Vocabulary learning strategies: their relation to learning success

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In the fields of Second Language Acquisition, there is a recent trend towards the identification of vocabulary learning strategies. However, the majority of this work has focused on the identification of strategies itself, rather than relating it to vocabulary mastery. This article presents a study on the use of vocabulary learning strategies and their relation to receptive vocabulary size. To do so, seventy secondary-school learners took part in the study. They were asked to respond the 2K version of the Vocabulary Levels Test (Schmitt, Schmitt & Clapham, 2001) and a vocabulary learning strategies questionnaire, adapted from Schmitt's taxonomy (1997). The data were examined looking into how the use of vocabulary learning strategies related to larger or smaller receptive vocabulary size. Results will have practical implications in language teaching, as, with the identification of those most useful strategies, teachers will be able to foster their use, turning learners' efforts into a more successful experience.

Keywords: *vocabulary learning, Vocabulary Levels Tests, vocabulary learning strategies, secondary-school.*

Las estrategias de aprendizaje de vocabulario: su relación con el éxito académico

En el ámbito de la investigación en enseñanza de segundas lenguas, hay un movimiento reciente que busca identificar las estrategias de aprendizaje de vocabulario. Sin embargo, la mayoría de estos estudios se han centrado en la identificación de las estrategias en sí, más que en la relación de estas con otros aspectos del aprendizaje de vocabulario. Este estudio presenta un análisis del uso de estrategias de aprendizaje de vocabulario y su relación con el nivel de vocabulario receptivo. Para ello, setenta alumnos de cuarto curso de educación secundaria participaron en el estudio. Se les pidió que respondieran el primer nivel del Vocabulary Levels Tests (Schmitt, Schmitt & Clapham, 2001) y un cuestionario sobre el uso de estrategias de aprendizaje de vocabulario, adaptado de la taxonomía de Schmitt (1997). Los datos se examinaron buscando una posible relación entre el tamaño de vocabulario receptivo y un mayor o menor uso de determinadas estrategias de aprendizaje. Los resultados tienen una aplicación práctica en la enseñanza de lenguas, ya que, con la identificación de las estrategias más fructíferas, los docentes podrán facilitar su uso en el aula, convirtiendo así los esfuerzos de los alumnos en experiencias satisfactorias.

Palabras clave: *aprendizaje de vocabulario, Vocabulary Levels Tests, estrategias de aprendizaje de vocabulario, educación secundaria.*

1. Introduction

In the last decades, there has been a concern about how learners' individual characteristics affect the language learning process. When talking about individual differences in second language acquisition, we refer to personality, aptitude, motivation, learning styles and learning strategies (Dörnyei, 2005). Focusing on the last point, a significant number of studies have focused on how the use of different strategies affects language learning (Jiménez Catalán, 2003).

Simultaneously, in the last 30 years, vocabulary has reached an unprecedented importance within the second language acquisition theories. Research on vocabulary has aimed at answering three main questions: what the term vocabulary knowledge involves, how vocabulary can be measured and how vocabulary is learnt. In response to this latter question, the construct of 'vocabulary learning strategies' emerged. It denoted these actions learners take to develop vocabulary knowledge. However, little research has been carried out about how the variations on vocabulary learning strategies selection affect vocabulary learning.

It is in consonance with these ideas that this study has been carried out. It presents a study in which not only the use of vocabulary learning strategies, but also the receptive vocabulary learning of the learners is examined. Therefore, the aim of the present study is twofold. The first goal is to analyse the use of strategies by ninth grade Spanish secondary-school learners. Secondly, the use of those strategies will be related to the receptive vocabulary size learners presented, aiming to determine which strategies lead to greater success.

2. Vocabulary Learning Strategies and its relation with Vocabulary Learning

The last three decades have seen the rise of a new trend in Second Language Acquisition (SLA) towards recognizing the importance of vocabulary for mastering a foreign language (Boers & Lindstromberg, 2008; Jiménez Catalán & Terrazas Gallego, 2005; Meara, 1996; Milton, 2009, 2009; Milton & Fitzpatrick, 2014; Nation, 2001; Schmitt, 2008). This situation has set off a plethora of studies with two foci: on the one hand, researchers have attempt to analyse vocabulary development, in terms of productive and receptive vocabulary size or vocabulary growth. On the other hand, other studies have focused on the role that learning actions, or strategies, plays in the acquisition of the target vocabulary.

Starting with the former, in the last forty years, there have been serious attempts towards exploring native and non-native speakers' vocabulary size. In the case of second language learners' vocabulary size, research has focused on prioritising the kind of vocabulary learners have to acquire in order to be functional efficient in that foreign language. This research resulted in the emergence of the frequency lists, that clustered the English words considering their frequency in specific contexts and established a minimum needed to carried out some basic communicative activities in English: 2000 word families were considered sufficient to engage in a daily conversation; 3000 words families were needed to enable initial access to authentic reading; 5000 word families enable independent reading and 10000 word families enable advance usage in most cases (Schmitt, 2010).

These concerns about vocabulary development were accompanied with the emergence of new brands of study focused on how students learnt vocabulary that resulted in the coinage of the term 'vocabulary learning strategies'. Therefore, from 1990s onwards, other studies have focused on the role that learning actions, or strategies, plays in the acquisition of the target vocabulary. Vocabulary learning strategies has been defined by Oxford (2017) as *"complex, dynamic thoughts and actions, selected and used by learners with some degree of consciousness in specific contexts in order to regulate multiple aspects of themselves (such as cognitive, emotional, and social) for the purpose of (a) accomplishing language tasks; (b) improving language performance or use; and/ or (c) enhancing long-term proficiency".* From this definition, it could be concluded that learning strategies are those actions taken by self-regulated learners in order to learn specific contents.

Research on vocabulary learning strategies has been taxonomic in nature, generating a large number of classifications of vocabulary learning strategies (c.f. Gu & Johnson, 1996; Lawson & Hogben, 1996; Nation, 2001; Schmitt, 1997; Stöffer, 1995; Tseng, Dörnyei, & Schmitt, 2006). As soon as first classifications emerged, studies on the use of vocabulary learning strategies flourished. Those studies had two main aims: on the one hand, some studies have attempted to identify the preferred and least used strategies. On the other hand, other strategies aimed at relating the selection of vocabulary learning strategies with other variables.

Starting with the former, Schmitt (1997), for instance, made use of the data gathered to developed his taxonomy and explored the Chinese secondary and tertiary learners' belief about the utility of the different strategies. He distinguished between those strategies used for discovering new meanings and those used for consolidating new meanings and concluded that learners reported greater utility in the use of bilingual dictionary, guessing from context and asking classmates in the case of discovery strategies, whereas in the case of consolidating strategies, the preferred strategies were related to the verbal and written repetition, the use of wordlists and some memory strategies, such as the study of the spelling and the study of the sounds of the words.

García López (2000) reached the same conclusion in his exploration of the use of vocabulary learning strategies by 139 secondary school learners. To this end, he designed an intervention research, in which 40 words, clustered in groups of ten were presented to the learners. They had to try to learn them and reflect on the type of mechanisms used to meet such objective. From the findings he obtained, he concluded that they had an inclination towards the use of repetition and semantic strategies.

Sahbazian (2004) carried out a study with the aim of identifying the Turkish university students' preferences as regards the use of strategies. To this end, she designed a 35-item questionnaire. Findings revealed that learners were inclined to make use of memory and mnemonic strategies.

From those studies it can be drawn that learners prefer using repetition techniques. Therefore, it is beyond doubt that learners are inclined to make use of those strategies, but, at the same time, the postulates of the Depth of Processing Hypothesis and Bloom's taxonomy (1984) call into question their utility, because of the low-level information processing required.

In the case of mnemonic strategies, results seem to show some inconsistency. On the one hand, Schmitt (1997) and Sahbazian (2004) seem to agree on their great use, but, on the other hand, García López's (2000) findings showed that the least used strategies were the mnemonic strategies. Therefore, further research is needed to understand the role of mnemonic techniques.

Similarly, studies on how the use of vocabulary learning strategies are related to other variables are also frequent in the literature. Among them, those based on gender differences stand out notably, but others that focus on other variables deserve also a closer look.

As for the gender differences, results are inconclusive. For example, Jiménez Catalán (2003) explored the differences in the selection of Vocabulary Learning Strategies taking into account the gender of the test-takers. The test-takers, 581 Spanish tertiary students learning Basque and English as foreign languages, were asked to respond a questionnaire about their own use of strategies. Results showed that both cohorts shared eight out of the ten most frequent strategies, although females used a larger percentage of strategies than males. On the other hand, Xhaferi & Xhaferi (2008) explored the use of vocabulary learning strategies by Albanian tertiary level students learning English, concluding that both cohorts made use of approximately the same strategies. Therefore, further research in this area would be needed.

Waldvogel (2011) explored Spanish Foreign language students' use of vocabulary learning strategies and concluded that there was a relationship between the level of the learners and the use of vocabulary

learning strategies: beginning-level learners made more used of determination and memory strategies, appreciating an increase of the use of cognitive skills as they improved their language level.

However, these studies have focused on the use of strategies by university students and have neglected the analysis of the selection by secondary-school learners. This study aims at exploring the selection of vocabulary learning strategies by secondary-school learners and its impact on vocabulary size.

3. Method

3.1. Context

Data were collected from four Secondary state urban schools located in a medium town in Extremadura (150,000 inhabitants). Extremadura is a Spanish monolingual region with a sparse population located in the south-western region of Spain on the border with Portugal. Those characteristics have influenced its second language policy and resulted in, for example, the promotion of learning Portuguese as a foreign language and the implementation of new languages teaching initiatives, such as the implementation of CLIL programs.

As for the selection of the schools, this sample can be considered a convenience one, as all the secondary state schools in this town were asked to take part in the study, but only those four finally agreed to participate.

3.2. Research questions

Keeping in mind the importance of vocabulary learning in second language acquisition and the potential usefulness of the selection and teaching of vocabulary learning

strategies, the present study sets out three different research questions:

1   What is the receptive vocabulary size that ninth grade secondary-school learners from Extremadura present?
2   What is the grade 9 secondary-school learners' use of vocabulary learning strategies?
3   Does the selection of certain vocabulary learning strategies benefit vocabulary acquisition?

3.3. Participants

Seventy Grade 9 secondary-school learners took part in this study. All participants had been learning English as a second language for ten academic years and the English input and output were limited to the English Foreign Language subject classroom and some exposure to English-language media. That resulted in approximately 1,200 hours of exposure to English.

3.4. Data gathering instruments

In order to measure receptive vocabulary size, the Vocabulary Levels Test was used due to its widespread use in the SLA context (Schmitt, 2010). This validated test was developed by Schmitt, Schmitt & Clapham (2001) and presents five different levels, sampling vocabulary from the 2K-word level, the 3K-word level, the 5K-word level, the 10K-word level and the Academic Word List. In each level, 30 items are presented in ten different clusters, each of which contains three definitions and six options. Test-takers are asked to match the definitions with their corresponding word. In this study, only the 2K band were administered.

In order to analyse the use of vocabulary learning strategies, a questionnaire was developed grounded in Schmitt's taxonomy (1997). It originally consisted of 58 strategies clustered into two main groups (Schmitt, 1997): discovery strategies, that include all those actions used to understand meanings of unknown words, and consolidation strategies, used to retain the meaning of new words.

Within the discovery strategies, Schmitt identified two sub-groups: Determination and social strategies. While the former refers to the ways learners individually understand the meaning of an unknown word, the latter refers to those actions to discover new meanings by interacting with others.

Regarding the consolidation strategies group, four different groups were clustered: (1) Social strategies for consolidating meanings group that encompasses those interactions with others in order to retain the meaning of a new word, once it has been encountered; (2) memory strategies, that Schmitt defines as "relating the word to be retained with some previously learned knowledge, using some form of imagery, or grouping" (Schmitt, 1997:15); (3) cognitive strategies, defined as the "manipulation or transformation of the target language by the learner" (Schmitt, 1997:16) and (4) metacognitive strategies, that encompass those actions used to do a conscious overview of the learning process in order to make decisions about it.

Due to the features of the sample, this taxonomy was adapted and the number of items were reduced. Eventually, it was made up of 21 items selected from the preferred questions in other studies. It was written in Spanish to facilitate understanding and was piloted before being used. Test-takers were asked to score from 1 (never) to 4 (always) their use of strategies.

3.5. Data collection and analysis

Data collection took two sessions during school time in order to avoid any possible effect of fatigue. The time allotted to complete the VLT test was the specified by the authors (Schmitt, Schmitt & Clapham, 2001) and to complete the Vocabulary Learning Strategies questionnaire fifteen minutes were allotted. At the beginning of each test, clear instructions were given in both, Spanish and English, and examples were also provided.

As regards the results, results regarding vocabulary size were analysed in both as percentages and relative terms. In order to estimate the amount of words known by the learners, Nation's formula (1990) was applied. This formula consisted of multiplying the result by the total number of words looked up in a dictionary. In this case, as the objective was to explore the learners' familiarity with the 2000 most frequent words, the obtained result was multiplied by 2000.

Regarding the use of strategies, results will be presented using a Likert-type scale with ranges from 1 to 4. All the results are also analysed with SPSS 23 to check whether there were statistically significant relationships between the use of strategies and larger or smaller size of vocabulary. The confidence interval taken was 95%.

4. Findings and results

After having presented the theoretical framework and the methodological aspects considered to carry out the research, this section shows the results that were obtained and discusses them in relation to the three research questions posed for the study.

4.1. What is the receptive vocabulary size presented by ninth grade secondary-school learners from Extremadura?

Students' global score had a mean of 37.81 per cent of the 2K most frequent running words in English, with a standard deviation of 20.63. In relative terms, these results meant that, in general, after 10 years studying English, learners knew approximately 756 words.

4.2. What is the secondary-school learners' use of vocabulary learning strategies?

Moving to the second research question, results are going to be presented following Schmitt's taxonomy (1997). First, results of the use of discovery and consolidation strategies will be shown, followed by the use of each subgroup of strategy.

Starting with the discovery strategies, learners made use of them more frequently than consolidation strategies (2.22). Two different reasons may be attributed to this fact: the number of unknown words learners have to face, or the incapability secondary-school learners have to remember words.

When analysing the strategies by groups, as shown in Table 1 below, results showed that the most widely used group was the cognitive strategies (2.81). Memory strategies group (2.78) group was the second most widely used, whereas the third preferred one was the memory group (2.60). In contrast, the least preferred group was the social strategies for consolidating meanings group (1.80).

Table 1. Mean score of each group of strategies.

Group	Mean
Determination strategies	2.60
Social strategies for discovering meanings	2.41
Social strategies for consolidating	1.80
Cognitive strategies	2.81
Memory strategies	2.78
Metacognitive strategies	2.28

4.3. Does the use of certain vocabulary learning strategies benefit vocabulary acquisition?

Once the results regarding learners' receptive vocabulary size and use of vocabulary learning strategies have been examined, in this section, the core issue of this study, the relation of both aspects, is going to be explored in order to identify the most and least beneficial groups.

A Pearson's r found that a larger-sized vocabulary was correlated positively (N=70, p<0.05) with a greater use determination (r=0.112, p=0.000), memory (r=0.107, p=0.000) and metacognitive groups (r=0.207, p=0.000).

At the same time, a negative correlation between the cognitive group and the receptive vocabulary size was found (r=-0.105, p=0.000). In other words, a greater use of this set of strategies does not reflect a larger size of receptive vocabulary size.

5. Discussion

This study had a triple aim of (1) analysing the receptive vocabulary size of 70 secondary-school students from Extremadura (Spain) learning English as a foreign language at school, (2) exploring the use of vocabulary learning strategies by these learners, and (3) examining how both aspects,

i.e. vocabulary size and vocabulary learning strategies related.

Starting with the VLT results, learners turned out to know less than 40% of the 2K most frequent words in English. In other words, learners' receptive knowledge of English was below the 1K band. The acquisition of this band is of prime importance, because it enables the understanding of everyday conversations, acting, in this way, as a motivational tool, with learners becoming aware that their efforts have resulted in a greater understanding of English. These results are well below others obtained from other studies in which the Spanish secondary-school learners' coverage of English receptive vocabulary size was analysed (Canga Alonso, 2013). Nevertheless, students from Extremadura are at the bottom of the European and Spanish ladder in terms of English knowledge, and these results seem to corroborate those previous studies (Soler, 2017).

In relation to the use of vocabulary learning strategies, cognitive strategies are the preferred ones, whereas social strategies for consolidating meanings are the least widely used. These results are, in the case of cognitive strategies, in line with other studies (Schmitt, 1997) in which cognitive strategies have been acknowledged to present a greater use than the rest of strategies. The reason other authors give to explain this fact is that cognitive strategies, in especial repetition strategies, have been proved to be deeply rooted in learners' behaviours, resulting in this greater use (Schmitt, 1997).

As for the least preferred group, it seems quite conflicting the difference between the use of social strategies when discovering meanings and when

consolidating them. It may be related to the teaching method: in these levels, lessons are really guided, so maybe the teacher promotes the use of social strategies for discovering meanings, as it includes asking to the teacher, but may not allow learners to interact freely with other counterparts. The teacher's conceptions may have some influence in this way.

Finally, a relationship between vocabulary success and the selection of some strategies have been found. On the one hand, metacognitive, determination and memory strategies seem to have a positive correlation with the receptive vocabulary size. In the case of the metacognitive group, it shows the strongest correlation. As already mentioned, this group of strategies are closely related to the learners' self-regulation capacity. It is manifest that a better self-regulation capacity leads to a larger receptive vocabulary size. This concept has been largely examined in the area of psychology, but little research has practically applied it to second language acquisition theories. Thereby, self-regulation actions should be explicitly taught to learners, and strategies such as the use of real English media in class should be fostered.

As for determination strategies, they also seem to have a positive impact on vocabulary. This group of strategies includes a wide range of strategies with the same aim: discovering the meaning of an unknown word without any assistance of other people and they seem to be quite popular within learners. The achievement of these strategies should be of prime importance, as they are the tools learners have when facing unknown words. Therefore, and, in light of the results, it may be interesting to promote the use of this kind of strategies

when planning lessons, in order to achieve learners to develop a more efficient learning method.

In relation to memory strategies, they also seem to be a slight positive correlation with vocabulary size. However, despite its efficiency, they are not really preferred to learners, in fact, they are at the bottom part of the table, so teachers should be aware of this circumstance and promote and introduce the use of those strategies more frequently in class.

On the other hand, cognitive strategies seem to influence negatively on vocabulary size, even when they are one of the preferred groups. According to the Depth of Processing Hypothesis, the use of those strategies does not benefit language learning at all, as they are based on simple repetition of words or structures, rather than on a comprehensive approach to the terms. The present results are in line with this idea.

Finally, social strategies did not seem to influence vocabulary size. However, the use of those kind of strategies are used in many language teaching approaches. Therefore, it should be important to understand the reasons why those strategies do not result in vocabulary learning, weighing up whether it is worthy to teach and promote the use of this kind of strategies.

These findings may have a clear repercussion on the language teaching practice. Teachers seem to influence learners' selection of vocabulary learning strategies (Oxford, 1989), therefore, they should be aware of the beneficial or detrimental effect of the strategies they use in class. In light of these results, teachers should try to foster the use of determination, metacognitive and memory groups, whereas they should try to avoid the use of cognitive strategies

in class. In the case of these latter strategies further research should be done in order to better understand the repercussion of these strategies in the learning process.

6. Conclusions

In light of the results of this study, as regards vocabulary size, it can be concluded that the results from learners from Extremadura are below the Spanish mean. Learners' results are below the 1000 most-frequent words; therefore, it cannot be assumed that those learners are able to understand everyday conversations.

As for the use of strategies, it can be concluded that cognitive strategies are the preferred ones in contraposition with social strategies for consolidating meanings. In addition, clear relations between the use of certain vocabulary learning strategies

and the development of vocabulary size can be established. In this way, determination, metacognitive and memory strategies seem to lead to better vocabulary development. On the other hand, cognitive strategies, although widely used among learners, correlate with a lower receptive vocabulary size.

From the results of this study, several applications to language teaching can be drawn. Language teachers should take into account vocabulary learning strategies when planning their lessons, especially in those levels in which learning is still a strong-guided action. Therefore, knowing which strategies are likely to lead to larger receptive vocabulary size may help them to select target strategies in order to enhance their use.

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