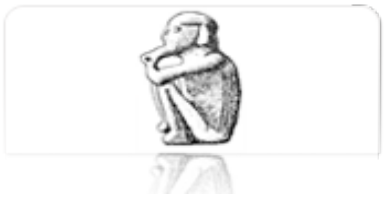

Káñina
ISSN: 0378-0473
ISSN: 2215-2636
Universidad de Costa Rica

Castro-García, Damaris
Public school students at a clear disadvantage in English language vocabulary production
Káñina, vol. 44, no. 2, 2020, May-August, pp. 69-94
Universidad de Costa Rica

DOI: https://doi.org/10.15517/RK.V44I2.44053

Available in: https://www.redalyc.org/articulo.oa?id=44265785004

Public school students at a clear disadvantage in English language vocabulary production

Los colegios públicos muestran una clara desventaja en la producción de vocabulario en inglés

Damaris Castro-García⁎

ABSTRACT

The aim of the present study is to offer a comparative perspective on the level of attainment of productive vocabulary in three different high school settings in the Costa Rican educational system. The study compares the results obtained in two tasks that demand controlled production and free productive vocabulary from students who attend these schools. The vocabulary was measured through the Productive Vocabulary Levels Test (PVLT) and a free composition, respectively. The first school is a school where content based instruction is implemented. The second school, a semi-private school, offers more hours of instruction of English as a Foreign Language than the minimum required by the Ministry of Education, although English is not used to teach non-language subjects. In the third school, a public school, the minimum number of hours officially required is offered to the students (532 hours). The results in the controlled productive vocabulary task and in the free composition favor, by far, the performance of the students who are taught using English as a medium of instruction. These results point to a much-needed change in the teaching methodology of EFL in Costa Rica, especially when it comes to the teaching practices implemented in most public schools.

Key Words: PVLT, vocabulary, writing, total word counts, vocabulary size.

RESUMEN

Este estudio ofrece una perspectiva comparativa del nivel de conocimiento de vocabulario productivo en tres tipos de centros de enseñanza secundaria costarricenses. Se comparan los resultados de dos actividades que requieren que los estudiantes utilicen vocabulario productivo en contextos controlados y libres. Los resultados se midieron respectivamente por medio de la Prueba de Nivel de Vocabulario Productivo (PVLT, por sus siglas en inglés) y de una composición. El primer colegio utiliza el idioma inglés como medio de enseñanza por contenidos. El segundo colegio, un colegio semiprivado, ofrece un mayor número de lecciones en inglés que las que el Ministerio de Educación establece como mínimas, aunque no aplica la enseñanza de contenidos en inglés. El tercer colegio, un colegio público, imparte la cantidad mínima de lecciones que el Ministerio de Educación establece como obligatorias (532 horas en total). Los resultados, tanto en la actividad controlada como en la libre, favorecen claramente el desempeño de los estudiantes que se exponen a inglés como medio de instrucción. Los resultados indican una evidente necesidad de cambio en la metodología de enseñanza de inglés como idioma extranjero en Costa Rica, especialmente en referencia a las prácticas implementadas en la mayoría de los colegios públicos.

Palabras clave: PVLT, vocabulario, escritura, palabras totales, cantidad de vocabulario.

⁎Universidad Nacional. Escuela de Literatura y Ciencias del Lenguaje. Costa Rica.
Email address: damaris.castro.garcia@una.ac.cr

Recepción: 6/01/2019. *Aceptación: 29/11/2019.*

1. Vocabulary

Vocabulary knowledge is a quintessential aspect of language learning. Vocabulary learning can be perceived as one of the first tasks that students embark upon once they start acquiring a language. When learners begin the process of second language acquisition, they develop their own repertoire of words in the target language. As knowledge of the target language deepens, so does the vocabulary knowledge of learners and vice versa. Nation (1993) insists that vocabulary is a basic cornerstone for students to develop the basic skills necessary for adequate language use. He maintains that lack of vocabulary knowledge would hinder the correct progression of language development and thus of the development of general knowledge derived from it. For Dóczi and Kormos (2016), a speaker's vocabulary is the aspect of language that undergoes the greatest change and development across that person's lifespan. The sets of words that learners have mastered vary from one speaker to another, and they vary even more so when compared to native speakers' word counts. While for some people native speakers' vocabulary size can be seen as unattainable, vocabulary learning remains a key aspect of second language learning. If vocabulary learning follows an adequate progression through the learning of vocabulary bands according to their frequency of use, learners will receive great benefits from this learning, and their overall language proficiency will also be greatly enhanced.

Traditionally, vocabulary studies have focused on different features of vocabulary knowledge. One field of vocabulary studies concentrates on the analysis of depth and breadth of vocabulary. The former refers to how well students know the different aspects of the words they use while the latter studies how many words, that is, the approximate

number of words students know (Nation, 2013). Vocabulary size, specifically, has been deemed a fundamental element in the process of second language learning. Nation (1983, 2003, 2013) and Webb and Nation (2017) provide a detailed categorization of vocabulary based on word frequency lists that label and group words together as they are used in different discourse types. These categories include *high frequency* words, *low frequency* words, and *technical* and *academic* words. High frequency vocabulary, the focus of the present study, has been assigned an essential role in the development of vocabulary in general and subsequent word level development in particular. The value of high frequency words lies in the fact that between 81,54 and 91,71 of words belonging to the 2000 word families that make up this band are present in texts such as novels, newspapers, conversations, television, films, and lectures that are common in everyday activities (Webb and Nation, 2017). This fundamental characteristic justifies the idea of this word list being identified as a starting point in vocabulary learning. If learners can encounter these words in large proportions in most of the texts they meet, it would only make sense for them to start learning these words as soon as possible.

For Nation (2003) the 2000 word band serves as a strong base on which subsequent word lists will develop. He maintains that knowledge of this basic word band sets the contexts and provides access to information that leads to learning words that belong to higher word bands. Nation (2011) also points to the importance of this word band in connection to the great value return that students experience when they come across these words in texts. That is, knowledge of this word band somehow warrants a good understanding of the information that is encountered. Nation (2013) considers that a 2000 word family list is an attainable target for a course program and he insists that given the importance of this word

list, students and instructors must dedicate time to actively learning this word list both inside and outside of the classroom.

Another emphasis of vocabulary studies concentrates on studying the characteristics of vocabulary as it develops at the receptive and at the productive level. Receptive vocabulary ability has to do with the vocabulary knowledge necessary when we read or listen to information in the second language. Productive vocabulary knowledge, on the other hand, has to do with the vocabulary knowledge used when we produce language through speaking or writing in the second language (Heaton, 1990). Researchers have found that vocabulary knowledge progresses from receptive to productive ability (Laufer, 1998; Webb and Nation, 2017). For Webb and Nation (2017) "productive learning involves the knowledge needed for receptive use, whereas receptive learning may not involve the knowledge needed for productive use" (p. 34). As a result, receptive vocabulary tends to be larger than productive vocabulary. Coming up with word forms at the productive level is more demanding at the cognitive level than is the recognition of words at the receptive level. This greater difficulty assigned to productive vocabulary ability calls for more direct attention to this type of vocabulary knowledge.

Yet another focus of vocabulary studies has to do with the types of contexts in which vocabulary appears. The areas of vocabulary studies mentioned above, besides being approached from the perspective of depth and breadth of vocabulary as well as receptive and productive knowledge of vocabulary, can also be approached from the standpoint of the contexts that posit different knowledge demands on the learners: controlled versus free contexts (Laufer and Nation, 1999). Laufer and Nation (1999) insist that the ability to produce vocabulary "implies degrees of knowledge" (p. 36) and claim that students can use vocabulary forms in some educational situations (i.e., when required by the teacher) and not

in others (i.e., free writing). Laufer and Nation (1999) establish a distinction between "the ability to use a word at one's free will as 'free productive ability' [and] 'controlled productive ability' for the ability to use a word when compelled to do so by a teacher or researcher" (p. 37). In the case that pertains us here, the students' free writing composition will be used to measure the former while the PVLT measures the latter.

Bringing the theoretical aspects discussed above to the present study, we will concentrate on breadth of knowledge, specifically, the approximate number of words that students know in their last year of high school. Additionally, that approximate number of words is described here from the perspective of productive vocabulary knowledge, in particular, written production. Finally, productive vocabulary knowledge is measured and compared in two different types of tasks that offer students the possibility of showing their productive vocabulary knowledge in both controlled and free contexts.

1.1. Productive Vocabulary

A rich productive vocabulary repertoire is key for basic communication in the second language. Only when students possess enough vocabulary are they able to communicate their ideas clearly and fluently. According to Laufer (1998), vocabulary knowledge develops and grows from superficial to more advanced types of knowledge related to different aspects of vocabulary. She insists that vocabulary knowledge moves from receptive knowledge types toward more productive forms of knowledge. Furthermore, Nation (2013) argues that productive vocabulary knowledge requires form recognition and form recall on the part of the learners. Being able to distinguish between different word

forms and being able to recall these forms when they need them enables learners to access these word forms for communication purposes.

In connection with vocabulary knowledge development, Dóczi and Kormos (2016) affirm that they have established "a potential order for the development of word knowledge types" (p. 87). Along the lines of Laufer (1998), for Dóczi and Kormos (2016), the types of word knowledge seem to evolve from receptive aspects toward more productive aspects of the language. Knowledge about the part of speech as well as written form knowledge are the first to develop and they progress at similar paces during the same initial stages. These are followed by knowledge of spoken form and word meaning. More productive features of vocabulary knowledge, namely, collocational use and sentence formation knowledge, follow. The next element in the order of development is knowledge about *other word forms* and *other word meanings.* Dóczi and Kormos (2016) argue that these are the last types of word knowledge to develop. Dóczi and Kormos (2016) point out that "this hierarchical order should not be seen as consisting of entirely distinct and separate stages of development but as phases whose boundaries might be fuzzy and that might potentially feed back to stages lower in the hierarchy" (p. 88). That means that whereas there might be some overlap in the development of the different types of word knowledge, we will still expect receptive features to surface before more productive forms of knowledge are observable.

Furthermore, according to Nation (2013), procedural knowledge of vocabulary refers to the "learners' ability to use words receptively and productively when their focus is on the message that they are receiving and conveying" (p. 561). This represents the main goal of learners when they are developing a second language. Only when learners have the ability to understand and respond to a message can we say that they have a functional use of the

target language, a quintessential characteristic of second language acquisition. Webb and Nation (2017) further argue that for learners to develop productive ability, students require prior receptive knowledge of vocabulary; the opposite does not necessarily occur. They maintain:

> Productive learning is more difficult than receptive learning, mainly because it requires more precise knowledge of aspects of the form, meaning, and use of words than receptive learning. It also requires the learners to give attention to aspects of vocabulary knowledge that are not so critical for receptive use (p. 180).

This added difficulty that productive ability demands from learners makes it all the more necessary for instructors and learners to devote more time to the development of this ability. In this study, we look into the development of the productive vocabulary knowledge of the learners with the intention of determining the ability that students have in terms of functional use of the language. That is the type of knowledge necessary for writing, in both controlled and free contexts. Also, Laufer and Goldstein (2004) attest to the existence of a hierarchy of vocabulary skills and maintain that *active recall*, the ability to come up with the target words when needed, is the most difficult task required of vocabulary knowledge. To produce a high-quality piece of writing, a great deal of organization is necessary. Ideas need to move from a mental conception to a written text through a process that requires brainstorming, planning, drafting, and revision to eventually obtain the final product. Aware of this high degree of difficulty due to the demands of the task, we set out to determine the level of productive ability that the subjects of the present study have attained. For Laufer (1994), "the vocabulary quality of a piece of writing depends on the type of words used and also on the effective way of varying these words" (p. 30). It follows that if learners lack the vocabulary they need, their ability to express themselves with ease will be

diminished. This difficulty will be reflected in poor writing quality that will also reveal limited language proficiency. Contrariwise, it has been noted that good writing offers various benefits in the second language learning process and it serves to demonstrate the writer's proficiency. Vocabulary is, thus, a key component of writing; and writing, in turn, has been associated with great gains when it comes to overall SLA. That is why, first, it is crucial to determine the approximate number of words that students have mastered (as it is reflected in controlled contexts), to later observe how that influences students' performance in the free writing task.

2. Previous Studies

The number of studies that look into productive vocabulary measures is a bit meager when compared to studies that look at receptive vocabulary measures, for example. Different authors attribute this to the difficulty of measuring productive vocabulary (Laufer and Nation, 1995,1999; Webb and Nation, 2017). The studies displayed in Table 1 represent the totality of those located by the author of the present analysis and they are used here as a basis for the comparison of the present results.

Table 1. Previous studies on productive vocabulary

Study	**Participants**	**Hours of Instruction**	**Vocabulary Size**
Laufer (1998)	Israeli high school students, 16 and 17 years old	1080 1260	1314 words 1667 words
Laufer and Nation (1999)	Israeli high school students, 16 to 19 years	1080 (10^{th} grade) 1260 (11^{th} grade)	1311 words 1667 words

	old	1365 (12th grade) 1560 (university)	1800 words 1889 words
Moreno Espinoza (2010) in Canga Alonso and Arribas García (2014)	Spanish high school students, (age not reported)	Total hours not reported	645 words
Shin, Chon & Kim (2011)	Korean high school students (age not reported)	Total hours not reported (10 years of prior English instruction)	519 words
Canga Alonso and Arribas García (2014)	Spanish high school students, 15 to 16 years old	1049	644 words
Ab Manan, Aziban, and Mohd Nasir (2017)	Malay first year university students, 18 to 20 years old	Total hours not reported (11 years of prior English instruction)	1459 words
Anil Kumar and Dhanavel (2018)	Indian undergraduate, university students (age not reported)	Total hours not reported	1611 words

Source: The data were compiled by the author based on each one of the sources.

The studies described in Table 1 exhibit a great variety of outcomes. A distinct gap can be observed between the results of the Israeli, Malay, and Indian students, in comparison with those of the Spanish and Korean students. While the Malay, and Indian students are already at the university level, most of the Israeli students are still at the high school level. With a difference of at least 600 words, the Israeli high school students outscore the Spanish students who are also at the high school level. At the university level, the Israeli students also outperform the Malay university students with a smaller difference of over 400 words. The present study shares more common grounds with the participants in the studies by Moreno Espinoza (2010) and by Canga Alonso and Arribas García (2014). The participants

in the latter studies have the same first language and education level as those of the present study.

3. The Present Study

3.1. Research Questions

This comparative study aims at answering the following questions:

1. What is the productive vocabulary size of students in the PVLT in three types of high school settings in Costa Rica?
2. What is the number and type of words that Costa Rican students from three different school settings produce in a free writing task?
3. Are there statistically significant differences in the productive vocabulary used in the three types of school settings?

3.2. Participants

Students from three different types of high school participated in this study. Fifty-four students (33 girls, 21 boys), with an average age of 16,3 years, attend a private school where content-based instruction is the methodology of choice. This school will be referred to here as Content School (CS). In this school, students receive 6 hours a week of English as a foreign language instruction plus 4 hours a week in a content course where the subject matter is taught in English. In sum, these students have received approximately 1368 hours

of English instruction, both through formal language learning and through the teaching of other subjects. The non-language subjects students have received include Ecology, Social Studies, and Biology. The second school setting is a semi-private school. We will refer to this school as the Semi-Private School (SPS). There are 128 students (64 boys and 64 girls). In this institution, students have received approximately 1140 hours of English instruction. Although these students do not receive non-language courses in English, this school has added more English language lessons to the curriculum than the minimum required by the Board of Education. According to the instructors and English Department coordinator, the English class should be taught in English, and Spanish should be used only when it is absolutely necessary. Finally, the third school setting is a public high school; henceforth this school will be referred to as the Public School (PS). There are 72 students (32 male, 40 female) from this school in our study; of those, only 63 participated in the free writing task. In this school, students have received the minimum number of hours required by the Board of Education: 3 hours a week in 7^{th}, 8^{th}, and 9^{th} grades; and 5 hours a week in 10^{th} grade. Those add up to an approximate total of 532 hours of instruction in secondary education. The language classes in this school concentrate solely on formal language instruction and oftentimes Spanish is used for both teaching and learning the target language.

3.3. Instruments

To measure controlled productive vocabulary ability we used the Productive Vocabulary Levels Test (PVLT) created by Laufer and Nation (1999), specifically the parallel version 1 (Version C) of the PVLT-2000 word band. This test consists of 18 items with statements

containing incomplete words immersed in these sentences. The students must complete these words. Each item provides a number of letters to guide students in the task and trigger the target word that best fits the sentence context. These clues aim at eliminating other possible alternatives or other words belonging to other word bands. This test has been used in many other studies and has been found to be reliable, valid and practical (Laufer and Nation, 1999). Students were given 15 minutes to complete this task.

This is a sample of the type of items that the students had to complete:

"1. I am glad we had this opp_____ to talk" (Laufer and Nation, 1999).

The second task is a free composition. To guide students in the free writing task, an instruction sheet was distributed. Students were given three topics to select from. The first topic asked them to describe what Costa Rica has to offer tourists. The second and third topics where taken from Laufer and Nation (1995). Students were not required to write a specific number of words but they were encouraged to write as much as possible. They were given one hour to complete the task and were not allowed to use a dictionary. The following is the set of choices as they were presented to the students.

a. "What could a foreigner find and enjoy if he visited Costa Rica? Discuss the things and places that Costa Rica has to offer to visitors" (Castro-García, 2018).

b. "Should a government be allowed to limit the number of children a family can have?" Discuss this idea considering basic human rights and the danger of population explosion (Laufer and Nation, 1995).

c. "A person cannot be poor and happy, because money is always needed to gain something that is important to that person." Argue for and against that idea (Laufer and Nation, 1995).

3.4. Data Analysis

The answers for the PVLT were checked for semantic correctness (Laufer and Nation, 1999). As the authors suggest, words were deemed correct or incorrect based on whether the general meaning of the word was understood. Minor spelling mistakes (*delibered* instead of *delivered*) and grammatical mistakes (*deliver* instead of *delivered*) were ignored. Once the tests were graded, descriptive statistics were calculated and the differences between the results of the different schools were compared using SPSS Version 20 (IBM Corp, 2011).

In the case of the written composition, every composition was digitized as a word document and later analyzed using the program *AntWordProfiler*, version 1.4.1. (Anthony, 2014). To be able to use the *Vocabulary Profile Tool* of *AntWordProfile*, the texts were turned into *.txt* files. Once the *Vocabulary Profile Tool* results were obtained, they were analyzed using SPSS, Version 20 (IBM Corp, 2011) to obtain descriptive and comparative statistics.

3.5. Results

3.5.1. Item and word count in the PVLT

Table 2 presents the results for each of the schools in terms of item and total word count information in the PVLT. These results are calculated following Nation's (1990) formula, "Vocabulary size = N correct answers multiplied by N words in dictionary (the relevant word list) divided by N items in the test" (p. 78). Based on this formula, a relation was established between the number of items (maximum 18) and the total number of words that

they stand for in the 2000 word band. In both cases the CTS outscores the other two types of schools; the SPS exhibits lower scores than the CTS but largely outperforms the PS, which has the lowest scores of all three. In terms of item performance, the CS shows a median of 13, the SPS has a median of 10 and the PS has a median of only 3 items. This translates into 1444; 1111; and 333 words respectively for the CTS, SPS, PS. That indicates that there is a difference of over 1000 words between the CS and PS and over 800 words between the SPS and PS. While the minimum of items stands at 8 for the CTS, it is zero for the SPS and PS schools. Additionally, whereas there are subjects in the PS that reach a very acceptable maximum score of 1889 words, clearly most of the population in this school has a much poorer performance; that causes the overall median to be extremely low (333 words). For further information on the results of the CS and SPS, readers may refer to Castro-García (2017, 2018).

Table 2. Item and word count per school in the PVLT

PVLT 2000 (N= 54 CTS, 128 SPS, 72 PS)						
	Item Word Count			**Total Word Count**		
	CS	**SPS**	**PS**	**CS**	**FPS**	**PS**
Total	18	18	18	2000	2000	2000
Mean	13.20	9.41	4.03	1467.33	1046.80	447.38
Median	13	10	3	1444	1111	333
Max words	18	18	17	2000	2000	1889
Min words	8	0	0	889	0	0
SD	2836	4.284	3.742	312.075	477.644	415.807

Source: Created by the author based on the data collected for this paper.

To determine normality assumptions that can help us describe the nature of the differences between the results for the three schools in the PVLT, the Kolmogorov-Smirnov test was used. This test demonstrates that the score distribution in the PVLT between schools is not

normal for the CS and PS schools, but it is normal for the SPS school; thus, non-parametric statistical tests are required to compare the medians in these schools. The results of the normality tests are displayed in Table 3.

Table 3. Normality test results

	Kolmogorov-Smirnov test			
	School	**Statistics**	**gl**	**Sig.**
PVLT total words	**CS**	.167	54	.001
	SPS	.068	128	.200
	PS	.253	72	.000

Source: Created by the author based on the data collected for this paper.

To determine the possible differences between these three schools, a one-way ANOVA was used and the Kruskal Wallis test is later applied to compare medians between schools. This test shows that there are indeed statistical differences amongst all schools in the sample; the differences are present regardless of which school is compared to one another. The output results for the Kruskal Wallis test are presented in Table 4.

Table 4. Kruskal Wallis test results

Sample compared	**Statistical test**	**Error**	**SD**	**Sig**	**Asymp. Sig**
PS-SPS	78883	10804	7302	.000	.000
PS-CS	133294	13202	10096	.000	.000
SPS-CS	54411	11900	4572	.000	.000

Source: Created by the author based on the data collected for this paper.

The statistical differences discussed in Table 4 are clearly illustrated in Figure 1, where we can easily observe the differences in distribution among these three schools as they are determined by the Kruskal-Wallis test for independent samples. As mentioned above, the CTS shows the highest results with a minimum of total word counts just below the 1000 mark, a maximum of 2000 words, and a median that is close to 1500 words. The SPS also

reaches a maximum of 2000 words, the minimum is zero words, and the median is a little over 1000 words. The spread of distribution for the scores in this school is wider than it is for either of the other schools in the sample. In the case of the PS, the minimum is also zero and the maximum is below the 1000 word mark; that is less than half of the words that are being evaluated. Interestingly, we can observe that there are at least 7 different outliers in this school. Although those students produced above average results in this test, it is clear that the vast majority of PS students exhibit a very limited command of vocabulary at the 2000 or even 1000 word level. The limited spread of distribution in this school, i.e. the concentration of results below the 1000 word mark, evinces that the lack of knowledge of vocabulary in this school setting is a general trait of that population.

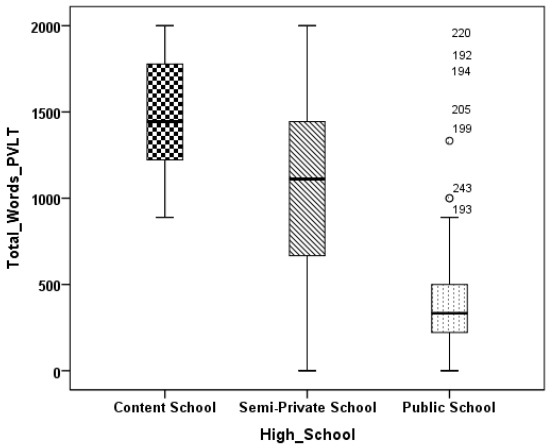

Figure 1. Word distribution per school in the PVLT.
Source: Created by the author based on the data collected for this paper.

In the analysis of this first task, we find that in the present sample the students who attend the CS outperform, by well-defined margins, the students who attend the SPS and PS.

3.5.2. Word count in composition task

The total numbers of words produced by the students in their composition in each type of school are summarized in Table 5. The CS students produce more words, a median of 248.5 words. It is followed by the SPS students who produced a median of 189 words per composition. Finally, the PS students produced a median of 126 words per composition (almost half of the words produced by those of the CS). Whereas in the PS, one student produced the maximum number of words (538 words), this school is also where the lowest rate of total words was produced (25 words).

Table 5. Total words in composition per school

	CS	SPS	PS
Mean	260.77	195.64	135.25
Median	248.50	189	126
Max words	473	467	538
Min words	70	27	25
SD	90.67	84.23	87.64

Source: Created by the author based on the data collected for this paper.

Once again, to determine the characteristics of the distribution of words per school a Kolmogorov Smirnov test was implemented. Table 6 contains the output results for this test.

Table 6. Word distribution according to the Kolmogorov-Smirnov test

		Kolmogorov-Smirnov test		
	School	Statistics	gl	Sig.
Word distribution	CT	.108	52	.187
	FLT	.049	125	.200
	PFLT	.104	63	.086

Source: Created by the author based on the data collected for this paper.

According to the Kolmogorov-Smirnov test, the total numbers of words in the composition between schools is normal for all schools in the sample, thus a parametric statistical test is required to determine the differences among schools. A one-way ANOVA parametric test is used to check the type of statistical differences existing between schools. The results for this test are depicted in Table 7. Comparisons show that there are statistically significant differences (p value of 000) amongst all schools. The Bonferroni test shows statistically significant differences with a p-value of .000 in all cases. The median differences and typical error results between each pair of schools are displayed in Table 7.

Table 7. Bonferroni test output results for total word comparison per school

			Median Diff	Type error	Sig
Bonferroni test output results	CS	SPS	65.129	14.283	.000
		PS	125.515	16.217	.000
	SPS	CS	-65.129	14.283	.000
		SPS	60.386	13.373	.000
	PS	CS	-125.515	16.217	.000
		SPS	-60.386	13.373	.000

Source: Created by the author based on the data collected for this paper.

According to this analysis, the gradation of results described in Table 5 for the total number of words accounts for statistically significant differences when the analysis compares the outcomes for the schools with either of the other schools in the sample. That is, the results for the CTS are statistically superior to those of the SPS and the PS. The results for the SPS, in turn, outscore those of the PS. These statistically significant differences are corroborated by the results described in Table 7.

The distribution of the words per school in the composition task is depicted in Figure 2. This figure distinctly shows the students' degree of vocabulary knowledge for each of the schools.

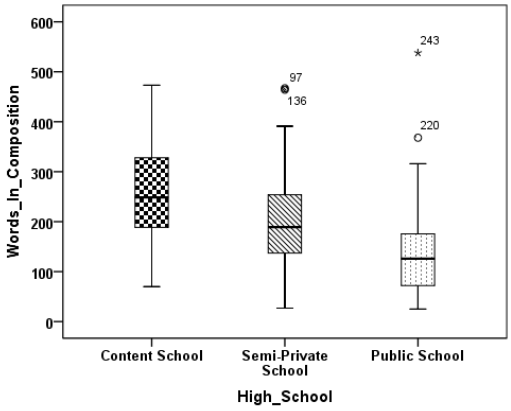

Figure 2. Word distribution per school in the written task
Source: Created by the author based on the data collected for this paper.

The CTS show the highest median close to 250 words and it also exhibits the higher minimum number of words close to 100. The SPS follows both in terms of median scores (189 words) and minimum words (27 words). Two outliers are present in this school, both of them show a maximum number of words that is placed close to the maximum number of words for the CTS. As it is established by the median scores; however, most of the participant subjects in this school used a lower median of words in their composition. Again, the PS exhibits the lowest overall results: a median place just over the 100 word mark and minimum well below 50 words. Interestingly, two outliers excel the performance of the rest of their classmates; one of the outliers even surpasses the maximum words for the CTS while the other is close to the 400 word mark. These are exceptional cases, however, since most of the participant subjects in this school are placed just a little over the 100 word mark. In this task, once more, the statistical tests favor the results obtained by the CS students by a large margin.

4. Discussion

We will begin by examining the results obtained by students in the PVLT. Laufer and Nation (1999) established that students should reach a minimum of 15-16 correct items in the test to demonstrate mastery of the 2000 word band. Given that minimum, the first result is that none of three schools sampled meets this requirement; that is, no school has mastered the 2000 word band of productive vocabulary as measured by the PVLT. As described in Table 2, the item median stands at 13, 10, and 3 items respectively for the CTS, SPS, and PS. The CTS is the closest to the mark while the PS exhibits clear limitations in terms of productive vocabulary knowledge. These results, of course, extend to limited total word counts in regard to the 2000 word band: 1444; 1111; and 333 total words respectively for the CTS, SPS, and PS.

Comparison with results obtained in other countries (depicted in Table 1) show that the Costa Rican results are similar to those of Laufer (1998), Laufer and Nation's (1999) younger participants and to Ab Manan, Azizan and Mohd Nasir (2017) participants when we look at the CTS in our sample. The results for the SPS do not fall close to either one of the other results available. The case of the PS, on the other hand, falls well below the results obtained by the Spanish population in Moreno Espinoza (2010), Canga Alonso and Arribas García (2014) and the Korean students in Shin, Chon & Kim (2011). The other two groups of Costa Rican subjects in the present study, however, outperform all of these subjects.

Our research offers additional information when compared to those studies because it also shows how students perform on a written composition. Evidently, the advantage that is exhibited by the students in the PVLT is carried over to the number of words that they use

in the written composition. The SPS, whose total number of words is below those of the CS, also follows this school in terms of the total numbers of words produced in the composition. Students who attend the PS also are last in terms of word production in free contexts. As expected, based on the results in the PVLT, these students also produce the lowest number of words in the composition. These results support Nation's (1993) idea discussed at the beginning of this article. As this author argues, it is evident that vocabulary size has a direct effect on the proper development of language skills, such as writing, in this case. These results also show that, as argued by Nation (1983, 2003, 2013) and Webb and Nation (2017), high frequency vocabulary plays a fundamental role in the proper progression of vocabulary knowledge. Given that students do not handle the 2000 word band, they cannot develop the other upper level word bands and thus they cannot use any of them when it comes to producing language in free contexts. Additionally, as Laufer (1994) argues, the quality of a piece of writing is affected directly by the types of words that students know. The present research shows that the more vocabulary students know in a controlled context, the more words they are able to produce in a free context, thus enhancing the quality of the latter.

Inevitably, we have to look at the results in the present study in connection to the methodology of the school and to the number of hours that students have spent learning English. Laufer (1998) already noted that there are certain aspects that have a direct impact on vocabulary size. She mentions that input conditions, comprehension versus production-oriented instruction, in particular, play a key role in vocabulary growth. Many other benefits are also associated with content based instruction; stronger self-confidence is one of them (Moratinos-Johnson, Juan-Garau, and Salazar Noguera, 2018). However, in the present study, all the factors seem to be combined in disadvantage of the population that

attends the public school in the sample. The fact that they are not exposed to the treatment of non-language subjects in English and the fact that they have received fewer hours of instruction during secondary education place them in serious disadvantage when compared to the other types of school setting that are also present in the Costa Rican context. The most troubling results of this study are not the scores on the tasks of the investigation per se, but the fact that the disadvantages of the students who attend public schools do not end with these tests results. These students are placed in further disadvantage when it comes to future employment in a job market that demands an increasing number of bilingual speakers as part of its workforce.

In the Costa Rican context, the term 'bilingual education' is used quite generally when people refer to the learning of second languages. This term is most often used when describing programs that involve the instruction of English as a foreign language. In more recent literature, however, the term bilingual education is reserved exclusively to describe those programs that use English as a medium of instruction or those in which English is used to teach subjects other than the language itself (Bialystok, 2016; Cummins, 2014). For these authors, traditional language instruction where the teaching of the foreign language takes place in a limited time allotment in the curriculum, where the class concentrates on formal aspects of the language, and where the first language is used to teach and learn the second language does not qualify as bilingual education. For Bialystok (2016), one of the key features of bilingual education is that it requires "more than one language …used in the curriculum to teach non-language academic subject matter" (p. 2). This characteristic makes us rethink the idea of bilingual education that seems to be so common in our context, in particular in reference to the public education system.

In reality, English instruction varies greatly amongst the different types of programs that coexist in the Costa Rican educational system. As a result, there is a wide range of outcomes in students that attend different language programs in different school settings that may be labeled as private, semi-private and public schools, for classification purposes in this study. The variety of results already shows that not all forms of language instruction deserve the title of bilingual education or bilingual programs. The term "bilingual education", as described above could be used in the Costa Rican context only to describe some of the programs as they are implemented in certain private institutions. In those cases, English is used as a medium of instruction to teach subjects such as Biology or Social Studies. In the case of semi-private schools, English is not yet used as a medium of instruction. In those schools, what often occurs is that they offer more English lessons than those offered in the public sector. Having more hours of English class a week allows for a greater variety of activities to be implemented in the classroom, and thus results in greater opportunities for language use during class. The third setting is the public school system in which English instruction is limited to a minimum number of instruction hours, as established by the Board of Education. In this case, English is taught as an additional subject of the curriculum and oftentimes Spanish is used in the teaching and learning of the foreign language.

Given that the public education system in Costa Rica offers mostly traditional, mainstream education, we cannot expect the same results as those of other programs (in terms of language proficiency) where English receives greater emphasis or where language use goes beyond that of formal aspects of the language. When English is used with functional purposes, the results show that students attain better proficiency levels than those of students who continue to see English as one more subject in their curriculum and where the

functional purposes of learning English are not pursued. The latter is the case of traditional, mainstream education in Costa Rica. As Baker and Wright (2017) point out "mainstream education rarely produces functionally bilingual children. A very limited knowledge of a foreign language tends to be the typical outcome for the mass of the language majority" (p. 209). Knowledge of the limitations that are associated with mainstream education should be enough for the Board of Education and any other party involved in language policies in the country to gear efforts towards true bilingual education programs. The results in terms of vocabulary knowledge, along with its size and the effect that it has on the practical use of the language show that there is an urgent need for change in the Costa Rican educational system, especially in the public sector, when it comes to foreign language teaching.

5. Conclusion

New policies which are geared towards more functional uses of the language, and which require that students actively use the knowledge that they are acquiring in the classroom, are necessary. It is evident that content based instruction serves the best purposes when it comes to a more functional use of the language. While there is still room for improvement in the results exhibited by the CS, these are still better, by far, when compared with the results of the other two types of teaching practices. The disadvantageous position of the students in the public school should be a matter of concern for those parties interested in providing students with the tools required in an ever more competitive job market. This study also shows that reinforcement in the number of hours per week in the high school system also benefits students, albeit to a more limited extent. That may be an initial step in

the direction towards a better proficiency in language attainment for students in the public secondary school system in Costa Rica. Although the ideal target should be directed to using English as a medium of instruction for non-language subjects, an increase in the number of hours that students spend learning English in class may also be beneficial as long as those hours are used adequately.

Bibliography

Ab Manan, N. A., Azizan, N. & Mohd Nasir, N. F. W. (2017). Receptive and productive level diploma students from a public university in Malaysia. *Journal of Applied Environmental and Biological Sciences*, *7*(1S), 53-59.

Anil Kumar, D. / Dhanavel, S. P. (2018). Exploring differences in vocabulary knowledge of semi-urban ESL undergraduate students. *Calidoscopio*, *16*(1), 114-121.

Anthony, L. (2014). AntWordProfiler (Version 14.0). Tokyo: Waseda University. Retrieved from www.laurenceanthony.net/software/antwordprofiler/

Baker, C. & Wright, W. E. (2017). *Foundations of bilingual education and bilingualism* (6th ed.). Bristol, UK: Multilingual Matters.

Bialystok, E. (2016). Bilingual education for bilingual children: Review of the effects and consequences. *International Journal of Bilingual Education and Bilingualism*, *21*(6), 1-14. doi: doi.org/10.1080/13670050.2016.1203859

Canga-Alonso, A. & Arribas-García, M. (2014). Productive vocabulary knowledge of Spanish EFL learners. *Revista Electrónica de Lingüística Aplicada*, *1*, 39-56. Retrieved from dialnet.unirioja.es/servlet/articulo?codigo=5031517

Castro-García, D. (2017). Are we preparing secondary students for a productive use of vocabulary in English as their second language? *Porta Linguarum*, *28*, 141-155.

Castro-García, D. (2018). *Receptive and productive vocabulary profiles of high school students in Content Based versus Foreign Language Instruction*. Doctoral Dissertation. Universidad de Salamanca. Unpublished.

Cummins, J. (2014). Rethinking pedagogical assumptions in Canadian French immersion programs. *Journal of Immersion and Content-Based Language Education*, *2*(1), 3-22. doi:10.1075/jicb.2.1.01cum

Dóczi, B. & Kormos, J. (2016). *Longitudinal development in vocabulary knowledge and lexical organization.* Oxford: Oxford University Press.

Heaton, J. B. (1990). *Classroom testing*. Essex: Longman.

IBM Corp. (2011). IBM SPSS Statistics for Windows (Version 20.0). Armonk, New York: IBM Corp.

Laufer, B. (1994). The lexical profile of second language writing: Does it change over time? *RELC Journal*, *25*, 21-33. doi/10.1177/003368829402500202

Laufer, B. (1998). The development of passive and active vocabulary in a second language: Same or different? *Applied Linguistics*, *19*(2), 255-271. doi:10.1093/applin/19.2.255

Laufer, B. & Goldstein, Z. (2004). Testing vocabulary knowledge: Size strength and computer adaptiveness. *Language Learning*, *53*(3), 399-436. doi:10.1111/j.0023-8333.2004.00260.x

Laufer, B. & Nation, P. (1995). Vocabulary size and use: Lexical richness in L2 written production. *Applied Linguistics*, *16*(3), 307-321. doi:10.1093/applin/16.3.307

Laufer, B. & Nation, P. (1999). A vocabulary size test of controlled productive ability. *Language Testing*, *16*(1), 33-51. doi:10.1177/026553229901600103

Moratinos-Johnston, S., Juan-Garau, M. & Salazar-Noguera, J. (2018). The effects of English- medium instruction in higher education on students' perceived level and self-confidence in ELF. In C. Pérez Vidal, S. López-Serrano, J. Ament & D. J. Thomas-Wilhelm (Eds.), *Learning context effects: Study abroad, formal instruction and international immersion classrooms* (pp. 75-99). Berlin: Language Science Press.

Moreno Espinoza, S. (2010b). *Evaluación del vocabulario en redacciones escritas por aprendices del inglés como L2 a través de tecnología*. Unpublished PhD Dissertation. Universidad de la Rioja.

Nation, P. (1983). Testing and teaching vocabulary. *Guidelines*, *5*, 12-25. Retrieved from https://www.victoria.ac.nz/lals/about/staff/paul-nation

Nation, P. (1990). *Teaching and learning vocabulary*. New York: Heinle & Heinle.

Nation, P. (1993). Vocabulary size, growth, and use. In R. Schreuder & B. Weltens (Eds.), *The Bilingual Lexicon* (Vol. 6, pp. 115-135). Amsterdam: John Benjamins.

Nation, P. (2003). Vocabulary. In D. Nunan (Ed.), *Practical English language teaching* (pp. 129-152). New York: McGraw Hill.

Nation, P. (2011). Research into practice: Vocabulary. *Language Teaching*, *44*(4), 529-539. doi:10.1017/S0261444811000267

Nation, P. (2013). *Learning vocabulary in another language*. Cambridge: Cambridge University Press.

Shin, D., Chon, Y. V. & Kim, H. (2011). Receptive and productive vocabulary sizes of high school learners: What next for the basic word list? *English Teaching*, *66*(3), 127-152.

Webb, S. & Nation, P. (2017). *How vocabulary is learned*. Oxford: Oxford University Press.