Estudios de lingüística inglesa aplicada

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THE EFFECTS OF USING L1 TRANSLATION ON YOUNG LEARNERS' FOREIGN LANGUAGE VOCABULARY LEARNING[1]

Aïda Codina Camó
Universidad Autónoma de Barcelona, Spain
acodinacamo@gmail.com

Elisabet Pladevall Ballester
Universidad Autónoma de Barcelona, Spain
elisabet.pladevall@uab.cat

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In the field of foreign language (FL) vocabulary acquisition, there seems to be a growing awareness of the fact that the mother tongue (L1) might have a facilitating role for language learners. Research has found evidence to support the positive effects of using the L1 as an instructional tool, particularly at the initial stages of FL learning. The present study explores the role that the L1 plays in young learners' retention of and access to English vocabulary. An experimental group and the corresponding control group of 10-11 year-old children in an EFL Catalan school context were recruited for the study. The experimental group was exposed to both the English input and the L1 translation of the target items, whereas the control group received just the English input. Differences between the groups in terms of lexical retention and lexical access were analysed. Results of the present study suggest that providing students with the L1 equivalents of the

lexical items results in learners retaining more lexical items, accessing them with greater ease and recalling them for longer periods of time.

Key words: *Young learners, foreign language learning, English vocabulary learning, L1 use.*

En el campo del aprendizaje del vocabulario de una lengua extranjera, parece haber cada vez más conciencia del hecho que la lengua materna (L1) podría tener un papel facilitador para los aprendices de una lengua extranjera. La investigación ha evidenciado los efectos positivos del uso de la L1 como una herramienta de instrucción, sobre todo en las etapas iniciales del aprendizaje de la lengua extranjera. Éste estudio explora el papel que desempeña la L1 en la retención y el acceso del vocabulario inglés en estudiantes jóvenes. Para el presente estudio, se reclutaron un grupo experimental y el correspondiente grupo control de niños de 10-11 años escolarizados en un contexto en el que, siendo el catalán la lengua materna de los estudiantes, el inglés se enseña como lengua extranjera. El grupo experimental fue expuesto al input en inglés y a la traducción del vocabulario y, en contra partida, el grupo control solo recibió el input en inglés. Los resultados de éste estudio muestran que proveer a los estudiantes con la traducción del vocabulario hace que los alumnos retengan más elementos léxicos, accedan a ellos con mayor facilidad y los recuerden por períodos más largos de tiempo.

Palabras clave: *Aprendices jóvenes, aprendizaje de lenguas extranjeras, aprendizaje del vocabulario inglés, uso de la L1.*

1. Introduction

Vocabulary is considered to be a key component of foreign language (FL) learning as commanding an extensive range of words is a central requirement to communicate effectively in any language (Hulstjin, 2001; Kit, 2003; Nation, 1990). A wide and growing range of techniques have been proposed to promote foreign language vocabulary development. Instances of different approaches include the use of mnemonic devices, the practice of guessing vocabulary from context, the employment of visual aids, the application of paired associates and the use of dictionaries, among many others. These various approaches are very often linked and embedded into different broad teaching methods as, for instance, the naturalistic approach, which favours more implicit techniques for vocabulary development (Laufer, 2005; Oxford, 1990; Read, 2004).

Providing the mother tongue (L1) translation to the items being taught is very often regarded as a controversial practice when used to deal with vocabulary in foreign language contexts. Resourcing to the L1 in FL vocabulary teaching might be seen as a negative and unfashionable exercise. Nevertheless, research has found clear advantages in linking FL words to their L1 equivalents, more significantly at the initial stages of the learning process when the initial form-meaning connection has to be established (Cook, 2003; Jiang, 2002; Liu, 2009; Schmitt, 2008).

The present study seeks to contribute new data to the analysis of the role the L1 plays in young learners' retention of and access to English vocabulary, as these learners represent the initial stages of the FL learning process in the context analysed. Two groups of Catalan students aged between 10 and 11 participated in this study. One group was exposed to both the FL forms of a set of lexical items and their L1 equivalents whereas the other group was only provided with the English input. This contrastive instructional practice is analysed in relation to lexical retention, memory effects and lexical access. More specifically, the main research questions addressed in the present study are the following (1) Does the use of L1 translation promote short and long-term vocabulary retention? and (2) Does the L1 act as a facilitator in terms of lexical access?

In line with other studies carried out exploring the effects of using L1 translation in foreign or second language vocabulary learning (Grace, 1998; Hulstijn, Hollander and Greidanus, 1996; Laufer and Shmueli, 1997; Liu, 2009; Lotto and de Groot, 1998; Macaro and Lee, 2013; Prince, 1996; Sieh, 2008; Van Hell and Candia Mahn, 1997), our hypothesis is that using the L1 when teaching vocabulary will be beneficial for young learners' vocabulary learning. Participants provided with the L1 equivalent translations are predicted to retain more words and access them with greater ease.

The present paper is divided in 6 sections and it is organized as follows: section 2 presents the theoretical framework of the study, which includes three different subsections: The first subsection highlights the main differences between learning and acquiring vocabulary, the second one explores strategies used in vocabulary learning and finally, the third subsection reviews the role of the L1 in FL vocabulary teaching. The methodology of the study is presented in Section 3. Sections 4 and 5

introduce, analyse and discuss the results obtained from the study and finally some conclusions are drawn.

2. Literature review

2.1. L1 vocabulary acquisition vs. FL vocabulary learning

Children learning their L1 receive a considerable stream of utterances and are capable of inducing, with little supervision, the words from this stream (Kit, 2003). Such a process is used by children to acquire a large number of words and they do so at an extraordinary pace. In contrast, learning FL vocabulary presents a very different scenario. The fact that FL learners are already equipped with an L1 and, hence, have developed conceptual and semantic systems linked to the L1, implies that FL vocabulary learning will involve, at least in its initial stages, a mapping of the new lexical forms onto already existing conceptual meanings or translational equivalents in the L1 (Takač, 2008). In other words, when being exposed to a second language, children have already learned how to categorise the world from their L1 experience and such categorisation is not likely to be retraced. Instead, the FL lexical items are prone to be associated to L1 representations.

Models of bilingual lexical processing like the Revised Hierarchical Model (Kroll and Stewart, 1994) suggest that "L1 word forms are directly linked to meaning at the conceptual level, but that FL meaning is accessed via L1 word forms" (Kroll and Sunderman, 2003: 401). Resourcing to a range of evidence from cross-language priming, Kroll (1993) also argues for a model of lexical and conceptual links between the L1 and the FL in which the strength of such connections differs depending on factors like proficiency and age of acquisition. Regarding these mentioned factors, it follows that during the early learning process, the FL mental lexicon seems to be most likely organised in subordination to the L1 than in more advanced stages.

Foreign language vocabulary learning diverges from L1 acquisition not only on account of the different mental organization but also with respect to exposure to the target language. Learning words both in the L1 and in the FL is a cyclical process which involves meeting these new words repeatedly (Cameron, 2001). As suggested by Laufer (2005), in order for lexical items to enter into the long-term memory system, the learner needs

to have repetitive encounters with them. Such a cyclical process is more likely to occur in immersion contexts in which language tends to be learned without paying special attention to vocabulary since massive exposure to language guarantees incidental vocabulary acquisition (Kersten, 2010). Conversely, the type of input exposure students learning a FL receive is often limited to the classroom environment. This condition does not favour children learning a large amount of vocabulary neither simply from exposure nor in a short period of time. In FL learning contexts, a remarkable amount of explicit vocabulary instruction is needed in order for students to learn vocabulary in a relatively short period of time (Campbell, Campbell & Dickinson, 2004).

2.2. Strategies for foreign language vocabulary teaching

A wide variety of approaches have been proposed to deal with vocabulary in FL learning contexts, which do not seem to foster the acquisition of vocabulary in an incidental way, as the FL learner is not likely to encounter a word numerous times so as for it to be naturally acquired (Folse, 2004; Laufer, 2005; Takač, 2008). In addition, a learner must have a large FL vocabulary to be able to guess the meaning of unknown words from surrounding context clues successfully. Such a precondition entails that less proficient and/or younger learners are at a disadvantage as they are likely to face considerable difficulties in increasing their FL lexicon by inferring unknown word meanings from unclear contexts. Explicit instruction of vocabulary, which is the practice used in the present study, is seen as particularly essential for FL learners, particularly beginners and young learners, whose lack of vocabulary limits their reading or understanding abilities (Folse 2004; Anuthama, 2010).

It is commonly believed that strategies that take form as the principal path to meaning are more efficient for FL learners since they enhance memorisation. Once learners have met and paid special attention to the form of a new word, their vocabulary learning process has begun. The word being taught explicitly enters the learner's short term memory and through repetitive vocabulary teaching stored items become available for use in the longer term. Specifically for young language learners, exposure to very concrete language that connects with objects young learners can handle or see is crucial in order to develop their mental inventory of lexical

items (Cameron, 2001). Techniques used to increase young learners' vocabulary include presenting realia that students can experiment with, making use of mime, presenting illustrative situations in which vocabulary is introduced and using visual aids (Pinter, 2006). The use of pictures has been especially highlighted in memory research since it has been asserted that pictures are recalled more efficiently than words (Carpenter and Olson, 2012).

2.3. The use of the L1 in foreign language vocabulary learning

Previous research on using L1 equivalent forms as a way of teaching, accessing and/or memorising FL lexical items has mainly focused on analysing adult intermediate-to-advanced students and suggests that a bilingual teaching /presentation method facilitates the learning and retention of vocabulary (Hulstijn *et al.,*1996; Laufer and Shmueli, 1997; Van Hell and Candia Mahn,1997; Lotto and de Groot, 1998; Liu, 2009)

As far as beginners are concerned, in a study carried out with English speakers learning French, Prince (1996) found evidence to support the claim that less proficient students are also able to recall more items when they learn the words in the translation condition. Similarly, Grace (1998) also gave support for translation resulting in learners retaining more words. In this study, translation was considered the preferred option for the FL beginners since it provided an opportunity for learners to double check the meanings of words. Considering young beginners, Sieh (2008) conducted a study aiming at investigating the way children process and store English vocabulary in initial stages of FL learning. More specifically, the status of the L1 in FL vocabulary learning was explored by measuring the students' accuracy and their reaction times in relation to visual and auditory stimuli. Sixty-four 9-year-old students from a suburban elementary school in southern Taiwan took part a story-telling programme focused on explicit vocabulary teaching. The experimental and the control group were discriminated by a pedagogical difference: The former was instructed only in English whereas the latter was provided with the Chinese translation equivalents to the selected English vocabulary. Results of the study showed that learners who were exposed to L1 translations not only gained more new words but they were also quicker in word retrieval. The author's conclusion is that the fact that the two languages were connected

made not only retention of but also the access to English vocabulary much more effective.

Finally, taking into consideration age, Macaro and Lee (2013) explored whether English only instruction or using the L1 was differentially beneficial to young and adult learners regarding vocabulary learning and retention. Elementary school children who had been studying English for a few years and adults at university with demonstrably higher levels of proficiency were selected to examine whether the effects of using L1 as a vocabulary learning practice varied across contrastive age groups. Findings of this study suggest that although the use of the L1 was shown to be more helpful for young learners than for older ones, both age groups benefited more from linking lexical items to their L1 translation than from being provided with definitions or paraphrases. All in all, research seems to give evidence to consider the L1 to be a useful tool when approaching vocabulary learning, both for young and adult learners, although previous studies on the use of L1 translation with young learners are particularly scarce. This study aims to contribute new young learners' data to the field by analysing short and long-term retention of and access to FL lexical items with and without the use of the learners' L1.

3. Methodology

3.1. Participants

A total of 34 students from two fifth grade groups of a Catalan primary school took part in the present study. The pupils were all aged between 10 and 11 at the time of the study. The two groups were distinguished by a different instructional practice in relation to explicit vocabulary teaching. During the study, the control group was instructed in English only whereas the experimental group was provided with the L1 translation of the chosen lexical items. The control group was composed of 16 students (7 male and 9 female) and the experimental group consisted of 18 participants (8 male and 10 female). All the children participating in the study had Catalan as their L1and English was a foreign language to all of them.

All the subjects started curricular English instruction when they were five years old and from that age on they had been exposed to three hours of English as a Foreign Language (EFL) a week. Apart from these

curricular hours of English, some of the participants reported that they were or had been attending extra English lessons. In the control group, there were 10 students attending extra classes and 6 who had never attended them. As for the experimental group, 11 students had attended them and 7 had not. Hence, the percentage of students attending and not attending private lessons is balanced between the two groups. Among the participants who reported attending extra-curricular lessons, a great variability in the number of hours per week as well as in the number of months/years that children had been exposed to these lessons was observed. As for the number of hours per week, extra exposure to English represented, in the vast majority of cases, as little as 1 hour or, at the most, two hours a week. With regards to the length of time, for children who had been attending extra lessons, values ranged from 5 months to 4 years, although many of the ones who had been involved in these lessons for years reported that their attendance had been irregular.

3.2. Materials, design and procedure

Explicit vocabulary teaching through storytelling was the practice employed in order to investigate whether the use of the mother tongue in vocabulary teaching helps learners retain and access new words in a more effective way.

The chosen story for the study was *The Tale of Peter Rabbit* (Potter, 1902), from which a total of 20 lexical items were selected to be explicitly taught. The chosen lexical items were presented through a story as stories offer meaningful and rich input while they also help increase the learners' level of motivation, interest, enjoyment and pleasure towards vocabulary learning. *The Tale of Petter Rabbit* was considered suitable for the purpose of the study for two reasons. First, it presents a simple plot which would enable students to focus not only on the story line but also on the selected vocabulary. Secondly, the fact that the story develops in a rural setting helped finding many specific vocabulary items that were most certainly not previously known by the subjects. Such a fact was further assured with the administration of a pre-test (see Appendix B and further explanation in this section).

Initially, storytelling was supposed to be carried out using only some flashcards with images of different scenes of the story. The exercise

of telling the story was piloted with a different group of 10 year-olds. The use of flashcards made the lesson not very dynamic and "rather boring", as reported by some of the children. It was very difficult to grasp their attention, as they would stop listening and would even start talking among themselves. The pilot study indicated that the story might have been too simple in terms of plot to hold the interest of 10 year-olds or else that the non-dynamic nature of flashcards was seen as extremely unfashionable to kids who have grown up surrounded by technology. Having these considerations in mind, a second pilot experiment was conducted, this time using a video of the tale to present the story and flashcards of some items that would be used not to explain the story but to emphasize the selected vocabulary. A flashcard containing an image and its spelling counterpart was designed for each of the 20 items to be tested (see Appendix A). This second pilot resulted in all the students carefully listening to the story. They even asked for the story to be played again. Hence, using a video[2] to present the story was selected as the practice to be used in the actual study.

Having all the materials ready for the study, a vocabulary test was administered as an achievement test to ensure that the two initially selected groups were comparable. The test was designed adapting some exercises from the textbook the participants used in their previous school year: *Incredible English 3* (Phillips and Morgan, 2007). Students were given different sets of 5 to 8 thematically related images with a total of 32 which they had to match with their corresponding spelling. The results of the vocabulary test in each group were compared by means of an independent samples t-test. Although the experimental group scored slightly higher (M= 17.84, SD= 2.62) than the control group (M= 16.99, SD= 2.40), the difference was not statistically significant: $t(34)=.985$, $p=.332$.

Once the two groups were shown to be comparable in terms of their capacity to retain vocabulary, a biodata questionnaire aiming at gathering information on the age, gender, educational backgrounds and linguistic habits of the participants was given to all the subjects (see section 3.1 for the results). In addition, a pre-test was carried out to make sure the participants were not familiar with the selected lexical items prior to instruction (see Appendix B and section 4 for the results). The pre-test included the 20 key items from the story which were divided into three parts so as for the young learners to be able to quickly make their choice among six to eight pictures. Students had to listen to a recording and number a set of lexical

items. They had to write down the number preceding a lexical item on the test sheet which had pictures of the objects corresponding to the selected lexical items. Prior to the administration of such a test, a corresponding mock test based on different lexical items was projected on the board and completed in front of the participants. The mock test was based on lexical items known by the subjects, namely fruits. The aim of such a test was to make sure the participants had understood the instructions given to fill in the actual test. In order to design the recordings for the mock test, the pre-test and the following post-tests, two different native speakers were asked to utter numbers from 1 to 8 followed by the target lexical items. The clearest recording was the one used for the tests.

After the students had completed the pre-test, two sessions of storytelling were devoted to each group, leaving a period of three days between one session and the other. For both groups, the video was played twice and during the second reproduction, it was stopped whenever a lexical item selected for the study appeared. Every time the story was paused, the flashcard of the particular item was shown to the pupils. Repetition was also encouraged every time a target lexical item appeared. For the control group, only the English names of the objects were uttered. On the other hand, the experimental group was provided with both the English name of the object and its translated counterpart for each item. Since Catalan is the official language in the education system in Catalonia, this was the language used for L1 translation. In the school in which the study was carried out, the English teacher would rarely use practices that include the use of the L1 to promote English vocabulary learning. Instead, students were exposed to the FL vocabulary and images were used to help them understand their meanings. Hence, students in the experimental group were exposed to a somehow new teaching practice for them.

Immediately after the second story session, a post-test (post-test I) having the same format as the pre-test was administered to both groups in order to explore the vocabulary gain with respect to the pre-test (see Appendix C and section 4 for the results). A second post-test (post-test II) took place four days after the last story session. The test being carried out a few days later enabled memory effects to be included as a further variable of analysis to the study (see Appendix D and section 4 for the results).

A week after the students were exposed for the last time to the story and hence to the instructed vocabulary, children were asked to complete

a computerised test designed with *TP Worken*[3] measuring reaction times (RT). Such a test was used to determine the time subjects took to match auditory and visual cues and, hence, to check which group accessed the vocabulary with greater and faster ease. In other words, the role of L1 was examined as being either an obstacle or a facilitator in terms of vocabulary access. After the completion of the computerised test, a short individual interview was carried out with all subjects in both groups. The purpose of this interview was to ask subjects whether translations came to their minds after listening to the audio and before clicking the right image so as to explore in a more qualitative and explicit way whether L1 translation influenced their choice. Finally, a third and last post-test (post-test III) was administered after a month in order to examine whether the students still maintained the vocabulary they proved to have learnt (see Appendix E and section 4 for the results). This test also served to analyse long-term memory effects. Participants were continually reminded before tests that the results were used exclusively for the study and would not count towards their school final mark.

3.3. Data analysis

Both quantitative and qualitative data were collected in the present study. Data from the two groups were coded in SPSS according to the distinct tests carried out. Intergroup comparisons between the control group, which was exposed to English only, and the experimental group, which was given L1 translation, were made through independent-samples t-tests, which examined the differences between the results of the two groups in relation to the pre-test, post-tests and Reaction Times test. On the other hand, intragroup comparisons were carried out by means of paired-samples t-tests which explored the individual evolution of each group from post-test I to post-test III. Finally, data collected from the recorded interviews with the participants were transcribed and analysed to explore from a qualitative point of view whether participants resorted to the L1 when accessing the FL lexical items.

The pre-test and the post-tests were all scored out of 20. The vocabulary test was scored out of 32 but later calculated out of 20 for the sake of simplicity. In all these tests, a score was given to each correct answer and no scores were given for incorrect ones. As for the computerised test, accuracy was not considered a variable of analysis since participants

were asked to choose the correct answer between just two pictures. This meant that the nature of this test was completely different from that of the post-tests, in which the choice was made among six to eight pictures. In order to analyse the learners' reaction times, the mean time of reaction of each participant was calculated in seconds excluding incorrect responses.

4. Results of the study

With the aim of ensuring not only that the participants were not familiar with the selected lexical items prior to instruction but also that the two groups had roughly the same previous knowledge about the words, results of the pre-test were analysed using independent-samples t-test. As it was expected, both groups scored very low in this test: M=5.25, SD=3.39 for the control group and M=5.44, SD=3.27 for the experimental group and the very slight difference found between the two groups resulted not to be significant: t(34)=.170, p=.866[4].

Regarding the first post-test, which was carried out immediately after the participants were exposed to the vocabulary items for the second time, no statistically significant differences (t(34)=.163, p=0.872) were found between the control group (M=17.43, SD=2.65) and the experimental group (M=17.55, SD=1.46). Not until some time was allowed between exposure to instruction and administration of the tests did the two groups start to show significant contrasts among them. The second test, which was carried out four days after the second storytelling session, already showed significant differences between the two groups (t(34)=4.802, p=.000). The mean score for this test was 15.06 (SD=3.88) for the control group and 19.61 (SD=0.97) for the experimental group. Significant differences between the two groups were maintained in post-test III (t(34)=3.367, p=.002) where, again, the experimental group scored higher (M=17.77, SD=2.31) than the control group (M=14.06, SD=3.99).

As far as the computerised test is concerned, the average time in seconds that students took to react to the auditory cues was also analysed using independent-samples t-tests. Considering reaction times, the experimental group (M=2.13, SD=0.39) responded consistently faster than the control group (M=2.58, SD=0.69) and the difference proved to be statistically significant t(34)=-2.372, p=.024. The interviews carried out

right after the completion of the RTs resulted in 77% of the participants in the experimental group admitting that Catalan translations had occurred to them during the RTs test. Conversely, only 44% of the control group subjects reported having mapped the cue with the Catalan translation. The majority of them further stated that they recalled the images that were used during instruction.

	Control group (N=16)		Experimental group (N=18)		t-test	
	M	SD	M	SD	*t*	*p*
Pre-test	5.25	3.39	5.44	3.27	0.170	0.866
Post-test I	17.43	2.65	17.55	1.46	0.163	0.872
Post-test II	15.06	3.88	19.61	0.97	4.802	*0.000
Post-test III	14.06	3.99	17.77	2.31	3.367	*0.002
Reaction Time	2.58	0.69	2.13	0.39	-2.372	*0.024

Table 1: Intergroup comparison of scores obtained in the various tests between the control and the experimental group.

Figure 1 shows the two groups' evolution from the pre-test to post-test III. The graphic illustrates that both groups went through a considerable and statistically similar word growth from the pre-test to post-test I. With respect to the evolution from post-test I to post-test II, whereas the control group experimented a decrease in word retention, the experimental group managed to recall more words in post-test II than in post-test I. Finally, both groups went through a word decrease in from post-test II to post-test III, which was carried out a month after the participants had been exposed to the target lexical items for the last time.

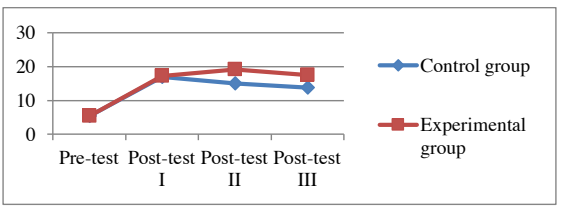

Figure 1: Group evolution from post-test I to post-test III

In order to explore the overall group evolution from post-test I, the first test carried out after exposure, to the last test, namely post-test III, results of these two tests were analysed using a paired-samples t-test. A period of one month in which students were not given any instruction of the target words was left between these two tests. As displayed in Table 2, there are statistically significant differences in word retention in the comparison of results for post-test I and post-test III for the control group but not for the experimental one. More specifically, the analysis of the paired-samples t-test for the control group showed that the mean of the lexical items retained differed significantly (t(16)= 4.331, p=.001) from post-test I (M = 17.43, SD = 2.65) to post-test III (M = 14.06, SD = 3.99). As for the experimental group, word retention for the target lexical items did not show a significant difference (t(18)= -.412, p=.686) from post-test I (M=17.55, SD=1.46) to post-test III (M=17.77, SD=2.31). Hence, although a month was left between the administration of the two tests, the participants provided with the L1 translation of the lexical items did not show a statistically significant decrease in word retention.

	Post-test I		Post-test III			
	M	SD	M	SD	*t*	*p*
Control Group (N=16)	17.43	2.65	14.06	3.99	4.331	*.001
Experimental Group (N=18)	17.55	1.46	17.77	2.31	-.412	.686

Table 2: Intragroup comparison of the students' performance in post-test I and post-test III.

5. Discussion

The present study aimed at examining whether English-only instruction or the use of L1 translation caused a different impact on young learners' retaining and accessing English vocabulary. In line with previous research carried out in foreign language vocabulary learning and as it was hypothesised (Prince, 1996; Hulstijn *et al.*, 1996; Laufer and Shmueli, 1997; Van Hell and Candia Mahn, 1997; Grace, 1998; Lotto and de Groot, 1998; Sieh, 2008; Liu, 2009; Macaro and Lee, 2013), results of this study show that the experimental group, which was provided with L1 glosses,

performed significantly better than the control group in terms of both long-term vocabulary retention and lexical access.

On the basis of the results obtained by both groups in the immediate test (post-test I) and as regards research question (1), the present study suggests that both teaching practices promoted an immediate recall of the English lexical items since both groups performed considerably well and statistically similarly in terms of short-memory vocabulary retention. According to Maye and Gerken (2001), words presented in verbal (including written and spoken text) and visual (including pictures and video) forms, enter the learners' sensory memory through the visual and the auditory channels and then a number of these words enter short-term memory, where they are temporarily held. Thus, it seems that both providing students with the pictorial and the English input in one group and using the pictorial and the English and Catalan word forms in the other group made lexical items enter the short-term memory system.

Still in relation to research question (1), using L1 translation proved to have a statistically significant positive effect on young learners' long-term vocabulary retention. Even though the two different instructional practices did not entail contrastive effects on the learners' immediate vocabulary retention, the learners' performance in post-test II and post-test III demonstrated that providing students with the L1translation of lexical items resulted in young learners retaining more words and for longer periods of time.

More specifically, results of post-test II, which was carried out four days after exposure to the items through storytelling, showed not only that the English-only participants experienced a word decrease as some time was allowed after exposure but also that the L1-translation group managed to recall more words than in post-test I, telling the two groups significantly apart. Thus, it appears that providing students with the L1 translation of the lexical items promoted a delayed memory effect in that it seems that the connection between the FL word-form and its L1 equivalent showed its beneficial effects not immediately after exposure but as some days were left after instruction, that is to say, in the long term. Hence, apparently both groups relied on the connection of the auditory and the visual cues in post-test I, since they had just been listening and exposed to the story and the flashcards. Yet, in post-test II, participants did not have the visual and the auditory stimuli fresh in their minds and the experimental group, who

could instead make use of the L1-FL connection with which they were provided during instruction, managed not only to maintain the number of right answers for post-test I but to increase it. On the other hand, the control group failed to make such connection and thus, they went through a memory decrease.

Considering the last post-test, although from post-test II to post-test III the experimental group also underwent a word decrease, this was statistically different from the more considerable decrease demonstrated by the control group. In fact, considering the overall group evolution, no statistically significant differences were found between post-test I and post-test III for the experimental group whereas the word decrease from these two tests was significant for the group that was not provided with the L1 equivalents of the target lexical items. In connection to the first research question, such a fact implies that providing young learners with both the L1 and the FL forms of lexical items does have an impact on their vocabulary gain since the connection of the two languages at the lexical level seems to make retention of English vocabulary easier.

Research has found that since learners exposed to a foreign language possess a well-established L1 conceptual and lexical system, FL words are likely to be linked to the already existing L1 conceptual representations. The fact that this study was carried out with young learners gives further support to predict the participants' reliance on the L1 translations since it has been attested that strong links between a concept and its L1 lexical representation exist at initial stages of foreign language learning (Kroll, 1993; Kroll and Stewart, 1994; Kroll and Sunderman, 2003; Kersten, 2010; Macaro and Lee, 2013). Consequently, and as it has been shown in the present study, L1 translation teaching practice enhances the connection between the FL and the L1 word forms and ultimately facilitates young learners' retention of new vocabulary. The interviews carried out in the present study lend further support to the claim that participants provided with the L1 translation accessed the FL words through their L1. The learners' limited proficiency in English strengthened their reliance on the L1 and they were able to retain more words precisely because they could match the FL forms directly to their already existing L1 mental representations. Students in the control group were not provided with the L1 during instruction and this made word access and retention slower and more difficult. This was shown by their substantial decrease in

lexical retention from post-test I to post-test II and even more regarding post-test III.

As far as lexical access is concerned and in relation to research question (2), the fact that the control group would match words directly to their corresponding pictures and the experimental group had to process one more step accessing the L1 translation equivalents could well lead to the prediction that the control group would produce shorter reaction times. Nevertheless, and in line with previous research (Sieh, 2008) results of the computerised tests showed that using the L1 in conjunction with the FL in teaching FL vocabulary was also beneficial in terms of lexical access since participants in the experimental group had shorter reaction times. Again, the stronger connection of the FL word forms to L1 representations in the experimental group made them outperform the control group also in terms of speed of lexical access.

As pointed out by Snodgrass (1993), connecting a FL word to its translated equivalent yields a reaction time advantage for FL–L1 translation. Since FL word forms are connected to L1 representations in early foreign language learning, the two groups had to locate the phonological cues to the L1 translation equivalents before the picture-decision was made. As suggested by Sieh (2008), the fact that the control group produced longer reaction times is linked to them having to undergo a further process: situating the L1 representations for the FL words. On the other hand, the experimental group managed to respond faster because of their readily-matched connection of English phonological forms to their L1 translation equivalents. Thus, instruction that provides students with the connection of FL words into L1 forms seems to have a positive role for young foreign language learners in terms of both retention and access.

A number of limitations are acknowledged in the present study. First, although the time spent in each of the instruction sessions was the same for both groups, the experimental group inevitably received more exposure to the target lexical items as they were exposed to both the L1 and FL word forms of each item. Secondly, the fact that students were administered four tests having the same format (pre-test, post-test I, post-test II and post-test III) could be considered a factor affecting their test-taking abilities in that although they were not given feedback on their performance, they acquired practice in filling in this kind of test. Moreover, the lexical items

were randomly arranged in the different tests carried out throughout the study, which meant that inevitably some lexical combinations could have been easier for participants to match. Also, the usage of pictures to present vocabulary as well as the written input included in the flashcards could have played a role in young learners' vocabulary retention that may have diminished the L1-yes versus L1-no factor. As for the computerised test, participants had to make their choice among two pictures, which meant that they possibly had to access the word-form of both lexical items to be able to decide which one matched the auditory stimulus they had been given. Such a fact meant that the RTs did not accurately show whether the time used to match the auditory and the pictorial stimuli included the access to one or two lexical items. Finally, it would have been interesting to administer a written test in which students had to provide the L1 translation of the lexical items to see whether the participants not provided with the translation during instruction could really come up with the equivalents, and hence, to explore whether they relied just on the image or whether they really understood the meaning of the concepts.

Further research on this topic could include comparing the practice of using L1 equivalents versus English-only instruction in children of different ages, for instance pre and post critical period children, in order to see whether the use of the L1 is equally beneficial in different young age groups. It would also be interesting to look at more advanced levels since it seems clear that the FL is connected to the L1 at the initial stages of the learning process, but it seems that as the learner becomes more advanced, reliance on the L1 decreases.

6. Conclusion

The present study aimed at exploring the role the L1 plays in young learners' retention of and access to English vocabulary. More specifically, the study has attempted to determine (1) whether the use of L1 translation aids short and long-term vocabulary retention and (2) whether the L1 acts as a facilitator in terms of lexical access.

Data were obtained from a pre-test and three post-tests to explore differences between and within the groups in relation to vocabulary gain and memory effects. A computerised test was conducted to measure

possible differences between the groups in relation to lexical access. In line with previous research carried out in foreign language vocabulary learning, results of the present study showed statistically significant differences in the outcomes of the two contrastive instructional practices, benefitting the group who had been instructed using the L1 translation equivalents. Data collected from recorded interviews carried out with the participants also determined from a more qualitative point of view the strong tendency for students to resort to the L1 when accessing the FL lexical items.

Results are accounted for by the fact that during the early stages of foreign language learning the FL lexis seems to be most likely organised in subordination to the L1 mental lexicon. To conclude, although the use of the L1 is often neglected in the foreign language classroom, the present study suggests that the mother tongue can be used as a beneficial rather than a detrimental tool to promote foreign language vocabulary learning.

Notes

[1] A previous version of this article was submitted as a BA dissertation in the *Departament de Filologia Anglesa i de Germanística* at *Universitat Autònoma de Barcelona*, Spain in June 2014 and is available at https://ddd.uab.cat/pub/tfg/2014/123365/TFG_aidacodina.pdf

[2] https://www.youtube.com/watch?v=MisrUJX3QGU

[3] http://www.worken.com.br

[4] The level of significance will be $p < 0.05$ all throughout the analysis.

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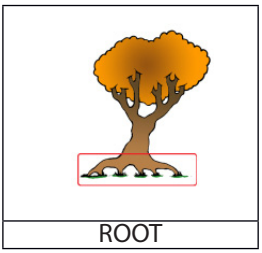
Appendices

Appendix A: Flashcards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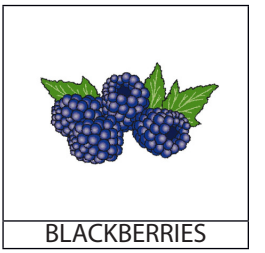
BASKET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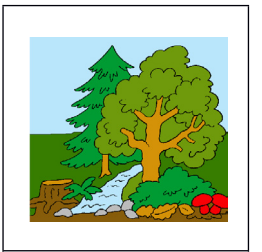
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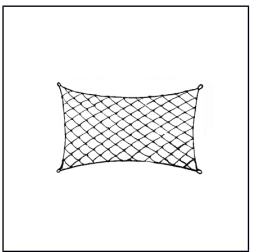
FIRE


BAKERY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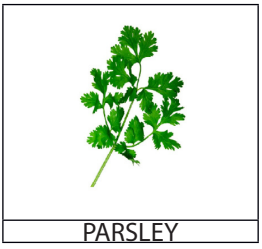
RAKE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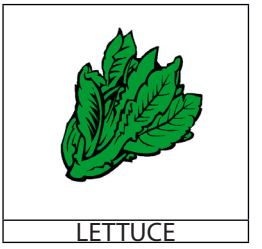
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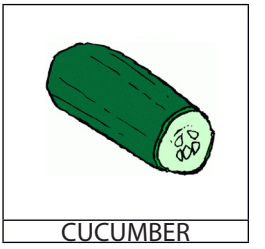
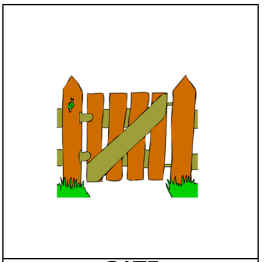

CUCUMBER

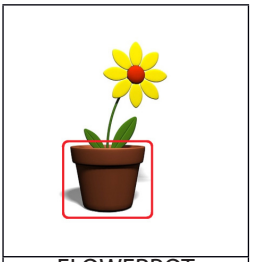


GATE

TOOLSHED

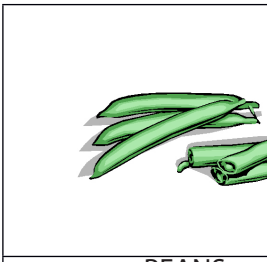
TEARS

SCARECROW

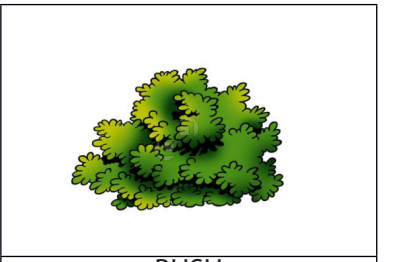


FLOWERPOT

WATERING CAN

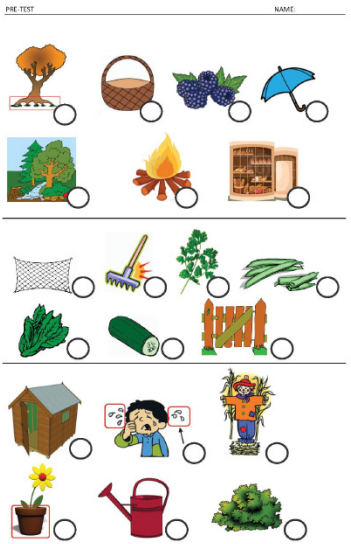


BEANS



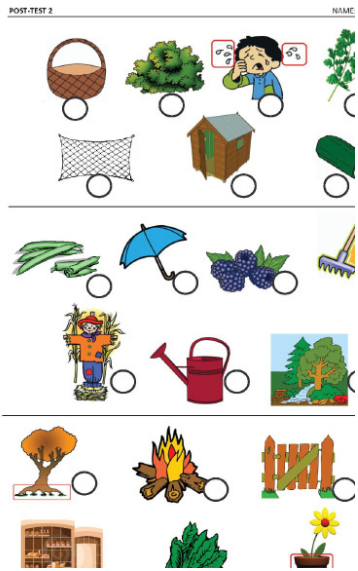
BUSH

Appendix B: Pre-test



Appendix C: Post-test I

Appendix D: Post-test II



Appendix E: Post-test III