

# Lexical Knowledge and Amount of L2 Exposure: A Study on CLIL Primary-school Learners' Receptive Vocabulary Knowledge

## Conocimiento léxico y exposición a la lengua extranjera: un estudio de estudiantes AICLE en Educación Primaria

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IRENE CASTELLANO-RISCO

Institution address: Universidad de Extremadura. Departamento de Filología Inglesa. Facultad de Educación y Psicología. Avda. de Elvas s/n. 06006 Badajoz. Spain.

E-mail: ircastellano@unex.es

ORCID: 0000-0002-3932-2002

Received: 10/03/2022. Accepted: 02/09/2022.

How to cite this article: Castellano-Risco, Irene. "Lexical Knowledge and Amount of L2 Exposure: A Study on CLIL Primary-school Learners' Receptive Vocabulary Knowledge." *ES Review: Spanish Journal of English Studies*, vol. 43, 2022, pp. 133–56.



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DOI: <https://doi.org/10.24197/ersjes.43.2022.133-156>

**Abstract:** L2 lexical knowledge has been an issue that has attracted much attention among SLA scholars, with studies examining the impact of different language teaching approaches on vocabulary knowledge. However, little research has been conducted to determine the amount of exposure needed for significant lexical improvement. This paper explores the impact of varying instructed amount of exposure on 112 CLIL primary-school learners' receptive knowledge of high-frequency vocabulary. Participants were asked to respond to the 1K and 2K of the Updated Vocabulary Levels Tests (Webb et al.). Data were examined looking into differences related to the amount of L2 exposure. Findings suggest a possible effect of instructed amount of exposure on the recognition of high-frequency words, which is discussed concerning its possible implications for the CLIL instructional practice.

**Keywords:** instructed amount of L2 exposure; receptive lexical knowledge; CLIL; primary education.

**Summary:** Introduction. L2 Development and Instructed Amount of Exposure. Design of Study. Results. Discussion. Conclusions.

**Resumen:** El desarrollo léxico en L2 ha sido objeto de un intenso debate en el ámbito de la enseñanza de segundas lenguas en las últimas décadas, dando lugar a numerosos estudios que han explorado el impacto de distintos enfoques de enseñanza en el conocimiento del vocabulario. Sin embargo, se han realizado escasas investigaciones para determinar la cantidad de exposición necesaria para una mejora léxica significativa. Este artículo explora cómo la variación en la exposición a la lengua extranjera afecta al conocimiento receptivo del vocabulario de alta

frecuencia de 112 alumnos AICLE de educación primaria. Los participantes respondieron a los niveles 1K y 2K del *Updated Vocabulary Levels Tests* (Webb et al.), y los resultados se analizaron teniendo en cuenta el nivel de exposición a la L2. Los resultados señalan un posible efecto de la cantidad de exposición en el reconocimiento de las palabras más frecuentes, que se discutirá en relación con su posible implicación en la práctica AICLE.

**Palabras clave:** exposición instruccional a la lengua extranjera; desarrollo léxico; AICLE; educación primaria.

**Sumario:** Introducción. El desarrollo lingüístico en el aprendizaje de una segunda lengua y su relación con la exposición instruccional. Diseño del estudio. Resultados. Discusión. Conclusiones.

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## INTRODUCTION

Lexical competence has gained unforeseen relevance in the latest second language (L2) teaching approaches and models, based on the evidence that a lack of vocabulary knowledge can lead to problems with comprehension and production for L2 students (Schmitt).

Mastery of vocabulary can help learners overcome communicative challenges. Nevertheless, given the breadth of the vocabulary knowledge construct, there is a need to delimit this notion.<sup>1</sup> In this regard, two lexical dimensions are often distinguished, related to learners' capacity to understand and recall L2 words: receptive vs. productive knowledge. In addition, lexical knowledge is usually measured considering frequency-based categories to facilitate the study of learners' L2 development. Accordingly, research usually identifies three word-family clusters according to their occurrence in oral and written discourse: high-frequency words—including word families from 1,000 to 2,000 (Schmitt and Schmitt) or 3,000 (Nation, *Teaching and Learning Vocabulary*) bands—mid-frequency (from the 2K/3K to the 8K band), and low-frequency words (from the 9K band onwards). In this regard, a mastery of high-frequency words (i.e., 2,000- to 3,000-word families) has been shown to provide learners with sufficient understanding of about 95% of everyday communication (Adolphs and Schmitt). Therefore, recognising high-frequency vocabulary items would be a primary objective for L2 learners, as it undoubtedly helps them improve their L2 competence and expand their lexical knowledge.

Given its importance for L2 proficiency, it is relevant to identify the main factors that presumably affect receptive lexical development. This

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<sup>1</sup> See Nation's *Teaching and Learning Vocabulary* and Schmitt's *Researching Vocabulary* for further detail.

paper focuses on a recent approach to language learning that emerged in Europe in the 1990s and spread worldwide over the last few decades: Content and Language Integrated Learning (CLIL). CLIL is thought to be particularly beneficial to lexical knowledge (Agustín-Llach; Agustín-Llach and Canga Alonso; Agustín-Llach and Jiménez Catalán; Canga Alonso, “Receptive Vocabulary of CLIL and Non-CLIL”; Canga Alonso, “Receptive Vocabulary Size of Spanish 5th Grade”; Canga Alonso and Arribas García; Castellano-Risco, Alejo-González and Piquer-Píriz), and, therefore, it seems to be an appropriate context to explore the influence of input quantity on lexical knowledge.

This paper aims to explore the impact of an input-related factor—the quantity of instructed input—on the receptive knowledge of high-frequency words in 112 CLIL primary-school learners in 6th grade (aged 11–12) receiving varying amounts of L2 exposure in an instructional setting. It is organised as follows. First, it discusses the relevance of vocabulary in Second Language Acquisition (SLA), focusing on the impact of instructed amount of exposure in a CLIL setting on lexical development. It, then, moves on to the methodological aspects. Afterwards, it describes the data obtained from the first and second 1K bands of the updated version of the Vocabulary Levels Test (Webb et al.). Finally, these data are described and discussed, analysing differences among groups, and the main conclusions are drawn and discussed in relation to their pedagogical implications.

## 1. L2 DEVELOPMENT AND INSTRUCTED AMOUNT OF EXPOSURE

In SLA research, input-related factors, such as the quantity and quality of L2 input, have been extensively explored in relation to language learning (Howard; Rothman and Fuentes Guijarro).

In general, most studies have shown that the context in which L2 is learnt directly affects the impact of input-related factors: greater L2 exposure has commonly been linked to better language proficiency in informal contexts, whereas this assumption has been proved not to occur when language learning takes place only at a formal instructional context (García Mayo and García Lecumberri; Miralpeix; Muñoz). In formal L2 learning, input exposure is usually restricted to the foreign language (FL) classroom, and this limitation brings with it some specific constraints, such as the limited quantity of input, affecting language learning (García Mayo and García Lecumberri; Miralpeix; Muñoz; Muñoz et al.).

Focusing exclusively on lexical knowledge in formal contexts, in the literature there have also been some efforts to clarify the impact of the quantity of exposure on L2 lexical development. For instance, Miralpeix explored the impact of age of onset and amount of exposure on lexical production, concluding that an early start in formal contexts, with its subsequent increase in L2 exposure, did not result in richer vocabulary production. She related her results to other age-related factors, such as maturational constraints, that could slow down L2 lexical improvement. More recently, in an attempt to exclude age-related differences, Castellano-Risco, Alejo-González and Piquer-Píriz explored the impact of input variations on learners who started learning English at the same time but in different teaching contexts (CLIL vs. mainstream English Foreign Language [EFL] approaches) and degrees of L2 exposure. They found that greater exposure to the L2 could not be directly related to vocabulary improvement in formal contexts. However, in Castellano-Risco, Alejo-González and Piquer-Píriz's study, participants were exposed to different L2 teaching contexts, which could have partially influenced the results. On account of the foregoing discussion, this paper aims to (1) explore whether the amount of exposure within the same teaching-learning approach, CLIL, has a significant impact on receptive lexical knowledge and (2) if so, to quantify the amount of L2 input needed to result in a significant lexical improvement. Thus, it reports on the results of an analysis of the receptive knowledge of the most frequent vocabulary items (first and second 1K band) by CLIL learners who are about to finish their last year of Primary Education (Year 6; aged 11–12).

### **1.1 Lexical Knowledge and Exposure in CLIL Settings**

CLIL is a dual-focused educational approach that has been shown to benefit, to some extent, L2 learning (Agustín-Llach, “The Role of Spanish L1”; Ruiz de Zarobe; Lorenzo and Rodríguez). In this approach, learners study some content subjects, such as Natural Science, PE or Arts and Crafts, in an L2. Therefore, there is an increased L2 exposure in formal contexts, which is related to better L2 development (Lasagabaster and Doiz; Lasagabaster and López Belouqui; Lorenzo and Rodríguez; Ruiz de Zarobe; Sylvén).

In particular, the type of language used in CLIL classes, with its subject-specific terminology and use of academic language,<sup>2</sup> is believed to affect L2 lexical knowledge positively, as shown in several contexts.<sup>3</sup>

Most studies have found positive evidence that CLIL learners outperform EFL learners in both receptive<sup>4</sup> and productive (Alejo and Piquer-Piriz; Canga Alonso and Arribas García; Moreno-Espinosa; Tragant et al.) lexical knowledge. In the case of receptive general vocabulary knowledge, studies have been carried out to (1) determine vocabulary knowledge of CLIL learners and (2) compare the vocabulary learning benefits resulting from the use of different language approaches (mainly CLIL and mainstream EFL). As for receptive vocabulary knowledge of CLIL primary-school learners, it is usually placed within the first vocabulary band at the end of this educational stage (Canga Alonso, “The Receptive Vocabulary of 6th-Grade Primary-School Students”; Jiménez Catalán and Ruiz de Zarobe).

Concerning the comparison of CLIL and non-CLIL groups, implementing a CLIL approach implies an increase in the exposure to the L2, and this difference in exposure has been tackled from two perspectives.

On the one hand, some studies have compared CLIL and non-CLIL learners of the same age but who were exposed to different amounts of L2 input as they started learning English at different ages through CLIL programmes (Agustín-Llach; Arribas; Canga Alonso, “Receptive Vocabulary Size of Spanish 5th Grade”). These studies have systematically found that CLIL learners have more extensive receptive vocabulary knowledge than their non-CLIL counterparts, which is often justified as a matter of exposure. In other words, these studies could not strictly demonstrate that such difference was not related to the larger exposure to English CLIL learners received, as other factors, such as the employment of different methodologies in CLIL and mainstream EFL classes, or the different objectives both approaches place on learners, could also result in lexical knowledge variation.

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<sup>2</sup> See Coyle et al.’s language triptych.

<sup>3</sup> See, for example, Agustín-Llach; Agustín-Llach and Canga Alonso; Agustín-Llach and Jiménez Catalán; Canga Alonso’s “Receptive Vocabulary of CLIL and Non-CLIL”; Canga Alonso’s “Receptive Vocabulary Size of Spanish 5th Grade”; Canga Alonso and Arribas García; Castellano-Risco’s “Receptive vocabulary and learning strategies in secondary school CLIL and non-CLIL learners.”

<sup>4</sup> See Castellano-Risco’s “Estrategias de aprendizaje y conocimiento léxico: un estudio sobre el alumnado de educación secundaria” for an overview.

On the other hand, there has been a more extensive set of studies comparing CLIL and regular EFL learners with the same amount of exposure, even when it meant comparing students of different ages (Canga Alonso, “Receptive Vocabulary Size of Spanish 5th Grade”; Fernández Fontecha; Sylvén). In these studies, CLIL learners do not always obtain better results, which is often related to CLIL learners’ maturational constraints. That is, it may be that the presumable positive effect of early exposure to the L2 in CLIL contexts may be reduced by the difficulty young learners may find in processing such a large amount of input in formal contexts.

The following table presents the main findings of some selected works in which lexical knowledge of CLIL learners is either quantified or compared to that of EFL learners.

Table 1. A summary on selected works on CLIL and receptive lexical knowledge in Spain

Study	Aim	Tuition	IAoE (in hours)	Year	Estimation of no. of words
Jiménez Catalán and Ruiz de Zarobe (2009)	Exploring CLIL learners’ knowledge	CLIL	960	6th	800
Agustín Llach (2012)	Comparing CLIL and EFL learners’ knowledge	CLIL	734	4th	470
		EFL	419	4th	595
Canga Alonso (2013a)	Exploring CLIL learners’ knowledge	CLIL	839	5th	696
Fernández Fontecha (2014)	Comparing CLIL and EFL learners’ knowledge	CLIL	734	4th	471.26
		EFL	734	7th	779.54
Canga Alonso (2015a)	Comparing CLIL and EFL learners’ knowledge	EFL	1,049	10th	936
		CLIL	949	6th	903

Canga Alonso (2015b)	Comparing CLIL and EFL learners' knowledge	EFL	499	5th	524
		CLIL	696	5th	839
Arribas (2016)	Comparing CLIL and EFL learners' knowledge	CLIL		10th	1330
		EFL	Not provided		1200
Castellano-Risco (2018)	Comparing CLIL and EFL learners' knowledge	CLIL	2,010	9 <sup>th</sup>	1,664
		EFL	1,200		1,301
Castellano-Risco, Alejo-González and Piquer-Píriz (2020)	Comparing CLIL and non-CLIL learners' vocabulary knowledge	Early-CLIL group	3,000	10 <sup>th</sup>	1,440
		Standard-CLIL group	2,400		1,408
		Late-CLIL group	2,000		1,310
		EFL	1,200		798

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Source: Prepared by the author.

The comparison of CLIL and non-CLIL learners seems to present evident methodological shortcomings derived from putting learners from very different realities side by side. First, comparing the effects of different language approaches may be challenging, as it is difficult to isolate the teaching approach variable from the effect of different amounts of L2 formal exposure or the implementation of different teaching techniques in the classroom. Second, when comparing learners of different ages, the problem that arises is related to the maturational constraints.

In an attempt to avoid these methodological flaws, this study aims to explore the effect of quantity of input on L2 lexical knowledge by focusing exclusively on learners of the same age and under the same learning context: a CLIL approach. In most studies exploring CLIL, learners are seen as homogeneous regarding their L2 learning abilities and experiences. However, CLIL is conceived as an “umbrella term” (Mehisto et al. 12) in which practices are adapted, among other factors, to the context in which

they are implemented, teaching aims, and learners' L2 level. This flexibility means, in practical terms, a significant disparity among CLIL practices (Manzano Vázquez) that may affect L2 exposure. Such is the disparity that can be found among CLIL programmes that some authors advocate distinguishing among three types of programmes depending on intensity of L2 exposure (Ball et al.; Mehisto et al.): Soft-CLIL, mid-CLIL and hard-CLIL programmes. However, to the best of my knowledge, little research has been conducted on how differences in exposure may affect L2 lexical development.

## **2. DESIGN OF THE STUDY**

### **2.1 Objectives**

This research study explores the impact of varying degrees of CLIL instructional exposure on lexical development, considering the type of students enrolled in the programme and the type of methodology employed. For this purpose, three groups of CLIL primary-school students (N=112, age 11–12) with varying exposure to English have been compared. Unlike previous studies, their difference in exposure did not derive from the implementation of CLIL at different ages but from being exposed to CLIL practices with differing intensities: all the groups began attending EFL classes in Pre-Primary education and joined CLIL practices in their 1st year of Primary Education, but the concentration of CLIL subjects and the number of hours devoted to CLIL in each subject varied depending on the school they attended.<sup>5</sup>

Given the age of the participants (11–12 years old) and their language learning experience (attending an EFL subject for nine years and CLIL subjects for six years), this study focuses exclusively on their recognition of high-frequency English words (up to the 2K band), as previous research in this issue has shown that CLIL learners are still in the process of recognising the 2K most frequent words when they finish the Primary Education stage (Canga Alonso, “The Receptive Vocabulary of 6th-Grade Primary-School Students”; Jiménez Catalán and Ruiz de Zarobe).

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<sup>5</sup> See 2.4 below for further explanation.



This objective is specified in the following two research questions:

1. RQ1: Does a greater amount of instructed exposure to English within the same learning approach result in greater recognition of the first 1K vocabulary band?
2. RQ2: Does a greater amount of instructed exposure to English within the same learning approach result in greater recognition of the second 1K vocabulary band?

## 2.2 Context of the Study

The three state primary schools taking part in this study were from a medium-sized town in Extremadura, Spain. Extremadura is a monolingual region with quite an extensive experience in English-Spanish CLIL education.

In this region, the first bilingual educational experiences can be traced back to the academic year 1996–1997, when the British Council-MEC (Ministry of Education and Culture) agreement was signed. This agreement detailed teaching the content of some subjects in English, while modifying the way EFL classes were taught. Schools were provided with specific training and language experts trained by the British Council joined the classes. This significantly increased learners' exposure to English, given that about 40% of the teaching hours were delivered in English. In practice, it was only implemented in two regional primary schools, but it meant a significant change in the approach to FL teaching.

CLIL became widespread with the launch of an official pilot project in the academic year 2004–2005, known as the “Bilingual Section” programme. This programme intended to implement CLIL practices in teaching/learning some disciplinary subjects. Nevertheless, CLIL was not implemented throughout the whole school, but only in specific groups (known as “sections”) in each grade. The number of schools and groups taking part in the programme has increased since its implementation.

The third step in developing and strengthening bilingual education was the inclusion of a new kind of school: CLIL schools. The main difference between a bilingual section school and a CLIL school is that the latter provides bilingual education in all the school groups and, as a consequence, it can also promote L2 development in extracurricular activities on a more regular basis.

Derived from this heterogeneous evolution of the programmes, schools taking part in this study differed in how CLIL programmes were implemented: one of the schools was considered a “CLIL school,” that is, all the students enrolled in the school (school groups) followed a CLIL approach. A second group was from a CLIL school resulting from the British Council-MEC agreement. The third school had implemented CLIL only in some groups, and the intensity of the programme was lower: students attended only a weekly session of two mandatory subjects in English.

### 2.3 Participants

This study made use of a convenience sample consisting of a total of 112 CLIL sixth-year learners. Participants were enrolled in three different state urban schools in Extremadura (Spain). All participants started learning English when they were three years old and joined CLIL programmes in their 1st year of primary education. The main difference was related to their CLIL experience, as they differed in their exposure to English in the CLIL classroom:

- a) High-exposure CLIL learners: this group consisted of 49 participants who had attended a ‘hard-CLIL’ programme, in which Natural and Social Sciences and Arts and Crafts had been taught in English for six academic years. In addition, they had attended EFL courses since the 1st year of pre-primary education. These courses were held twice a week at the pre-primary level, and taught four times weekly during primary education. They had been exposed to approximately 2,556 hours of English input.
- b) Moderate-exposure CLIL learners: this group comprised 22 learners who participated in a ‘hard-CLIL’ programme. Natural and Social Sciences and Arts and Crafts were taught in English for six academic years. In addition, they had EFL courses since pre-primary education. Unlike the previous group, in pre-primary, they only attended one weekly hour of English and, in primary education, up to four hours a week. Altogether, moderate-exposure CLIL learners had a mean exposure of about 2,440 hours of English.

- c) Lower-exposure CLIL learners: this group consisted of 41 participants who had attended a weekly hour of English in pre-primary and then, in primary education, a ‘soft-CLIL’ programme, in which they attended Arts and Crafts entirely in English and a weekly lesson of Natural Science in English, in addition to the EFL lessons, for six academic years. In total, over the course of nine years, they had been exposed to English, lower-exposure CLIL learners had been in contact with English for about 1,200 hours.

Table 2 below summarises the main features of each group.

Table 2. Demographical description of the data

	Highly exposed CLIL learners	Moderately exposed CLIL learners	Low exposed CLIL learners
N	49	22	41
Disciplinary subjects taught in English	Natural Science Social Science Arts and Crafts	Natural Science Social Science Arts and Crafts	Natural Science Arts and Crafts
Amount of exposure (in hours)	2,556	2,400	1,200

Source: Prepared by the author.

## 2.4 Instruments

In order to measure receptive vocabulary knowledge, the first and second 1K bands of the latest version of the Vocabulary Levels Test (VLT) developed by Webb et al. were used. This instrument, based on previous versions of the VLT (Nation, *Testing and Teaching*; Schmitt et al.), enables the measurement of the knowledge of the five first frequency bands (from the first to the fifth 1K band) of the Nation’s British National Corpus/Corpus of Contemporary American English (BNC/COCA) lists, which are one of the most up-to-date English vocabulary frequency lists.

For each band, there are 30 definitions presented in groups of three, and participants are asked to match these definitions with the corresponding word in English among the options given. Definitions are

presented in ten clusters, and, in each cluster, six words and three definitions are presented.

In contrast to previous research in which Schmitt et al.'s VLT version prevails, the latest version of the VLT was preferred for two main reasons. First, unlike previous versions, it includes the 1K band, which is considered suitable for primary school learners. Second, to create the tests, the authors use one of the most up-to-date Corpora in English as the source of items: the BNC/COCA corpus (Nation, *BNC/COCA*). Previous versions made use of frequency lists compiled in the 1970s and 1980s. With this inclusion, the frequency lists reflect current English.

The study has been limited to the recognition of high-frequency words (first 2K bands), taking into consideration previous findings on L2 lexical knowledge of students with similar age and L2 exposure.

## 2.5 Data Collection and Treatment

Data collection took one session during school time.<sup>6</sup> The test format was pen and paper, and the time allotted to complete the task was seven minutes per band. Initially, instructions were given in Spanish and examples were provided to avoid possible misunderstanding.

Data were anonymised and were explored in raw and extrapolated values. To estimate the total number of words known by the participants, Nations' formula (*Teaching and Learning Vocabulary*, 78) was applied: "N correct answers multiplied by the total N-words in dictionary divided by N items in test," where the number of words in the dictionary corresponds with the number of words in the band. The number of participants mastering the band was also calculated. To this aim, Schmitt's instructions were followed, and a band was only considered to be known when a test-taker got a score equal to or higher than 26 words out of 30.

Finally, data analysis was performed using IBM SPSS Statistics v. 25. A Shapiro-Wilk test did not show that the variables presented a Gaussian distribution, so non-parametric tests were carried out.

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<sup>6</sup> Parents were informed and consent was obtained.

### 3. RESULTS

#### 3.1 Analysis of the Recognition Rate of the First 1K Band

The exploration of the first 1K band knowledge shows that, on average, CLIL learners recognised 18.04 out of the 30 words in the 1K band test. Applying Nation's formula, it would mean that, in general, they identified 601 words out of the 1K most frequent ones.

In terms of absolute values, the comparison among groups shows that noticeable differences between the group with the lowest exposure and the other two groups seem to exist. High-exposure CLIL learners obtained a mean score of 21.55 out of the 30 words examined ( $SD = 5.82$ ,  $min. = 8$ ,  $max. = 30$ ), which, translated into extrapolated values, means that they knew approximately 718 words out of the 1K most frequent English words. For its part, the moderately exposed group shows quite a similar result: they understood a mean of 21.82 words ( $SD = 4.34$ ,  $min. = 14$ ,  $max. = 30$ ), which means that, in extrapolated values, they identified 727 words out of the 1K most frequent terms.

On the other hand, lower-exposure CLIL learners knew 11.83 of the 30 words included in the 1K VLT ( $SD = 7.06$ ,  $max. = 27$ ,  $min. = 0$ ), which, in extrapolated values, means that they identified about 394 words out of the 1K most frequent English words. Table 3 provides a summary of the results.

Table 3. Statistical descriptions of the recognition of the 1K band by groups (in %)

	Highly exposed CLIL learners	Moderately exposed CLIL learners	Low exposed CLIL learners
Hours of exposure	2,556	2,400	1,200
1K band mean score	21.55	21.82	11.83
% of participants scoring >26 hits	28.89	27.27	4.87

Source: Prepared by the author.

This contrast is also observed in the percentage of participants mastering the whole band, that is, recognising more than 26 items in the

test. A substantial number of high-exposure and moderate-exposure participants reached full knowledge of the band. In understanding the 1K band, nearly 29% of the high-exposure CLIL learners and 27.27% of moderate-exposure CLIL learners got a score higher than 86%, whereas, among the lower-exposure CLIL learners, only 4.88% mastered the band.

The significance of the differences among groups was calculated, showing that lower-exposure CLIL learners had a statistically significant lower recognition rate of the 1K band than high-exposure ( $p < 0.0004$ ) and moderately exposed CLIL learners ( $p < 0.0004$ ). On the other hand, high and moderate exposure CLIL learners did not show significant ( $p = 0.848$ ) differences in their recognition of the first 1K band.

### 3.2 Analysis of the Knowledge of the Second 1K Band

Moving now to the analysis of the receptive knowledge of the second 1K band, participants display an overall recognition rate lower than their understanding of the first 1K band ( $\bar{x} = 12.25$ ,  $SD = 7.73$ ,  $\text{max.} = 30$ ,  $\text{min.} = 0$ ). In extrapolated values, CLIL learners understood a mean of 408 of the second 1K band of the BNC/COCA after applying Nation's formula.

Table 4. Statistical descriptions of the recognition of the 1K band by groups (in %)

	Highly exposed CLIL learners	Moderately exposed CLIL learners	Low exposed CLIL learners
Hours of exposure	2,556	2,400	1,200
Second 1K band mean score	16.06	12.13	9.27
% of population scoring >26 hits	4.44	0	2.44

Source: Prepared by the author.

The comparison of the different groups shows that learners with the most significant exposure to English obtained the highest results ( $\bar{x} = 16.06$ ,  $SD = 6.77$ ,  $\text{min.} = 0$ ,  $\text{max.} = 30$ ), as can be seen in table 4. Moderately exposed CLIL learners recognise, on average, four fewer items

than their high-exposure counterparts ( $\bar{x} = 12.13$ ,  $SD = 5.93$ ,  $\text{min.} = 5$ ,  $\text{max.} = 26$ ). The statistical comparison between groups confirms that this difference is statistically significant ( $p = 0.038$ ).

Again, a considerable disparity is noticed when comparing high- and moderate-exposure CLIL learners to lower-exposure CLIL participants, whose mean score ( $\bar{x} = 9.27$ ,  $SD = 7.23$ ,  $\text{min.} = 0$ ,  $\text{max.} = 30$ ) is well below that of the other two CLIL groups. The statistical analysis shows a significant difference between high- and lower-exposure participants ( $p < 0.001$ ) and moderate- and lower-exposure ( $p < 0.001$ ).

Concerning the mastery of the second 1K band, a small proportion of the learners receptively knew more than 26 items of the 30 in the test: 4.44% of the high-exposure group and 2.44% of the lower-exposure CLIL learners. Therefore, in this issue, it cannot be stated that none of the CLIL primary-school groups shows an evident mastery of the band, with no substantial differences among groups observed.

#### 4. DISCUSSION

Results have shown that CLIL learners, on average, recognise about 60% of the 1K most frequent English words and about 41% of the second 1K most frequent terms after more than 2,000 hours of English instruction. Therefore, these learners are still in the process of understanding the first 1K most frequent words and are far from mastering the second 1K band receptively.

The present results are lower than those reported in other studies exploring CLIL learners' receptive knowledge of high-frequency words in the same context and age (Canga Alonso, "The Receptive Vocabulary of 6th-Grade Primary-School Students"; Jiménez Catalán and Ruiz de Zarobe), which place the receptive knowledge of CLIL primary-school learners in the first vocabulary band after 1,000 hours of instruction in English.

One of the most plausible reasons for this finding is methodological. Previous studies on CLIL lexical knowledge calculated the knowledge of the 1K band by extrapolating it from understanding the 2K most frequent English words. In contrast, the present study shows a clear difference in the calculation of the recognition rate of the two first 1K bands, as it distinguishes between the first and second 1K bands rather than exploring an overall understanding of high-frequency terms. In this respect, the

discrimination between the knowledge of each band seems to be critical. In general, both bands comprise high-frequency English words, and, overall, they account for about 90% of any written text (Dang and Webb; Nation; Webb and Rodgers, “The Vocabulary Demands of Television Programmes”; Webb and Rodgers, “The Lexical Coverage of Movies”). However, their weight on written and spoken texts is not the same: while the first 1K band covers about 65 to 85% of spoken and written English discourse (Webb and Nation), the coverage of the second 1K band is considerably lower. An appropriate strengthening of the 1K band knowledge may imply a better development of the rest of the bands, and if the first and the second 1K band are explored together, the importance of the first band may be disregarded.

Significant differences have been found among groups exposed to different amounts of English input. The analysis of the receptive knowledge of the two bands yields that those learners less exposed to English show a lower receptive lexical mastery than the other two groups. However, there are differences when breaking down the analysis of each band.

The examination of the receptive knowledge of the first 1K band indicates that high- and moderate-exposure CLIL learners have a similar receptive understanding of the band. On average, high- and moderate-exposure CLIL learners recognise nearly two-thirds of the band, and almost a third of the high- and moderate-exposure learners master the band. However, there is a big contrast when compared to low-exposed CLIL learners. This specific learner group knew nearly 40% of the items receptively, and only almost 5% showed complete control of the band. The statistical analysis also makes explicit this difference between the high- and moderate exposure groups and lower-exposure CLIL learners. The explanation for this difference may lie in the amount of exposure to the FL. While the difference in exposure is not remarkable in the two most exposed groups, and learners seem to have received sufficient exposure to recognise most items, the lowest exposed group still needs more input to reach that level.

As for the exploration of the recognition of the second 1K band, the impact of the amount of exposure seems more pronounced. In this case, there are significant differences among the three groups, even in those with slight differences in exposure. This may be related to several factors. First, the impact of greater L2 exposure may be more evident in less frequent words. In this regard, there may be a ceiling effect in the 1K band, in which



slight variations in input may not produce the expected significant differences; but, as difficulty in lexis increases, differences in exposure may result in substantial lexical improvements. At this point, it would be of interest to explore how minor input variations affect the knowledge of other less-frequent vocabulary bands (2K+).

Second, the difference between the three groups in the recognition of the second 1K terms may be related to the kind of methodology implemented in the CLIL classroom. CLIL is a heterogeneous approach to L2 learning that may vary in terms of the intensity of L2 exposure, teaching methods, duration of the programme, and subjects offered in the L2 (Mehisto et al. 12). Although the three groups in this study are framed within the CLIL approach, there are evident differences among them that lead to input differences: the least exposed group follows a ‘soft-CLIL’ programme, whereas the other two groups follow ‘hard-CLIL’ programmes. Likewise, there is a methodological difference between the two ‘hard-CLIL’ programmes: the school that highly exposed CLIL learners attend is a ‘British Council-MEC’ school, whose teachers receive specific instruction on content-based approaches from the British Council. These differences in the CLIL programmes may also have contributed to extending the differences in lexical knowledge, although they are not as evident in the recognition rate of the first one-thousand-word families.

Third, the synergy between the previous two explanations may be the reason for the differences between high- and moderate-exposure CLIL learners. It is also possible that a slight difference in input, together with the use of a different teaching method in the class, may result in significant improvements in recognising the second 1K most frequent items. Be that as it may, in light of these results, one cannot dismiss that the amount of exposure may foster vocabulary knowledge.

However, the findings of this study should be treated with caution, and some limitations should be considered. First, this study should be complemented with other factors that may affect the results, such as the teachers’ role, individual differences, extramural use of English, or actual English use in the classroom. Likewise, a more extensive and varied sample would be welcome to replicate the study. Besides, the impact of input should also be explored to better understand the importance of input-related factors in CLIL. Finally, comparing the effects of exposure with other teaching contexts would also be relevant.

## CONCLUSIONS

The present piece of research was designed to analyse the impact of the amount of exposure on the receptive lexical knowledge of CLIL primary-school learners. Concretely, it has explored differences in recognition of high-frequency L2 English words of three CLIL primary-school groups (N=112) differing in their exposure to English.

CLIL is a dual-focused approach in which learners study some subjects in a FL. In practice, it is defined as an “umbrella term” (Mehisto et al. 12), in which learners’ L2 learning experience may vary significantly depending on the number of subjects taught in the FL and the time devoted to the CLIL practice. In the particular case of L2 exposure, input-related factors, such as frequency, quantity and quality of input, are frequently pointed out as elements that may result in effective language learning practices. In the case of CLIL, the increased instructed amount of exposure the approach offers has often been claimed to be a positive determining factor for students’ linguistic development. However, to the best of my knowledge, little research has been conducted to systematise and quantify the benefits of increased L2 exposure to CLIL learners.

Following this idea, the receptive knowledge of the first and second 1K bands of three groups of CLIL primary-school learners exposed to different amounts of L2 instruction has been compared. Although there have been some efforts to determine the recognition rate of L2 lexical items by CLIL primary learners, this study offers a significant methodological difference in the exploration of high-frequency terms as it differentiates between the first and second 1K bands explicitly, rather than presenting a comprehensive exploration of understanding of high-frequency terms. This methodological modification has allowed an in-depth exploration of the possible differences in lexical knowledge resulting from varying L2 amount of exposure.

Results have shown that CLIL learners understand about 60% of the 1K most frequent English words and about 41% of the second 1K most frequent terms after an average exposure of 1,800 hours of English instruction. However, some significant variations have been identified when considering L2 exposure. Students with the lowest exposure have shown a worse performance in both first 1K and second 1K tests. As for high and moderate exposure CLIL learners (differing in about 400 hours of exposure), their comparison showed no significant differences in the first 1K band, where both groups showed extensive knowledge, but,

conversely, significant differences were found in the second 1K band, where more intensively exposed learners presented a better recognition rate.

The lack of difference in the 1K band between high- and mid-exposure groups may prevent one from stating that Instructed amount of exposure affects L2 highly-frequency word recognition at first. However, it may be related to a possible ceiling effect. Both groups show an extensive command of the band, with nearly a third of the high-exposure participants and a fourth of the mid-exposure CLIL learners mastering the band receptively. Given these results in the 1K band test and the vast difference with the lower-exposure group, there may be a ceiling effect not allowing us to perceive significant differences in L2 lexical development derived from varying L2 exposure.

In contrast, these differences are more noticeable in the second 1K band, where learners exposed to a larger amount of input significantly obtained better results. Again, this finding may support the idea that Instructed amount of exposure has some kind of effect on the receptive knowledge of high-frequency words, even when the difference in hours of exposure is not excessively large.

All in all, these findings point to an impact of quantity of L2 exposure on receptive L2 lexical knowledge in CLIL, and, after 2,000 hours of instruction, its influence appears to be particularly evident in the recognition of the second 1K band.

This finding may have some pedagogical implications. Understanding the 2K most frequent English items is a milestone in L2 learning, as they account for about 90% of written texts. This impact is more marked in the case of the first 1K band, which covers about 65 to 85% of spoken and written English discourse (Webb and Nation). Given the weight high-frequency items have on written and spoken texts, the knowledge of these items should be promoted among beginners, as an appropriate development of this band would pave communication in the L2, in general, and understanding of less frequent items in particular.

This research study may serve as a basis for future lines of research. First, it would be very relevant to explore a more comprehensive sample of CLIL students exposed to significantly different degrees of exposure. Second, this research would also be benefitted from and complemented with the analysis of written input to give a more accurate picture of the actual input CLIL learners are exposed to. Besides, further research on the impact of exposure should incorporate learners of younger ages and with

lower L2 exposure to (1) determine the impact of input quantity in the recognition of 1K lexical items and identify the amount of input needed to master this band and (2) explore whether the lack of difference between high-exposure and mid-exposure CLIL learners is constant in time, or, on the contrary, stems from the fact that both groups have already been exposed to input enough to master the band.

## FUNDING

This research has been funded by the Government of Extremadura (HUM022–2021/00547/001), and the *Instituto Universitario de Investigación y Prospección Educativa de la Universidad de Extremadura*.

## REFERENCES

- Adolphs, Svenja, and Norbert Schmitt. “Lexical Coverage of Spoken Discourse.” *Applied Linguistics*, vol. 24, no. 4, 2003, pp. 425–38, doi:10.1093/applin/24.4.425.
- Agustín-Llach, María del Pilar. “Exploring the Receptive Vocabulary of Young CLIL and Non-CLIL Learners.” EuroSLA Conference, 2012, Poznan, Poland. Conference Presentation.
- Agustín-Llach, María del Pilar. “The Role of Spanish L1 in the Vocabulary Use of CLIL and Non-CLIL EFL Learners.” *Content and Language Integrated Learning: Evidence from Research in Europe*, edited by María del Pilar Agustín-Llach and Rosa María Jiménez Catalán, Multilingual Matters, 2009, pp. 112–30.
- Agustín-Llach, María del Pilar, and Andrés Canga Alonso. “Vocabulary Growth in Young CLIL and Traditional EFL Learners: Evidence from Research and Implications for Education.” *International Journal of Applied Linguistics*, vol. 26, no. 2, 2016, pp. 211–27, doi:10.1111/ijal.12090.
- Agustín-Llach, María Pilar, and Rosa María Jiménez Catalán. “Teasing out the Role of Age and Exposure in EFL Learners’ Lexical Profiles: A Comparison of Children and Adults.” *IRAL—International Review of Applied Linguistics in Language Teaching*, vol. 56, no. 1, 2018, pp. 36–43, doi:10.1515/iral-2015-0075.

- Alejo, Rafael, and Ana María Piquer-Píriz. "Measuring the Productive Vocabulary of Secondary School CLIL Students: Is Lex30 a Valid Test for Low Level School Learners?" *Vigo International Journal of Applied Linguistics*, no. 13, 2016, pp. 31–53.
- Arribas, Mario. "Analysing a Whole CLIL School: Students' Attitudes, Motivation, and Receptive Vocabulary Outcomes." *Latin American Journal of Content and Language Integrated Learning*, vol. 9, no. 2, 2016, pp. 267–92, doi:10.5294/la-clil.2016.9.2.2.
- Ball, Phil, et al. *Putting CLIL into Practice*. Oxford UP, 2015.
- Canga Alonso, Andrés. "Receptive Vocabulary of CLIL and Non-CLIL Primary and Secondary School Learners." *Complutense Journal of English Studies*, vol. 23, 2015, pp. 59–77, doi:10.5209/rev\_CJES.2015.v23.51301.
- Canga Alonso, Andrés. "The Receptive Vocabulary of 6th-Grade Primary-School Students in CLIL Instruction: A Preliminary Study." *Latin American Journal of Content and Language Integrated Learning*, vol. 6, no. 2, 2013, pp. 22–41, doi:10.5294/3138.
- Canga Alonso, Andrés. "The Receptive Vocabulary Size of Spanish 5th Grade Primary School Students in CLIL and Non-CLIL Instruction." *ES: Revista de Filología Inglesa*, vol. 36, 2015, pp. 63–85.
- Canga Alonso, Andrés, and Mario Arribas García. "The Benefits of CLIL Instruction in Spanish Students' Productive Vocabulary Knowledge." *Encuentro Journal*, vol. 24, 2014, pp. 15–31.
- Castellano-Risco, Irene. "Receptive Vocabulary and Learning Strategies in Secondary School CLIL and Non-CLIL Learners." *Onomazein*, vol. 40, 2018, pp. 28–48, doi:10.7764/onomazein.40.02
- Castellano-Risco, Irene. *Estrategias de aprendizaje y conocimiento léxico: un estudio sobre el alumnado de educación secundaria en programas de Aprendizaje Integrado de Contenidos y Lengua Extranjera*. 2021. Universidad de Extremadura, PhD dissertation.
- Castellano-Risco, Irene, et al. "The Development of Receptive Vocabulary in CLIL vs EFL: Is the Learning Context the Main Variable?" *System*, vol. 91, 2020, 102263. doi:10.1016/j.system.2020.102263.

- Coyle, Do, et al. *CLIL: Content and Language Integrated Learning*. Cambridge UP, 2010.
- Dang, Thi Ngoc Yen, and Stuart Webb. "The Lexical Profile of Academic Spoken English." *English for Specific Purposes*, vol. 33, no. Supplement C, Jan. 2014, pp. 66–76, doi:10.1016/j.esp.2013.08.001.
- Fernández Fontecha, Almudena. "Motivation and Vocabulary Breadth in CLIL and EFL Contexts. Different Age, Same Time of Exposure." *Complutense Journal of English Studies*, vol. 23, 2015, pp. 79–95, doi:10.5209/rev\_EIUC.2012.v20.39993.
- García Mayo, María del Pilar, and María Luisa García Lecumberri, editors. *Age and the Acquisition of English as a Foreign Language*. Multilingual Matters, 2003.
- Jiménez Catalán, Rosa María, and Yolanda Ruiz de Zarobe. "The Receptive Vocabulary of EFL Learners in Two Instructional Contexts: CLIL versus Non-CLIL Learners." *Content and Language Integrated Learning: Evidence from Research in Europe*, edited by Ruiz de Zarobe and Jiménez Catalán, Multilingual Matters, 2009, pp. 81–93.
- Hernández Muñoz, Natividad, et al. "Cognitive Factors of Lexical Availability in a Second Language." *Lexical Availability in English and Spanish as a Second Language*, edited by Rosa María Jiménez Catalán, Springer, 2014, pp. 169–86, doi:10.1007/978-94-007-7158-1\_10.
- Howard, Martin. "Input Perspectives on the Role of Learning Context in Second Language Acquisition. An Introduction to the Special Issue." *IRAL: International Review of Applied Linguistics*, vol. 49, 2011, pp. 71–82, doi:10.1515/iral.2011.004.
- Lasagabaster, David, and Aintzane Doiz. "A Longitudinal Study on the Impact of CLIL on Affective Factors." *Applied Linguistics*, vol. 38, no. 5, Oct. 2017, pp. 688–712, doi:10.1093/applin/amv059.
- Lasagabaster, David, and Raquel López Beloqui. "The Impact of Type of Approach (CLIL Versus EFL) and Methodology (Book-Based Versus Project Work) on Motivation." *Porta Linguarum*, vol. 23, 2015, pp. 41–57.

- Lorenzo, Francisco, and Leticia Rodríguez. “Onset and Expansion of L2 Cognitive Academic Language Proficiency in Bilingual Settings: CALP in CLIL.” *System*, vol. 47, 2014, pp. 64–73, doi:10.1016/j.system.2014.09.016.
- Manzano Vázquez, Borja. “CLIL in Three Spanish Monolingual Communities: The Examples of Extremadura, Madrid and La Rioja.” *Estudios de Lingüística Inglesa Aplicada*, vol. 15, 2015, pp. 135–59.
- Mehisto, Peeter, et al. *Uncovering CLIL: Content and Language Integrated Learning in Bilingual and Multilingual Education*. Macmillan Education, 2008.
- Miralpeix, Immaculada. “Lexical Knowledge in Instructed Language Learning: The Effects of Age and Exposure.” *International Journal of English Studies*, vol. 7, no. 2, 2007, pp. 61–83.
- Moreno-Espinosa, Soraya. “Can P\_Lex Accurately Measure Lexical Richness in the Written Production of Young Learners of EFL?” *Porta Linguarum*, vol. 4, 2005, pp. 7–21.
- Muñoz, Carmen. *Age and the Rate of Foreign Language Learning*. Multilingual Matters, 2006.
- Muñoz, Carmen. “Contrasting Effects of Starting Age and Input on the Oral Performance of Foreign Language Learners.” *Applied Linguistics*, vol. 35, 2014, pp. 463–82, doi:10.1093/applin/amu024.
- Nation, Paul. *The BNC/COCA Word Family Lists*. 2012.
- Nation, Paul. “How Large a Vocabulary Is Needed for Reading and Listening?” *The Canadian Modern Language Review*, vol. 63, 2006, pp. 59–82.
- Nation, Paul. *Teaching and Learning Vocabulary*. Newbury, 1990.
- Nation, Paul. “Testing and Teaching Vocabulary.” *Guidelines*, vol. 5, no. 1, 1983, pp. 12–25.
- Rothman, Jason, and Pedro Guijarro-Fuentes. “Input Quality Matters: Some Comments on Input Type and Age-Effects in Adult SLA.” *Applied Linguistics*, vol. 31, no. 2, 2010, pp. 301–06, doi:10.1093/applin/amq004.

- Ruiz de Zarobe, Yolanda. "CLIL and Foreign Language Learning: A Longitudinal Study in the Basque Country." *International CLIL Research Journal*, vol. 1, 2008, pp. 60–73.
- Schmitt, Norbert. *Researching Vocabulary: A Vocabulary Research Manual*. Palgrave Press, 2010.
- Schmitt, Norbert, et al. "Developing and Exploring the Behaviour of Two New Versions of the Vocabulary Levels Tests." *Language Testing*, vol. 18, no. 1, 2001, pp. 55–88, doi:10.1177/026553220101800103.
- Schmitt, Norbert, and Diane Schmitt. "A Reassessment of Frequency and Vocabulary Size in L2 Vocabulary Teaching." *Language Teaching*, vol. 47, no. 4, Oct. 2014, pp. 484–503, doi:10.1017/S0261444812000018.
- Sylvén, Liss. *Investigating Content and Language Integrated Learning: Insights from Swedish High Schools*. Multilingual Matters, 2019.
- Tragant, Elsa, et al. "Vocabulary Learning at Primary School: A Comparison of EFL and CLIL." *International Journal of Bilingual Education and Bilingualism*, vol. 19, no. 5, 2015, pp. 579–91.
- Webb, Stuart, et al. "The Updated Vocabulary Levels Test: Developing and Validating Two New Forms of the VLT." *International Journal of Applied Linguistics*, vol. 168, no. 1, 2017, pp. 33–69, doi:10.1075/itl.168.1.02web.
- Webb, Stuart, and Paul Nation. *How Vocabulary Is Learned*. Oxford UP, 2017.
- Webb, Stuart, and Michael P. H. Rodgers. "The Lexical Coverage of Movies." *Applied Linguistics*, vol. 30, no. 3, 2009, pp. 407–27.
- Webb, Stuart, and Michael P. H. Rodgers. "The Vocabulary Demands of Television Programmes." *Language Learning*, vol. 59, no. 2, 2009, pp. 335–66.