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Language learning strategy reported choice by bilingual children in CLIL: The effect of age, proficiency and gender in L3 learners of English

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ABSTRACT

Research on language learning strategies (LLS) has widely investigated the relationship between adult second language (L2) learners' choice and use of LLS and different learner factors such as proficiency, age and gender. In the present study, these three variables are investigated in relation to the choice of LLS focusing on primary school bilingual learners in a CLIL context. Using a revised version of Oxford's (1990) survey, we collected data on the choice of LLS from Basque/Spanish bilingual learners of third language (L3) English in grades 5 and 6 primary education (age range 10–12; N = 131). Results show no differences in the amount and types of LLS chosen when proficiency and gender are considered separately. However, age seems to have a minimal effect in that grade 5 learners report using 'Remembering' more frequently than grade 6 ones. Additionally, proficiency seems to interact with gender in favour of males in that males in the lower beginner and beginner groups choose a wider range of LLS than females. However, this difference between males and females disappears in the upper beginner group. These findings are discussed in light of results from previous research of LLS choice by child L2 learners.

1. Introduction

Research on language learning strategies (LLS) spans over more than 40 years now and despite serious criticism which pushed this line of research to the verge of being completely dismissed, in recent years the topic of LLS has gained momentum again, as evidenced by numerous recent publications on the topic (Chamot & Harris, 2019; Griffiths, 2013; Griffiths & Cansiz, 2015; Oxford, 2011, 2017; Oxford & Amerstorfer, 2018; Psaltou-Joycey, Mattheoudakis, & Alexiou, 2014; Psaltou-Joycey, Sougari, Agathopoulou & Alexiou, 2014; Thomas & Rose, 2019). Past criticisms have been acknowledged and many have been incorporated into the renewed line of research. Among the factors taken into consideration are the learners' specific individual and contextual factors. The aim of this paper is therefore to contribute to this new line of research on LLS by looking at the effect of well-studied factors such as age, proficiency, and gender in a population of learners which have been understudied so far: child bilingual learners learning English as an L3 in a content and language integrated learning (CLIL) context.

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The paper is organized as follows: First, a theoretical background on LLS is provided, with definitions, classifications and examples of LLS. Second, recent literature on LLS is reviewed, particularly those studies with bilingual children participants and with a focus on the influence of age, proficiency, and gender, highlighting the dearth of research on these factors in studies with primary school children. Third, we describe the methodology followed in our study, the research questions, the instruments and sample employed as well as the data analysis performed. Then, results are reported and discussed in terms of previous literature before the conclusion.

2. Theoretical background

Language learning strategies (LLS) have been the focus of study for more than 30 years as good language learners have been reported to use a variety of LLS frequently and successfully in their language acquisition process (for a review, see Oxford, 2017). Despite the fruitful investigation of LLS, the journey has not been smooth and results are far from converging or unanimous. Firstly, LLS do not exist in a vacuum. Researchers have always acknowledged that the concept of LLS is complex and dynamic and closely associated with individual cognitive and affective factors such as motivation, learners' beliefs, learning styles and previous language learning experience, age, proficiency, and gender as well as with contextual factors such as socioeconomic, cultural and geographical factors, and learning environment (whether the context is second language (SL) or foreign language (FL) learning). Coming up with a definition that encompasses all aspects involved in LLS is not easy as evidenced by the numerous and sometimes contradicting definitions that can be found in the literature. Recently, Oxford (2017) has proposed an encompassing definition which tries to take into account their complexity, dynamic, and flexible nature as well as contextual factors involving the learners such as different learning styles and elements such as self-regulation, agency, and autonomy. Oxford (2017: 48) "proposes that L2 LLS are complex, dynamic thoughts and actions, selected and used by learners with some degree of consciousness in specific contexts in order to regulate multiple aspects of themselves (such as cognitive, emotional, and social) for the purpose of (a) accomplishing language tasks; (b) improving language performance or use; and/or (c) enhancing long-term proficiency. Strategies are mentally guided but may also have physical and therefore observable manifestations. Learners often use strategies flexibly and creatively; combine them in various ways, such as strategy clusters or strategy chains; and orchestrate them to meet learning needs. Strategies are. Learners in their contexts decide which strategies to use. Appropriateness of strategies depends on multiple personal and contextual factors".

This definition stresses the idea of LLS as choices that L2 learners make in order to overcome difficulties they might encounter or to help them in their progress towards the mastery of the new language. As Oxford (2011, 2017) stresses, self-regulated learning strategies are pivotal for language acquisition and as such they should be further assessed, taught and researched. LLS are still thought to make language learning easier and more efficient by making learners conscious of their strategy use. For this reason, they are still being actively researched as reflected in the number of papers on LLS that have been published in recent years (Ardasheva & Tretter, 2013; Griffiths & Oxford, 2014; Oxford, 2017; Oxford & Amerstorfer, 2018; Petrogiannis & Gavriilidou, 2015; Psaltou-Joycey et al., 2014; Psaltou-Joycey, Mattheoudakis & Alexiou, 2014; Saks & Leijen, 2016; Thomas & Rose, 2019; Zhang, 2003; Zhang; Thomas & Qin, 2019). A renewed interest in LLS has resulted in studies which include Oxford's (2011) Strategic Self-Regulation (S^2R) model and use mixed-methods approaches which include variables such as context and individual differences in order to obtain a more fined-grained picture of LLS as well as exploring the implications of teaching LLS in the classroom.

In this paper we will employ an adaptation of Oxford's well-known classification of LLS, namely, the Strategy Inventory for Language Learning (SILL). As we will describe below, we will use an adapted version of the SILL where items have been added to adjust the questionnaire to the particular needs of the study. The SILL is still a widely used tool to collect quantitative data on LLS which has been used in more than 17 different languages (Castillo & Cordova, 2014; Gunning & Turner, 2018; Lan & Oxford, 2003; Liu, 2013; Magno, 2010; Mitits & Gavrilidou, 2016; Nosratinia, Saveiy, & Zaker, 2014; Papadopoulou, Kantaridou, Platsidou, & Graviilidou, 2018; Petrogiannis & Gavriilidou, 2015; Psaltou-Joycey et al., 2014; Psaltou-Joycey & Gavriilidou, 2018; Saks & Leijen, 2016; Solak & Cakir, 2015, among others). The SILL's reliability index in the different languages in which it has been administered has been reported to be high (Cronbach's alpha between .91 and .95 (Mitits & Gavrilidou, 2016: 299). In the SILL, strategies are classified into six categories, which are described below: memory, cognitive, compensating, metacognitive, affective, and social. Table 1 displays the categories in which these strategies are further classified in Oxford's (1990) SILL and descriptions of each strategy are shown in the right-hand-side column.

3. Previous research on LLS and intervening factors

As Grenfell and Harris (2015) state, LLS do not exist in a vacuum and research has shown that learners' preference for one category or another is affected by complex and multiple individual and contextual factors (Grenfell & Harris, 2015; Lan & Oxford, 2003; Oxford & Amerstorfer, 2018; Psaltou-Joycey, Mattheoudakis, & Alexiou, 2014; Wharton, 2000). Factors such as age, proficiency, and gender have been widely investigated from the very first studies on LLS. Thus, older learners have been reported to use a wider range of LLS and of a different type than younger learners (Griffiths, 2013; Lee & Oxford, 2008). More proficient learners have been reported to use LLS more frequently and display greater variation in their use than less proficient language learners (Green & Oxford, 1995; Griffiths, 2003; Lee, 2003; Rahimi, Riazi, & Saif, 2008; Rao, 2016). As to the specific categories preferred, more proficient learners have reported to use cognitive and metacognitive strategies

Table 1
Classification of strategies and examples of the different categories.

General group	Category	Strategy descriptions
DIRECT	MEMORY	Creating mental linkages
		Applying images and sounds
		Employing action
	COGNITIVE	Practicing, receiving, and sending messages
		Analyzing and reasoning
		Creating structure for input and output
	COMPENSATION	Guessing intelligently
		Overcoming limitations in speaking and writing
INDIRECT	METACOGNITIVE	Linking with previous knowledge
		Paying attention
		Organizing
		Planning
	AFFECTIVE	Managing their emotions
		Motivation
		Attitudes
	SOCIAL	Asking questions
		Cooperating
		Becoming culturally aware

(Peacock & Ho, 2003), as well as compensating strategies (Green & Oxford, 1995) more frequently than less proficient learners. On the other hand, less proficient learners report using a more limited range of LLS and less sophisticated strategies, such as repetition and copying (Griffiths, 2003; Magogwe & Oliver, 2007). However, the picture that emerges from studies investigating the effect of age is not clear-cut, since it is often difficult to disentangle the effect that age has on LLS from proficiency and course level. Since older learners are also those with a higher proficiency level, they are usually at higher course levels and have more hours of instruction in the target language than younger learners (Tragant & Victori, 2012). With respect to gender, research has shown that females in general report using LLS more frequently and also using a wider range of LLS than males (Božinović & Sindik; 2011; Dongyue, 2004; Gavrilidou & Papanis, 2009; Hong-Nam & Leavell, 2006; Kazamia, 2003; Lan & Oxford, 2003; Peacock & Ho, 2003; Psaltou-Joycey & Kantaridou, 2009; Salahshour, Shafiri, & Salahshour, 2013; Vrettou, 2009, 2011). As with the factors age and proficiency, however, not all studies have reported a female superiority in the choice of LLS. Thus, Wharton (2000) reported no overall differences between male and female learners but when specific strategy items were examined, males showed a greater frequency than females in many of them. There are also studies which have reported no differences between males and females in LLS choice (Griffiths, 2003; Nisbet, Tindall, & Arroyo, 2005; Psaltou-Joycey, 2008). Additionally, other contextual factors such as the learners' learning environment (SL vs FL learning) and their experience in language learning (whether the learners are bilingual and thus have experience with learning more than one language or whether they are monolingual and face the experience of learning an additional language for the first time) have not received so much attention in the literature (Grenfell & Harris, 2015; Psaltou-Joycey et al., 2014; Wharton, 2000). In what follows we provide a brief review of each of these factors in studies using the SILL which have investigated primary school children's reported choice of LLS, which will be the focus of the present study.

3.1. LLS choice in child populations

Lan and Oxford (2003) used an adaptation of Oxford's (1990) SILL for children (Gunning, 1997) to investigate 379 sixth-grade students learning EFL in a public primary school in Taiwan. The results showed a medium use[1] (mean = 2.9) of LLS by the Taiwanese children, being compensation and affective strategies chosen most frequently. They also reported that LLS choice was significantly related to gender and proficiency (as established by means of a criterion-referenced placement test designed by the City Government Education Bureau). Girls were reported to choose cognitive, compensating, metacognitive and affective strategies more often than boys. Moreover, no strategies were used significantly more often by boys than girls. Proficiency also had an effect in four categories (cognitive, compensating, metacognitive and affective), where higher proficiency tended to relate to greater strategy use in these categories. They also reported that gender had a strong impact in the reported choice of LLS in the Taiwanese children in that the girls showed a greater metacognitive and cognitive awareness and a greater use of strategies related to auditory and social practice than the boys.

In the context of Greece, the study by Psaltou-Joycey et al. (2014) investigated LLS choice by 103 EFL primary school Greek learners of English as a foreign language in grades 4 (aged 9–10), grade 5 (aged 10–11) and grade 6 (aged 11–12) by means of Oxford's (1990) SILL questionnaire adapted to the Greek context. The results showed that the overall mean score for four of the six categories was medium and only metacognitive and affective strategies were reported with a high frequency. They also investigated the effect of age, proficiency and gender on the choice of LLS. With respect to age, they found that the older

[1] Following Oxford (1990: 330), means between 5.0 and 4.5 are interpreted as very highly frequently chosen, 3.5 to 4.4 as high, 2.5–3.4 as medium and 1.5 to 2.4 as low.

learners (11–12 year olds) appeared to use most strategies (memory, cognitive, metacognitive, affective and social) less frequently than younger learners (9–10 year olds), a finding supported by the observation that junior secondary school learners reported lower use of LLS than primary school learners (Psaltou-Joycey & Sougari, 2010). Psaltou-Joycey and Sougari (2010) suggested that the unexpectedly higher frequency of reported use of LLS by younger learners (in their study 6th primary and 3rd secondary school graders learning EFL in Greece) may be due to the conscious effort the primary school learners made to use different LLS in order to achieve better learning outcomes and also the younger learners' willingness to experiment. Although Psaltou-Joycey et al. (2014) did not independently measure for proficiency, they assumed that the learners' proficiency increased as they got older. The finding that less advanced learners used LLS more resourcefully than more advanced learners was also reported by Tragant and Victori (2012), as we will describe below. Finally, overall, their study found no significant effect of gender in the children's choice of LLS.

3.2. LLS and previous language learning experience

Bilingual language acquisition has been reported to differ in important respects from monolingual language acquisition (Cenoz, 2003, 2013; Park & Starr, 2015; Sanz, 2000). One of the aspects along which bilinguals seem to differ from monolinguals is their reportedly higher metalinguistic awareness (Atar, 2018; Huang, 2018; Liu & Ni, 2016; Reder, Marec-Breton, Gombert, & Demont, 2013), social sensitivity and flexibility of thought (Harmers & Blanc, 2000). Sanz (2000) reported that L1 Catalan/Spanish bilingual learners of L3 English followed the same acquisition route as L1 Spanish learners of L2 English. However, the former did so earlier than the latter. Sanz (2000) suggested that this may be due to the bilinguals' greater explicit knowledge about language which leads them to 'notice' the features of the target language.

To our knowledge, few studies have addressed the choice of LLS in multilingual child populations using the SILL (Grenfell & Harris, 2015; Magogwe & Oliver, 2007). Grenfell and Harris (2015) tested the effectiveness of strategy instruction in one hundred and twenty 12–13 year old students' reading and listening skills in French. The learners had 16 different L1 backgrounds (from Vietnamese, Mandarin and Cantonese Chinese, Yoruba, Bemba, Farsi, Hebrew, Bengali as well as Spanish, Serbo-Coration or Polish). They measured the relative influence of reading and listening strategy instruction (especially cognitive and metacognitive strategies) on variables such as bilingualism vs. monolingualism, gender, and socio-economic background. The results showed that bilingual learners seemed to outperform their monolingual peers only in their effective use of listening comprehension strategies in that they relied more on oral/aural strategies for memorizing words than in written strategies. The authors suggest that this result may be due to the fact that the majority of bilingual learners were not billiterate as many used their L2s only at home with their parents and the community, but had had no formal instruction in their L2s.

Magogwe and Oliver (2007) investigated LLS choice by 480 English/Setswana bilingual primary (and also secondary and tertiary) level school children in Bostwana by means of Oxford's (1990) SILL questionnaire. In the Bostwana context reported, both English and Setswana are official languages. The results from the 168 primary school students revealed significant differences in the amount of LLS chosen by good, fair, and poor proficient learners (as established by the criterion of the children's teachers), with good proficiency learners favouring the use of social and metacognitive LLS. Magogwe and Oliver (2007) also reported that age made a difference as to the amount of LLS and the variety of strategy type used in their sample. However, in their study there was great variability in the age range within each group in the different school levels, especially in primary education. The context in Magogwe and Oliver (2007) makes it very difficult to tease apart whether the difference is due to the learners' age, to their language proficiency, or a combination of both.

3.3. LLS and language learning context

There is little doubt that the context in which L2 and L3 learning takes place influences the process of language acquisition and hence, it is expected that learners will use different LLS according to the context. Thus, learners in second language acquisition (SLA) contexts have been reported to use LLS more frequently than those in foreign language acquisition (FLA) contexts (Green & Oxford, 1995; Oh, 1992; Wharton, 2000). One reason for this could be the fact that learners in a SLA context live immersed in the target language and must use it in everyday situations, while learners in FLA are only exposed to the language in the classroom and have a limited and restricted need to use it. In the past few decades, content and language integrated learning (CLIL) instruction has become popular across Europe (Dalton-Puffer & Smit, 2013). In CLIL, the foreign language is used as a vehicle for instruction and thus, it is characterized by its dual focus on the learning of a foreign language (English in the majority of cases) and the learning of the content of the subject. This dual focus undoubtedly places learners in a different position from more traditional SLA and FLA. The increased language and cognitive demands related to CLIL may require "students to adjust their familiar strategy repertoires in order to deal effectively with both content and language goals at the same time" (Griffiths & Cansiz, 2015: 478).

To our knowledge, only one study has focused on LLS choice and CLIL. Pslatou-Joycey et al. (2014) investigated 136 CLIL and non-CLIL learners in three primary school grades in Greece: 4th grade (9–10 year olds), 5th grade (10–11 year olds) and 6th grade (11–12 year olds) to compare their reported use of LLS by means of an adapted SILL version to the Greek context containing 24 questions using a 1–3 Likert scale questionnaire. They also investigated the effect of gender and age in this particular population. The results revealed that in CLIL, learners reported only one affective strategy significantly more often than the non-CLIL group grade 4; the non-CLIL learners reported using two strategies more frequently than the CLIL learners

in grade 5 and there was no difference between the CLIL and non-CLIL groups in grade 6. With respect to gender, they reported that girls in the CLIL group chose affective and metacognitive LLS more frequently than boys while in the non-CLIL group only one difference emerged in favour of girls.

Summing up, although age, proficiency and gender have been widely investigated in the LLS literature, the complex interaction of these factors does not allow to draw clear conclusions as to the effect that age, proficiency, and gender play in the choice of LLS. The highly complex nature of LLS and the myriad of contextual factors surrounding each learner at the individual, as well as cultural and educational background, clearly calls for more studies where as many contextual variables as possible are taken into consideration. In the present study, we try to fill these gaps by analyzing the responses to a questionnaire on LLS choice by upper-primary school males and females whose age ranges between 10 and 12 and have been classified as having three different proficiency levels after taking a language placement test. Despite the spread of bilingual language acquisition across the world (European Commission, 2006), the new context of CLIL in which more and more learners find themselves immersed remains understudied, a gap which the present paper will try to fill.

4. Research questions

Given the renewed interest in the influence of contextual factors in the choice of LLS and taking into account the gaps described in the literature review section, the aim of the present study is to investigate the frequency of reported strategy use in upper-primary Basque/Spanish bilingual school children learning L3 English in a CLIL context. More specifically, we consider how the frequency of reported strategy use is influenced by the learners' age, proficiency, and gender. Accordingly, we entertain the following research questions:

1) Are there any differences in the reported use of LLS between grade 5 and grade 6 bilingual learners of L3 English in a CLIL context?
2) Does the reported use of LLS differ by language proficiency level (low beginners, beginners, and upper beginners)?
3) Does the reported use of LLS differ in males and females?

5. Methodology

5.1. Participants

The participants in the study were 131 Basque-Spanish bilingual learners of L3 English corresponding to two intact classes of grades 5 and 6 of primary education (10–11 and 11–12 year olds respectively, mean age = 10.7) in a school in the Basque Autonomous Community (BAC) in northern Spain. All the learners were enrolled in model B[2] where instruction is carried out in the two official languages: Spanish, the majority language, and Basque, the minority language. With respect to English, the participants had started learning English at school at around the age of 4 and had been introduced to CLIL in their third year of primary education.[3] At the time of testing, the learners in the 5th year of primary education were receiving 3 h of EFL a week plus 3 h of CLIL (in the first term they had 1 h of Science and 1 h of Physical Education and in the subsequent terms, 2 h of Science and 1 h of Arts and Crafts). Those learners in their 6th year of primary education were receiving 4 h a week of EFL and 4 h a week of CLIL (in the first term 2 h of Science and one of Physical Education and in the subsequent terms they had 3 h of Science and 1 h of Arts and Crafts). Besides, 59% of the participants had been attending private lessons in English involving an average of 2 h a week.

The teaching method followed in primary education in this particular school is based on collaborative learning where students work in pairs and small groups, rather than individually, reading texts for meaning most of the time. The teachers' pedagogical practices focus on the students' understanding of the meaning of the texts they read and the lessons taught. These pedagogical practices also extend to the English class, where the students' English knowledge and abilities are assessed formally. Memorization is also part of the pedagogical practices in the English class but as with all other subjects, the focus is on understanding texts and content lessons collaboratively rather than memorizing facts individually. Table 2 shows the participants' details.

5.2. Instruments

The instruments used in the study involved (a) a background questionnaire to establish the learners' linguistic history, (b) a language placement test, and (c) an adaptation of Oxford's (1990) SILL with multi-item scales.

[2] In the BAC there are three different linguistic models of obligatory education: In Model A, all the subjects are taught in Spanish except for the Basque and English language classes. In Model D, all subjects are taught in Basque except for the languages Spanish and English. Model B is an intermediate option where half of the curricular subjects are taught in Basque and half in Spanish except for the English language.

[3] In CLIL, students are taught subjects in the foreign language, English in this case, instead of their native languages. Additionally, they are also taught English through traditional language classes.

Table 2
Details of the participants in the study.

PARTICIPANTS (n = 131)	Grade 5 (n = 68) (mean age = 10.29)		Grade 6 (n = 63) (mean age = 11.19)	
Gender	Males (n = 41)	Females (n = 27)	Males (n = 35)	Females (n = 28)
EFL hours/CLIL hours	3/3		4/4	
Total amount of hours in English	714 (162 CLIL)		884 (291 CLIL)	
First exposure to English	Mean age = 3.93		Mean age = 4.28	

Table 3
Language test results.

n = 131	LANGUAGE LEVEL
GROUP 1 (n = 31)	Low Beginners (<40) mean: 30.03, SD: 6.89
GROUP 2 (n = 51)	Beginners (41–56) mean: 48.01, SD: 4.76
GROUP 3 (n = 49)	Upper Beginners (>57) mean: 63.73, SD: 3.94

5.2.1. Background questionnaire

With respect to the background questionnaire, it was made up of 11 questions where information about the linguistic history of the participants was collected (Appendix I). Learners were asked about the languages they could speak (Spanish, Basque, English, or any other) as well as their use of the different languages with members of their family and friends. We also asked them the age when they started to speak the different languages and whether it was at home or at school. The results revealed that 86.25% of the participants' first language was Spanish and 16% reported having both Basque and Spanish as their first language. There was one participant who reported having Dutch as his first language and another who reported Basque as her first language. Those whose first language was not Basque reported having started learning Basque at school at around age 4 and about half the children reported taking regular private lessons in English.

5.2.2. Language proficiency test

The students' proficiency was established through the Cambridge English FLYERS (Cambridge English, n.d.) placement test. The test included listening (max. score = 25), reading and writing sections (max. score = 50). The results (Table 3) revealed that all participants were beginners. Although all learners were classified as beginners, given the wide ranges within the scores, three different subgroups were identified by the researchers: a) a lower beginner group (Low Beginners; n = 31) who obtained a score of less than 40 in the test, b) a beginner group (Beginners; n = 51) whose score ranged between 41 and 56 and c) an upper beginner group (Upper Beginners; n = 49) with a score of 57 or over. The Mann-Whitney *U* test revealed that the differences between the three groups were statistically significant (Low beginner vs. Beginners: Z = −7.570, p = .000, r = 0.83; Low Beginners vs. Upper Beginners: Z = −7.507, p = .000, r = 0.83; Beginners vs. Upper Beginners: Z = −8.625, p = .000, r = 0.86).

5.2.3. Strategy questionnaire

Different techniques may be used to explore LLS, such as interviews, observation, or think aloud protocols. The use of questionnaires such as the SILL is still considered a valid methodology for the study of LLS as a diagnostic instrument for the FL classroom provided an adequate analysis of the data is carried out (Griffiths & Oxford, 2014; Magno, 2010; Oxford, 2011; Oxford & Amerstorfer, 2018; Papadopoulou et al., 2018). The SILL has been widely used to analyze information about strategy use and its relationship with variables such as age, proficiency, and gender (Lan & Oxford, 2003; Petrogiannis & Gavriilidou, 2015; Psaltou-Joycey et al., 2014; Saks & Leijen, 2016; Solak & Cakir, 2015; Wharton, 2000, among others), the variables under study in the present paper.

The present study is part of a wider project in which besides using the SILL, production data has been collected in order to compare the self-reported use of LLS with the learners' actual use. In this paper, we report the results of an adapted SILL questionnaire in order to collect frequency data of LLS, compare the results obtained with previous literature, and compare it with the learners' actual use of LLS (Gutiérrez-Mangado & Milla, in preparation). More specifically, we adapted Purdie and Oliver's (1999) questionnaire[4] used with children in the Australian context to the specific context in the BAC. We used the same categories but we eliminated three items from their version since they were exclusively aimed at the Australian context, and therefore not pertinent for our study (Table 4).[5] Additionally, we considered that the category compensating for missing knowledge (compensation in our table) had an insufficient number of items so we included five new items in this category: From Poulisse's (1990) taxonomy, we adopted the strategy of transfer, which is subdivided into borrowing, literal translation and foreignizing. Then, from Tarone's (1977) classification, strategies such as avoidance and appeal for assistance were

[4] The questionnaire in Purdie and Oliver (1999) was based on the SILL except for the category 'Affective Strategies', which was excluded.

[5] For the sake of simplicity, throughout the paper for each category we use the shorter labels in the left column, which correspond to Oxford's (1990) labels.

Table 4
Categories and corresponding items in our study.

	Present study
Memory (n = 6)	Remembering more effectively (items 1, 6, 11, 16, 21, 26)
Cognitive (n = 11)	Using your mental processes (items 2, 4, 7, 12, 17, 22, 27, 31, 33, 36, 38)
Compensation (n = 11)	Compensating for missing knowledge (items 3, 5, 10, 15, 20, 25, 30, 32, 35, 37, 40)
Metacognitive (n = 7)	Organizing and evaluating your learning (items 9, 14, 19, 24, 29, 34, 39)
Social (n = 5)	Learning with others (items 8, 13, 18, 23, 28)

adopted. All the items of the questionnaire are displayed in Appendix II. As in previous LLS studies using SILL or its adaptations, we performed a Cronbach test in order to verify the internal consistency (Oxford & Burry-Stock, 1995) of the specific version of the questionnaire we were using in order to confirm how closely related the set of items are, which revealed a value $\alpha = 0.91$ confirming the reliability of the questionnaire used.

The questionnaire was administered in Spanish, the dominant language of most children, (113/131; 86.25%). The students were asked to read each statement carefully and then choose the options with which they identified best. The choice was presented as a 5 point Likert scale where instead of numbers, symbols were used (and completely agree; and completely disagree and for not sure; see Appendix II). The questionnaire was administered by the students' teacher during one of their English lessons. First, the teacher explained that the questionnaire included some statements and that they had to establish their degree of agreement with each statement by choosing one of the symbols. The students were told that each symbol represented their degree of agreement with the statement, from "totally agree" to "totally disagree". Then, the teacher proceeded to illustrate with a sample answer and asked the students to complete the questionnaire by marking the chosen cell with an X. The learners were also advised to give honest answers as there were no right or wrong answers.

6. Results

The results showed that all the participants (n = 131) reported using all strategies with a high frequency. Table 5 shows the rank order of each category, the overall means and standard deviation (SD), the minimum and maximum scores and confidence intervals (CI) for each strategy type. We can see that the CIs show a narrow range, which adds robustness to the results in the present study.

In order to statistically compare the results we used non-parametric tests because the data did not meet the conditions of normal distribution. Although the Kolmogorov-Smirnov test for normality of variance revealed that none of the categories tested had a normal distribution, Levene's test for homogeneity of variance showed that all the variables met the conditions of homogeneity required. Additionally, non-parametric tests are independently thought to be a more adequate tool for comparing ordinal data obtained from Likert-type scales (Griffiths & Oxford, 2014; Jamieson, 2004). We also calculated effect size r and following recommendations in Plonsky and Oswald (2014) we considered *r*s close to 0.25 as small, 0.40 as medium and 0.60 as large.

The Friedman test revealed that there were statistically significant differences among the different LLS chosen ($X^2 = 175{,}863$, p = .000) by all the participants (n = 131). The subsequent Wilcoxon test comparing the variables two by two revealed statistically significant differences in all the comparisons (memory vs. cognitive (Z = −6.313, p = .000, r = 0.39); memory vs. compensation (Z = −6.395, p = .000, r = 0.39); memory vs. social (Z = −5.559, p = .000, r = 0.34); cognitive vs. compensation (Z = −2.293, p = .000, r = 0.14); cognitive vs. metacognitive (Z = −6.043, p = .000, r = 0.37); cognitive vs. social (Z = −8.952, p = .000, r = 0.55); compensation vs. metacognitive (Z = −5.337, p = .000, r = 0.32); compensation vs. social (Z = −8.530, p = .000, r = 0.52); metacognitive vs social (Z = −6.524, p = .000, r = 0.40)) except when comparing memory with metacognitive (Z = -.588, p = .557, r = 0.03). As can be seen, the values of the effect sizes are mostly medium. Thus, the results revealed that in general, the most frequently chosen strategy was social, followed by memory and metacognitive, which were chosen with the same frequency, and the least frequently chosen were cognitive and compensation.

6.1. Research question 1: age

Next, in order to make sure that the grade 5 and grade 6 participants' responses were comparable, we carried out a comparison between the two groups. The means obtained by each age group are shown in Table 6.

Table 5
Rank order, overall means, SD and confidence intervals.

	RANK	M (SD)	Min. Max.	95% CI
Memory (n = 6)	2	3.82 (.61)	1.33–5.00	[3.72–3.93]
Cognitive (n = 11)	4	3.5 (.53)	1.82–4.91	[3.41–3.60]
Compensation (n = 11)	5	3.39 (.54)	2.00–4.91	[3.30–3.49]
Metacognitive (n = 7)	3	3.8 (.62)	1.43–5.00	[3.68–3.89]
Social (n = 5)	1	4.13 (.59)	1.75–5.00	[4.03–4.23]

Table 6
Mean, SD, Min. and Max. scores and 95% confidence intervals by age.

	Grade	M	Min.− Max.	95% CI
Memory (n = 6)	5 (n = 68)	3.93 (.53)	2.00−4.83	[3.78−4.04]
	6 (n = 63)	3.71 (.67)	1.33−5.00	[3.56−3.90]
Cognitive (n = 11)	5 (n = 68)	3.56 (.52)	1.82−4.36	[3.43−3.69]
	6 (n = 63)	3.45 (.54)	1.91−4.91	[3.31−3.58]
Compensation (n = 11)	5 (n = 68)	3.45 (.55)	2.00−4.91	[3.31−3.59]
	6 (n = 63)	3.34 (.53)	2.18−4.27	[3.20−3.46]
Metacognitive (n = 7)	5 (n = 68)	3.81 (.67)	1.43−5.00	[3.63−3.97]
	6 (n = 63)	3.76 (.57)	2.29−4.86	[3.63−3.91]
Social (n = 5)	5 (n = 68)	4.14 (.65)	1.75−5.00	[4.00−4.29]
	6 (n = 63)	4.12 (.60)	2.80−5.00	[3.97−4.27]

The Mann-Whitney *U* test revealed that the younger group chose the LLS memory more often than the older learners (Z = −1.993, p = .046, r = 0.17), although the size effect is small. No differences were found between the older and younger learners in any of the other categories (cognitive Z = −1.567, p = .117, r = 13; compensation Z = −1.133, p = .257, r = 0.09; metacognitive Z = -.913, p = .361, r = 0.07; social Z = −1.709, p = .087, r = 0.14).

Turning now to within group comparisons, the Friedman test revealed that in the grade 5 group there were statistically significant differences between the LLS chosen ($X^2 = 108.111$, p = .000). The Wilcoxon tests comparing the different LLS two by two showed that there were differences between all LLS (memory vs. cognitive (Z = −5.280, p = .000, r = 0.45); memory vs. compensation (Z = −4.745, p = .000, r = 0.40); memory vs. social (Z = −3.325, p = .001, r = 0.28); cognitive vs. metacognitive (Z = −3.917, p = .000, r = 0.33); cognitive vs. social (Z = −6.334, p = .000, r = 0.54); compensation vs. metacognitive (Z = −3.474, p = .001, r = 0.29); compensation vs. social (Z = −5.863, p = .000, r = 0.50); metacognitive vs. social (Z = −5.024, p = .000, r = 0.43)) except when comparing memory vs. metacognitive (Z = −1.531; p = .126, r = 0.13) and when comparing cognitive vs. compensation (Z = −1.334, p = .182, r = 0.11). Once again, the size effect for the statistically significant comparisons was medium size. In other words, in the group, the most frequently chosen LLS was social, followed by memory and metacognitive, and the least frequent LLS were both cognitive and compensation.

With respect to the grade 6 group, the Friedman test revealed that there were statistically significant differences between the LLS used ($X^2 = 108.851$, p = .000). The Wilcoxon tests comparing the different LLS two by two revealed that these differences were exactly the same as those found in the grade 5 group: there were differences between all LLS (memory vs. cognitive (Z = −3.615, p = .000, r = 0.32); memory vs. compensation (Z = −4.280, p = .000, r = 0.38); memory vs. social (Z = −4.390, p = .000, r = 0.39); cognitive vs. metacognitive (Z = −4.653, p = .000, r = 0.41); cognitive vs. social (Z = −6.306, p = .000, r = 0.56); compensation vs. metacognitive (Z = −4.159, p = .000, r = 0.37); compensation vs. social (Z = −6.241, p = .000, r = 0.55); metacognitive vs. social (Z = −4.279, p = .000, r = 0.38)) except when comparing memory vs. metacognitive (Z = −0.736, p = .462, r = 0.06) and when comparing cognitive vs. compensation (Z = −1.920; p = .055, r = 0.17). As in the grade 5 group, the size effect for the statistically significant comparisons was medium size. In other words, the grade 6 group showed the same pattern of preference as the grade 5 group, choosing social to a greater extent than any other LLS, followed by memory and metacognitive and the least frequently chosen LLS were both cognitive and compensation.

6.2. Research question 2: proficiency

The mean results obtained by language proficiency are shown in Table 7. There were 31 children who were classified as Low Beginners (LB) (mean age 10.66), 51 as Beginners (B) (mean age 10.52) and 49 as Upper Beginners (UB) (mean age 10.88). In the case of proficiency, we find wider ranges in the CI, so these results have to be taken more cautiously.

Table 7
Mean, SD, Min. and Max. scores and 95% confidence intervals by language proficiency.

	Proficiency	M	Min. − Max.	95% CI
Memory (n = 6)	Low Beginners	3.79 (.68)	2.00−4.83	[3.54−4.04]
	Beginners	3.84 (.51)	2.67−5.00	[3.70−3.99]
	Upper Beginners	3.82 (.68)	1.33−4.83	[3.63−4.02]
Cognitive (n = 11)	Low Beginners	3.35 (.60)	1.82−4.27	[3.13−3.57]
	Beginners	3.57 (.53)	2.27−4.91	[3.42−3.72]
	Upper Beginners	3.53 (.49)	2.09−4.36	[3.39−3.68]
Compensation (n = 11)	Low Beginners	3.51 (.58)	2.00−4.36	[3.29−3.72]
	Beginners	3.44 (.53)	2.27−4.91	[3.29−3.59]
	Upper Beginners	3.27 (.52)	2.00−4.18	3.12−3.42]
Metacognitive (n = 7)	Low Beginners	3.73 (.75)	2.00−4.86	[3.46−4.01]
	Beginners	3.82 (.51)	2.57−5.00	[3.68−3.97]
	Upper Beginners	3.78 (.65)	1.43−5.00	[3.59−3.96]
Social (n = 5)	Low Beginners	4.03 (.74)	1.75−4.53	[3.76−4.31]
	Beginners	4.05 (.51)	2.80−5.00	[3.91−4.20]
	Upper Beginners	4.27 (.56)	3.00−5.00	[4.11−4.43]

The Kruskall Wallis test revealed no statistically significant differences among the three groups in any of the categories. Within group comparisons showed that in the Low Beginner group there were differences between the following pairs: cognitive vs. memory ($Z = -3.390$, $p = .001$, $r = 0.42$), memory vs. social ($Z = -2.098$, $p = .036$, $r = 0.26$), metacognitive vs. cognitive ($Z = -3.743$, $p = .000$, $r = 0.46$), social vs. cognitive ($Z = -3.988$, $p = .000$, $r = 0.49$), social vs. compensation ($Z = -3.077$, $p = .002$, $r = 0.38$) and social vs. metacognitive ($Z = -2.911$, $p = .004$, $r = 0.36$), being the effect sizes medium. The comparisons between the remaining LLS were not statistically significant (memory vs. compensation ($Z = -1.803$, $p = .071$, $r = 0.22$); memory vs. metacognitive ($Z = -5.556$, $p = .578$, $r = 0.69$); cognitive vs. compensation ($Z = -.974$, $p = .330$, $r = 0.12$) and compensation vs. metacognitive ($Z = -1.462$, $p = .144$, $r = 0.18$)). In other words, in the Low Beginner group, the strategy selected most often was social, followed by memory and the least chosen strategies were cognitive, metacognitive, and compensation.

Within the Beginner group, we found the same differences: cognitive vs. memory ($Z = -3.891$, $p = .000$, $r = 0.38$), memory vs. social ($Z = -2.996$, $p = .003$, $r = 0.29$), metacognitive vs. cognitive ($Z = -3.239$, $p = .001$, $r = 0.32$), social vs. cognitive ($Z = -5.240$, $p = .000$, $r = 0.51$), social vs. compensation ($Z = -5.348$, $p = .000$, $r = 0.52$) and social vs. metacognitive ($Z = -2.977$, $p = .003$, $r = 0.29$), and also compensation vs. memory ($Z = -4.180$, $p = .000$, $r = 0.41$) and metacognitive vs. compensation ($Z = -3.708$, $p = .000$, $r = 0.36$), most of them showing a medium size effect. That is, all comparisons revealed differences except for metacognitive vs. memory ($Z = -.066$, $p = .948$, $r = 0.00$) and compensation vs. cognitive ($Z = -1.568$, $p = .117$, $r = 0.15$). As in the Low Beginner group, in the Beginner group the strategies chosen most frequently were first, social, followed by memory and the least were cognitive, and compensation. Note at this stage that in the Beginner group the number of categories which were significantly different in the pair-wise comparison was higher (8) than in the Low Beginner group (6).

Within the Upper Beginner group, the comparison between metacognitive vs. memory was not statistically significant ($Z = -.405$, $p = .685$, $r = 0.04$). All other comparisons were statistically significant: cognitive vs. memory ($Z = -3.512$, $p = .000$, $r = 0.35$), compensation vs. memory ($Z = -4.919$, $p = .000$, $r = 0.49$), memory vs. social ($Z = -4.340$, $p = .000$, $r = 0.43$), compensation vs. cognitive ($Z = -2.989$, $p = .003$, $r = 0.29$), metacognitive vs. cognitive ($Z = -3.547$, $p = .000$, $r = 0.35$), social vs. cognitive ($Z = -6.034$, $p = .000$, $r = 0.60$), metacognitive vs. compensation ($Z = -3.825$, $p = .000$, $r = 0.38$), social vs. compensation ($Z = -5.914$, $p = .000$, $r = 0.59$) and social vs. metacognitive ($Z = -5.084$, $p = .000$, $r = 0.51$), all showing medium size effects. Note here that the number of pair-wise comparisons which were significantly different was higher in this group (9), than in the Low Beginner (6) and the Beginner (8) groups. As in the other two groups, in the Upper Beginner group the strategies chosen most frequently were first, social, followed by memory and metacognitive and the least were cognitive, and compensation.

6.3. Research question 3: gender

In order to answer our third research question, we first established whether there were statistically significant differences among males ($n = 76$) and females ($n = 55$) in the whole sample in regards their proficiency level as well as their age. The results revealed no differences in this respect. Nor were there any differences when we compared the choice of LLS by males and females in the whole sample (Table 8). The CIs in the case of gender are somehow wider than for age means, but still present narrow ranges.

We then compared the male and female responses within each age group in order to find out whether males and females in the grade 5 and grade 6 groups chose different LLS. The results revealed no statistically significant differences between the grade 5 males and females (memory $Z = -1.286$, $p = .198$, $r = 0.16$; cognitive $Z = -.388$, $p = .698$, $r = 0.04$; compensation $Z = -.042$, $p = .967$, $r = 0.005$; metacognitive $Z = -1.675$, $p = .094$, $r = 0.21$; social $Z = -.167$, $p = .868$, $r = 0.02$) nor between the grade 6 males and females (memory $Z = -1.639$, $p = .101$, $r = 0.19$; cognitive $Z = -.075$, $p = .940$, $r = 0.009$; compensation $Z = -.973$, $p = .330$, $r = 0.11$; metacognitive $Z = -.679$, $p = .497$, $r = 0.08$; social $Z = -.993$, $p = .321$, $r = 0.12$).

Finally, we compared male and female's responses within each proficiency level (Table 9). The CIs in this case have the widest ranges, making the results less generalizable, although significance and effect size results are strong.

Table 8
Results of the test for gender differences in the choice of LLS strategies.

	Gender	M	Min.-Max.	95% CI
Memory (n = 6)	Males (n = 76)	3.83 (.58)	2.00–5.00	[3.70–3.96]
	Females (n = 55)	3.81 (.66)	1.33–4.83	[3.63–3.99]
Cognitive (n = 11)	Males (n = 76)	3.52 (.54)	1.82–4.91	[3.39–3.64]
	Females (n = 55)	3.49 (.54)	1.91–4.36	[3.34–3.63]
Compensation (n = 11)	Males (n = 76)	3.36 (.54)	2.00–4.36	[3.24–3.49]
	Females (n = 55)	3.43 (.55)	2.00–4.91	[3.28–3.58]
Metacognitive (n = 7)	Males (n = 76)	3.86 (.60)	1.43–5.00	[3.72–4.00]
	Females (n = 55)	3.68 (.65)	2.29–5.00	[3.51–3.86]
Social (n = 5)	Males (n = 76)	4.10 (.60)	2.50–5.00	[3.96–4.24]
	Females (n = 55)	4.17 (.58)	1.75–5.00	[4.02–4.33]

Table 9
Results for strategy preference by males and females in the different proficiency levels.

	Proficiency	Gender	M	Min.-Max.	95% CI
Memory (n = 6)	Low Beginners (n = 31)	Males (n = 18)	4.00 (.73)	2.00–4.83	[3.62–4.38]
		Females (n = 13)	3.54 (.53)	2.50–4.50	[3.23–3.85]
	Beginners (n = 51)	Males (n = 17)	3.75 (.52)	2.67–5.00	[3.57–3.66]
		Females (n = 34)	4.02 (.45)	3.17–4.83	[3.79–4.26]
	Upper Beginners (n = 49)	Males (n = 24)	3.82 (.54)	2.67–4.83	[3.59–4.05]
		Females (n = 25)	3.82 (.81)	1.33–4.83	[3.48–4.16]
Cognitive (n = 11)	Low Beginners (n = 31)	Males (n = 18)	3.56 (.57)	1.82–4.27	[3.26–3.85]
		Females (n = 13)	3.10 (.54)	1.91–3.64	[2.79–3.42]
	Beginners (n = 51)	Males (n = 17)	3.47 (.56)	2.27–4.91	[3.27–3.66]
		Females (n = 34)	3.77 (.39)	2.82–4.36	[3.56–3.97]
	Upper Beginners (n = 49)	Males (n = 24)	3.56 (.50)	2.55–4.30	[3.35–3.77]
		Females (n = 25)	3.51 (.50)	2.09–4.36	[3.30–3.72]
Compensation (n = 11)	Low Beginners (n = 31)	Males (n = 18)	3.54 (.59)	2.64–4.36	[3.23–3.84]
		Females (n = 13)	3.47 (.60)	2.00–4.27	[3.12–3.82]
	Beginners (n = 51)	Males (n = 17)	3.35 (.50)	2.27–4.27	[3.18–3.53]
		Females (n = 34)	3.62 (.56)	2.82–4.91	[3.33–3.90]
	Upper Beginners (n = 49)	Males (n = 24)	3.26 (.55)	2.00–4.18	[3.03–3.49]
		Females (n = 25)	3.28 (.49)	2.27–3.91	[3.07–3.49]
Metacognitive (n = 7)	Low Beginners (n = 31)	Males (n = 18)	4.05 (.67)	2.00–4.86	[3.70–4.39]
		Females (n = 13)	3.36 (.68)	2.29–4.29	[2.96–3.75]
	Beginners (n = 51)	Males (n = 17)	3.82 (.42)	3.14–4.17	[3.67–3.97]
		Females (n = 34)	3.84 (.67)	2.57–5.00	[3.49–4.18]
	Upper Beginners (n = 49)	Males (n = 24)	3.79 (.73)	1.43–5.00	[3.49–4.09]
		Females (n = 25)	3.76 (.57)	2.43–4.86	[3.52–4.00]
Social (n = 5)	Low Beginners (n = 31)	Males (n = 18)	4.25 (.68)	2.50–5.00	[3.89–4.60]
		Females (n = 13)	3.78 (.74)	1.75–4.60	[3.35–4.21]
	Beginners (n = 51)	Males (n = 17)	3.91 (.53)	2.80–5.00	[3.72–4.10]
		Females (n = 34)	4.33 (.31)	3.80–5.00	[4.17–4.49]
	Upper Beginners (n = 49)	Males (n = 24)	4.25(.60)	3.00–5.00	[4.00–4.50]
		Females (n = 25)	4.30 (.53)	3.20–5.00	[4.07–4.52]

The results showed significant differences between males and females in the Low Beginner group for the categories memory ($Z = -2.175$, $p = .029$, $r = 0.20$), cognitive ($Z = -2.207$, $p = .026$, $r = 0.39$), metacognitive ($Z = -2.649$, $p = .007$, $r = 0.47$) and social ($Z = -2.167$, $p = .032$, $r = 0.38$), with males showing a higher frequency of reported use of these categories with a medium size effect. No differences were found for compensation ($Z = -.080$, $p = .953$, $r = 0.01$). Regarding the Beginner group, there were also significant differences in the strategy preference in two of the five categories: cognitive ($Z = -2.082$, $p = .037$, $r = 0.29$) and social ($Z = -2.781$, $p = .05$, $r = 0.38$), also favouring males who showed a higher preference for these categories. The remaining strategies were preferred equally by males and females: memory ($Z = -1.854$, $p = .064$, $r = 0.25$), compensation ($Z = -1.193$, $p = .233$, $r = 0.16$) and metacognitive ($Z = -.241$, $p = .810$, $r = 0.03$). Finally, in the Upper Beginner group, no differences were found in any of the five categories: memory ($Z = -.462$, $p = .644$, $r = 0.06$), cognitive ($Z = -.431$, $p = .666$, $r = 0.06$), compensation ($Z = -.060$, $p = .-52$, $r = 0.00$), metacognitive ($Z = -.432$, $p = .666$, $r = 0.06$) and social ($Z = -.161$, $p = .872$, $r = 0.02$).

7. Discussion

The aim of this study was to investigate LLS choice among Basque/Spanish bilingual primary school children in a CLIL context, an understudied population, and establish whether age, proficiency and gender affect their choice in a LLS questionnaire. The participants were two intact classes in their 5th (10–11 year olds) and 6th (11–12 year olds) year in primary school. The results showed that taken together, the upper-primary school children chose the whole range of LLS with high frequency (above 3.39 out of 5 for all categories) and that the learners' most frequently chosen LLS was social, followed by memory and metacognitive LLS, and the least frequently chosen (but still with high frequency) were cognitive and compensation strategies. These choices do not coincide with the results in Lan and Oxford (2003) where social strategies and memory strategies were the least frequently chosen strategies nor with Psaltou-Joycey et al. (2014) where social strategies were chosen, with a medium frequency, in the third position out of the six investigated, and memory was the least chosen LLS. These differences could be due first to the different contexts in which these studies took place. The child learners in the present study are different from Lan and Oxford's (2003) and Psaltou-Joycey et al.'s (2014) two studies in that in the present study (1) the learners are all experienced language learners for whom English is the third language they are acquiring and (2) they are immersed in a CLIL context, contrary to the FLA settings of the former two studies. In the African context, Magogwe and Oliver (2007) also reported a high use of social and metacognitive strategies but only for the most (teacher-established) proficient learners. The finding that Basque/Spanish bilingual learners of L3 English prefer to use social strategies may be influenced by their language learning experience. Note that many of them have learned their second language (Basque) at school and are therefore used to asking teacher and peers to repeat things they do not understand more slowly, asking for

help, practicing the language and being corrected when they say something incorrectly in the target language. Given this experience, it may be only natural for them to resort to social strategies more frequently than monolingual learners without any prior language learning experience, also suggested by Wharton's (2000) research with adult bilinguals learning an L3. Additionally, being immersed in a CLIL context, these learners may often (perhaps more often than in traditional FLA settings) find themselves in situations where they need to ask their teacher and/or peers for help given that it is necessary for them not only to learn new words in the foreign language but also to integrate that knowledge in the content they are learning through English. Therefore, they may perceive more acutely the importance of seeking help in order to overcome the difficulties they may experience in learning the foreign language. Interestingly, this same set of learners was also reported to make a high use of appeals for assistance (Martínez-Adrián, Gallardo-del-Puerto, & Basterrechea, 2017), which may be a characteristic of younger leaners in CLIL contexts.

With respect to age, our results for RQ1 showed no differences in the choice of LLS between grade 5 and grade 6 children in 4 out of the 5 LLS categories tested. In both groups, the most frequently chosen LLS was social, followed by memory and metacognitive and the least frequent LLS were cognitive and compensation. The only difference was that grade 5 learners chose memory more often than the grade 6 learners. This difference was unexpected given the small grade difference between the two groups and the fact that the school's pedagogical practices did not focus strongly on memorizing information. However, Psaltou-Joycey et al. (2014) found that the younger learners in their study (9–10 year olds) reported using most strategies, including memory, more frequently than the older learners (11–12), a finding that was also reported by Psaltou-Joycey and Sougari (2010) when they compared junior secondary to primary school learners. The finding that the only LLS which was chosen differently by the younger and older learners in the present study was memory is in line with previous research which has shown that memorization is typically found in lower proficiency and less experienced learners (Oxford, 1990; Saks & Leijen, 2018) and may be an indication of the transition from the choice of less cognitively complex LLS. It may be the case that as memory improves through adolescence (Gómez-Pérez & Ostrosky-Solís, 2006), older learners in pre-adolescence may need to rely less on memory strategies than younger learners. This finding might suggest that a difference of one school year in the middle childhood-early adolescent border is important enough to reflect the cognitive development associated with age. Interestingly, the finding that older learners report memory less frequently than younger learners seems to be related to their age, and not their proficiency, since, as discussed below, no differences in the choice of LLS emerged when the participants' proficiency was considered. The result that younger children chose memory more often than older children reinforces the need to carry out fine-grained studies since the effect of age may have a different impact on child and adult populations when it comes to the choice of LLS: a difference of one year in adulthood may not have the same impact as in childhood, where cognitive development is still underway.

With respect to RQ2, namely whether proficiency affected the children's choice of LLS, the results showed that it did not. Although the statistical analyses revealed no differences when taken together, two by two comparisons revealed that there were differences in the choice of the categories within each of the proficiency groups. In the Low Beginner group out of the 10 pair-wise comparisons 6 were statistically significant, this number rising to 8 in the Beginner group and to 9 in the Upper Beginner group. In other words, the lower the proficiency the smaller was the use of clearly distinct LLS, even in the case where proficiency differences are small (all learners were beginners in the present study). This result might indicate a tendency to use more strategies distinctly to a higher degree as proficiency increases, in contrast to lower proficiency learners who seem to show smaller differences among their choice of LLS. Therefore, we can see a tendency to consolidate the preference for certain strategies in higher level learners, since there are statistically significant differences between almost all their choices when compared to lower proficiency learners. Nevertheless, the fact that no differences emerged when we compared the three proficiency groups does not support findings where higher proficient learners have been reported to use more strategies with a greater frequency than lower proficiency groups. However, we need to highlight that the differences in proficiency within our child learners might not be so high as to give rise to differences in the choice of LLS and we cannot discard the possibility that bigger differences in proficiency might indeed trigger differences in the reported choice and frequency of use of different LLS among higher and lower proficiency child learners.

Finally, with respect to RQ3, namely, whether gender affects the choice of LLS, we found no significant differences between males and females when the LLS choices of the whole sample were considered. With respect to gender and age, when looking at the LLS choice by females and males by age group, the results revealed no significant differences between younger male and female learners or older females and males. Interestingly, however, when we analysed gender effects in the different proficiency groups, the results showed statistically significant differences. Proficiency level seems to interact with gender when it comes to choosing LLS: males and females differed in their choice of LLS in the lowest proficiency levels, Low Beginner and Beginner, while these differences vanish in the Upper Beginner level. More specifically, males in the Low Beginner group reported using memory, social, cognitive and metacognitive more frequently than females whereas in the Beginner group males reported using cognitive and social more often than females. It seems that males report more LLS use and of a wider range than females the less proficient they are, but these differences disappear as proficiency increases. Therefore, gender ceases to be an influential factor in the choice of LLS with LLS choice becoming identical at upper beginner levels. This finding contrasts with previous studies (Božinović & Sindik, 2011; Dongyue, 2004; Goh & Poh Foong, 1997; Oxford & Ehrman, 1995; Peacock & Ho, 2003; Phakiti, 2003; Salahshour et al., 2013), where females were found to report and use a higher number and range of LLS. The difference might be caused by the age variation, since the participants in most of these studies are high school or college students, ages where gender differences might be more evident than at 10 or 12 years old. Additionally, the teaching context might also have influenced this result since CLIL instruction has been reported to minimize gender

differences in some cases (Fernández Fontecha & Canga Alonso, 2014; Heras & Lasagabaster, 2015). To the best of our knowledge, there are no other studies that have looked into the interaction of gender with proficiency in child learners. Further research would be desirable in order to confirm that these results are maintained in other contexts. The small size of the groups, particularly when the groups are separated by gender, has to be acknowledged as a limitation, and the findings have to be interpreted with caution. Further research should consider larger groups and richer data to confirm the results revealed in this study.

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Appendix A. Supplementary data

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