory secondary education; (2) a NON-CLIL 1 group (n=14) with the same age as the previous group but less hours of exposure; (3) a CLIL 2 group (n=22) of 15/16-year-old learners in the 4th year; and (4) a NON-CLIL 2 group (n=19) with students of the same age with a total number of hours of exposure lower than CLIL 2 but similar to the CLIL 1 group. Additionally, 59% of the sample received exposure extramurally, with an average of 2 hours per week in the past few years [1].

All the groups started learning English at the same age (3-4) and received the official number of hours of instruction of EFL (3 per week) through their academic years. Apart from these hours of formal English instruction, CLIL 1 received Science and Technology through English in grade 7 and 8. CLIL 2 studied Technology in English in grade 7, Technology and Science in grade 8, Science in grade 9 and Maths in grade 10. Hence, the CLIL 1 group was exposed to CLIL instruction for one-and-a-half year and the CLIL 2 group for three-and-a-half years by the time the study was conducted. Participants' characteristics are displayed in Table 1.

*Table 1: **Participants' characteristics***

Group	Grade	Age at testing	Age at first exp.	Length of exp. in years	Exposure to CLIL	Total nº hours of exposure
CLIL 1 (n=23)	8 (2nd year)	12-13	4.21	9-and-a-half academic years	1-and-a-half academic years	1331
NON-CLIL 1 (n=14)	8 (2nd year)	12-13	4.02	9-and-a-half academic years	-	1054
CLIL 2 (n=22)	10 (4th year)	15-16	3.95	11-and-a-half academic years	3-and-a-half academic years	1757
NON-CLIL 2 (n=19)	10 (4th year)	15-16	3.21	11-and-a-half academic years	-	1276

4.2 *Data collection, instruments and procedure*

Learners were asked to complete a questionnaire on their linguistic and personal background, and a proficiency level test (the Quick Oxford Placement Test (QPT)). It was organized in two parts: Part 1 (the first 40 questions) administered to all students and Part 2 (20 questions) only for the CLIL 4 group since some of them scored 36 or above in the first part. Part 2 was not handed out in the other groups since none scored 36 or above.

Finally, the self-report questionnaire taken from Martínez-Adrián et al. (2019) who adapted it from Purdie and Oliver (1999) was administered in order to analyse learners' opinions regarding CSs. A five-point Likert-type scale was used, in which the minimum

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[1] Note that in recent similar investigations conducted by means of questionnaires (Martínez-Adrián et al., (2019); Gallardo-del-Puerto et al., (in press)) students receiving extra-curricular hours of EFL have not been excluded from the sample since nowadays the vast majority of learners receive additional hours of exposure. Otherwise, our sample would have been so limited that it would have prevented us from making generalizations about the results. Note also that the analysis of the OPT scores revealed the inexistence of differences between those who did and did not receive extramural exposure.

score for each item was 1 (I strongly disagree) and the maximum 5 (I strongly agree). As stated in section 2.2., this last questionnaire consisted in 40 statements in Spanish about learning strategies, out of which 11 randomized items focused on CSs. 6 items were taken from the questionnaire by Purdie and Oliver (1999). The rest of items were adopted from Poulisse's (1990) and Tarone's (1977) classifications. This set of strategies comprised conceptual, linguistic and interactional strategies. Table 2 displays the distribution of categories with their corresponding items, which were written in Spanish for students but are presented in English here for the reader's convenience. In particular, the three L1-based CSs from Poulisse (1990) are the focus of analysis for the present study (see Appendix 1 for the complete distribution of categories).

*Table 2: **Distribution of L1-based CSs.***

Poulisse (1990)	Borrowing	If I can't think of how to say something in English, I say it in my mother tongue.
	Calque	If I can't think of how to say something in English, I translate word for word from my mother tongue.
	Foreignising	If I can't think of how to say something in English, I adapt a word from my mother tongue.

All tests were done in one session and a half during class time.

4.3 *Data analysis*

Statistical analyses were carried out using SPSS 24 (IMB Corp., 2010). Both descriptive and inferential analyses were conducted. As for the former, means and standard deviations were calculated in all the groups. As for the latter, a normality test (Kolmogrov-Smirnov) was run to verify the normality of distribution of the data. As the samples did not meet the criteria for using parametric tests, Mann-Whitney tests were carried out to examine intergroup comparisons and Wilcoxon Signed Rank tests were conducted for analysing intragroup comparisons. Regarding significance, an alpha level of 0.05 was used for all statistical tests and statistical tendencies are marked at the 0.09 level.

5. RESULTS

5.1 *Quick Oxford Placement Test*

Table 3 presents the results of the QPT. The Mann-Whitney U tests run to compare the results of the QPT in the four groups indicate that both CLIL groups had a higher level of proficiency than their NON-CLIL counterparts. However, this difference was not statistically significant when the CLIL 1 and NON-CLIL 2 were compared. The maximum score for both tasks was 34 in the case of CLIL 1, 21 among NON-CLIL 1 learners, 52 for CLIL 2 participants and 29 for the NON-CLIL 2 group. The scores correspond to CEFR level A2 for NON-CLIL 1 group, A2+ for both CLIL 1 and NON-CLIL 2 groups and B1+ for CLIL 2. Additionally, older CLIL and NON-CLIL learners were found to have a higher proficiency level when compared to their younger counterparts.

Table 3: Oxford placement test mean scores and standard deviations

Group	Mean	SD	Z	p-value
CLIL 1	23.35	3.11	- 4.545	0.000*
NON-CLIL 1	17.36	3.34		
CLIL 2	38.91	6.28	- 2.851	0.004*
NON-CLIL 2	22.74	2.40		
CLIL 1	23.35	3.11	- 0.779	0.436
NON-CLIL 2	22.74	2.40		
CLIL 1	23.35	3.11	-5.679	0.000*
CLIL 2	38.91	6.28		
NON-CLIL 1	17.36	3.34	-4.415	0.000*
NON-CLIL 2	22.74	2.40		

$*p < .05$

5.2 *Self-report Questionnaire*

In this section, the results of the written questionnaire as regards the intergroup comparison will be presented for all L1-based CSs and for each strategy separately.

Firstly, CLIL and NON-CLIL groups in both grades are compared in order to analyse the impact of CLIL on the self-reported use of L1-based CSs. Then, less and more proficient learners are contrasted with the aim of elucidating the effect of proficiency on learners' opinions regarding L1-based CSs use. Table 4 displays the results for all L1-based CSs. Mean scores (between 1 and 5), standard deviations and the results of inferential statistical analyses have been provided.

Table 4: Descriptive and inferential statistical analysis for self-reported use of all L1-based CSs

All L1-based CSs	Mean	SD	Z	p-value
CLIL1	3.57	1.19	-1.419	0.156
NON-CLIL 1	3.81	1.47		
CLIL 2	2.88	1.34	-2.272	0.023*
NON-CLIL 2	3.37	1.34		
CLIL 1	3.57	1.19	-2.496	0.013*
CLIL 2	2.88	1.34		
NON-CLIL 1	3.81	1.47	-1.181	0.069#
NON-CLIL 2	3.37	1.34		

When the whole sample and all L1-based CSs are analysed, learners reported a moderate-to-high use of L1-based CSs with a mean value of 3.4 (SD=0.47). In this case, the between-group comparisons revealed that CLIL learners reported a lower use of L1-based CSs in both grades than their NON-CLIL peers: 3.57/3.81 in 2nd year and 2.88/3.37 in 4th year. However, this difference only yielded statistical significance when CLIL 2 and NON-CLIL 2 were compared. As proficiency increases, the reported use of L1-based CSs decreases both in CLIL and NON-CLIL groups. This difference was found to be statistically significant when CLIL 1 and CLIL 2 were compared, and a statistical tendency was found when NON-CLIL 1 and NON-CLIL 2 were contrasted.

Table 5 shows the analysis for the strategy of 'borrowing' in all groups.

Table 5: **Descriptive and inferential statistical analysis for self-reported use of borrowings**

Borrowings	Mean	SD	Z	p-value
CLIL 1	4.22	0.8	-0.51	0.61
NON-CLIL 1	4.14	1.29		
CLIL 2	3	1.35	-2.478	0.013*
NON-CLIL 2	4	0.94		
CLIL 1	4.22	0.8	-3.105	0.002*
CLIL 2	3	1.35		
NON-CLIL 1	4.14	1.29	-1.098	0.272
NON-CLIL 2	4	0.94		

To start with, when all participants are considered, they exhibited a moderate-to-high self-reported use of borrowings with a mean of 3.84 (SD=1.11). As for the factor of CLIL, between-group statistical analysis revealed no statistically significant differences between CLIL 1 and NON-CLIL 1 groups. Nevertheless, the NON-CLIL 2 group significantly reported a higher use of borrowings than their CLIL counterparts. Regarding proficiency, the reported use of borrowings by CLIL 1 participants is significantly higher than CLIL 2. However, no statistically significant differences were found between NON-CLIL 1 and NON-CLIL 2 as regards the use of this strategy.

The results regarding foreignisings are illustrated in Table 6.

Table 6: **Descriptive and inferential statistical analysis for self-reported use of foreignisings**

Foreignisings	Mean	SD	Z	p-value
CLIL 1	3.13	1.36	-1.891	0.059#
NON-CLIL 1	4	1.41		
CLIL 2	2.59	1.44	-0.498	0.618
NON-CLIL 2	2.84	1.61		
CLIL 1	3.13	1.36	-1.299	0.194
CLIL 2	2.59	1.44		
NON-CLIL 1	4	1.41	-2.150	0.032*
NON-CLIL 2	2.82	1.61		

The whole sample reported a moderate-to-high use of foreignisings with a mean of 3.14 (SD=1.45). As can be observed, NON-CLIL learners reported to use foreignisings more frequently than their CLIL peers but this difference did not yield statistical significance. As regards proficiency, the statistical analysis revealed significant differences in the self-reported use of this strategy between NON-CLIL 1 and NON-CLIL 2 but no differences emerged when CLIL 1 and CLIL 2 were contrasted, even if CLIL 1 reported to use foreignisings slightly more frequently than their counterparts two grades ahead.

Table 7 presents the results for the descriptive and inferential statistical analysis for the strategy of 'calque'.

Table 7: Descriptive and inferential statistical analysis for self-reported use of calques

Calques	Mean	SD	Z	p-value
CLIL 1	3.35	1.11	-0.194	0.865
NON-CLIL 1	3.29	1.64		
CLIL 2	3.05	1.25	-0.647	0.518
NON-CLIL 2	3.26	1.19		
CLIL 1	3.35	1.11	-0.843	0.399
CLIL 2	3.05	1.25		
NON-CLIL 1	3.29	1.64	-0.399	0.734
NON-CLIL 2	3.26	1.19		

Participants exhibited a moderate-to-high self-reported use of calques with a mean value of 3.24 (SD= 1.3). In this case, no statistically significant differences were found between the groups in the use of this strategy either when CLIL groups were compared to their NON-CLIL counterparts or when less proficient and younger learners were contrasted to more proficient and older learners.

Finally, Table 8 displays the descriptive intragroup comparison in order to examine the most/least preferred L1-based CSs in each group. Next, Table 9 presents the intragroup inferential analysis.

Table 8: Means and standard deviations for self-reported use of L1-based CSs

	Borrowing		Foreignising		Calque	
	Mean	SD	Mean	SD	Mean	SD
CLIL 1	4.22	0.8	3.13	1.35	3.35	1.11
NON-CLIL 1	4.14	1.29	4	1.41	3.29	1.64
CLIL 2	3	1.35	2.59	1.44	3.05	1.25
NON-CLIL 2	4	0.94	2.84	1.6	3.26	1.6

Table 9: Intragroup inferential analysis

	Borrowings-Foreignisings		Borrowings-Calques		Calques-Foreignisings	
	Z	p-value	Z	p-value	Z	p-value
CLIL 1	-2.930	0.003*	-2.578	0.06#	-1.213	0.225
NON-CLIL 1	-1.698	0.090#	-0.108	0.914	-1.678	0.092
CLIL 2	-0.412	0.680	-1.693	0.090#	-1.725	0.084#
NON-CLIL 2	-2.613	0.009*	-2.496	0.0013*	-1.273	0.203

As displayed in Table 8, the CLIL 1 group reported to use borrowings to a higher extent (4.22) than foreignisings (3.13) or calques (3.35). Additionally, as shown in Table 9 this difference was found to be statistically significant. On their part, the NON-CLIL 1 group reported a high use of both borrowings (4.14) and foreignisings (4) while calques were reported to be used to a lesser extent (3.29). However, these differences yielded only a statistical tendency in the contrast borrowings-foreignizings. CLIL 2 participants exhibited a high-to-moderate self-reported use of borrowings (3) and calques (3.05) whereas foreignisings (2.59) were reported to be less frequent. In the same vein as in the NON-CLIL 1 group, there were no statistically significant differences, even though statistical tendencies were found in the contrasts borrowings-calques and calques-foreignizings. Finally, NON-CLIL 2 participants reported a high use of borrowings (4) followed by a high-to-moderate use

of calques (3.26) and a moderate use of foreignisings (2.84). In this case, the use of borrowings yielded statistical significance.

6. DISCUSSION

In this section, the two research questions posed for the present study will be answered.

With respect to the first research question (*Are there any differences between CLIL and NON-CLIL learners with respect to their self-reported use of L1-based CSs?),* the analysis of the data revealed that in both grades, CLIL learners reported a lower use of L1-based CSs than their NON-CLIL peers (3.57 vs 3.81/ 2.88 vs. 3.37). This is consistent with previous research (see Agustín Llach, 2009; Celaya & Ruiz de Zarobe, 2010; Martínez-Adrián & Gutiérrez-Mangado, 2015b) which found that CLIL learners did not resort with such frequency to the L1 as NON-CLIL learners did both in oral and written production. This result may be accounted for by the fact that CLIL learners use the FL as a tool for communication. Moreover, these quantitative differences could be explained not only by the greater exposure to the FL but also by the different type of input CLIL learners receive. They are exposed to a more natural and contextualized input than mainstream EFL learners, which may promote a higher proficiency and in turn a lower reliance on the L1. In fact, results of the present study and the ones reported in previous investigations (Lasagabaster, 2008; Navés & Victori, 2010; Navés, 2011) suggest general proficiency benefits in favour of CLIL learners even when compared to NON-CLIL learners one or two grades ahead (Celaya & Ruiz de Zarobe, 2010). The fact that CLIL learners are more proficient in the FL could account for their lower self-reported use of L1-based CSs. However, the statistical analysis only revealed significant differences between CLIL 2 and NON-CLIL 2. This result is in line with previous research (Martínez-Adrián, in press) which revealed greater differences regarding L1 use as grade increases when CLIL and NON-CLIL learners are compared which suggests a beneficial effect of CLIL in the long-run for L1 use reduction. That is, the accumulated hours of CLIL instruction leads to lower L1 use.

As for the strategy of 'borrowing', it seems not to be affected by the factor of CLIL in the 2nd year of secondary education since statistical differences were not found. This result is in sharp contrast to previous research (Celaya, 2007; Agustín Llach, 2009; Celaya & Ruiz de Zarobe, 2010; Agustín Llach, 2016) which found that CLIL learners produced fewer borrowings than their NON-CLIL peers. This lack of differences might be due to the fact that CLIL 1 had been immersed only for one-year-and-a-half by the time they were tested and hence the benefits of CLIL were not still visible in the domain of CSs. In fact, statistically significant differences emerged between CLIL 2 and NON-CLIL 2 groups, suggesting a benefit of CLIL in the long-run regarding borrowings. For the high mean scores of this strategy among CLIL learners, Agustin Llach (2016) suggests that it can be related to the difficulty of L2 vocabulary since CLIL is more demanding in cognitive terms.

In terms of foreignisings, the statistical analysis revealed that there are not statistically significant differences between CLIL and NON-CLIL learners in the use of this strategy. These findings run counter to previous research which reported a greater use of foreignisings among CLIL learners due to their higher amount of exposure and general proficiency (Agustín Llach, 2009; Agustín Llach, 2016). However, it is in line with other research which explains the lack of differences due to the fact that "(…) a CLIL programme does not provide learners with more tools 'to create' L2 vocabulary" (Celaya, 2007:47). In this respect, see also Gallardo-del-Puerto (2015) and Arratibel-Irazusta and Martínez-Adrián (2018) as the former did not find statistically significant differences between CLIL and NON-CLIL

learners in year 4 and the latter between more and less proficient CLIL learners. In the same vein, statistical significant differences were not found in the use of calques between CLIL and NON-CLIL learners. This result does not support previous research which found more instances of calques among CLIL learners' written productions (Manzano Vázquez, 2014).

In the light of these findings, one can claim that the accumulated hours of CLIL instructions help EFL learners to be lesser dependent on L1-based CSs. Besides, the use of borrowings seems to be minimized.

A qualitative inspection of the results revealed that the CLIL 1 group showed preference for borrowings over other L1-based CSs, while NON-CLIL 1 reported to use L1-based CSs with the same frequency. This result suggests that the strategy of 'borrowing' is typical among students in their first year of immersion in CLIL instruction due to the demanding tasks this programme requires. On their part, CLIL 2 learners reported using the different L1-based CSs in the same way whereas borrowings seem to be the most preferred strategy among NON-CLIL 2 learners. This result seems to evince that the accumulated hours of CLIL instruction helps students to rely less on the strategy of 'borrowing' and balance their use of L1-based CSs. Hence, it seems that borrowings rank higher in beginner CLIL learners while experienced CLIL learners do not manifest any preference for any particular strategy.

As for the second research question (*Are there any differences between less and more proficient learners with respect to their self-reported use of L1-based CSs?),* the analysis of the self-reported opinions indicated that as proficiency increases learners tend to significantly resort less frequently to L1-based CSs. This correlates with previous findings (Celaya, 2007; Celaya & Ruiz de Zarobe, 2010; Agustín Llach, 2011; Gallardo-del-Puerto et al., in press; Martínez-Adrián, in press) which showed a higher use of L1-based CSs among lower proficient learners due to their insufficient command of the TL, whereas advanced learners were considered to use other types of strategies such as L2-based CSs. Findings of the present study suggest that proficiency exerts influence on the quantity of L1-based CSs used by learners, being more common among low proficient learners. This might be due to the fact that more proficient learners do not have so many gaps in the FL and they do not feel the need to fill lexical gaps with their L1.

As for the category 'borrowing' it only yielded significant differences when CLIL 1 and CLIL 2 groups were compared. This result may suggest that proficiency exercises a greater influence on the category 'borrowing' when a certain level of FL proficiency is achieved, in this case an Intermediate level (the case of CLIL 2). It might be the case that when a certain level of FL is mastered, learners' metalinguistic awareness grows and they become aware of their TL speech and all the linguistic devices at hand. This finding correlates with previous research that suggested a decrease in borrowing use as proficiency increased (Celaya, 2007; Celaya & Ruiz de Zarobe, 2010; Agustín Llach, 2011) but contrasts with a recent longitudinal study which found an increase of borrowings over the last three years of primary education (Agustín Llach, 2016). As for foreignisings, more proficient learners reported to use this strategy to a lesser extent than less advanced learners, being this difference significant in the comparison between NON-CLIL 1 and NON-CLIL 2. This result does not align with previous research (Celaya & Ruiz de Zarobe, 2010; Agustín Llach, 2014) which concluded that more advanced learners produced more foreignisings than lower proficient learners since a certain level of L2 mastering is needed to resort to this strategy. Nevertheless, this general trend has been found in recent research where the strategy 'foreignising' seems to be characteristic of low-proficient learners (Gallardo-del-Puerto, 2015; Agustín Llach, 2016; Arratibel-Irazusta & Martínez-Adrián, 2018; Martínez-Adrián et al., 2019; Arratibel-Irazusta & Martínez-Adrián, in press). Finally, no significant differences emerged when the category 'calque' was examined in both contexts. This result does not

support previous research which found significant differences between less and more advanced learners in the production of calques (Agustín Llach, 2011; Barea Neira, 2018).

A qualitative inspection of the results has revealed that CLIL 1 and NON-CLIL 2 groups showed a preference for borrowings over other L1-based CSs, and interestingly, these two groups command the same level of proficiency in the TL (A2+). This result suggests that borrowings are typical of EFL learners who are in a transitional proficient stage between an elementary and intermediate level, being this preference mitigated when an intermediate proficiency level is reached. As stated by Agustín Llach (2016), the instability of the interlanguage of an intermediate stage could explain this deviation of the general trend. On their part, calques and foreignisings are reported to be equally used by all groups regardless their proficiency in their TL. Therefore, these results seem to evince that neither foreignisings nor calques or borrowings are typical of more proficient learners in the TL. This result clashes with previous research (Agustín Llach, 2009) which found that foreignisings are more typical of advanced learners but it is in line with recent investigations on self-reported opinions which found no preference for any L1-based CSs among more proficient learners (Gallardo-del-Puerto et al., in press).

7. CONCLUSION

Research on L1-based CSs in CLIL contexts has mainly analysed oral and written production and little is known about these learners' self-reported opinions concerning their L1 use. More specifically, studies comparing CLIL to NON-CLIL secondary-school learners' opinions about L1-based CSs use, as well as (pseudo)longitudinal investigations along these lines as FL proficiency increases are non-existent. In this context, the present study set out to investigate the effect of CLIL and TL proficiency on secondary-school learners' reported use of their L1 use as well as on their preference regarding the type of L1-based CSs employed during FL production.

The analysis of the data has also suggested that CLIL enhances a lower use of L1-based CSs due to its communicative nature. As for the types of L1-based CSs, statistically significant differences were not found in the self-reported opinions of CLIL and NON-CLIL groups when foreignisings and calques were analysed. However, CLIL seems to have a mitigating effect on borrowings in the long-run since significant differences were found when CLIL 2 and NON-CLIL 2 were compared.

Finally, concerning proficiency in the TL, it seems that as proficiency increases, learners do not resort with such frequency to L1-based CSs. The qualitative analysis has also revealed that the CLIL 1 and the NON-CLIL 2 groups with an A2+ level of proficiency showed a preference for borrowings while more advanced learners (B1+) showed no preference for any L1-based CSs in particular.

In general, it seems that as in the case of previous investigations with primary-school CLIL learners (Martínez-Adrián et al., 2019), low-proficient secondary-school learners do report a higher use of L1-based CSs. The present investigation has also contributed to shed light on the effect of CLIL on the self-reported use of L1-based CSs, a line of research inexistent to the present date. CLIL has a clear effect on the minimization of these strategies, a result in line with production data (Agustín Llach, 2009; Celaya & Ruiz de Zarobe, 2010; Martínez-Adrián & Gutíerrez-Mangado, 2015; Martínez-Adrián, in press;). In sum, both CLIL and proficiency are crucial factors to analyse the scope of secondary-school learners' self-reported opinions about L1-based strategy use.

In terms of pedagogical implications, the analysis of learners' self-reported opinions regarding L1-based CSs suggests the existence of marginal use of the L1 both in primary

(Martínez-Adrián et al., 2019) and secondary education. Learners resort to the L1 as a temporary scaffold in order to overcome L2 communicative difficulties both in oral and written production since L1 reliance diminishes as proficiency increases. In this sense, the use of the L1 should not be punished in EFL classrooms, but should be used as a tool to maximize learning opportunities (Lo & Lin, 2019). In fact, recent investigations with secondary-school learners (Arratibel-Irazusta & Martínez-Adrián, in press) have reported the coexistence of both L1-based CSs and L2-based strategies (such as paraphrases), a result showing that the use of the L1 does not impede the growth of the L2 as a communicative tool.

For future research, triangulation of the self-reported opinions analysed in this study with oral and written data gathered from the same subjects would be convenient. Moreover, a longitudinal study comparing these four groups at higher levels of proficiency would shed more light on the effect of proficiency on self-reported opinions about L1-based CSs as well as on the effect of CLIL in the long-run.

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*Appendix 1: **Distribution of CSs***

Purdie and Oliver (1999)	Guessing	If I don't understand something in English, I guess what it means.
	Miming	If I can't think how to say something in English I use my hands to show what I mean.
	Morphological creativity	If I can't think how to say something in English, I make up new words.
	Dictionary	If I don't understand what something means in English, I look it up in a dictionary.
	Predicting	When someone talks to me in English, I try and guess what they will say next.
	Paraphrasing	If I can't think how to say something in English, I use other words that mean the same thing.
Poulisse (1990)	Borrowing	If I can't think how to say something in English, I say it in my mother tongue.
	Calque	If I can't think how to say something in English, I translate word for word from my mother tongue.
	Foreignising	If I can't think how to say something in English, I adapt a word from my mother tongue.
Yule and Tarone (1990)	Avoidance	If I can't think how to say something in English, I avoid referring to it.
	Appeal for assistance	If I can't think how to say something in English, I ask for help.