# The role of motivarion and age in vocabulary knowledge –

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## Abstract

Vocabulary knowledge is central in FL learning. A large number of studies have shown a positive link between learners' achievement in FL learning and motivation. However not many have paid attention to the specific effect of motivation in FL vocabulary learning. This paper explores the relevance of motivation and age in receptive vocabulary size acquisition. A total of 186 EFL Spanish students were tested throughout 8<sup>th</sup> and 9<sup>th</sup> grades of Secondary Education. Three vocabulary size tests and part of an adapted questionnaire from Gardner's (1985) A/MTB were used to assess their word knowledge level and motivation towards EFL respectively. Results prove that there is a lineal increase in the overall scores of the pupils and significant growth for the three vocabulary levels tested at both grades, yet the rate of growth is uneven for the three levels. No variation was found in the learners' level of motivation as they moved up a grade. Finally, a significant relationship between the level of motivation and the three receptive vocabulary tests was perceived in 9<sup>th</sup>, but not in 8<sup>th</sup> grade.

**Keywords:** motivation, receptive vocabulary size, age, Secondary Education and English as a Foreign Language.

#### Resumen

El vocabulario receptivo es fundamental en el aprendizaje de una LE. Muchos estudios muestran una relación positiva entre el rendimiento de los aprendices y su motivación en el aprendizaje de una LE, sin embargo pocos se han centrado en explorar el efecto de la motivación en el aprendizaje del vocabulario de una lengua extranjera. Este artículo explora la importancia de la motivación y la edad en la adquisición del tamaño de vocabulario receptivo. Examinamos a 186 alumnos españoles de Inglés como LE a lo largo de 2º y 3º ESO. Les administramos tres pruebas de tamaño de vocabulario receptivo y parte de una adaptación del test A/MTB de Gardner (1985) sobre motivación. Se observa un incremento lineal en las puntuaciones y un crecimiento

significativo para los tres niveles de vocabulario receptivo en ambos cursos, aunque el ritmo de crecimiento es desigual en los tres niveles de vocabulario. No existe variación alguna en el nivel de motivación hacia la lengua de 2º a 3º. Por último, existe una relación significativa entre el nivel de motivación y los tests de vocabulario receptivo en 3º pero no en 2º ESO.

Palabras clave: motivación, tamaño de vocabulario receptivo, edad, Educación Secundaria e Inglés como Lengua Extranjera.

## 1. Introduction

## 1.1 Receptive Vocabulary

The importance of vocabulary knowledge in FL learning is widely reported in the literature (Read 1988; Laufer 1989, 1998; Nation 1990; Meara 1996). Further, size of vocabulary knowledge, either receptive or productive, has also been proved to be crucial in language performance (Laufer 1997; Qian 2002; Schmitt 2000, Nation 2006, Staehr 2008, Agustín Llach and Terrazas, 2009a; Terrazas and Agustín Llach, 2009; Mokhtar et al. 2010). However, L2 researchers embarked on estimating students' vocabulary size face a number of difficulties such as how to define the term 'word' (Bauer and Nation, 1993) or how to explain what knowing a word means (Nation, 1990, 2001; Meara 1996). In fact, knowing a word implies mastery of a wide range of aspects, i.e. formal, grammatical, structural, semantic, or conceptual. This is why researchers and instructors need to bear in mind what areas of lexical competence they wish to assess (Read, 1988) before undertaking any task on vocabulary learning. In this regard, the selection of the test used to calculate vocabulary size is crucial.

Among vocabulary size tests, we find two different types: receptive and productive. For the purposes of this study, we shall concentrate on the former, whose most representative tests are the VLT (Vocabulary Level Test) (Nation, 1983; 1990), and the Yes/No vocabulary test (Meara and Buxton, 1987; Meara and Jones, 1990). Both these tests have proved to be valid and have had considerable relevance for receptive vocabulary research purposes (Laufer, 1998; Cobb and Horst, 1999; Cameron, 2002; Jiménez and Terrazas, 2005-2008; Agustín Llach and Terrazas, 2008a, 2009a; 2009b; Terrazas and Agustín Llach, 2009; Mokhtar et al., 2010). This paper describes the reliability of the first test in its receptive version only in an attempt to measure the vocabulary size and growth of Spanish EFL learners in 8th and 9<sup>th</sup> grades of Secondary Education.

The VLT was devised to measure informants' vocabulary size at five different levels of frequency: 2000, 3000, 5000, the University Word List, and 10000. In these tests learners are requested to match three definitions to six words of similar meaning in ten blocks of six. Nation's test implies that knowledge of the 1000 most frequent words in a language will be the first to be learned. The same assumption applies to the rest of levels up to 10000 words. In this regard, knowledge of less frequent words implies recognition of most frequent words, but not the other way round. The list of words that comform the VLT test are based on graded frequency lists from Thorndike and Lorge (1944), Kucera and Francis (1967) and West (1953).

One of the reasons why we chose to use the receptive version of the VLT in this study is because it proved to be valid in a large number of studies on secondary school informants from varied contexts and so comparisons between our informants' profiles and those obtained by previous researchers will provide insight for learning and teaching purposes. After reviewing the literature on studies that have used the VLT to measure the receptive vocabulary size of learners from different backgrounds, Terrazas and Agustín Llach (2009: 116-117) conclude that most informants tested have been university students (Waring, 1997; Horst et al. 1998; Cobb and Horst, 1999; Nurweni and Read, 1999; Pérez Basanta, 2005; also Moktar et al., 2010) and that only very recently have young learners been administered the VLT to check the reliability of this test and to find out their receptive vocabulary size profile (Cameron, 2002; Jiménez and Terrazas, 2005-2008; Agustín Llach and Terrazas, 2008a; 2009a; 2009b; Terrazas and Agustín Llach, 2009). Laufer (1998) and Qian (2002) have used the VLT to measure the receptive vocabulary size of similar testees to ours, that is, secondary school students. Thus Laufer (1998) reports a receptive vocabulary size of 3500 words after 1500 hours of instruction from a sample of Hebraic informants. Qian's findings (2002) point out a profile of 7224 words from a group of Korean secondary school students and another profile of 6663 words from a second sample of secondary school Chinese students. Despite these data, Qian does not provide us with the number of hours of instruction received by these two groups of learners, which makes it very difficult for us to make straightforward comparisons. The scarcity of studies on the receptive vocabulary size of EFL secondary school informants using the VLT along with the relevance of such investigations for educational purposes call for further research on this issue.

### 1.2 Motivation and Foreign Language Vocabulary Acquisition

Even though motivation has been traditionally recognized as one of the key factors related to language learning, and one which has a paramount role in FL achievement by mediating the actual effect of other affective and attitudinal constructs at stake (Gardner, 2007), very few studies have been carried out to determine the role of motivation in vocabulary learning (Eysenck and Eysenck, 1980; Elley, 1989; Gardner and MacIntyre, 1991; Laufer and Husltijn, 2001; Kim, 2008) and not even one has examined the relationship between motivation and receptive vocabulary size.

Many investigations have proved the positive relationship between motivation and scores in FL learning of learners of different age, sex and different language realities (e.g. Schmidt and Watanabe, 2001; Masgoret and Gardner, 2003; Csizér and Dörnyei, 2005; Bernaus and Gardner, 2008; Yu and Watkins, 2008). In the same vein and although the connection between motivation and FL vocabulary learning has not received much attention in research, different studies have identified a positive effect of motivation on different aspects of FL vocabulary learning (Gardner, Lalonde and Moorcroft, 1985; Elley, 1989; Gardner and MacIntyre, 1991; Fernández Fontecha, 2010). In these studies, for example, Gardner, Lalonde and Moorcroft (1985) investigated the effects of the aptitude and integrative motivation of 170 students from an introductory psychology course on their learning rate of 25 French/English vocabulary pairs. They found, among other results, that the subjects with a high integrative motivation learned faster than those with a low integrative motivation. Apart from these results, a current trend of research attempts to shed light on the effect of the motivational and cognitive load of the task over the learners' lexical competence. In this line, Laufer and Hulstijn (2001) formulate the involvement load hypothesis, according to which the higher the level of the cognitive and motivational load of the task is, the more effective the task will be in increasing lexical competence. Based on this hypothesis, Kim (2008) concludes that the higher this cognitive-motivational index is in the task, the better the results in the initial steps of vocabulary learning and in the retention of new words will be. Also, they found that the factor that mostly correlates with vocabulary learning is not so much the task as its involvement load. In another line of studies, Tseng and Schmitt (2008) claim that motivation should be approached as a dynamic factor comprising a number of stages, and that each of these stages will affect in different ways the process of vocabulary acquisition, which is also dynamic.

#### 1.3 Motivation and Age

As regards the connection between motivation and age, most studies conclude that the level of motivation decreases with age (Tachibana, Matsukawa and Zhong, 1996; Chambers, 1999; Williams, Burden and Lanvers, 2002; Cenoz, 2003; Ágreda, 2006; Bernaus and Gardner, 2004 – quoted in Bernaus, Moore and Cordeiro Azevedo, 2007; Ghenghesh, 2010). However, studies in Catalonia prove that motivation towards foreign language learning (English) is higher in Secondary students than in Primary students (Tragant, 2006) and this tendency stops at some point in upper Secondary Education (Tragant, 2006: 239). The research conducted by Lasagabaster (2003) on a group of university students shows that motivation stabilises after Secondary Education. Data from Tragant's study and Tragant and Muñoz (2000) also reveal that it is the learner's biological age rather than the age of onset which mostly affects the level of motivation, although Cenoz (2004) found that the learners' age of onset also has some effect on motivation, i.e. the earlier the learners are exposed to the foreign language, the higher their motivation is. Among the reasons behind these differing results we may point to psychological factors related to age, educational factors (e.g. compulsoriness of education) methodological, linguistic or sociolinguistic factors.

# 2. Purpose

The aim of the present study is to examine the relevance of motivation and age in FL receptive vocabulary size acquisition. More specifically, we attempt to research on the following questions:

- 1. What is the receptive vocabulary knowledge of students when they finish 9th grade?
- 2. Are there are any aged-based differences in learners' degree of motivation towards EFL learning?
- 3. Is there any relationship between the degree of motivation towards EFL and the scores obtained by students at both grades in the above-mentioned vocabulary tests?

# 3. Method

## 3.1. Participants

A total of 186 EFL Spanish learners participated in this study. They averaged 15.39 and 16.39 years old at each testing moment, that is, they were in 8<sup>th</sup> and 9<sup>th</sup> grades of Secondary Education (2<sup>nd</sup> and 3<sup>rd</sup> courses of Secondary Education). We randomly selected them from four mixed-gender schools in Logroño (La Rioja, Spain) in the years 2008 and 2009. The four schools had a similar sociocultural and economic background. By the time of the second data collection period, students had been exposed to 944 hours of instruction in English as a Foreign Language.

#### 3.2 Data gathering instruments

Three instruments were devised to assess the receptive vocabulary size of these subjects, that is, the 1000 Word Test (1k WT), the 2,000 word frequency-band from the receptive version of the VLT (2k VLT) (Schmitt, Schmitt and Clapham, 2001, version 2) and the 3000 frequency-band of the VLT (Schmitt et al., 2001, version 2). A previous pilot study was undertaken with these three tests and it proved to be adequate for these learners' age and language level. The 1k WT consists of matching three target words with their Spanish translations. Both target words and translations appear in ten blocks of six words each. In the 2k VLT and the 3k VLT, students have to match three target words with their corresponding English definitions.

Learners' motivation towards EFL was measured by using part of a questionaire adapted from Gardner's (1985) Attitude/Motivation Test Battery (A/MTB). The part selected consisted of a semantic differential technique of 7-point bipolar rating scale using 7 pairs of bipolar adjectives displayed in this way: 'necessary'/'unnecessary', 'ugly'/'nice', 'attractive'/'unattractive', 'pleasant'/'unpleasant', 'important'/'unimportant', 'useful'/'useless', and 'interesting'/'boring'. In this way these adjectives were used to measure learners' perception about English

#### 3.3 Procedures and analysis

Receptive vocabulary data were collected in one session during the regular school time for each of the two data gathering moments, that is, 8th and 9th grades. The time allotted to complete each of the three vocabulary tasks was 10 minutes during class time. At the beginning of each test, clear instructions were given both orally and in written form in the students' L1 to clarify what they were being requested to do. Students could achieve up to a maximum of 30 points in each task. The 7-point bipolar rating scale used to measure motivation was administered together with another part of Gardner's (1985) A/MTB for 10 minutes at the end of a session. Descriptive and inferential statistical analyses were applied to the data. We used the SPSS program version 15.0 to perform these statistical analyses.

### 4. Results

Concerning our first research question, i.e. if there was any significant growth in the receptive vocabulary size of our young Spanish EFL students in the 1k WT, 2k VLT and 3k VLT as students move up a grade, Table 1 presents the descriptive statistics for results on these three tests scores for the two years under research.

	Ν	Min.	Max.	Mean	SD
1k WT_8 <sup>th</sup>	186	18	30	25.06	2.745
$2k$ VLT_ $8^{th}$	186	4	26	14.83	4.706
3k VLT_8 <sup>th</sup>	186	1	25	11.70	4.949
$1 \mathrm{k} \mathrm{WT}_{9^{\mathrm{th}}}$	186	20	30	26.57	2.331
2k VLT_9 <sup>th</sup>	186	3	29	18.23	5.342
3k VLT_9 <sup>th</sup>	186	0	27	13.68	4.936

Table 1.Descriptive statistics for 1k WT, 2k VLT and 3k VLT

Results reveal that there is a lineal increase in the overall scores of the pupils for the three levels tested in the two years of our research. In addition, Pearson correlations were conducted between scores on the three tests in order to ascertain whether there was a significant growth in the receptive vocabulary size of our young Spanish EFL students in the 1k WT and the 2k VLT and 3k VLT as students moved up a grade. Table 2 presents these results.

 Table 2. Results of inferential statistics for differences in receptive vocabulary knowledge across grades

	1k WT	2k VLT	3k VLT
8 <sup>th</sup> to 9 <sup>th</sup> year	r = 0.520; p<.000	r = 0.493; p<.000	r = 0.432; p<.000

A significant growth for all the three levels tested at both grades is perceived. Figures 1, 2 and 3 also show the evolution of receptive vocabulary knowledge for the three frequency bands assessed for the two years examined.

Figure 1. Scatterplot of 1000 word test for 8th and 9th grades



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Figure 3. Scatterplot of 3000 word-frequency band of the VLT for 8<sup>th</sup> and 9<sup>th</sup> grades



In the light of these results, it can be inferred that those students who obtained better scores on the 1k WT, 2k VLT and 3k VLT in grade 8 also scored high in these three tests in 9th grade. This fact implies that students' performance in 8th grade explains their scores in 9th grade, yet not completely because other factors are at stake. Since the data were not normally distributed (Kolmogorov-Smirnov and Shapiro-Wilk), we decided to perform a non-parametric test of means comparison (Wilcoxon signed ranks test). The results of the Wilcoxon signed ranks test applied to the means of each frequency level gave us the values displayed in Table 3.

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	1k WT	2k VLT	3k VLT
	Z	Z	Z
8 <sup>th</sup> to 9 <sup>th</sup> year	-7.334 (p<.000)	-7.774 (p<.000)	-4.829 (p<.000)

 Table 3. Results of inferential statistics for differences in vocabulary knowledge

 across grades

As Table 3 shows, these values are significant at p<.000 level. It can be concluded that the rate of growth is higher in the 2k VLT (22.93%) versus the 3k VLT (16.92%) and the 1k WT (6.03%). A box diagram with the median values of test scores is obtained (Figure 4). As can be observed, (i) the receptive vocabulary of participants grows over time; (ii) students know fewer words from the 3000 word-frequency band of the VLT than from the other two tests administered; (iii) scores are more uniformly and homogeneously distributed for the 1000 word level for both grades than for the other two levels, where more differences in the students' scores can be found. More specifically, the spread of the scores is higher for the 3000 word-frequency band of the VLT than for the 2000 word-frequency band of the VLT. Finally, it is in the last three boxes, that is, those corresponding to participants' scores in the 2000 word-frequency band of the VLT in 8th and 9<sup>th</sup> grades, where the spread of scores is maximised.

**Figure 4.** Box diagram of score value for 1000 word test and the 2000 and 3000 word-frequency bands of the VLT across grades.



The results confirmed that the average receptive vocabulary size of EFL learners is within the 2,000 frequency level when they finish their 9th grade of Secondary Education. In other words, participants recognize 886 words from the first 1000 most frequent words in English, 608 words from the second most frequent 1000 words, and 456 words from the third most frequent 1000 words. In our view, these results show that our informants performed high for the 1k WT, relatively high for the 2k VLT and slightly lower for the 3k VLT. Despite these facts, we should bear in mind that our secondary school students know considerably fewer words (about half the number) from the 3k VLT than from the 1k WT.

In order to answer the second research question, i.e. whether there were any agedbased differences in learners' degree of motivation towards EFL learning, we performed inferential statistics. Since, in this case, the data were not normally distributed either, we performed a non-parametric test of means comparison (Wilcoxon signed ranks test). The results of the Wilcoxon signed ranks test applied to the mean motivation at both grades gave us the values described in Table 4.

 Table 4. Results of inferential statistics for differences in mean motivation across grades.

	Mean motivation
	Z
8 <sup>th</sup> to 9 <sup>th</sup> year	794 (p<.427)

A box diagram with the median values of motivation test scores is also obtained (Figure 5).

Figure 5. Box diagram of score value for mean motivation across grades.



Results reveal no variation from 8<sup>th</sup> to 9<sup>th</sup> grade of Secondary Education regarding learners' level of motivation towards EFL learning. Even so, we still wanted to

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investigate any possible variation in the levels of motivation of subjects in  $9^{th}$  grade with respect to the levels they obtained in  $8^{th}$  grade. We arranged the scores obtained in the motivation test according to three levels, ranging from level 1 (marks: 1.0 to 3.0), level 2 (marks: 3.01 to 5.0), and level 3 (marks: 5.01 to 7.0).

		Level of motivation - 9 <sup>th</sup> grade			Total
		1	2	3	1
Level of motivation –	1	3	0	1	4
8 <sup>th</sup> grade	2	3	27	30	60
	3	0	20	101	121
Total		6	47	132	185

Table 5. Contingency table for level of motivation at both grades.

As we can see from Table 5, a general tendency is easily identified here: the great majority of students (101) who were highly-motivated (level 3) in 8<sup>th</sup> grade kept their motivation (level 3) in 9<sup>th</sup> grade, and 30 students who were motivated at level 2 in 8<sup>th</sup> grade became motivated at level 3 in 9<sup>th</sup>. Therefore, in general terms, there is an increase in the number of subjects who were highly-motivated (level 3) in 8<sup>th</sup> grade (121 subjects) with respect to 9<sup>th</sup> grade (132 subjects). On the other hand, 20 subjects who were highly-motivated (level 3) in 8<sup>th</sup> grade at 8<sup>th</sup> grade were still low-motivated at 9<sup>th</sup> grade. There was one low-motivated participant at 8<sup>th</sup> grade who became highly motivated (from level 1 to level 3) at 9<sup>th</sup> grade.

Finally, taking into account our third research question, we aimed at finding out whether there was any relationship between the degree of motivation towards EFL and the scores obtained by our students at both grades in the three receptive vocabulary tests. Since the two sets of scores were not normally distributed, we calculated the correlation between these two variables by means of a Kruskal-Wallis test applied to the means of each score. Table 6 shows the results obtained.

Table 6. Results of inferential statistics for differences in degree of motivation and receptive vocabulary knowledge for the three levels tested across grades.

1000 Word Test		2000 word-frequency band of the VLT	3000 word-frequency band of the VLT	
	x <sup>2</sup>	x <sup>2</sup>	x <sup>2</sup>	
8 <sup>th</sup> year	.933 (p<.627)	.996 (p<.608)	4.643 (p<.098)	
9 <sup>th</sup> year	8.488 (p<.014)	15.304 (p<.000)	14.284 (p<.001)	

Our findings reveal that there is a significant positive relationship between the level of motivation and the three receptive vocabulary tests in 9th grade, but not in 8th grade. That is to say, those 9th graders with higher levels of motivation also obtained better results in the three receptive vocabulary tests.

## 5. Discussion

Our assessment of the receptive vocabulary size of Spanish EFL students in 9th grade of Secondary Education as measured by the 1k WT and the 2k VLT and 3k VLT indicates that this is within the 2,000 frequency band. However, this does not mean that students master this level since scores demonstrate that knowledge of words from the third thousand was less than that of the second thousand and knowledge of words of this second level was even less than that of the first one thousand. This finding is in accordance with Nation (1983; 1990), who claims that subjects' knowledge of less frequent words implies knowledge of the most frequent words, yet not viceversa. In our view, knowledge of the receptive vocabulary size of these secondary school students is very relevant to instructors who struggle to improve this knowledge and keep students motivated because this informs them that still there are words from this 2000 frequency band that need to be learned.

Furthermore, this study has revealed that our pupils significantly increase the number of words they know of all the three levels tested as they move up a grade. In other words, students show significantly higher receptive vocabulary sizes of all the three levels from grade 8 to grade 9. This means that the more hours of instruction students receive, the more their receptive vocabulary size increases as well. The fact that learners' scores in 8th grade explain their performance in 9th grade, yet not completely, may be due to various factors, i.e. youth processes of identity construction, their personal and familiar situation and their teachers at both grades. In spite of the fact that estimates on students' word knowledge are complex to compare because of differences regarding learning situations, informants, and the tests used for measuring vocabulary size, to our mind, this finding represents a satisfactory receptive vocabulary size. As shown in Terrazas and Agustín Llach (2009: 116-117), our informants show lower levels of receptive vocabulary size than learners of the same age who have been instructed in English for fewer hours (Takala, 1985).2 However, our students do show higher receptive vocabulary size than learners of approximately the same age (Laufer, 1998) and even older (Horst et al., 1998) who have received a higher amount of instruction. Finally, our Secondary school informants show higher receptive vocabulary knowledge than university students who have been instructed in English for fewer hours (Nurweni and Read, 1999) or for more hours (Waring, 1997) than our own.

The results obtained reveal also that the receptive vocabulary of students grows over time. Furthermore, and in relation to this, a significant growth for all three levels tested at both grades is found. This means that, generally speaking, the students who score high at all vocabulary levels in 8th grade also achieve high scores in 9th grade, yet not completely, because the rate of vocabulary growth of these students is uneven for the three levels tested. In other words, increases in the three vocabulary levels tested do not remain constant across grades, since the rate of growth of students' receptive vocabulary size is higher in the 2kVLT than in the 3k VLT and the 1k WT.

In this sense, the relationship between age and receptive vocabulary knowledge implies that other factors are influencing the students' results. For example, this relationship may be sensitive to the nature of the test employed to obtain measures of size, as is evidenced by Agustín and Terrazas (2009a: 126), who reported low scores in the 2000 word-frequency band of the VLT because of the great demands made by this test task. In our view, it is surprising that informants have higher knowledge of words from the 2k VLT than from the 1k WT. A number of reasons may be proposed to explain these variations. One is that the low scores of the 1k WT obtained by our learners reflect that a number of them were tired, unmotivated or simply bored. Another reason for such lack of interest is that students were aware of the fact that the tests scores had no negative consequence on their final marks. A third explanation is that some of the students who scored low in the 1k WT were from a foreign country and had just entered in Secondary School. As the 1k WT requires that testees identify 30 English words with their corresponding Spanish translations, the test format might have prevented these few students with a poor command of Spanish from obtaining higher scores. In any case, Schmitt (2000: 137) is right when he points out that a mixture of explicit teaching and incidental learning seems to be essential for learning the most frequent words of any second language, a knowledge that seems to be definite for effective vocabulary and language use.

As to our second research question on whether there are any aged-based differences in our learners' motivation towards EFL learning, our data show no variation in the mean motivation of Secondary Education learners from 8<sup>th</sup> to 9<sup>th</sup> grade, i.e. 2<sup>nd</sup> and 3<sup>rd</sup> ESO respectively. In the main, the students of our sample remain motivated or highly motivated in 9<sup>th</sup> grade (motivation levels 2 and 3). An increase in the number of students motivated at level 3 is observed in 9th grade (132 out of 185) with respect to those motivated in 8<sup>th</sup> grade (121 out of 185). Minor variation is detected. Perhaps the most striking result is the drop of a group of 20 students from level 3 at grade 8 to level 2 at grade 9.

These results contradict earlier investigations which point to a decrease in motivation towards FL learning along Secondary Education (see the Introduction). According to these studies, negative attitudes towards the learning of English seem to be higher in upper than in lower Secondary Education. We are aware that the short interval of our study, 8th to 9th grade, is insufficient in providing enough evidence in the possible fluctuation of motivational levels in the subjects. Overall, the results obtained here are in the line of those obtained by González García (2004) or by Tragant (2006). For instance, González García (2004) found out that 50% of Spanish EFL Secondary school students aged 13, who said they liked English a lot, remained the same two years later. Moreover, our general result mirrors to some extent Tragant's (2006) study, who finds no variation in motivation levels in Secondary Education. In a study by MacIntyre, Baker, Clément and Donovan (2002) an increase from 7th to 8th grades on the learners' desire to establish communication in second/foreign language or Willingness to Communicate (WTC), perceived competence, and frequency of communication in French as a second language is observed. This increasing tendency is maintained in grade 9. In view of these results, further longitudinal studies on the motivation of these learners and related factors such as WTC throughout Primary and Secondary Education are needed here.

To complete the picture concerning the degree of motivation, we would like to offer some plausible explanation for the group of almost 10% of the informants who show a higher motivation in 8th grade (motivation level 3) than in 9th grade (motivation level 2). It seems that some general pattern can be traced concerning subjects' low motivation as they move up a grade. Several reasons may account for this general negative trend. Sigelman (1999) – quoted in MacIntyre et al. (2002: 559), posits, among these reasons, "the increasing amounts of negative feedback children receive as they progress through school, the onset of puberty, and cognitive growth that allows them to assess their abilities more realistically". MacIntyre et al (2002: 559) also note the possibility that the decrease in motivation among adolescents is global rather than specific to language learning. Tragant (2006: 239) adds that in Secondary Education, the teaching approaches become less dynamic than in previous grades, adolescents tend to view all school subjects negatively in opposition to learners in their first year of foreign language instruction, for whom the novelty of learning a foreign language contributes to motivation. Further, the role of the teacher is mentioned as one of the main reasons affecting motivation (Chambers, 1998; Williams and Burden, 1999; Ghenghesh, 2010).

Through the third research question of our study, we wanted to know whether there was any relationship between the learners' degree of motivation towards EFL and their scores in the three receptive vocabulary tests at both grades. Our findings reveal that there is a significant relationship between these two variables in 9th grade but not in 8th grade. In other words, the higher the degree of motivation of these students towards learning EFL at 9th grade is, the better their scores in the three receptive vocabulary tests are as well. In 8th grade motivation has not got an effect over students' receptive vocabulary. We could infer from this that several other age-

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related factors are playing some role in the relationship between students' degree of motivation and their receptive vocabulary size. If the absence of variation in the mean motivation of 8th and 9th graders cannot help us to understand this result, the type of motivation – integrative/instrumental (Gardner, 1985) or intrinsic/extrinsic (Noels, 2001; Noels, Pelletier, Clément, and Vallerand, 2000) – should be especially addressed here. The literature offers abundant evidence on the fact that instrumental motivation, i.e. learning the language with a pragmatic purpose, is mostly detected in the last years of Secondary Education rather than in Primary Education or the first years of Secondary Education, where intrinsic motivation is usually the most frequent type (Gardner, 2007; Tragant and Muñoz, 2000). It is very likely that the types of motivation of our subjects differ and that these differences may explain the two distinct results obtained for 8th and 9th graders. For future studies, the effect of the types of motivation in these learners on attainment in EFL receptive vocabulary should be investigated.

It is interesting to note that the connection between the scores in the 3000 VLT and motivation in the 8th grade, although not significant, is closer than in the rest of tests at this level. This means that the most highly-motivated subjects obtain better results in the 3000 VLT, i.e. the task involving more low frequency words, and as a result, the most difficult receptive vocabulary task (3000 VLT:  $x^2 = 4.643$ , p<0.098; versus 2000 VLT:  $x^2 = 0.996$ , p<0.608; and 1000 Word Test: 0.933, p<0.627 – see Table 6). A similar result is identified in 9th grade, where the significance levels are notably higher for the 2000 VLT ( $x^2 = 15.304$ , p<0.000) and the 3000 VLT ( $x^2 = 14.284$ , p<0.001) than for the 1000 Word Test ( $x^2 = 8.488$ , p<0.014). These results imply that motivation plays a greater role in the most difficult tests. At the grades under examination, the 1000 WT is not as much of a challenge for the learners as the 2k VLT is– where most of them are placed – or the 3k VLT. As Eysenck and Eysenck (1980) claim in a study of cued recall of word list items, motivation would have a greater effect on the learning and retention of difficult words than in the learning of easy words.

Finally, it is worth alluding here to the results obtained in a previous study by Fernández Fontecha (2010) with a group of 250 8th graders to which the sample (N = 186) of the present study belongs. In that study a significant positive relationship between learners' motivation towards EFL learning and their scores in a lexical availability test, which measured the learners' productive vocabulary, was found (Pearson correlation: 0.268, Sig. 2-tailed: 0.000). The students being the same in the two studies and their motivational levels kept broadly unchanged from 8th to 9th grade, the type of vocabulary tasks used in both studies could be said to be somehow affecting the results. The different features of language tasks in general, and vocabulary tasks in particular, and their effect on the results in language performance are aspects

that should be taken under discussion. If we take previous research conducted with our sample of students, or a slight variation on it, as an example, girls outperformed boys in productive vocabulary tasks (Ojeda and Jiménez, 2007; Jiménez and Ojeda, 2008, 2009) but no significant gender differences were identified between them in the same receptive vocabulary tasks included in the present study (Jiménez and Terrazas, 2005-2008; Agustín and Terrazas, 2008a, 2008b). Together with sociocultural and biological factors related to the sex/gender of the students, the nature of the task is here pointed out as one factor affecting the results.

Whereas receptive vocabulary tasks consist of the perception of a linguistic form while listening or reading and its consequent meaning retrieval, productive tasks involve the production of language forms through speaking and writing in order to convey messages to others (Nation, 2001). In productive vocabulary we perceive a sense of wanting to express a meaning. We can bring here the so-called "motivation" explanation, i.e. "learners are not motivated, for a variety of reasons including sociocultural background, to use certain kinds of knowledge productively" (Corson, 1995 – quoted in Nation, 2001: 30). And, as Nation (2001: 28) notes, students need to be highly motivated to produce words because this is a more demanding task than recognizing words.

Apart from these ideas, the elucidation about the relationship between the variables explored in this paper gets more complex as learning differences are also found in tests administered to measuring the same type of vocabulary learning. Thus, Jiménez Catalán (2010a, 2010b) finds out that vocabulary learning outcomes differ when students are administered two different productive tasks: lexical availability task and composition. Therefore, on the basis of this argumentation, further research is required to determine, on the one hand, the effect of different productive vocabulary tasks on the results of this study.

## 6. Conclusion

Evidence from this study suggests that the receptive version of the VLT is an accurate and valid tool to measure the vocabulary knowledge of secondary school students. We can conclude that the receptive vocabulary size of our Spanish students of EFL in 9th grade of Secondary Education falls within the 2000 frequency band of the VLT. Moreover, this study has demonstrated that there is a significant receptive vocabulary growth for the three levels examined at both grades, yet that such rate is uneven. Further, a positive significant correlation between receptive vocabulary size and age was found. Nonetheless, this study has also demonstrated that students' level

of motivation towards EFL learning did not change from grade 8 to grade 9. In our view, no sufficient time span elapsed to provide with more concluding results about the relationship between these two variables. Finally, a significant relation between the level of motivation and the three receptive vocabulary tests was perceived in 9th grade, but not in 8th grade.

As shown in this study, not all the tests used are similarly successful in demonstrating a relationship between vocabulary knowledge and age. In particular, the 1k test format requires greater demands than the other two vocabulary levels tests. To avoid surprising results like higher scores obtained in the 2000 vocabulary test than in the 1000 word test in the future, students should no longer be administered the 1k test.

As regards the validity and reliability of the receptive vocabulary tests used in this study, we entirely agree with Terrazas and Agustin (2009: 127) when they claim that, from a statistical point of view, it would be advisable that "the sample of words tested each year should change. In other words, the 30 words of the first year should be substituted by another 30 words of similar characteristics (word class, length, etc.) for the subsequent year, and successively with other years."

This study inevitably hinges on the fact that vocabulary learning and motivation have multiple dimensions to consider. Their separate dynamic natures make their conjunction something very difficult to measure. As explained above, concerning motivation exclusively, a myriad of factors may appear to have an effect on learning outcomes, such as the learners' age, the compulsoriness of education, learners' perception of the foreign language, social status of the foreign language, or the international posture or attitude toward the international community and the FL (Yashima, 2002). As Chambers (1998: 232) rightly points out, "to identify with any validity the cause of pupil dissatisfaction is an impossible task" because there are "many interlinking variables that the challenge to unravel them in order to pinpoint a specific variable or group of variables with any confidence is well nigh insurmountable". This is why the real challenge for EFL researchers is to provide instructors with real and contrasted evidence from longitudinal studies that enables them to sustain students' initial positive attitudes towards a foreign language throughout time.

In the light of the results of the present study, which identifies a lack of variation in a reasonably high mean motivation of a group of EFL adolescent students from 8th grade to 9th grade, the direct teaching implications that could be suggested cover actions for maintaining and even increasing motivation through variables, such as learning autonomy, willingness to communicate, or self-worth. Meeting these goals becomes a very hard task when the use of the foreign language does not arise naturally from the social and educational environment. That is why teachers should be constantly creating a necessity for their learners to use the words and grammar adequately as instruments required for the correct understanding and communication of messages. As for vocabulary teaching, we cannot forget about the use of some proactive or reactive Focus on Form activities within this communicative environment. These activities would offer learners opportunities for an extensive and rich use of vocabulary and especially of low-frequency words.

Given the above-mentioned difficulty in investigating the relationship between the different variables of this study, and aware of the limitations that this difficulty entails, we suggest that further studies should be devised to shed some light on aspects uncovered in the present research. As an example, this investigation should be complemented with further longitudinal studies on aspects, such as the motivation of our learners and related factors, such as WTC, attitudes towards instruction, effort in learning them, etc. throughout Primary and Secondary Education by means of different tests, such as the WTC test (MacIntyre et al., 2002) or the FLAGS (Cid, Grañena, Tragant, 2009); the effect of the types of motivation in these learners on attainment in EFL receptive vocabulary; or the effect of different productive vocabulary tasks and different receptive vocabulary tasks in vocabulary learning results.

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