

Receptive Vocabulary and Learning Strategies in Secondary School CLIL and non-CLIL Learners

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Abstract

In recent years, vocabulary has risen up as a key issue in Second Language Learning (cf. Jiménez Catalán & Terrazas Gallego, 2005; Siriwan, 2007; Boers & Lindstromberg, 2008; Schmitt, 2008, 2010). Moreover, CLIL, the acronym for Content and Language Integrated Learning, as an educational approach in which content subjects are taught through a foreign language, has seen a surge in the different educational systems all throughout Europe. The present piece of research aims to present a study about the use of vocabulary learning strategies and their relation to the receptive vocabulary size of secondary school learners.

In order to explore this issue, two groups (one CLIL and one non-CLIL) of students from Extremadura were asked to answer two different questionnaires: a Yes/No test (Meara, 2010 [1992]) and a vocabulary learning strategies test (adapted from Schmitt, 1997). The data obtained was analyzed with two specific objectives in mind: to look for differences between the learner groups regarding their use of strategies and between their levels of receptive vocabulary. Results show differences between both groups not only in their receptive vocabulary size, but also in their use of vocabulary learning strategies. From the results of this study, it can be concluded that CLIL instruction seems to benefit the acquisition of foreign language and may also have an influence on the use of certain vocabulary learning strategies.

Keywords: CLIL; secondary education; vocabulary; learning strategies.

1. Introduction

Throughout the years, vocabulary acquisition has become an important field within the area of Second Language Acquisition (SLA) research. Traditionally, vocabulary learning had played a secondary role in the main approaches to foreign language teaching. However, since the 1980s, when Communicative Language Teaching became the dominant approach, vocabulary acquisition has become one of the real goals regarding learning a target language. In the 1990s, vocabulary acquisition research began gaining more and more importance and there has been a flood of studies related to vocabulary acquisition since then, thereby proving the importance and the key role that vocabulary plays in foreign language learning (Boers & Lindstromberg, 2008; Jiménez Catalán & Terrazas Gallego, 2005; Milton, 2009; Nation, 2001; Schmitt, 2008).

The last two decades have seen the rise of a new approach to foreign language teaching all throughout Europe: Content and Language Integrated Learning (CLIL). In this approach, language is used as a vehicle through which content subjects are learned. This means that learning vocabulary becomes a real necessity and, consequently, a real aim. For that reason, a number of studies in recent years have investigated learner vocabulary size with respect to CLIL practices (Ruiz de Zarobe, 2008; Jiménez Catalán & Ruiz de Zarobe, 2009; Canga Alonso, 2013a, 2013b, 2015).

Finally, there is growing concern regarding how learners' individual characteristics affect the language learning process. When talking about individual differences in second language acquisition, the dimensions of personality, aptitude, motivation, learning styles, and learning strategies are usually explored (Dörnyei, 2005). Examining the latter, a significant number of studies have focused on how the use of different strategies affects language learning (Jiménez Catalán, 2003; García López, 2003).

However, none of these studies link learner vocabulary level with the types of strategies used for learning vocabulary, nor do they analyze if there is any relationship between being enrolled in a CLIL program and the types of vocabulary learning strategies used. These questions are the main foci for analysis in the present research.

This study is organized as follow. First, it discusses the relevance of vocabulary in SLA, focusing on different aspects related to vocabulary and vocabulary learning. It then moves on to go through the evolution of the use of vocabulary learning strategies. After that, it provides a short account of CLIL as an educational approach, focusing on the panorama in Extremadura. Subsequently, the theoretical framework is presented before moving on to the methodological aspects. Then, it presents the data obtained from two tests, a Yes/No test (Meara, 2010 [1992]) and a vocabulary learning strategies questionnaire (VLSQ, adapted from Schmitt, 1997), that were administered to two groups of secondary school students from Ex-

tremadura (a CLIL group and a non-CLIL group). This data is then examined in order to look for differences in both receptive vocabulary size and in the use of strategies.

2. Vocabulary Learning and a CLIL Approach

It is widely recognized that vocabulary is one of the most important aspects to be mastered when learning a second language (Jiménez Catalán & Terrazas Gallego, 2005; Boers & Lindstromberg, 2008; Schmitt, 2008).

Vocabulary is commonly defined as the “total number of words which (with rules for combining them) make up a language” (Hornby, 1974: 959). It is related to lexical knowledge, but what does knowing a word really involve? Knowing a word does not only mean knowing its meaning or recognizing its written or spoken form, as it is widely believed, but rather it also involves many other aspects. In Schmitt’s words (2010: 3), “a form-meaning linkage is the most basic vocabulary knowledge”, yet this link should only be the first step.

Vocabulary knowledge consists of a number of interrelated aspects. Therefore, some kind of classification among different kinds of vocabulary is needed in order to analyze it. A well-known distinction in vocabulary studies is receptive versus productive vocabulary, as it is a fact that users of a language can usually understand more words than they can use. According to López Campillo (1995: 36), productive vocabulary, also known as active vocabulary, can be defined as “the words learners need to be able to use and understand”, while receptive or passive vocabulary is “the words they need to recognise only”.

This piece of research focuses on receptive knowledge. Bearing in mind the characteristics of the sample (secondary school learners), measuring receptive vocabulary is more suitable since the receptive vocabulary dimension usually precedes the productive one in the lexicon of L2 learners. Due to this fact, their receptive vocabulary sizes are expected to be higher than their productive vocabulary sizes, so it would be more interesting to analyze similarities and differences among CLIL and non-CLIL learners as they relate to this specific aspect of vocabulary.

2.1. Vocabulary Learning Strategies

Vocabulary learning research started gaining relevance due to the importance of vocabulary in the language learning process. Initial interest in this topic was more focused on how the way the learners acted might have affected the language learning process (Schmitt, 1997). As research went beyond this focal point, the term ‘language learning strategies’ emerged with the objective of defining the concept and identifying the most useful strategies. Scarcela and

Oxford (1992: 63) defined them as “specific actions, behaviors, steps, or techniques—such as seeking out conversation partners, or giving oneself encouragement to tackle a difficult language task—used by students to enhance their own learning”. Xhaferi and Xhaferi (2008: 31) defined them as “steps that learners take in order to accomplish learning tasks”.

Several classification systems have arisen subsequently, such as O’Malley and Chamot’s taxonomy or Oxford’s taxonomy, but, according to Van Patten and Benati (2010), the key elements attributed to the strategies must include the following: (1) they involve choice on the part of the learner, (2) they involve conscious selection, (3) they are goal directed, and (4) they are effortful.

As language learning strategies were studied in depth and research on vocabulary progressed, many researchers focused on strategies that were specifically used when learning vocabulary. When talking about ‘vocabulary learning strategies’, the term refers to “any set of techniques or learning behaviours, which language learners reported using in order to discover the meaning of a new word, to retain the knowledge of newly-learned words and to expand one’s knowledge of vocabulary” (Intaraprasert, 2004: 53).

Although different taxonomies can be used when classifying and analyzing vocabulary learning strategies (cf. Gu & Johnson, 1996; Stoffer, 1995; Nation, 2001; Siriwan, 2007; Vlcková, Berger & Völkle, 2013), this study employs Schmitt’s taxonomy. The main reasons for this selection are both its relevance in vocabulary learning research as well as the similarities found between that author’s sample and the one used in this piece of research. Schmitt’s taxonomy is based on Oxford’s classification of language strategies, and it consists of 58 strategies classified into five groups (Schmitt, 1997):

1. Determination strategies: The ways learners individually discover the meaning of an unknown word.
2. Social strategies: Ways to discover new meanings by interacting with others. Social strategies can also be used for learning meanings once they have been encountered.
3. Memory strategies: Also known as mnemonics, Schmitt defines them as “relating the word to be retained with some previously learned knowledge, using some form of imagery, or grouping” (Schmitt, 1997: 15).
4. Cognitive strategies: “Manipulation or transformation of the target language by the learner” (Schmitt, 1997: 16).
5. Metacognitive strategies: “A conscious overview of the learning process and making decisions about planning, monitoring or evaluating the best ways to study” (Schmitt, 1997: 17).

These five groups can be clustered into two more general groups: discovery strategies, comprised of those strategies used to understand the meaning of a new word, and consolidation strategies, which include those strategies used to retain the meaning of a word.

2.2. Content and Language Integrated Learning (CLIL) and Vocabulary

The acronym CLIL (Content and Language Integrated Learning) has seen a surge throughout Europe over the past two decades. The term, coined in 1994, was defined by Coyle, Hood and Marsh (2010: 1) as a “dual-focused educational approach in which an additional language is used for the learning and teaching of both content and language”, or in other words, CLIL is an educational approach in which more than just language is used in the context of the class. As it is dual-focused, it means that it is neither a new form of language education nor a new form of content education, but rather an “innovative fusion of both” (Coyle et al. 2010: 1).

A CLIL approach advocates the use of interactive and experiential learning situations that promote autonomous learning and the development of critical thinking. Moreover, it promotes more contextualized learning that capitalizes on activating prior knowledge to help students to understand the contents. Additionally, it proposes the use of meaningful communicative activities. In that way, language is used for a communicative purpose and is assimilated in a more “natural” way.

Moreover, it has been demonstrated to have beneficial effects on vocabulary learning. Since the use of a CLIL approach started being implemented in Spain, a number of researchers have attempted to analyze whether or not CLIL benefited vocabulary learning in some way. In a very influential study, Ruiz de Zarobe (2008) studied the differences in speech production focusing on items such as pronunciation, vocabulary, grammar, fluency, and content, and demonstrated that CLIL learners outstripped non-CLIL learners in all of those categories. There are also studies that analyze differences in vocabulary size, among which two types can be found. Canga Alonso and Arribas García’s paper (2014) illustrate the first type of studies that mostly focus on analyzing the differences in the productive vocabulary sizes of CLIL and EFL learners. On the other hand, a number of studies have analyzed the receptive vocabulary size, showing that CLIL approaches benefit the receptive vocabulary size when compared to other approaches (Canga Alonso, 2013a, 2013b, 2015; Jiménez Catalán & Ruiz de Zarobe, 2009).

2.2.1. CLIL in Extremadura

This study took place in Extremadura, where the regional Educational Authority set up ‘bilingual sections’ based on CLIL principles over a decade ago in an attempt to promote second language learning. They started to be officially regulated in the 2004-2005 academic year and the number of schools with bilingual sections has been increasing exponentially each year since then, increasing from eight schools in the 2004-2005 academic year to 240 bilingual sections in the 2013-2014 academic year (Panorama Extremadura, 2014).

In order to implement the bilingual sections project efficiently, the educational authorities of the region have established some regulations (Junta de Extremadura, 2011, 2013), such as establishing the foreign languages that can be used (English, French or Portuguese), the number of content areas, the roles of the teachers, and demanding some requirements of the teachers regarding their methodology and language knowledge (for more detailed information, see Alejo & Piquer-Píriz, 2010, 2016a, 2016b).

3. Method

3.1. Research Questions

As mentioned above, this study has two principal objectives: (1) to analyze both the learners' receptive vocabulary size and the use of vocabulary learning strategies, and (2) to explore the possible correlations between those aspects and the kind of educational approach being employed (CLIL vs. mainstream EFL). Specifically, these objectives aim to provide an answer to the following three research questions:

RQ1: Do CLIL learners have a wider range of receptive vocabulary than non-CLIL learners?

RQ2: Is there a relation between the usage of certain vocabulary learning strategies and a having a larger receptive vocabulary?

RQ3: Is there a difference between the vocabulary learning strategies used by CLIL and non-CLIL learners?

3.2. Context

The school used for this study is located in a small town in Extremadura (17,000 inhabitants). Extremadura is a monolingual region with a sparse population located in the southwestern region of Spain on the border with Portugal. Those characteristics have influenced the way in which CLIL programs have been implemented and resulted in, for example, the promotion of learning Portuguese and the implementation of CLIL programs in both rural and urban areas.

Due to the location of this school, it can be considered a rural secondary school. English was chosen as the communication vehicle and students were enrolled in the bilingual section for four years, from the first year of secondary education through their fourth year. This was not the only means of promoting language teaching. In addition to the bilingual section, students were also enrolled in other European programs, such as the Comenius Program, with the objective of using the foreign language for communicative purposes as much as possible.

Regarding the organization of this school, there were three groups of students for each year, of which one (the 'bilingual section' group, using the local terminology) had some sub-

jects taught through English. In order to select those learners who took part in the ‘bilingual section’ program, students had to pass a language level test. This test consisted of a grammar and a listening section, whereas reading and speaking skills were not assessed. However, classes were only split into those groups for subjects taught in the foreign language in order to promote equality among the groups and to avoid streaming.

3.3. Design of the Study

3.3.1. Treatment

This study utilized a convenience sample consisting of 44 third grade secondary education students. Twenty-four students were enrolled in a CLIL program and the other twenty students followed an EFL program.

Most of the members of the CLIL group had been following this program for three years (since they started secondary education), and the subjects they had studied in English were: Physics and Chemistry, Social Science, Music, Technology, and Mathematics. Furthermore, these students had an extra hour of EFL per week. As can be seen in table 1 below, the CLIL group was exposed to approximately 810 more hours of the foreign language than the non-CLIL group. This important advantage should lead to CLIL learners having a larger receptive vocabulary.

TABLE 1

Comparison between CLIL and non-CLIL learners in relation to age and hours of instruction

	CLIL LEARNERS	NON-CLIL LEARNERS
Members	24	20
Age	14-15	14-15
Hours of instruction in the foreign language	CLIL section: 720 hours EFL: 1290 hours	EFL: 1200 hours
Gender	Male: 6 Female: 18	Male: 9 Female: 11

3.3.2. Data Gathering Instruments

Two different tests were used in the study:

In order to measure receptive vocabulary size, a Yes/No test was used. This validated test was developed by Meara and his team in 1992 and consists of 60 words, 20 of which are invented ones.

With regard to the words chosen, Eyckmans (2004) poses that the real words were chosen randomly, whereas the pseudowords were made up following two different methods: (1) changing one or two letters from the original real word and (2) creating “unconventional base plus affix combinations” (Eyckmans, 2004: 27). Testees were asked to mark the words they recognized. In order to get more reliable data, two different versions of the test were used (as suggested by Meara, 2010).

In order to analyze the use of vocabulary learning strategies, a questionnaire was developed in accordance with Schmitt’s taxonomy (1997) that consisted of 21 items selected from the preferred questions in other studies. It was written in Spanish to facilitate understanding and was piloted before being used. Test-takers were asked to give a score from 1 (never) to 4 (always) regarding their use of the strategies displayed.

3.3.3. Data Collection and Analysis

The tests were administered on two different days in order to avoid any possible effect of fatigue or weariness. On the first day, the participants completed the vocabulary learning strategies test and one of the vocabulary tests. On the second day, they were given the second vocabulary test.

As regards the receptive vocabulary size analysis, results will be presented both as percentages and also in relative terms. In order to estimate the amount of words known by the learners, Nation’s formula (1990) was applied. This formula consists of multiplying the result by the total number of words looked up in a dictionary. In this case, as the objective was to analyze the learners’ familiarity with the 2,000 most frequent words, the obtained result will be multiplied by 2,000.

With regard to the analysis of the use of strategies, results will be presented using a Likert-type scale with ranges from 1-4.

4. Results

After having presented the theoretical framework of this study and the methodology used to carry out the research, this section presents the results that were obtained and discusses them below in relation to the research questions posed for the study.

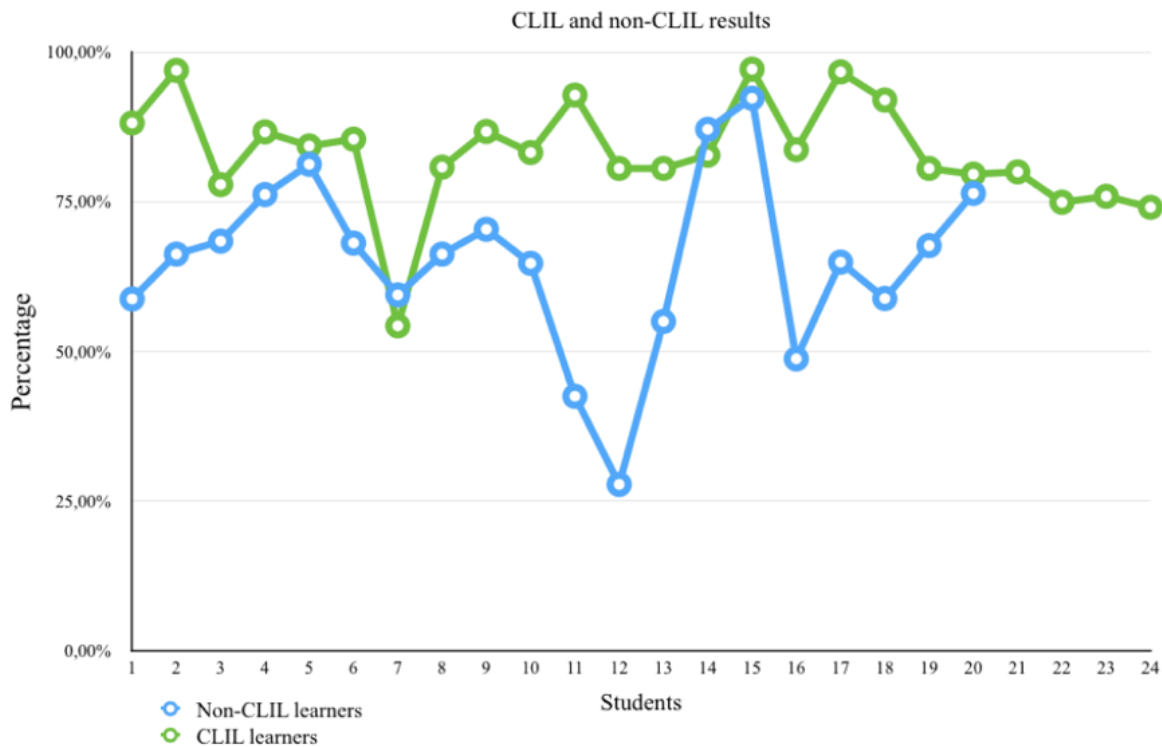
4.1. Do CLIL learners have a wider range of receptive vocabulary than non-CLIL learners?

In order to provide an answer to the first research question, the results will be presented not only as percentages, but also as an estimation of the number of words that learners seem to

know. Figure 1 below shows mastery of the 2,000 most frequent words in the two groups (CLIL and non-CLIL) of students:

FIGURE 1

CLIL and non-CLIL learners' vocabulary tests results



As can be determined by the data, the students' global score had a combined global mean of 74.78% for both groups. Upon separating the groups' scores, a difference between the CLIL and non-CLIL learners can be observed. CLIL students obtained higher results from the tests (83.15%) than non-CLIL students (65.05%) did. In relative terms, these results mean that CLIL learners knew approximately 1,663 words, whereas non-CLIL learners presented a lower result with a mean mastery of 1,301 of the 2,000 most frequent words.

When inferential statistics were applied, a Pearson's r found positive correlations ($N=44$, $p < .05$) between presenting a larger receptive vocabulary size and being enrolled in a CLIL program (.608). Thus, being enrolled in a CLIL program seems to have a clear positive impact on receptive vocabulary size.

As has been pointed out above, there may be different reasons behind this connection. While the clearest reason seems to be the amount of exposure to the foreign language, other factors may have also contributed to those results. CLIL learners were not only exposed to

more hours of L2 input, but also experienced a wider range of vocabulary given that they had to study contents in a foreign language. This situation could have had a positive impact on the development of their receptive vocabulary. In addition, CLIL learners had to pass an exam before being accepted into the CLIL program, so the fact that CLIL learners presented a better starting level could also be a factor.

These results are similar to those obtained from other studies in which the differences between CLIL and non-CLIL students in relation to receptive vocabulary were analyzed (Jiménez Catalán & Ruiz de Zarobe, 2009; Canga Alonso, 2013a, 2013b, 2015).

4.2. Is there a relation between the usage of certain vocabulary learning strategies and having a larger receptive vocabulary?

Moving on to the second research question, the results are shown below (see table 2) as global data for both groups without distinguishing between CLIL and non-CLIL learners.

TABLE 2

The ten most widely used strategies

	DISCOVERY STRATEGIES	CONSOLIDATION STRATEGIES	MEAN	TYPE OF STRATEGY
1		Grouping words together to study them	3.3	Memory
2		Word lists	3.16	Cognitive
3	Analyzing any available pictures or gestures		3.02	Determination
4	Asking teacher for an L1 translation		2.86	Social (discovery)
5	Analyzing affixes and roots		2.8	Determination
6		Written repetition	2.77	Cognitive
7/8		Studying word with pictorial representation of its meaning	2.68	Memory
7/8		Using new word in a sentence	2.68	Memory
9	Analyzing part of speech		2.64	Determination
10	Asking students for meaning		2.63	Social (discovery)

As shown in the table above, the most widely used strategy was ‘grouping words together to study them’, a memory strategy according to Schmitt’s taxonomy, followed by the use of ‘word lists’, a cognitive strategy.

Regarding the relationship between a larger receptive vocabulary and the use of certain vocabulary strategies, results showed that a larger-sized vocabulary was correlated with the use of the following strategies: using new words in a sentence (.567), studying and practicing meaning in groups (.325), grouping words together to study them (.393), and analyzing affixes and roots (.419). Moreover, the less frequently students used the ‘skipping or passing a new word’ strategy, the larger their vocabulary was (-0.345). Finally, the rest of strategies did not show any significant correlations with receptive vocabulary size.

4.3. Is there a difference between the use of vocabulary learning strategies used by CLIL and non-CLIL learners?

In order to provide an answer to the third research question, the learners’ use of vocabulary learning strategies needed to be analyzed more profoundly by separating CLIL and non-CLIL learners.

First of all, it is interesting to compare the differences in the use of discovery and consolidation strategies between CLIL and non-CLIL learners. Both groups made use of discovery strategies more frequently than consolidation strategies. In spite of this fact, table 3 below shows that CLIL learners made use of consolidation strategies more frequently than non-CLIL learners did, while non-CLIL learners made use of discovery strategies more often than CLIL learners did.

TABLE 3

Use of discovery and consolidation strategies by CLIL and non-CLIL learners

STRATEGIES	CLIL LEARNERS	NON-CLIL LEARNERS
Discovery strategies	2.56	2.67
Consolidation strategies	2.35	2.13

This difference was statistically significant (sig. <0.5) and may be related to the fact that CLIL learners do not need to discover the meaning of as many words. Since they present a larger receptive vocabulary size from the start, they may already know the word; they only need to consolidate the word knowledge.

When analyzing the strategies by grouping them into Schmitt’s six main groups, the results showed that, although the most widely employed strategies were cognitive ones for both

groups, there was a significant (sig. <0.05) difference in the use of these strategies: CLIL students used cognitive strategies significantly more frequently in comparison to non-CLIL learners.

Regarding the use of the rest of the strategies, some differences were found and are presented below in table 4. Determination strategies were the second most widely used for both groups, but learners did not make use of the rest of strategies in the same way. CLIL learners' memory strategies (2.38) were the third most widely used strategies, followed by social strategies for discovering new meanings (2.33), metacognitive (2.2), and social consolidation strategies (2.17). For non-CLIL learners, the third most widely used strategies were social strategies for discovering new meanings (2.6), followed by social for consolidation strategies (2.19), memory strategies (2.28), and metacognitive strategies (2.05).

TABLE 4

Use of strategies organized in groups

GROUP STRATEGY	MEAN	CLIL LEARNERS	NON-CLIL LEARNERS
Determination strategies <ul style="list-style-type: none"> Analyzing any available pictures or gestures Analyzing affixes and roots Analyzing the part of speech Checking for L1 cognate Using a bilingual dictionary 	2.73	2.76	2.72
Cognitive <ul style="list-style-type: none"> Saying new word aloud when studying Written repetition Word list 	2.84	3.01	2.63
Social strategies (discovery strategies) <ul style="list-style-type: none"> Asking teacher for an L1 translation Asking students for meaning Asking teacher to paraphrase or for a synonym of the new word 	2.43	2.33	2.60
Memory <ul style="list-style-type: none"> Studying with the pictorial representation Connecting word with personal experience Connecting word with synonyms and antonyms Grouping words together to study them Using new words in a sentence Using physical action 	2.29	2.38	2.18
Metacognitive <ul style="list-style-type: none"> Using English-language media Skipping or passing new word Continuing to study the word over time 	2.18	2.2	2.05
Social (consolidation strategies) <ul style="list-style-type: none"> Practicing in groups 	2.14	2.17	2.19

4.3.1. Analysis of Discovery Strategies

In relation to the discovery strategies (see table 5 below for details), it can be said that non-CLIL learners showed that the strategy they used the most was ‘analyzing any available pictures or gestures’ (3.05), while results showed that the strategy most used among CLIL learners was ‘analyzing affixes and roots’ (3.04).

TABLE 5

Comparison of CLIL and non-CLIL learners’ use of discovery strategies

STRATEGIES	CLIL LEARNERS	NON-CLIL LEARNERS
Analyzing the part of speech	2.37	2.95
Analyzing affixes and roots	3.04	2.5
Checking for L1 cognate	2.67	2.5
Analyzing any available pictures or gestures	3	3.05
Using a bilingual dictionary	2.58	2.6
Asking teacher for an L1 translation	2.75	3
Asking teacher to paraphrase or for a synonym of the new word	1.67	1.95
Asking students for meaning	2.46	2.71

According to the results of the tests, although there were differences in the use of all the strategies, there were only two differences that could be highlighted as significant (sig. <.05): ‘analyzing the part of speech’ (.036) and ‘analyzing affixes and roots’ (.02). In other words, CLIL learners used the strategy ‘analyzing affixes and roots’ more frequently, while non-CLIL learners employed ‘analyzing the part of speech’ more often than CLIL learners.

4.3.2. Analysis of Consolidation Strategies

In the analysis of the use of consolidation strategies, clear differences were found between CLIL and non-CLIL learners (see table 6). A comparison of their preferred vocabulary learning strategy shows that CLIL learners’ most widely used strategy was the use of word lists, a cognitive strategy, while non-CLIL learners tended to group words together to study them, a memory strategy, more frequently than the rest of the strategies. The two groups did not have a common least widely used strategy either. For CLIL learners, this strategy was ‘skipping or passing new words’, while for non-CLIL learners the least used strategy was ‘connecting word with synonyms and antonyms’.

TABLE 6

Use of consolidation strategies by CLIL and non-CLIL learners

STRATEGIES	CLIL LEARNERS	NON-CLIL LEARNERS
Studying and practicing meaning in a group	2.2	2.05
Studying word with pictorial representation of its meaning	2.4	3.05
Connecting word to a personal experience	1.9	1.7
Connecting the word to its synonyms and antonyms	1.9	1.65
Grouping words together to study them	3.4	3.2
Using the new word in a sentence	3.1	2.15
Using a physical action when learning a word	1.6	1.35
Saying the new word aloud when studying	2.6	2.6
Written repetition	3	2.5
Word lists	3.5	2.8
Using English-language media	2.5	2.1
Skipping or passing new word	1.7	2.3
Continuing to study word over time	2.3	2.16

As for the differences in the use of consolidation strategies explained above, according to the results of Kolmogorov-Smirnov test, there were significant differences (sig. <.05) between CLIL and non-CLIL learners in the use of the following strategies: 'skipping or passing new words' (.039), 'studying word with pictorial representation of its meaning' (.019), 'using word lists' (.019), and 'using new word in sentences' (.01). This means that, on the one hand, CLIL learners make use of visual aids (studying a word with pictorial representation of its meaning), word lists and creating sentences which containing the new word more frequently. On the other hand, non-CLIL learners skipped over new words more often.

5. Discussion

This study has attempted to assess how the use of different language teaching approaches may influence the vocabulary size and the strategies used to acquire it. The two teaching approaches compared were a CLIL approach and an EFL approach, and they were compared and contrasted with regard to vocabulary size and the use of VLSs.

The results of this study seem to show that, first of all, the use of a CLIL approach influences receptive vocabulary size. CLIL learners outperformed non-CLIL learners in terms of vocabulary level, though said performance is likely due to a number of different factors. Of those factors, the most crucial appears to be that CLIL learners received approximately 800 additional hours of foreign language input than non-CLIL learners. However, they are not only exposed to more input, but also the type of input differs from that received in the English as a Foreign Language (EFL) classroom; it includes academic and technical vocabulary since CLIL students are learning the content subjects of Physics and Chemistry, Social Science, Music, Technology, and Mathematics in English. Finally, CLIL learners had to have a minimum level of proficiency in the foreign language before beginning a CLIL program since they had to pass an exam for acceptance into the bilingual section. Although this result was expected, it is supported by the statistical analysis and is similar to the results found in previous research on the differences between CLIL and non-CLIL learners (Canga Alonso, 2013a, 2013b, 2015; Jiménez Catalán & Ruiz de Zarobe, 2009).

Secondly, the use of a CLIL approach also seems to influence the selection of strategies used. It was observed that both groups, CLIL and non-CLIL, make use of the strategies in different ways. Although both groups use discovery strategies most frequently, when the data is analyzed more thoroughly, it can be seen that CLIL learners use consolidation strategies more often than non-CLIL learners do. In contrast, non-CLIL learners apply discovery strategies with more frequency than do those from the CLIL group. This result could be related to the fact that CLIL learners may already be familiar with the new word since they present better results in receptive vocabulary. Thus, they do not need to discover what it means, but rather consolidate the meaning. Non-CLIL learners have a lower level of receptive vocabulary, so they need to first make use of discovery strategies to understand the meaning before learning and retaining the meaning.

Furthermore, this is not the only observed difference regarding the use of strategies. CLIL learners also made more use of visual strategies than non-CLIL learners did. A CLIL approach advocates for the use of visual aids in order to facilitate understanding and learning among learners. Therefore, this may result in greater use of this type of strategy ('studying a word with the pictorial representation of its meaning') by CLIL learners in order to remember the meaning of new words. This statement cannot be extrapolated to the use of visual aids to discover the meaning of a word due to the fact that both groups used visual strategies in the same way.

Moreover, the fact that CLIL learners 'skip' fewer unknown words is quite significant. Given that these learners are exposed to more foreign language input and need to understand what that input means in order to learn the content subjects, the way they face this challenge leads to their having a greater receptive vocabulary as well. This could also be a consequence of the CLIL approach, as this approach includes the use of scaffolding techniques in which learners are encouraged to confront the unknown words. In the same vein, CLIL learners are

taught in a more contextualized way since they are required to understand and retain new knowledge given in a foreign language. Therefore, to help them understand more easily, teachers make use of context. Since students are learning in that way, they may feel more secure when learning the meanings of new words in a less isolated way, but rather by relating the word to an example (in this case, context).

Significant differences in the use of cognitive strategies (saying new words aloud when studying, the use of written repetition, and word lists) by CLIL and non-CLIL learners were also found. Nevertheless, these differences should be more deeply analyzed since, although word lists are promoted in a CLIL approach, neither the use of spoken nor written repetition is specifically encouraged. Therefore, it would be interesting to carry out a more concrete study to determine the reasons behind why CLIL and non-CLIL learners employ said strategies in different ways.

In addition, it could also be stated that, in light of the results, the use of a CLIL approach has an effect on the way learners perform when learning languages. The data shows that non-CLIL learners ask their teachers about word meanings more frequently. One of the main objectives of a CLIL approach that may be related to the results of this study is its promotion of developing learner autonomy in order to help students become more independent when accessing and utilizing new information. Since CLIL learners are more autonomous, they demand less help from the teacher in the process of discovering new meanings. Additionally, the results obtained tend to show that CLIL students reflect more on the properties of language than non-CLIL learners do. They relate new words to antonyms and synonyms and group words together analyzing connections among them in order to remember new meanings of words as well as analyze suffixes and roots in order to discover those meanings.

Finally, when comparing our data with that of similar studies, it is important to highlight that our results were significantly different from the results obtained by Schmitt. Schmitt's findings showed that students used more strategies related to the written mode. In contrast, those who were tested in the present study used strategies more closely related to semantic fields, networks, etc. Considering that those tested in Schmitt's research had the same age as those in the present study, we cannot attribute the difference to age factor. Conversely, several reasons will be suggested: for instance, the use of different alphabets requiring Japanese learners to learn a new alphabet or the difference in the objectives of the approach. Whereas CLIL learners learn language in order to learn contents, Japanese learners aim to improve their knowledge of the language itself.

6. Conclusions

In light of the results of this study, it can be concluded that there are clear differences in receptive vocabulary sizes given that CLIL learners outperformed non-CLIL learners in

receptive vocabulary level tests. These results match other studies that analyze CLIL and non-CLIL learner differences (Canga Alonso, 2013a, 2013b, 2015; Jiménez Catalán & Ruiz de Zarobe, 2009). Nonetheless, this was an expected outcome since, as Jiménez Catalán and Ruiz de Zarobe (2009: 88) point out, the amount of exposure to the foreign language is not the same for both groups. Another possible reason for this difference is that CLIL learners had to pass an exam beforehand in order to enter the bilingual section and, thus, this exam could act as a filter. The better students in terms of foreign language knowledge were those who were able to enroll in the bilingual section. Finally, this difference may also be attributed to the use of CLIL instruction as it seems to have an influence on not only the size of receptive vocabulary, but also on how CLIL and non-CLIL learners make use of vocabulary learning strategies.

Taking into account the type of instruction, there is a clear distinction in the use of strategies. CLIL learners make significantly more use of consolidation strategies, while non-CLIL learners use more discovery strategies. This may be related to the fact that CLIL learners seem to only require the consolidation of meanings, whereas non-CLIL learners are still in the process of 'discovering' new words. In addition, both groups make different use of some specific vocabulary learning strategies, and this may be explained through their relation to their respective educational frameworks. A CLIL approach promotes the use of some specific strategies, such as the use of visual aids and those related to learner autonomy and metalinguistic awareness. Nonetheless, there are other results that could not be related to the CLIL approach. Non-CLIL students outperformed CLIL students in the use of social strategies and it cannot be attributed to CLIL approach characteristics given that a CLIL approach encourages the use of social strategies to learn, so it would be interesting to study why this happened by carrying out more in-depth research.

In relation to the use of strategies, there seems to be evidence to state that the use of certain strategies ('using new words in a sentence', 'studying and practicing meaning in a group', 'grouping words together to study them', and 'analyzing affixes and roots') leads to developing a larger receptive vocabulary. In the same way, the use of certain vocabulary learning strategies ('skipping or passing new words') correlates with a lower receptive vocabulary level.

From the results of this study, it can be concluded that CLIL instruction seems to benefit the acquisition of foreign language receptive vocabulary and influences the use of certain vocabulary learning strategies although other studies with more representative samples to analyze the differences among groups are needed to further corroborate these results. It would also be interesting to include observational research and to explore the differences among teaching materials given that both of these factors, the way teachers carry out their lessons and the materials used, influence and have a strong overall effect on the input that is received by learners.

7. Works Cited

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