How a CLIL approach may affect the size of receptive vocabulary and the use of vocabulary learning strategies: An empirical study focused on Extremaduran secondary learners

IRENE OLGA CASTELLANO RISCO

Profa. Dra. Ana Piquer Píriz

Departamento de Filología Inglesa

Máster en Educación Bilingüe para Primaria y Secundaria

Table of contents

Abstract

Vocabulary has risen up as a key issue in Second Language Learning. Moreover, CLIL, as an educational approach in which content subjects are taught through a foreign language, has irrupted as a reality in the recent years, relying on its reported benefits in relation to vocabulary learning in the foreign language used. The present MA dissertation presents 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 (a CLIL group and non-CLIL group) of Extremaduran students were asked to answer two different questionnaires: A Yes/No test and a vocabulary learning strategies test. The data obtained were analyzed following two specific purposes: Looking for any differences in the use of strategies by CLIL and non-CLIL learners and for any relation between the use of vocabulary learning strategies and their levels of receptive vocabulary. The results show that there seems to be differences between both groups not only in the receptive vocabulary size but also in the use of vocabulary learning strategies.

Key words: vocabulary learning strategies, CLIL, receptive vocabulary.

Resumen

Actualmente, el conocimiento de vocabulario se ha erigido como un aspecto clave en la adquisición de una segunda lengua. A su vez, AICLE, como enfoque educativo en el que distintas material no lingüísticas se enseñan utilizando una lengua extranjera, ha irrumpido en las aulas en los últimos años como una realidad, basándose para ello en los beneficios demostrados en lo referente a adquisición de vocabulario. Este Trabajo Final de Máster presenta un estudio sobre el uso de estrategias de aprendizaje de vocabulario y su relación con el nivel de vocabulario receptivo de los alumnos de Secundaria. Para llevar a cabo este análisis, se le ha pedido a dos grupos, uno AICLE y uno no AICLE, que respondieran dos cuestionarios: un test de estrategias de vocabulario y un test de vocabulario receptivo (Yes/No test). Los datos obtenidos fueron analizados teniendo en cuenta dos propósitos: analizar diferencias en el uso de estrategias de aprendizaje de vocabulario por alumnos AICLE y no AICLE, y buscar relaciones entre el uso de ciertas estrategias de vocabulario y el nivel de vocabulario receptivo de los estudiantes. Los resultados obtenidos muestran que existen diferencias entre ambos grupos no solo en el nivel de vocabulario receptivo, sino también en el uso de estrategias de aprendizaje de vocabulario.

Palabras claves: estrategias de aprendizaje de vocabulario, AICLE, vocabulario receptivo.

1. Introduction

Second Language Learning research has evolved throughout the years providing different approaches to Second Language Learning. For several decades, vocabulary learning has played a secondary role in the main second language learning approaches.

For example, as is well-known, one of the most best-known methods, the Grammar-translation approach, focused on morphology and syntax, specially in written skills, while vocabulary was learned by memorizing in order to help translations. As oral skills became more important in Second Language Learning, the Grammar-Translation approach was pushed into a second place, and Audiolingualism became the dominant approach. This approach, based on Behaviourism theory, gave more importance to fluency with accuracy; in order to achieve that fluency, it proposed the use of dialogues and drills. Through memorizing them, students were able to learn vocabulary.

But, since the Communicative Language Teaching approach rose up as the dominant approach in the 1980s, vocabulary acquisition has become a real aim when learning a target language. In the 1990s vocabulary acquisition research started to be more and more important, as the same time as the idea of students acquiring vocabulary from the context was becoming more and more accepted. Since that moment, and up to now, studies of vocabulary acquisition flooded, proving the importance and the key role that vocabulary plays in foreign language learning (Boers & Lindstromberg, 2008).

In the last two decades, a new approach to foreign language teaching has risen up in all throughout Europe: Content and Language Integrated Learning (CLIL). In this approach, language is used as a vehicle to learn content subjects. CLIL provides real input for the leaner (Cangas Alonso, 2013), so, learning vocabulary becomes a real aim, as it is essential for reading and comprehending texts and for favouring communication. For that reason, in recent years, a number of studies have investigated the vocabulary size, linking it with the CLIL practice (Ruiz de Zarobe, 2008; Jiménez Catalán & Ruiz de Zarobe, 2009; Cangas Alonso, 2013).

1.1. Justification

The CLIL approach has become a reality in the Spanish educational system. But, since this approach started to be implemented, many voices have been raised for both, defending its benefits but also for highlighting the backwards. In the face of those voices against the implementation of CLIL approach, many scholars try to give empirical evidence of those benefits, focusing on different aspects of language learning such as receptive vocabulary (Cangas Alonso, 2013).

In the last decades, there has been a concern about how learners' individual characteristics affect the language learning process. When talking about individual differences in second language acquisition, we refer to personality, aptitude, motivation, learning styles and learning strategies (Dörnyei, 2006). Focusing on the last point, 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 learners' vocabulary level with the type of strategies used for learning vocabulary; nor analyze if there is any relationship between the fact of being enrolled in a bilingual section with the types of vocabulary learning strategies used. These questions are the main focus of analysis in the present MA dissertation.

This MA dissertation presents a study of the use of vocabulary learning strategies by CLIL and non-CLIL learners. It first outlines the importance of the vocabulary acquisition in the second language acquisition, following by the evolution of the use of vocabulary learning strategies and ending with the explanation of the reality of the CLIL approach in Extremadura. Then, it presents the data obtained from two tests conducted with two groups of Extremaduran students in secondary education (a CLIL and a non-CLIL group). These data are analyzed, looking for relations between the use of vocabulary learning strategies and the fact of being enrolled in a CLIL section, the use of vocabulary learning strategies and the size of receptive vocabulary and the size of receptive vocabulary and the fact of being enrolled in a CLIL section. Finally, some conclusions about the use of vocabulary learning strategies in secondary CLIL and non-CLIL learners are drawn.

1.2. Aims of the study

In this study, the main aims are:

1. To analyze the differences between CLIL and non-CLIL learners in relation to receptive vocabulary.

2. To find relations between the use of some particular vocabulary learning strategies and vocabulary learning success.

3. To study the differences between CLIL and non-CLIL learners in relation to the use of vocabulary learning strategies.

1.3. 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 better size of receptive vocabulary?

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

2. Theoretical Framework

2.1. The Importance of Vocabulary in a Second Language (L2)

It is widely recognized that vocabulary is one of the most important aspects to master when learning a second language (Jiménez Catalán & Terrazas Gallego, 2005; Boers & Lindstromberg, 2008; Schmitt, 2008). A lack in vocabulary knowledge can cause problems for students to express themselves, their thoughts or feelings, as words are the tool used by learners to think and express ideas (Schmitt, 2010). According to Siriwan (2007) although both, grammar and vocabulary, are essential in good language learning, vocabulary is much more important.

Vocabulary is commonly defined as *"total number of word which (with rules for combining them) make up a language"* (Hornby, 1974, p. 959). It is related to lexical knowledge. So, taking this definition into consideration, what does 'knowing a word' mean? In the literature, there are many different definitions of 'word knowledge', what shows the complexity of the concept.

On the one hand, Laufer (1990, 1991) suggests that word knowledge involves learning the following features: Word form, word structure, syntactic behaviour, meaning and lexical relation of the word with other words.

On the other hand, Taylor, as cited in López Campillo (1995), suggests that word knowledge implies the knowledge of: Frequency of occurrence, style, register, dialect, semantic and syntactic collocations, morphology, semantics, polysemy and its translation.

For Nation (2005), word knowledge includes: Knowledge of written and spoken form, knowledge of meaning, and knowledge of use. The last one can be divided into knowing the grammatical functions, collocations and constrains on uses.

Finally, Schmitt (2010) makes use of Nation's definition of 'knowing a word' to emphasize the importance of the context in the process of learning, as the number of exposures is a key aspect: The more the learner uses and listens to a word, the faster he or she will learn it.

As has been pointed out before, when learning a second language, vocabulary has an important role, so it is important to know what it consists of. After all the previous revision,

what can be taken as conclusion from these definitions is that knowing a word does not mean just knowing its meaning or recognizing its written or spoken form, as it is widely believed, it involves many other aspects. In Schmitt's words (2010, p. 3), "*a form-meaning linkage is the most basic vocabulary knowledge*", but this link should be only the first step.

2.1.1. Productive and receptive vocabulary.

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. But even though many studies use both the terms 'productive vocabulary knowledge' and 'receptive vocabulary knowledge', these terms are not simple to define.

According to López Campillo (1995, p. 36) productive, also known as active, vocabulary can be defined as "*the words learners need to be able to use and understand*" and receptive or passive vocabulary is *"the words they need to recognise only"*. But, although this seems to be a clear distinction, some authors, such as Pignot Shahov (2012), point out that this is not as simple as it seems to be at first sight.

There is a lack of consensus about productive and receptive vocabulary. For some authors, such as Laufer and Goldstein (2004) or Teichroew, cited in Pignot Shahow (2012), receptive and productive knowledge are placed on a continuum, so when learning a word, the passive knowledge becomes productive as the learner goes beyond the lexical item.

In general, some basic skills are related to each kind of knowledge; in that way, productive knowledge is related to speaking and writing, while receptive knowledge is associated with listening and reading (Laufer & Goldstein, 2004). But as can be observed, when a learner is listening or reading he or she also displays productive knowledge.

Once the main differences between productive and receptive vocabulary have been clarified, it is important to point out that the present piece of work will be focused on receptive knowledge. Bearing in mind the characteristics of the sample (secondary school learners), measuring receptive vocabulary is more suitable, due to the fact that receptive vocabulary is the first vocabulary knowledge learnt, the receptive vocabulary size would be higher than productive vocabulary size, so it would be more interesting to analyze similarities and differences among CLIL and non-CLIL learners.

2.1.2. Measuring vocabulary size.

Measuring vocabulary size involves counting lexical items for different purposes, such as, finding out the number of items a learner has acquired, or discovering how many words are necessary to understand a text (Schmitt, 2010).

So, with this objective in mind, the first thing that should be set is the unit of measure. According to Schmitt (2010), there are different items that can be used for measuring, and the results will vary depending on the unit used. In his opinion, the main ones are:

1. Tokens and types: Tokens can be defined as the number of words that compose a text, while types are the number of different words.

2. Word forms: It is the easiest way of counting, as the only thing the researcher has to do is counting each word separately.

3. Lemmas: They can be defined as "groups of related word forms within a word class" (Schmitt, 2010, p. 189). The main reason for using lemmas when measuring vocabulary size is that there is strong evidence that the mind stores the base form of a lemma and then adds suffixes and prefixes when they are needed.

4. Word families: Groups of words which are semantically related. They are the most difficult items to use when counting, as it is difficult to decide whether the word belongs to a word family or not.

Now the most important units of measure have been presented, it is necessary to move on to the testing instruments used for measuring vocabulary size (Schmitt, 2010), important in the present paper owing to the need of measuring the receptive vocabulary level of testees:

1. Vocabulary Levels Test (VLT): It is the most widely used vocabulary test in the English as a second language (ESL) context. Designed by Nation in 1983, it is a form recognition test, in which there are different clusters of items, and each of them contains three definitions and six options. The interviewee has to match the definitions with the correct word. It focuses on vocabulary at four frequency levels which are thought to be necessary for achieving key goals: Engaging in a daily conversation (2,000 word families), enabling initial access to authentic reading (3,000 word families), enabling independent reading of authentic material (5,000 word families) and enabling advanced usage of a language

(10,000 word families). Furthermore, there is a section in which academic language is measured, although it is not frequency-based.

2. Vocabulary Size Test (VST): It is a multiple choice meaning recognition test, in which vocabulary is broken into 14 frequency bands. The words have been chosen from Collins English Dictionary.

3. Checklist tests: It was a test created by Meara and his team in 1992 and is also known as Yes/No test. Meara (1994) describes it as a test in which the testee has to mark the word that he or she knows. It consists of a set of words, some of which are invented ones, so, in that way, the researcher ensures that the testees have not marked words that they do not know.

The following table summarizes the advantages and disadvantages of using each of those testing instruments.

Table 1

Advantages and disadvantages of vocabulary tests

	Advantages	Disadvantages
Vocabulary Level Test	Short definitions. Designed to tap into the initial stages of form-meaning link. Clusters designed to minimize aids to guessing.	Not designed to provide an estimate person's overall vocabulary size.
Vocabulary Size Test	It intends to measure overall vocabulary size.	It is too long to be administered in class.
Checklist tests	Easy to take in class. Quick to take. Many items can be included.	No direct demonstration of knowledge, there can be a problem with the examinees' variability.

So, taking into account all these considerations, the test that was chosen to be used in this study was a checklist test (Yes/No test), because it is the easiest test to take in class, enabling to measure the largest number of items in the shortest time.

2.2. Learning Strategies

The research in the area of learning strategies started as a movement interested in studying how the way the learners act might affect the language learning process (Schmitt, 1997). As it went beyond, many definitions of learning strategies emerged. Scarcely and Oxford (1992, p. 63), as cited in Oxford (2003, p. 2) 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"*. Therefore, Xhaferi and Xhaferi (2008, p. 31) defined them as *"steps that learners take in order to accomplish learning tasks"*.

Cohen (1996, p. 2) defines learning strategies as *"the steps or actions selected by learners either to improve the learning of a second language, the use of it, or both"* making the distinction between the second language *learning* and second language *use* strategies. The main aim of the first kind of activities is assisting the learners in improving their knowledge in a target language, while language use strategies focus on employing the language the learners have in their interlanguage.

According to Van Patten and Benati (2010) the key elements attributed to the strategies 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.

Since learning strategies started to be studied, one of the main aims was to identify these strategies used by good language learners. Naiman, Fröhlich, Stern and Todesco (1978/1995), as cited in Cook (2001) found six strategies used by good language learners. For them, good language learners:

1. Find a learning style that suits them.

2. Involve themselves in language-learning process.

3. Develop an awareness of language both as system and as communication.

4. Pay constant attention to expanding their language knowledge.

5. Develop the second language as a separate system.

6. Take into account the demands that second language learning imposes.

As the research provided scholars with a wide number of different strategies, researchers started to look for a way to classify them. As a result, there are lots of foreign language learning strategies classifications, which differ in a number of points, such as, whether they provide a detail categorization of single strategies or the degree of clarity or the research methods used for obtaining the strategies. Furthermore, it is possible to find even more differences depending on the type of researchers, as Vlckova, Berger and Völkle (2013, p. 5) point out, "*classifications by psychologists, linguists, and education scientists are often different, involving different definitions and implying different theories of second language acquisition*". So, bearing this in mind, the two most widely known classifications are going to be explained in more detail:

1. O'Malley and Chamot's taxonomy (1990)

O'Malley and Chamot (1990) suggested that 24 strategies can be identified in second language learners. In order to select the strategies, they applied Anderson's model of mental operation in learning a skill to language learning (Kudo, 1999). As a result, they identified three main groups of strategies:

1. Metacognitive strategies: These kinds of strategies promote the reflection of the own way of thinking so the student can plan the way of learning. They include higher order executive skills, as planning for, monitoring or evaluating the success of a learning activity. Examples of these strategies are planning, monitoring, analyzing and assessing learning.

2. Cognitive strategies: They are related to what to learn, the steps a student must follow to learn. They operate directly on incoming information, manipulating it in ways that enhance learning. According to O'Malley and Chamot, these strategies include rehearsal, organization, inferencing, summarizing, deducing, imagery, transfer and elaboration.

3. Social and effective strategies: They represent a broad grouping that involves either interaction with another person or ideational control over affect. Examples include asking for clarification, asking teachers or pears, self-talk and self-encouragement.

2. Oxford's taxonomy (1990)

In 1990, Oxford provided an example of taxonomy of learning strategies as a result of a study she was carrying out. She published a method for finding out strategies called the Strategy Inventory for Language Learning (SILL), in which she divided the strategies into:

Table 2

Oxford's strategies classification

	Type of strategy	Definition
Direct strategies	Memory strategies	Learners use strategies for storing information
	Cognitive strategies	Used to deliberate of what they are learning
	Compensation strategies	They help learners to overcome lack of knowledge
Indirect strategies	Metacognitive strategies	Used by learners to regulate their own language learning
	Affective strategies	They have to do with learners' emotion
	Social strategies	They promote opportunities to practice the target language

As a conclusion, it can be observed that the research on learning strategies have been developed throughout the years, moving from studying strategies used only by "good learners" to a more concrete classification of the strategies used by all type of learners. This can be considered the starting point when studying vocabulary learning strategies, as the vocabulary researchers used them in their studies to analyze the strategies used for learning vocabulary by second language learners. Bearing this in mind, in the next section some of the most important vocabulary learning strategies will be analyzed in depth.

2.2.1. Vocabulary learning strategies.

As language learning strategies were studied in depth and the research on vocabulary progressed, many researchers focused on strategies 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, p. 53). Siriwan (2007, p. 19) defined vocabulary learning as *"learning a package of sub-sets of words as well as learning how to use strategies to cope with unknown or unfamiliar words"*.

Several classification systems have been proposed, so it is important to revise them and analyze the most suitable for the piece of research proposed. The following taxonomies of vocabulary learning strategies are extracted from Siriwan's study (2007).

1. **Gu and Johnson's classification** (1996):

They clustered vocabulary learning strategies used by advanced Chinese learners into eight categories:

1. Beliefs about vocabulary learning.
2. Metacognitive regulation.
3. Guessing strategies.
4. Dictionary strategies.
5. Note-taking strategies.
6. Memory strategies rehearsal.
7. Memory strategies (encoding).
8. Activation strategies.

2. **Stoffer's classification** (1995)

She developed the "Vocabulary Learning Strategy Inventory" (VLSI), a classification in which 53 items were grouped into the nine following categories:

1. Strategies involving authentic language use.
2. Strategies used for self-motivation.
3. Strategies used to organise words.
4. Strategies used to create mental linkages.
5. Memory strategies.
6. Strategies involving creative activities.
7. Strategies involving physical action.
8. Strategies used to overcome anxiety.
9. Visual/auditory strategies.

3. Schmitt's Taxonomy (1997)

It has been considered the most appropriate taxonomy developed for learning words in English. It is based on Oxford's taxonomy of learning strategies, the research done with Japanese learners and some recommendations by teachers. In order to compile his taxonomy, Schmitt first analyzed different types of books; after that, Japanese intermediate level students were asked to write a report on how they studied English vocabulary. Third, students were asked to review the list and add strategies they thought useful. Finally, with all the strategies defined, Schmitt had to organize the results and he decided to base it on Oxford's taxonomy although he decided to change some aspects of it.

The final taxonomy consists of a list with 58 strategies classified into five groups (Schmitt, 1997):

1. Determination strategies: The way learners discover individually the meaning of an unknown word.

2. Social strategies: Ways to discover new meanings by interacting with others. Social strategies can be used also for learning that 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, p. 15).

4. Cognitive strategies: "Manipulation or transformation of the target language by the learner" (Schmitt, 1997, p. 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, p. 17).

These five groups can be clustered in two more general groups: Discovery strategies (composed by determination strategies and social strategies) and consolidation strategies (which include social strategies, memory strategies, cognitive strategies and metacognitive strategies). As can be seen in the figure below, social strategies are in both groups of strategies, as learners can discover the meaning of a new word by asking to others, but they can also learn the meaning in the same way, but each group of social strategies consists of different strategies.
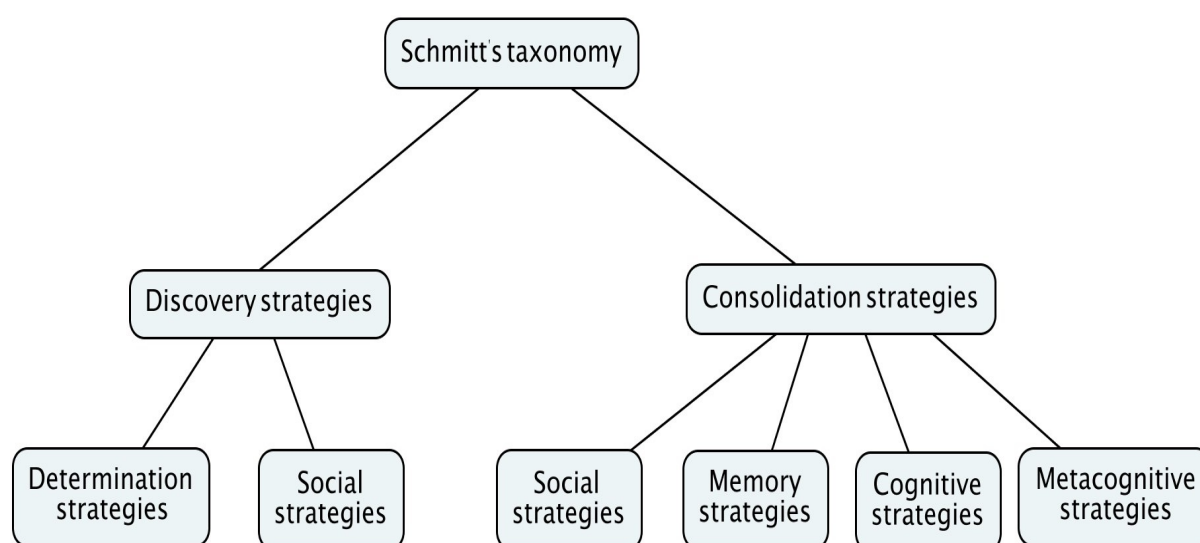

Figure 1: Schmitt's taxonomy.

4. Nation's Taxonomy (2001):

In 2001, Nation proposed a taxonomy in which the strategies are divided into three general groups: Planning, source and processes, each of which contains a subset of key strategies.

Table 3

Nation's strategies classification

General groups	Definition	Strategies
Planning	"Deciding on where, how and how often to focus attention on the vocabulary item"	Choosing words
		Choosing aspects of word knowledge
		Choosing strategies and planning repetition
Source	"Getting information about the word"	Analyzing the word
		Using word parts
		Learning from word cards
		Using context
		Using a dictionary
		Consulting a reference source in L1 and L2
		Using parallels in L1 and L2
Processing	"Establishing word knowledge"	Noticing
		Retrieving
		Generating

Source: Siriwan, 2007, p. 55.

As can be seen, all the taxonomies cited above may differ in terms of strategies they categorize, but all of them provide a list of widely applicable vocabulary learning strategies. The main differences are in relation to two main aspects: The methods used by the researchers in order to obtain the data (interviews, questionnaires, observation...) and classification criteria of the strategies (Vlckova et al., 2013). Furthermore, it should be taken into account that depending on the taxonomy chosen, some strategies can be included in one group or in another, so it is really important to analyze it in depth in order to choose the taxonomy that fits better with the research.

In the present piece of research, Schmitt's classification is used, as it is widely used and it was done by analyzing data of a sample which presents similarities with the sample used in this study.

2.2.2. Review of studies analyzing vocabulary learning strategies use.

In the literature, there are lots of studies related to vocabulary learning strategies used by students. In this section, some of them will be presented, classified into two groups:

-Those in which the main aim is identifying the most used strategies (see table 4 below for an overview).

Table 4

Studies analyzing the most-used strategies

Study	Methodological aspects of study	Learners' characteristics
Lawson and Hogben (1996)	- Think-aloud procedure - Interviews	- Tertiary level
	Results: Most widely used strategies are: Repetition of the new words and their meanings.	
Gu and Johnson (1996)	- Vocabulary Learning Strategies Questionnaire - Gu and Johnson's classification	- Tertiary Level
	Results: Most useful strategies: Guessing from context, using dictionary, paying attention to a word form and using new learned words in sentences.	
Schmitt (1997)	- Vocabulary Learning Strategies Questionnaire - Schmitt's taxonomy	- Adults - Secondary and tertiary level - Students of a L2.
	Results: Discovery of a new word's meaning: Bilingual dictionary, guessing from textual context and asking classmates. Consolidating a word: Verbal repetition, written repetition, study of spelling, say new word aloud, study the sound of a word and word lists.	
García López (2003)	- Self-observation - Levin and Pressley (1985) taxonomy	- Secondary level
	Results: Most used strategies: Repetition strategies and semantic strategies. Less used strategies: Mnemonic strategies.	

Source: Schmitt (1997), García López (2003) and Siriwan (2007).

-Those in which the strategies are related to other variables such as gender, language proficiency or age.

Table 5

Studies analyzing strategies usage and other variables

Study	Methodological aspects of study	Learners' characteristics
Jiménez Catalán (2003)	- Vocabulary Learning Strategies Questionnaire - Relation to other variables: Gender	- Tertiary level - Students of Basque and English as foreign languages
	Results: Males and females differ in the number of strategies although they share 8 of the ten most frequent strategies.	
Xhaferi and Xhaferi (2008)	- Vocabulary Learning Strategies Questionnaire - Relation to other variables: gender	- Tertiary level. - Albanian students learning English
	Results: Most-used strategies: Asking teachers for meaning, making guesses and making list of new words to memorize. Usage approximately of the same strategies by males and females.	
Sahbazian (2004)	- 35-item Survey questionnaire	- Turkish students learning English. - Tertiary level.
	Results: Memory and mnemonic strategies were the most used strategies.	
Yoshi and Flaitz (2002)	- Related to extensive reading programmes	- French learners
	Results: Vocabulary acquisition is possible from extensive reading that what previous studies have suggested.	

Source: Jiménez Catalán (2003), Siriwan (2007) and Xhaferi and Xhaferi (2008).

To sum up the main ideas of this section, vocabulary learning strategies research is a branch of research in learning strategies that focuses on what instruments learners of a language use to acquire vocabulary. When researchers started to study those strategies, they decided to classify them into different groups, developing a number of taxonomies, so one of the main important things when using them, is analyzing the different taxonomies in order to choose this that fits better with your study. Finally, as a result of the implementation of those taxonomies in real settings, there is a number of studies applying them, so it is possible to compare results in order to check if there are differences relating aspects such as genders, age or methods used.

2.3. Content and Language Integrated Learning (CLIL)

CLIL (acronym of Content and Language Integrated Learning) has risen all across Europe as a reality in the last two decades. The term was coined in 1994 and it has been defined by Coyle, Hood and Marsh (2010, p. 1) as a "*dual-focused educational approach in which an additional language is used for the learning and teaching of both content and language*" in other words, CLIL is an educational approach in which more than a 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, it is an "*innovative fusion of both*" (Coyle et al. 2010, p. 1).

According to Coyle et al. (2010) CLIL rose in a time in which global change, converging technologies, and adaptability to the Knowledge Age are challenges for education so CLIL emerges as an answer to those problems, specially the first one. The world is much more connected nowadays than ever before, so this means there is a need to communicate in different languages, as people have to communicate with other people from different places of the world; in that context, CLIL is a response to that need, because one of its aims is developing the learning of second language. But, even in a globalized world, in which English is a lingua franca, we should take into account that CLIL is not a synonym for using English as a vehicle for teaching a content-subject; CLIL is multilingualism so any language can be promoted, depending on the interests of the regions; as socio-economic, cultural or political situations are different from country to country, CLIL will differ depending on the

country in which is implemented. It is a core feature of CLIL: Flexibility. Due to this main trait, it is also defined as an "*umbrella term*" by Mehisto, Marsh and Frigols (2008, p. 12) and it can be hard to determinate what type of approaches are CLIL, as there is a lack of conceptual clarity when distinguishing CLIL from other programmes (Cenoz, Genesee, & Gorter, 2013).

A CLIL approach advocates the use of interactive and experiential learning situations, which promotes autonomous learning and the development of critical thinking and learning skills. Moreover, it promotes a more contextualized learning, activating prior knowledge to help students to understand the contents in a foreign language. Finally, it also proposes the use of communicative meaningful activities, in that way, language is used for a communicative purpose and assimilated in a more "natural" way than in English as a Foreign Language classroom.

2.3.1. CLIL in Extremadura.

The Extremaduran Educational Authority, trying to promote second language learning, set up the 'Bilingual Sections', based on the CLIL principles. They started to be officially regulated in the academic year 2004-2005 and, since then, the number of schools with bilingual sections have been increasing exponentially year by year, from the eight schools in the academic year 2004-2005 to the 240 bilingual sections in the academic year 2013-2014 (Panorama Extremadura, 2014).

But, before this 'bilingual section' project was regulated, there was a previous project whose objective was also promoting second language learning: The agreement between Spanish Ministry of Education and Science and the British Council institution. The main aim of this agreement was the integration of both curricula, Spanish curriculum and British curriculum so that the children could learn English while getting both diplomas. To achieve it, teachers were trained by both institutions and 40% of the teaching hours were in English. Currently, there are two schools which follows this agreement: Luis de Morales, in Badajoz and Alba Plata, in Cáceres.

In order to implement the bilingual sections project efficiently, the educational authorities of the region have established some impositions (DOE, 2011, 2013):

- The implementation of the project in a school must be done gradually, it may start in the first grade of Primary Education and will be expanded in the following years.

- The languages in which the contents can be taught are English, French and Portuguese.

- The number of content areas that can be taught in a foreign language must be, at least, two different subjects and a maximum of 3 content subjects.

- It establishes the role of the different teachers participating in the project: Content teachers and specialist teachers, highlighting that in each school, there must be a bilingual section coordinator, who must be a language specialist teacher.

- In the sixth grade of Primary Education, students must take a test with the objective of evaluate the efficiency of the bilingual section.

- The teachers who teach content subjects using a foreign language are required a B2 level in the foreign language used.

- Furthermore, the amount of hours per week are also established for the content subjects and also in the foreign language subject.

- It has been established that all new state schools are going to be bilingual schools. Currently, there are five of them in Extremadura and there is also one school being built.

- Partnered schools are promoted with the objective of helping the students to continue with the project throughout their educational life. Moreover, it is also tried to keep a balance between urban and rural areas with the objective of spread CLIL throughout all the Community.

Once the legal situation of the program has been presented, the real situation of the school chosen for the study is going to be presented. It is a high school located in a rural area, Montijo, and they have a bilingual section of English in the center since five years ago. It is a school with three sections, in one of them some subjects are taught using English as a vehicle for communication. The subjects taught in a foreign language, depending on the grade, are: Mathematics, Social Science, Physical Education, Music, Natural Sciences and Physics and Chemistry. Moreover, CLIL students have an extra hour of English per week, devoted to develop interaction and oral communication skills. There are six teachers who teach their content subjects in English and a teacher coordinator for the bilingual section programme.

It is also important to highlight that although not all the students are enrolled in the bilingual sections, all the students are mixed in the three sections, they only split in those subjects which are taught in a foreign language, in order to promote equality in all the sections. Finally, in relation to the students, to become enrolled in the bilingual section, they have to pass an exam.

2.3.2. Review of studies analyzing CLIL learners' vocabulary.

Since CLIL started to be implemented in Spain, a number of researchers have tried to identify the main benefits in CLIL students in contrast to non-CLIL students. In order to analyze the main differences, many different issues have been studied in depth.

Agustín Llach (2009) studied what kind of students transfer more from their mother tongue, CLIL or non-CLIL learners. In order to carry out her study, she analyzed the differences between two groups of sixth grade of Primary education with different amount of hours of exposure. The CLIL group was more exposed to foreign language input, as they learnt Science and Arts and Crafts in English. The students were asked to write a composition in English, and after analyzing them and the L1 transfer lexical errors, she concluded that non-CLIL learners had more transfer episodes than CLIL learners.

Jiménez Catalán and Ruiz de Zarobe (2009) compared CLIL and non-CLIL learners enrolled in 6th grade of Primary Education, in terms of receptive vocabulary size, suggesting that CLIL students show better results in vocabulary level tests. In order to test their hypothesis, they made use of two different tests: 1000-word receptive test (Nation, 1992) and 2000-frequency band of the receptive version of the Vocabulary Levels Test (Nation, 1983). They concluded that CLIL students presented higher level on receptive vocabulary and language level.

Furthermore, Ruiz de Zarobe (2008) studied the differences in speech production, focusing on different items such as pronunciation, vocabulary, grammar, fluency and content, and CLIL students outstrip non-CLIL students in all the categories.

But, as it has been said before, although there is some research that links vocabulary and CLIL learners, there is no research relating the usage of some specific vocabulary learning strategies and the fact of being enrolled in a bilingual section.

3. The study

3.1. Participants

In the present study, two groups of third year of Secondary Compulsory Education of the Vegas Bajas High School are analyzed. It is situated in a rural area, in which students are considered middle class. Both groups present different characteristics, one group learns some subjects through English (CLIL project) and the other one only uses English in English as a Foreign Language subject.

Most of the members of the CLIL group have been in a bilingual section for 3 years, and, as has been said before, the subjects they study through English are: Physics and Chemistry, Social Science, Music, Technology and Mathematics. Furthermore, they have an extra hour of English as a Foreign Language subject per week in which interaction skills are promoted. As can be seen in table 6 below, CLIL group is exposed to approximately 810 more hours of the foreign language than non-CLIL group, so, as the amount of input CLIL learners receive is higher, this should lead into a higher size of receptive vocabulary.

Table 6

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

	CLIL learners	Non-CLIL learner
Members	24	20
Age	14-15	14-15
Hours of instructions	CLIL section:720 hours EFL: 1290 hours	EFL: 1200 hours
Gender	Male: 6 Female: 18	Male: 9 Female: 11

3.2. Instruments

In the present dissertation, a number of instruments have been used with different purposes:

- Yes/No test: As has been said before, Meara's test was used to measure the learner's receptive vocabulary level size. Meara (2010, p. 13) suggested to use two or more tests to measure each band of words in order to "get more reliable data" as one test would not be enough. Bearing in mind these indications, the testees took two different tests for the first band of 2,000 words.

- Vocabulary learning strategies questionnaire (see Appendix B): This survey was developed following Schmitt's vocabulary learning strategies taxonomy. In order to adapt this taxonomy to the characteristics of the subjects, only twenty-one (21) of the fifty-seven (57) items have been included. The main criteria used to select them have been the results of other studies in which the usage of vocabulary learning strategies was analyzed; those strategies which were more used in other studies, were included in this survey.

Finally, the test was piloted with a sample similar to the original one to ensure that the students understand properly what they had to do. Some of the questions needed to be reformulated, as the pilot sample did not understand properly some words. In table 7 below, the strategies chosen can be seen:

Table 7

Strategies chosen from Schmitt's taxonomy

Group	Sub-group	Strategies
Discovery strategies	Determination strategies	Analyzing part of speech
		Analyzing affixes and roots
		Check for L1 cognate
		Analyzing any available picture or gesture
		Using bilingual dictionary
	Social strategies	Asking teacher for an L1 translation
		Asking teacher for paraphrase or synonym of new word
		Asking students for meaning
Compensation strategies	Social strategies	Studying and practice meaning in group
	Memory strategies	Studying word with a pictorial representation of its meaning
		Connecting word to a personal experience
		Connecting the word to its synonyms and antonyms
		Using new word in a sentence
		Grouping words together to study them
		Using physical action when learning a word
	Cognitive strategies	Verbal repetition
		Written repetition
		Word lists
	Metacognitive strategies	Using English-language media
		Skipping or passing new word
		Continuing to study word over time

3.3. Data Collection

The tests were taken in two different days. The first day, the participants answered the vocabulary learning strategies test and one of the vocabulary tests. The second day, the other vocabulary test was given to them. It was done in such a way as to avoid the testees got tired or bored while answering the vocabulary tests. They were asked to be honest, and it was stressed that the tests were completely anonymous. Furthermore, the participants were also told the aims of the study, in order to engaged them with the task.

In relation to the vocabulary learning strategies tests, testees had fifteen (15) minutes to mark the use of each strategy in a scale from 1 (never) to 4 (always). In that way, they showed their preferences in relation to the use of vocabulary learning strategies.

Finally, as far as the Yes/No tests are concerned, testees were warned that there were words that did not exist in English, so they should be careful when ticking the words they thought they knew. They just had five minutes for answering each test because, following Meara's instructions, this helps to avoid those students thought "too much time about individual items" (Meara, 2010, p. 13). They were told to write a Y (yes) if they knew the word and an N (no) if they did not know or they were not sure.

Once all the results were taken, the data were transcribed to an Excel document. In the case of the vocabulary learning strategies tests, as they had to mark in a Likert scale, a number was assigned to each category (1= never, 2=occasionally; 3= usually; 4= always). In relation to the variable "testees", the number 1 was assigned to the fact of not being enrolled in a bilingual section, while number two was assigned to the fact of being a CLIL learner.

3.4. Results

In this section, the results of the study are presented and some answers are provided for the research questions posed at the beginning of this MA dissertation. The programmes used to analyze the data were: SPSS v.22 for Mac and Excel.

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

In relation to the first research question posed, the main aim was to analyze the student's achievement of the 2,000 most frequent words and to try to find if there was any relation with the type of instruction (CLIL learners or non-CLIL learners). The results are presented in the following figure:
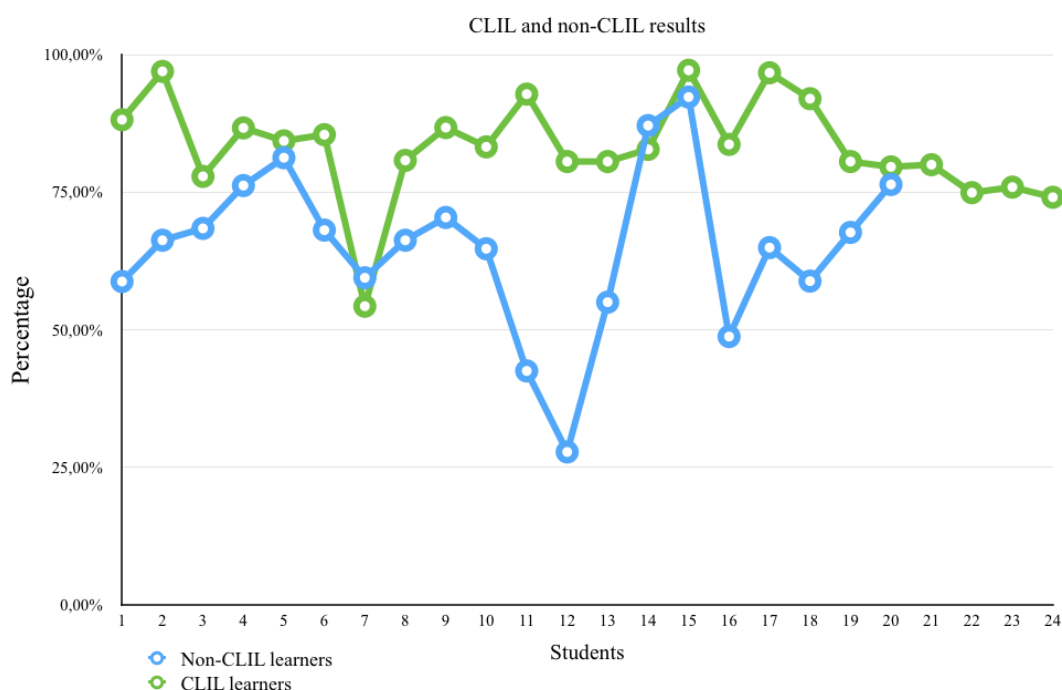
Figure 2: CLIL and non-CLIL learners vocabulary tests results.

The first point that should be highlighted is that students' global score shows that they have achieved a 74.78% of the words. In relation to the difference between CLIL and non-CLIL learners, CLIL students presented better results in the tests (83.15%) than non-CLIL students (65.05%). As has been pointed out before, this difference between CLIL and non-CLIL learners was expected, as they have been exposed to a significant higher and more varied amount of input (810 more hours of exposure in CLIL sections).

Table 8

Statistical data for CLIL and non-CLIL learners

General results	CLIL learners	Non CLIL learners
Mean: 74.78%	Mean: 83.15%	Mean: 65.05%
Min: 27.78%	Min: 54.26	Min: 27.78%
Max: 97.14%	Max: 97.14%	Max: 92.28 %
Standard deviation: 0.15	Standard deviation: 0.09	Standard deviation: 0.15

Furthermore, as can be seen in the table 8, the results of the CLIL group were much more homogeneous (standard deviation= 0.09) than the non-CLIL learners' results (standard deviation= 0.15). This can be related with the fact that CLIL learners had to pass an exam to enroll in the bilingual section, so all CLIL learners are supposed to have a minimum level of language causing this homogeneity. This also explains the results: CLIL learners present a better starting level.

To end up, and once the data have been analyzed, one of the aims proposed in the study, analyzing the differences between CLIL and non-CLIL learners in relation to the vocabulary size level, can be clarified. CLIL learners and non-CLIL learners differ in relation to vocabulary size level. In order to look for those possible differences, Pearson product-moment correlation coefficient was used, as it is used to analyze if two items correlate and in which way they do. So, analyzing if there was any relation between the fact of being enrolled in a "bilingual section" and obtaining a better result in the Yes/No tests, it can be concluded that there was a positive moderate correlation (0.608). This correlation can be defined as significant (sig. <0.01). It seems that there is a relation between being enrolled in a bilingual section and have a better receptive vocabulary size, CLIL learners presents better size of receptive vocabulary.

As has been pointed out above, there are different possible reasons for this relation: The amount of exposure to the foreign language, the fact that CLIL learners had to pass an exam to be enrolled in the bilingual section, and, also, the kind of vocabulary they are exposed to. CLIL learners are exposed to more hours of foreign language, this can explain why they present a better receptive vocabulary level. Otherwise, they are also exposed to a

wider range of vocabulary, as they have to study contents through a foreign language, so this situation could benefit the development of receptive vocabulary.

These results are in the same line as those shown by other studies in which the difference among CLIL and non-CLIL students in relation to receptive vocabulary were analyzed (Jiménez Catalán & Ruiz de Zarobe, 2009).

3.4.2. RQ2: Is there a relation between the usage of certain vocabulary learning strategies and a better size of receptive vocabulary?

The second research question focuses on whether there is any kind of relation between the size of receptive vocabulary and the strategies used by testees in order to give an answer to the research question. In order to explore this issue, firstly, the use of vocabulary learning strategies was analyzed, distinguishing between discovery and consolidation strategies. After that, the use of those strategies was related. Finally, the results were compared with Schmitt's results.

To start with, the global results are shown, without making any difference between CLIL and non-CLIL learners. The following table shows the top-ten strategies in relation to the usage and classified into discovery and consolidation strategies.

Table 9

Top-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 can be seen in the table, the most widely used strategy was "grouping words together to study them", a memory strategy according to Schmitt's taxonomy, followed by the used of "word lists", a cognitive strategy.

Comparing the top-ten preferred strategies with Schmitt's conclusions, the latter showed that, for high school learners (years 7-9), the most widely used vocabulary learning strategies were written repetition (91%); studying the spelling of words (89%); the use of bilingual dictionary (77%) and word lists (67%). So, a clear relation between Schmitt's results and the present results cannot be established.

A. Analysis of the use of discovery strategies

As can be seen in the chart below, the preferred discovery strategy for testees was "analyzing any available pictures or gestures", followed by "asking teacher for an L1 translation". The strategy learners used least was "asking teacher for paraphrase or synonym of the new word".

Table 10

Mean marks of student's use of discovery strategies

Strategies	Mean
Analyzing any available pictures or gestures	3.02
Asking teacher for an L1 translation	2.86
Analyzing affixes and roots	2.8
Analyzing the part of speech	2.64
Asking students for meaning	2.63
Checking for L1 cognate	2.6
Using of bilingual dictionary	2.6
Asking teacher for paraphrase or synonym of the new word	1.79

If we group the strategies into the two sub-groups related to discovery strategies proposed in Schmitt's taxonomy, determination and social strategies, it can be observed that determination strategies are preferred to social strategies.

Table 11

Use of discovery strategies classified into determination and social strategies

Group strategy	Global means
Determination strategies	2.73
•Analyzing any available pictures or gestures	
•Analyzing affixes and roots	
•Analyzing the part of the speech	
•Checking for L1 cognate	
•Using of bilingual dictionary	
Social strategies	2.43
•Asking teacher for an L1 translation	
• Asking students for meaning	
• Asking teacher for paraphrase or synonym of the new word	

These results did not match Schmitt's study results: In his study, the preferred strategy was "using a bilingual dictionary", while the most widely used strategy in this study, "analyzing any available pictures or gestures",was not a common strategy according to Schmitt's study, as only 47% of his testees acknowledged its use.

B. Analysis of the use of consolidation strategies

According to the results, the most widely used consolidation strategy was "grouping words together to study them"; this was a memory strategy according to Schmitt's taxonomy, followed by the used of "word lists" and "written repetition", both cognitive strategies. The less used was "using physical action when learning a word", a memory strategy.

Table 12

Use of consolidation strategies

Strategies	Global results	Strategy type
Grouping words together to study them	3.32	Memory
Word lists	3.16	Cognitive
Written repetition	2.77	Cognitive
Studying word with pictorial representation of its meaning	2.68	Memory
Using new word in sentence	2.68	Memory
Saying new word aloud when studying	2.6	Cognitive
Using English-Language media	2.32	Metacognitive
Continuing to study word over time	2.21	Metacognitive
Studying and practicing meaning in group	2.14	Social
Skipping or passing new word	1.98	Metacognitive
Connecting word to a personal experience	1.8	Memory
Connecting the word to its synonyms and antonyms	1.76	Memory
Using physical action when learning a word	1.48	Memory

Although the most widely used strategy was a memory strategy, if strategies are grouped into social, memory, cognitive and metacognitive strategies, the main conclusion that can be reached is that in general, cognitive strategies were the preferred strategies used by the students, followed by memory strategies. The less used strategies were social ones.

Table 13

Use of strategies grouped using Schmitt's taxonomy

Group strategy	Global means
Cognitive	2.84
・Saying new word aloud when studying	
・Written repetition	
・Word list	
Memory	2.29
・Studying with the pictorial representation	
・Connecting word with personal experience	
・Connecting with synonyms and antonyms	
・Grouping words together to study them	
・Using new words in sentence	
・Using physical action	
Metacognitive	2.18
・Using English-Language media	
・Skipping or passing new word	
・Continuing to study word over time	
Social	2.14
・Practicing in groups	

Comparing these results with Schmitt's, Schmitt concluded that the most widely used strategies for young high school Japanese learners were "written repetition strategies", followed by "studying the spelling of the word", and use of bilingual dictionary and word lists. So, in that way, the results of Japanese testees and the testees of the present study did not match either.

As regards the relationship between a better receptive vocabulary size and the use of certain vocabulary strategies, the following results have been found:

First of all, a good size of vocabulary level can be related to the use of the following strategies:

1. "Using new words in a sentence": There is a positive, significant, moderate correlation (0.567) between the use of this particular strategy and better level of receptive vocabulary size. In other words, students who use that determination strategy present better level of receptive vocabulary.

2. "Studying and practicing meaning in group": A significant, moderate, positive correlation (0.325) between the use of this strategy and presenting a better result in receptive vocabulary size is found. This implies that those students who use a new word in sentences to remember its meaning, present a better result in receptive vocabulary test.

3. "Grouping words together to study them": A significant, moderate, positive correlation (0.393) between the use of this strategy and better level in vocabulary size is found.

4. "Analyzing affixes and roots": There is a significant positive correlation (0.419) between a better level of receptive vocabulary size and the use of "studying and practicing meaning in group".

Secondly, the less they use the "skipping or passing new word" strategy, the better vocabulary size they achieve (-0.345).

Finally, the rest of strategies do not show any significant correlation with a better result in vocabulary test (see Appendix C for the detailed statistical analysis).

3.4.3. RQ3: Are there differences between the use of vocabulary learning strategies of CLIL and non-CLIL learners?

In order to provide an answer for this question, the used of strategies will be analyzed more deeply than in the previous section, making the distinction in the use of CLIL and non-CLIL learners. After that, some conclusions will be drawn about the different uses of both groups.

First, it is interesting to compare CLIL and non-CLIL learners' use of discovery and consolidation strategies. Both groups make use of discovery strategies more frequently than consolidation strategies, but, in spite of this fact, as it can be seen in the table 14 below, CLIL

learners make use of consolidation strategies more frequently than non-CLIL learners, while non-CLIL learners make use of discovery strategies more often than CLIL learners.

Table 14

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

As has been said before, and can be observed in the table above, there are some differences in its use. But, the significance of these differences was analyzed, by using Kruskal-Wallis test. Krusal-Wallis test was chosen due to the results of two different tests done before it: A run test for randomness and Kolmogorov-Smirnov test to check the normality assumption in Analysis of Variance.

A significant difference (sig. <0.5) has been found: CLIL learners make significantly more use of consolidation strategies than non-CLIL learners. This can be related to the fact that CLIL learners do not need to discover the meaning of the word, in fact, they present a better receptive vocabulary size, so they may know the word; they just need to consolidate their knowledge of that word. On the other hand, although the difference is not significant, non-CLIL learners do actually need to guess what the word means, so they make more use of discovery strategies.

Once the use of strategies by CLIL and non-CLIL learners has been analyzed classifying them into the main two groups, discovery and consolidation strategies, it is interesting to compare CLIL and non-CLIL learners' ten most widely used strategies in order to analyze how they made use of different strategies. CLIL learners made use of consolidation strategies more often that non-CLIL learners; on the other hand, non-CLIL learners used more determination (discovery) strategies and less consolidation strategies. They did not agree on the most widely used strategy, either: The use of word lists is the preferred strategy for CLIL learners whereas non-CLIL learners preferred grouping words together to study them.

Table 15

Comparison of the ten most widely used strategies of CLIL and non-CLIL learners

	Strategies	CLIL	Strategies	Non-CLIL
1	Word lists	3.5	Grouping words together to study them	3.2
2	Grouping words together to study them	3.4	Analyzing any available pictures or gestures	3.05
3	Using new word in sentence	3.1	Studying word with pictorial representation of its meaning	3.05
4	Analyzing affixes and roots	3.04	Asking teacher for an L1 translation	3
5	Analyzing any available pictures or gestures	3	Analyzing part of speech	2.95
6	Written repetition	3	Word lists	2.8
7	Asking teacher for an L1 translation	2.75	Asking students for meaning	2.71
8	Checking for L1 cognate	2.67	Say new word aloud when studying	2.6
9	Saying new word aloud when studying	2.6	Using of bilingual dictionary	2.6
10	Using of bilingual dictionary	2.58	Analyzing affixes and roots	2.5
10			Checking for L1 cognate	2.5
10			Written repetition	2.5

When analyzing the strategies by grouping them into Schmitt's main six groups, the results showed that, although the most 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 significantly more frequently cognitive strategies in comparison with non-CLIL learners.

As regards to the use of the rest of strategies, some differences can be found: Although determination strategies were the second most widely used ones for both groups, they do not make use of the rest of strategies in the same way: While for CLIL learners memory strategies (2.38) were the third most widely used strategies, followed by social

strategies for discovering new meanings (2.33), metacognitive (2.17) and social strategies (2.2). For non-CLIL learners, the third most widely used strategies were social strategies for discovery new meanings strategies (2.6), followed by metacognitive strategies (2.19), memory strategies (2.28) and social strategies (2.05).

Table 16

Use of strategies organized in groups

Group strategy	CLIL learners	Non-CLIL learners
Determination strategies •Analyzing any available pictures or gestures •Analyzing affixes and roots •Analyzing the part of the speech •Checking for L1 cognate •Using of bilingual dictionary	2.76	2.72
Social strategies (Discovery) •Asking teacher for an L1 translation • Asking students for meaning • Asking teacher for paraphrase or synonym of the new word	2.33	2.60
Cognitive • Saying new word aloud when studying • Written repetition • Word list	2.2	2.05
Memory • Studying with the pictorial representation • Connecting word with personal experience • Connecting with synonyms and antonyms • Grouping words together to study them • Using new words in sentence • Using physical action	2.38	2.18
Metacognitive • Using English-Language media • Skipping or passing new word • Continuing to study word over time	3.01	2.63
Social (Consolidation) • Practicing in groups	2.17	2.19

A. Analysis of discovery strategies

In relation to the discovery strategies, it can be seen that non-CLIL learners showed that the strategy they used the most was "analyzing any available pictures or gestures" (3.05), while CLIL learners' results showed that the strategies they used the most was "analyzing affixes and roots" (3.04).

Table 17

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 of bilingual dictionary	2.58	2.6
Asking teacher for an L1 translation	2.75	3
Asking teacher for paraphrase or 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. <0.05): "analyzing part of the speech" (0.036) and "analyzing affixes and roots" (0.02). This means that CLIL learners used more frequently the strategy "analyzing affixes and roots", while non-CLIL learners analyzed the part of the speech more often than CLIL learners.

B. Analysis of consolidation strategies

In the analysis of the use of consolidation strategies, differences can be found between CLIL and non-CLIL learners. Comparing their preferred vocabulary strategy, it could be said 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 strategies. They do not share the 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 to it antonyms and synonyms". This idea is very important, CLIL learners do not 'skip' unknown words, they face them, and this can be another good reason to explain why they have a better receptive vocabulary knowledge.

Table 18

Use of determination strategies by CLIL and non-CLIL learners

Strategies	CLIL learners	Non-CLIL learners
Studying and practicing meaning in 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 new word in sentence	3.1	2.15
Using physical action when learning a word	1.6	1.35
Saying 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-Smirov test, there were significant differences (sig.<0.05) between CLIL and non-CLIL learners in the use of the following strategies: "skipping or pass new words" (0.039), "studying word with pictorial representation of its meaning" (0.019), "using word lists" (0.019) and "using new word in sentences" (0.01). What this means is that, on the one hand, CLIL learners made use more frequently of visual aids (studying word with pictorial representation of its meaning), word lists and creating sentences which containing the new word. On the other hand, non-CLIL learners skipped new words more often.

As a conclusion, the following differences were found differences in the use of strategies between CLIL and non-CLIL learners:

In general, CLIL learners make significantly more use of consolidation strategies than non-CLIL learners. In contrast, non-CLIL learners use more frequently discovery strategies. This can be related to their level of receptive vocabulary; as CLIL learners present a better level of vocabulary, they actually recognize the word, so they just have to consolidate their knowledge of it. However, non-CLIL learners have a lower level of receptive vocabulary, so they have to discovery or guess what the word means first, so they have to use more discovery strategies.

In relation to the use of discovery strategies, although it seems that CLIL and non-CLIL learners make use of strategies in the same way, CLIL learners focused more frequently on affixes and roots, while non-CLIL learners analyzed the part of the speech more often than CLIL learners to guess meanings of new words.

As far as consolidation strategies are concerned, although the most used ones are cognitive strategies for both groups of study, there is a significant difference in their use: CLIL learners tend to use more often cognitive strategies than non-CLIL learners. Cognitive strategies include repetitions and using mechanical means to study. If the strategies are studied one by one, CLIL learners learn new word by using new words in sentences and using word lists more frequently than non-CLIL students, who skip or pass unknown words more often than CLIL learners.

3.5. Discussion

Once the data obtained have been analyzed and once the research questions have been clarified, some important conclusions can be drawn:

1. Differences in receptive vocabulary size: CLIL learners outperformed non-CLIL learners in the vocabulary level, probably due to different facts. The crucial one is probably that CLIL learners receive a higher amount of input CLIL learners, as they have received approximately 800 hours of input more than non-CLIL learners. Besides, they are not only exposed to more input, but also this input is different from the one received in English as a Foreign Language classroom, as it includes academic and technical

vocabulary due to CLIL learners are learning contents on Physics and Chemistry, Social Science, Music, Technology and Mathematics through English.

Moreover, they 'skip' less unknown words, they face them, so this can lead into a better receptive vocabulary size too. This can also be a consequence of a CLIL approach, as it includes the use of scaffolding techniques, in which learners are encouraged to face the unknown words. Finally, they had to have a minimum level of proficiency in the foreign language, as they had to pass an exam to entry in the bilingual section. Although this result was expected, it is supported by the statistical analysis and goes in the same line as previous research about differences between CLIL and non-CLIL learners (Jiménez Catalán & Ruiz de Zarobe, 2009).

2. Use of strategies: It has been observed that both groups, CLIL and non-CLIL learners make use of the strategies in a different way: Although both groups use more frequently discovery strategies, if the data are analyzed more thoroughly, on the one hand, CLIL learners use consolidation strategies more often than non-CLIL learners. In contrast, non-CLIL learners make more use of discovery strategies. This result can be related to the fact that CLIL learners may know the new word, as they present better results in receptive vocabulary, so they do not need to discover what it means, they just need to consolidate its meaning. On the other hand, non-CLIL learners have a lower level of receptive vocabulary, so they need to make use of discovery strategies first to understand the meaning, before learning that meaning.

3. Use of visual aids: CLIL learners make more use of visual strategies than non-CLIL learners. A CLIL approach advocates for the use of visual aids in order to facilitate understanding and learning to learners. So, this can be the reason why CLIL learners make more use of this type of strategies ("studying word with the pictorial representation of its meaning") 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, as both groups use visual strategies in the same way.

4. Learners autonomy: The data show that non-CLIL learners asks more frequently to their teachers about meanings. One of the main objectives of CLIL is to develop learners' autonomy, to help students to become more autonomous when accessing new

information, so that can be related to the results of this study; as CLIL learners are more autonomous, they demand less help from the teacher to discover new meanings.

5. Use of social strategies: Although the difference cannot be considered as significant, non-CLIL learners use more social strategies than CLIL learners. One of the core features of CLIL is development of co-operative work, so it would be thought that the most logical result would have been the opposite one and no reasons can be found to explain that difference.

6. Metalinguistic awareness differences**:** Metalinguistic awareness is defined as "the ability to attend to, and reflect upon, the properties of language" (Davidson & Raschke, 2009, p. 1). A number of studies have found differences in metalinguistic awareness between bilingual and monolingual people. The results obtained tend to show that CLIL students reflect more on the properties of language than non-CLIL learners: They relate new words to antonyms and synonyms and group words together analyzing relations among them in order to remember new meanings of words and analyze suffixes and roots in order to discover those meanings.

7. Use of new word in sentences: CLIL learners are taught in a more contextualized way, as they have to understand and retain new knowledge in a foreign language so, to help them understand more easily, teachers make use of the context. As they are learning in that way, they may feel more secure when learning meanings of new words not in an isolated way, but relating the word to an example (in that case, context).

8. Use of cognitive strategies: There have been found significant differences in the use of cognitive strategies (saying new word aloud when studying, and use of written repetition and word lists) by CLIL and non-CLIL learners, but this difference should be analyzed in depth, as, although word lists are promoted in a CLIL approach, it does not promote specially the use of neither spoken or written repetition, so, it would be interesting to study more concretely why CLIL and non-CLIL learners make a different use of them.

9. Skipping or passing new words: It is really significant the fact that non-CLIL learners 'skip' or pass unknown words much more frequently than CLIL learners. This can be related to the fact that CLIL learners are exposed to much more amount of input than non-CLIL learners, so, they may face more unknown words too, and they need to

understand what the input means, as they have to learn content in that foreign language, so they may be more used to infer meaning of words they do not know, instead of passing the word.

10. In the description of the data, one important feature that could be highlighted is that the results do not match at all with Schmitt results. Schmitt's findings showed that students use more strategies related to the written mode, while the testees of the present study use strategies more related to semantic fields, networks... Considering that Schmitt's testees' ages were the same than the testees of the present study, we cannot attribute the difference to the age factor, but other several reasons can be attributed to it:

- Testees characteristics: Japanese alphabet does not match with English alphabet, while Spanish alphabet does, so, that might be the reason why Japanese testees use more repetition strategies than Spanish testees, as they have to learn not only the word and the meaning, but also remember the letters. It would be a good idea to compare these results with results of testees with different mother tongues and alphabets.

- Aims: Japanese students and non-CLIL learners are learning language for improving their knowledge of language while CLIL learners learn language to learn contents. This may cause that testees use language with different aims, so they use and learn the foreign language in different ways.

4. Conclusions

At the beginning of the present piece of research, three main objectives were established, so, now all the data have been analyze and the research questions have been answered, aims can be clarified too.

In the light of the results, it can be concluded that there are clear differences in the receptive vocabulary size, as CLIL learners outstrip non-CLIL learners in the receptive vocabulary level tests. These results match with other studies that analyze CLIL and non-CLIL learners differences (Jiménez Catalán & Ruiz de Zarobe, 2009). But, this result was expected, due to, as Jiménez Catalán and Ruiz de Zarobe (2009, p. 88) point out, the amount of exposure to the foreign language is not the same for both groups. Another possible reason for that difference is that CLIL learners had to pass an exam to entry in the bilingual section, so this exam could act as a filter, the better students in relation to language were those who enrolled in the bilingual section. But also, this difference may be due to CLIL instruction, as it seems to influence not only in the size of receptive vocabulary but also in how CLIL and non-CLIL learners make use of vocabulary learning strategies.

There is a clear distinction in the use of strategies taking into account the type of instruction: In that way, CLIL learners make significantly more use of consolidation strategies and non-CLIL learners use more discovery strategies. This can be related to the fact that, as CLIL learners seem to just need to consolidate meanings whereas non-CLIL learners are still in the process of 'discovering' new words. In addition, both groups make a different use of some specific vocabulary learning strategies, and this may be explain in relation to their educational background: A CLIL approach promotes the use of some specific strategies such as the use of visual aids and those related with learners autonomy and metalinguistic awareness. Nonetheless, there are other results that could not be related with CLIL approach; non-CLIL students outperform CLIL students in the use of social strategies and it cannot be related to the CLIL approach features, as a CLIL approach encourages the use of social strategies to learn, so it would be interesting to study why this happened in depth.

In relation to the use of strategies, there seems to be evidences to state that the use of some strategies ("using new words in a sentence", "studying and practicing meaning in group", "grouping words together to study them" and "analyzing affixes and roots") leads

into a better size of receptive vocabulary, while the use of certain vocabulary learning strategies ("skipping or passing new words") leads into a worse level of receptive vocabulary.

From the results of this study, it can be concluded that a CLIL instruction seems to benefit the acquisition of foreign language receptive vocabulary and influences the use of certain vocabulary learning strategies.

The present piece of work has some limitations:

1. Ample sample: As the sample was a convenience sample, it is not representative of the reality. It could be interesting to analyze samples from different contexts (urban and rural areas, different models of CLIL, different types of schools) in order to observe if there are differences not only between CLIL and non-CLIL learners but also between urban and rural contexts. Moreover, with a more representative sample, the results of the relation of the use of certain use of vocabulary learning strategies and a better size of vocabulary could be used to apply them in class in order help students to achieve a better size of vocabulary.

2. Depth of knowledge of the development of testees' vocabulary size: It would be an interesting idea to do a pre-test and a post-test in relation to vocabulary size, in order to analyze the evolution of testees' vocabulary size since they started to be enrolled in a CLIL section and in a non-CLIL section. In that way, it could be analyzed how the difference in relation to vocabulary size evolves.

3. Contrasting with other variables: In the present study the main focus is on CLIL and vocabulary learning strategies, but it could also be related to other variables such as gender, years in CLIL programmes, time of exposure in the CLIL sessions or age of students. Another important variable to take into account could be the learning preferences. This in-depth analysis would draw on clearer conclusions of the use of vocabulary learning strategies by students in general but also by CLIL students in particular.

4. Including observation research: It could be interesting to analyze the way the CLIL teachers carry out their sessions, if they use only the foreign language or code-switching, whether they use interactive methodology or group works. This affects the way their students learn vocabulary, so it would be an interesting variable to analyze.

5. Contrasting the results with other studies: As has been said in the previous section, it has been seen that the present results do not match Schmitt's conclusions. It would be

interesting analyze the possible reasons and to compare not only with Schmitt's results but also with other studies analyzing the use of vocabulary learning strategies in other countries, with different mother tongues, analyzing how this fact can affect the use of them.

6. Analysis of the quality of input: The materials used in class also influence the vocabulary the learners are exposure to. It would be interesting to analyze the type of materials the CLIL teacher use (visuals, textbooks, worksheets, videos...), as in English as a Foreign Language classroom they have the same teacher and the contents, so it would not make the difference.

5. References

Agustín Llach, M.P. (2009). The Role of Spanish L1 in the Vocabulary Use of CLIL and non-CLIL EFL Learners. In R. M. Jiménez Catalán, & Y. Ruiz de Zarobe (Eds.), *Content and language integrated learning: Evidence from research in Europe* (pp. 112-130). U.K.: Multilingual Matters.

Boers, F., & Lindstromberg, S. (2008). How cognitive linguistics can foster effective vocabulary teaching. In F. Boers & S. Lindstromberg (Eds.), *Cognitive Linguistic Approach to Teaching Vocabulary and Phraseology* (pp. 1-65). Berlin: Mouton, The Hague.

Cangas Alonso, A. (2013). Receptive vocabulary size of secondary Spanish EFL learners. *Revista de Linguisticas y Lenguas Aplicadas, 8*, 66-75.

Cenoz, J., Genesee, D., & Gorter, D. (2013). Critical analysis of CLIL: taking stock and looking forward. *Applied Linguistics, 35*(3), 1-21.

Cohen, A. D. (1996). *Second language learning and use strategies: clarifying the issues*. University of Minnesota. Minneapolis: Center for Advanced Research on Language Acquisition.

Coyle, D., Hood, P., & Marsh, D. (2010). *CLIL: Content and Language Integrated Learning*. Cambridge: Cambridge University Press.

Cook, V. (2001). *Second language learning and language teaching*. London, Great Britain: Hooder Education.

Davidson, D., & Raschke, V. R. (2009). Metalinguistic awareness in monolingual and bilingual children and its relationship to receptive vocabulary scores and performance on a reading readiness test. In J. Chandlee, M. Franchini, S. Lord, & M. Rheiner (Eds.), *Boston University Conference on Language Development 33 Online Proceedings Supplement.* Somerville, MA: Cascadilla Press**.**

Dörnyei, Z. (2006). Individual differences in second language acquisition. *AILA Review, 19,* 42-68.

Junta de Extremadura (2011, April 23). ORDEN de 8 de abril de 2011 por la que se regula la convocatoria de secciones bilingües, con carácter experimental, en centros sostenidos con fondos públicos que impartan enseñanzas obligatorias en Extremadura. *Diario Oficial de Extremadura*, 77, 9711-9731. Retrieved May 10, 2015 from: http://doe.juntaex.es/pdfs/doe/2011/770o/11050111.pdf

Junta de Extremadura (2013, June 4). ORDEN de 27 de mayo de 2013 por la que se regula, con carácter experimental, la convocatoria de Secciones Bilingües en Educación Primaria, Educación Secundaria Obligatoria y Formación Profesional para el curso 2013/2014, en centros sostenidos con fondos públicos de la Comunidad Autónoma de Extremadura. *Diario Oficial de Extremadura*, 106, 12679-12708. Retrieved May 10, 2015 from: http://doe.juntaex.es/pdfs/doe/2013/1060o/13050125.pdf

García López, M. (2003). Estrategias de aprendizaje de vocabulario de inglés utilizadas por los estudiantes de secundaria. *Lenguajes y textos, 15*, 61-70.

Hornby, A.B. (1974). *Oxford Advanced Learner's Dictionary of Current English*. Oxford: Oxford University Press.

Intaraprasert, C. (2004). EST Students and Vocabulary learning strategies: A Preliminary investigation. Muang: Suranaree University of Technology, School of English.

Jiménez Catalán, R.M. (2003). Sex differences in L2 vocabulary learning strategies. *International Journal of Applied Linguistics, 13*(1), 54-77.

Jiménez Catalán, R. M., & Terrazas Gallego, M. (2005). The receptive vocabulary of English Foreign Language young learners. *Journal of English Studies,* 5, 173-192.

Jiménez Catalán, R. M., & Ruiz de Zarobe, Y. (2009). The receptive vocabulary of EFL learners in two instructional contexts: CLIL versus non-CLIL learners. In R. M. Jiménez Catalán, & Y. Ruiz de Zarobe (Eds.), *Content and language integrated learning: Evidence from research in Europe* (pp. 81- 93). Bristol: Multilingual Matters.

Kudo, Y. (1999). *L2 vocabulary learning strategies*. Honolulu: University of Hawai`i. Retrieved May 10, 2015 from: http://scholarspace.manoa.hawaii.edu/bitstream/handle/10125/8951/NW14.pdf?sequence=1

Laufer, B. (1990). Why are some words more difficult than others? Some intralexical factors that affect the learning of words. *Iral- International Review of Applied Linguisitics in Language Teaching, 28*, 239-307.

Laufer, B. (1991). Knowing a word: What is so difficult about it?. *English Teachers' Journal, 42,* 82-86.

Laufer, B., & Goldstein, Z. (2004). Testing vocabulary knowledge: Size, strength, and computer adaptiveness. *Language Learning, 54*(3), 399-436.

López Campillo, R. M. (1995). Teaching and learning vocabulary: An introduction for English students. *Revista de la Facultad de Educación de Albacete: Ensayos,10*, 35-49.

Meara, P. (1994). The complexities of simple vocabulary tests. In: FG Brinkman, JA van der Schee and MC Schouten-van Parreren (Eds.) *Curriculum research: different disciplines and common goals* (pp.15-28). Amsterdam: Vrije Universiteit.

Meara, P. (2010). *EFL vocabulary tests* (2nd ed.)*.* Wales University: Swansea Centre for Applied Language Studies.

Mehisto, P., Marsh, D., & Frigols, M. J. (2008). *Uncovering CLIL: Content and Language Integrated Learning and Multilingual Education.* Oxford: Macmillan Education.

Nation, P. (2005). Teaching Vocabulary. *Asian EFL Journal, 7* (3), 47-54. Retrieved from: *http://www.asian-efl-journal.com/sept_05_pn.pdf*

O'Malley, J.M., & Chamot, A.U. (1990). *Learning Strategies in Second Language Acquisition.* Cambridge: Cambridge University Press.

Oxford, R.L. (2003). Language Learning Styles and Strategies: an overview. *Generative Approaches to Language Acquisition*. Oxford: Mouton de Gruyter. Retrieved from: http://web.ntpu.edu.tw/~language/workshop/read2.pdf

Panorama Extremadura (2014, February 25). Unos 3.000 alumnos participan en el "V Encuentro de Centros Bilingües" en Villafranca de los Barros. *Panorama Extremadura.* Retrieved May 10, 2015 from: http://www.panorama-extremadura.com/texto-diario/mostrar/170406/unos-3000-alumnos-participan-en-el-v-encuentro-de-centros-bilingues-

en-villafranca-de-los-barros

Pignot Shahov, V. (2012). Measuring L2 receptive and productive vocabulary knowledge. *Language Studies Working Papers, 4*, 37-45.

Ruiz de Zarobe, Y. (2008). CLIL and foreign language learning: A longitudinal study in the Basque Country. *International CLIL Research Journal*, *1*, 60-73.

Schmitt, N. (1997). Vocabulary learning strategies. In N. Schmitt & M. McCarthy (Eds.), *Vocabulary: Description, acquisition and pedagogy* (pp. 199-227). U.K.: Cambridge University Press.

Schmitt, N. (2008). Instructed second language vocabulary learning. *Language Teaching Research, 12*, 329-363.

Schmitt, N. (2010). *Researching vocabulary: A vocabulary research manual*. U.K.: Palgrave Macmillan.

Siriwan, M. (2007). *English Vocabulary learning strategies employed by Rajabhat University Students*. Nakhon Ratchasima: Suranaree University of Technology.

Xhaferi, B., & Xhaferi, G. (2008). *Vocabulary learning strategies used by students at SEEU in terms of gender and teachers' attitudes toward teaching vocabulary*. Tetovo: South East European University**.**

Van Patten, B., & Benati, A.G. (2010). *Key Terms in Second Language Acquisition*. U.K.: Continuum International Publishing Group.

Vlckova, K., Berger, J., & Völkle, M. (2013). Classification theories of the foreign language learning strategies: An exploratory analysis. *Studia Paedagogica, 18* (4), 93-113.

6. Appendices

Appendix A: Vocabulary Learning Strategies questionnaire

Cuestionario sobre estrategias de aprendizaje de vocabulario

Por favor, puntúa en las siguientes tablas, donde 1 significa nunca y 5 se corresponde con siempre, el uso que le das a las estas estrategias para aprender vocabulario.

1. Perfil del alumnado
    1. Sexo:
    2. Edad:
    3. ¿Estás en una sección bilingüe?
    4. En caso de que estés en una sección bilingüe, ¿cuánto tiempo llevas en ella?

	Cuando encuentro palabras nuevas, para averiguar lo que significa....	Nunca	a veces	muy a menudo	Siempre
		1	2	3	4
1	Analizo el tipo de palabra que es (nombre, adjetivo, verbo..), por ejemplo en la frase "I go home", aunque no sepa lo que significa 'go', puedo averiguar que es un verbo, porque aparece el sujeto ('I') y sé que la otra palabra no es un verbo.				
2	Analizo sus prefijos o sufijos, por ejemplo,en la palabra 'unhappy', me fijo en el prefijo 'un-', que significa no, para averiguar que significa infeliz.				
3	Analizo si se parece a alguna palabra en castellano, por ejemplo, la palabra 'produce' en inglés se parece a producir.				
4	Uso las imágenes de los libros para intentar averiguar qué significa				
5	Consulto el significado en un diccionario bilingüe (español-inglés/ inglés-español)				
6	Pido al profesor que me dé el significado de la palabra				
7	Pido al profesor que me diga un sinónimo de esa palabra en la lengua extranjera, por ejemplo, si aparece la palabra 'big' y no sé lo que significa, el profesor podría decirme 'it's the opposite of small'				
8	Averiguo el significado preguntando a mis compañeros				

	Una vez sé lo que significa la palabra, para memorizar su significado...	Nunca	a menudo	muy a menudo	Siempre
		1	2	3	4
9	Practico esa palabra en actividades en grupo, por ejemplo, si estoy aprendiendo verbos sobre la rutina diaria ('lay the table', 'do my homework') trato de usarlas en las actividades en grupo				
10	Relaciono la palabra con algún dibujo o imagen				
11	Conecto la palabra con una experiencia personal, por ejemplo, si tengo que memorizar la expresión "it's raining cats and dogs" puedo asociarlo a un día que no pude salir de casa porque llovía mucho.				
12	Asocio el significado de la palabra con un sinónimo o antónimo, por ejemplo si tengo que aprender la palabra 'happy' lo asocio a su antónimo 'sad'				
13	Agrupo las palabras que tienen relación para estudiarlas juntas, por ejemplo, si estoy estudiando el vocabulario de deportes y de rutinas, agrupo por un lado, todas las palabras que tengan que ver con el deporte ('football, basketball..'), y por otro lado las rutinas.				
14	Uso la palabra en una frase, por ejemplo, para recordar que 'many' se usa con nombres contables, recuerdo la frase "How many students are there in class?"				
15	Realizo físicamente la acción que indica la palabra, por ejemplo, si tengo que aprender lo que significa 'run', hago como si estuviera corriendo.				
16	Repito en voz alta muchas veces la palabra hasta que me la aprendo				
17	Escribo varias veces las palabras para recordar cómo se escribe				
18	Hago listas con el vocabulario que tengo que estudiar				
19	Escucho canciones y películas en inglés				
20	Ignoro una palabra que no sé que significa cuando comprendo en general lo que quiere decir el texto				
21	Repaso las palabras cada cierto tiempo para no olvidarlas				

Si utilizas algún truco más, por favor escríbelo en el siguiente cuadro:
Muchas gracias por tu colaboración

Appendix B: Statistical analysis data

1. Significance of the differences between CLIL and non-CLIL learners' use of consolidation and discovery strategies.

Test Statistics[a,b]	Consolidation strategies	Discovery strategies
Chi–Square	4,037	1,166
df	1	1
Asymp. Sig.	,045	,280

a. Kruskal Wallis Test
b. Grouping Variable: Testees

2. Significance of the differences between CLIL and non-CLIL learners in the use of strategies:

Test Statistics[a,b]	Social strategies	Memory strategies	Cognitive strategies	Metacognitive strategies	Determination strategies	Social (discovery strategies)
Chi–Square	,409	,143	3,994	,001	,064	2,672
df	1	1	1	1	1	1
Asymp. Sig.	,522	,705	,046	,975	,801	,102

a. Kruskal Wallis Test
b. Grouping Variable: Testees

3. Analysis of the differences between CLIL and non-CLIL learners in the use of discovery strategies.

Test Statistics[a,b]	Analyzing parts of the speech	Analyzing affixes and roots	Checking for L1 cognate	Analyzing any available pictures or gestures	Using of bilingual dictionary	Asking teacher for an L1 translation	Asking teacher for paraphrase or synonym of the new word	Asking students for meaning
Chi–Square	4,407	5,456	,268	,010	,005	1,083	,383	2,721
df	1	1	1	1	1	1	1	1
Asymp. Sig.	,036	,020	,604	,921	,941	,298	,536	,099

a. Kruskal Wallis Test
b. Grouping Variable: Testees

4. Analysis of the differences between CLIL and non-CLIL learners in the use of consolidation strategies. 57

Test Statistics[a,b]

	Study and practice meaning in group	Studying word with pictorial representation of its meaning	Connecting word to a personal experience	Connecting the word to its synonyms and antonyms	Grouping words together to study them
Chi–Square	,409	5,491	,060	,823	,544
df	1	1	1	1	1
Asymp. Sig.	,522	,019	,807	,364	,461

Test Statistics[a,b]

	Using new word in sentence	Using physical action when learning a word	Saying new word aloud when studying	Written repetition	Using word lists
Chi–Square	10,545	,087	,165	2,195	5,529
df	1	1	1	1	1
Asymp. Sig.	,001	,768	,684	,138	,019

Test Statistics[a,b]

	Using English–Language media	Skipping or pass new word	Continuing to study word over time
Chi–Square	1,882	4,242	,528
df	1	1	1
Asymp. Sig.	,170	,039	,468

a. Kruskal Wallis Test
b. Grouping Variable: Testees

5. Pearson correlation test

Correlations

		Testees	Vocabulary Tests results
Testees	Pearson Correlation	1	,608**
	Sig. (2-tailed)		,000
	N	44	44
Vocabulary Tests results	Pearson Correlation	,608**	1
	Sig. (2-tailed)	,000	
	N	44	44

**. Correlation is significant at the 0.01 level (2-tailed).

		Vocabulary Tests results	Study and practice meaning in group
Vocabulary Tests results	Pearson Correlation	1	,335*
	Sig. (2-tailed)		,026
	N	44	44
Study and practice meaning in group	Pearson Correlation	,335*	1
	Sig. (2-tailed)	,026	
	N	44	44

*. Correlation is significant at the 0.05 level (2-tailed).

		Vocabulary Tests results	Using new word in sentence
Vocabulary Tests results	Pearson Correlation	1	,567**
	Sig. (2-tailed)		,000
	N	44	44
Using new word in sentence	Pearson Correlation	,567**	1
	Sig. (2-tailed)	,000	
	N	44	44

**. Correlation is significant at the 0.01 level (2-tailed).

		Vocabulary Tests results	Connecting word to a personal experience
Vocabulary Tests results	Pearson Correlation	1	,229
	Sig. (2-tailed)		,136
	N	44	44
Connecting word to a personal experience	Pearson Correlation	,229	1
	Sig. (2-tailed)	,136	
	N	44	44

		Vocabulary Tests results	Grouping words together to study them
Vocabulary Tests results	Pearson Correlation	1	,393**
	Sig. (2−tailed)		,008
	N	44	44
Grouping words together to study them	Pearson Correlation	,393**	1
	Sig. (2−tailed)	,008	
	N	44	44
**. Correlation is significant at the 0.01 level (2−tailed).			

		Vocabulary Tests results	Skipping or pass new word
Vocabulary Tests results	Pearson Correlation	1	−,345*
	Sig. (2−tailed)		,022
	N	44	44
Skipping or pass new word	Pearson Correlation	−,345*	1
	Sig. (2−tailed)	,022	
	N	44	44
*. Correlation is significant at the 0.05 level (2−tailed).			

		Vocabulary Tests results	Analyzing parts of the speech
Vocabulary Tests results	Pearson Correlation	1	−,028
	Sig. (2−tailed)		,854
	N	44	44
Analyzing parts of the speech	Pearson Correlation	−,028	1
	Sig. (2−tailed)	,854	
	N	44	44

		Vocabulary Tests results	Analyzing affixes and roots
Vocabulary Tests results	Pearson Correlation	1	,419**
	Sig. (2−tailed)		,005
	N	44	44
Analyzing affixes and roots	Pearson Correlation	,419**	1
	Sig. (2−tailed)	,005	
	N	44	44
**. Correlation is significant at the 0.01 level (2−tailed).			

		Vocabulary Tests results	Asking teacher for an L1 translation
Vocabulary Tests results	Pearson Correlation	1	,266
	Sig. (2−tailed)		,081
	N	44	44
Asking teacher for an L1 translation	Pearson Correlation	,266	1
	Sig. (2−tailed)	,081	
	N	44	44

		Vocabulary Tests results	Connecting the word to its synonyms and antonyms
Vocabulary Tests results	Pearson Correlation	1	,229
	Sig. (2−tailed)		,135
	N	44	44
Connecting the word to its synonyms and antonyms	Pearson Correlation	,229	1
	Sig. (2−tailed)	,135	
	N	44	44

		Vocabulary Tests results	Using English−Language media
Vocabulary Tests results	Pearson Correlation	1	,203
	Sig. (2−tailed)		,186
	N	44	44
Using English−Language media	Pearson Correlation	,203	1
	Sig. (2−tailed)	,186	
	N	44	44

		Vocabulary Tests results	Studying word with pictorial representation of its meaning
Vocabulary Tests results	Pearson Correlation	1	−,105
	Sig. (2−tailed)		,499
	N	44	44
Studying word with pictorial representation of its meaning	Pearson Correlation	−,105	1
	Sig. (2−tailed)	,499	
	N	44	44

		Vocabulary Tests results	Using physical action when learning a word
Vocabulary Tests results	Pearson Correlation	1	,075
	Sig. (2-tailed)		,626
	N	44	44
Using physical action when learning a word	Pearson Correlation	,075	1
	Sig. (2-tailed)	,626	
	N	44	44

		Vocabulary Tests results	Asking students for meaning
Vocabulary Tests results	Pearson Correlation	1	−,093
	Sig. (2-tailed)		,548
	N	44	44
Asking students for meaning	Pearson Correlation	−,093	1
	Sig. (2-tailed)	,548	
	N	44	44

		Vocabulary Tests results	Saying new word aloud when studying
Vocabulary Tests results	Pearson Correlation	1	−,220
	Sig. (2-tailed)		,151
	N	44	44
Saying new word aloud when studying	Pearson Correlation	−,220	1
	Sig. (2-tailed)	,151	
	N	44	44

		Vocabulary Tests results	Analyzing any available pictures or gestures
Vocabulary Tests results	Pearson Correlation	1	,037
	Sig. (2-tailed)		,811
	N	44	44
Analyzing any available pictures or gestures	Pearson Correlation	,037	1
	Sig. (2-tailed)	,811	
	N	44	44

		Vocabulary Tests results	Continuing to study word over time
Vocabulary Tests results	Pearson Correlation	1	,235
	Sig. (2-tailed)		,125
	N	44	44
Continuing to study word over time	Pearson Correlation	,235	1
	Sig. (2-tailed)	,125	
	N	44	44

		Vocabulary Tests results	Checking for L1 cognate
Vocabulary Tests results	Pearson Correlation	1	,033
	Sig. (2-tailed)		,834
	N	44	44
Checking for L1 cognate	Pearson Correlation	,033	1
	Sig. (2-tailed)	,834	
	N	44	44

		Vocabulary Tests results	Written repetition
Vocabulary Tests results	Pearson Correlation	1	,109
	Sig. (2−tailed)		,481
	N	44	44
Written repetition	Pearson Correlation	,109	1
	Sig. (2−tailed)	,481	
	N	44	44

		Vocabulary Tests results	Using word lists
Vocabulary Tests results	Pearson Correlation	1	,170
	Sig. (2−tailed)		,270
	N	44	44
Using word lists	Pearson Correlation	,170	1
	Sig. (2−tailed)	,270	
	N	44	44

		Vocabulary Tests results	Using of bilingual dictionary
Vocabulary Tests results	Pearson Correlation	1	,061
	Sig. (2−tailed)		,696
	N	44	44
Using of bilingual dictionary	Pearson Correlation	,061	1
	Sig. (2−tailed)	,696	
	N	44	44

		Vocabulary Tests results	Asking teacher for paraphrase or synonym of the new word
Vocabulary Tests results	Pearson Correlation	1	,190
	Sig. (2−tailed)		,216
	N	44	44
Asking teacher for paraphrase or synonym of the new word	Pearson Correlation	,190	1
	Sig. (2−tailed)	,216	
	N	44	44