

Article

Creating a Context for Vocabulary Growth

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Abstract

This paper presents a practice-based action research study in which, based on a thorough analysis of the students' vocabulary knowledge and learning objectives, a rich context is created for the acquisition of English vocabulary learning. Based on the initial vocabulary breadth and depth tests, the learners were divided into two groups. While both groups were given opportunities for extensive reading, written and spoken output, some language focused study and in-built strategy training, the less advanced group had more opportunities for extensive listening. The latter group also initially displayed a narrower range of vocabulary learning strategies. In addition, a small group of independent learners which engaged mainly in extensive reading and controlled output served as a comparison with the two treatment groups. While the learners in both treatment groups experienced vocabulary growth, which was not the case with independent learners, the less advanced learners achieved higher scores on the target vocabulary.

Keywords

Vocabulary growth, vocabulary learning strategies, extensive reading, narrow reading

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1 Introduction

Vocabulary knowledge is not only an indicator of language ability (Nation, 2006), but it is also a good predictor of academic success (Masrai & Milton, 2017). There is evidence that approaches to language teaching can greatly affect the vocabulary knowledge of a learner. One of the ways this can happen is through the choice of vocabulary to teach. Initially, learners should be exposed to two to three thousand most frequent words, which are reinforced through repeated encounters (Nation, 2006). Trying to teach less frequent words before the more frequent words are mastered is counterproductive, as “the effort given to the learning of new words will be wasted if this is not followed up by later meetings with the words” (Nation, 1990, p.7). Another way the approach to teaching can impact vocabulary growth in language learners is through teaching method. For example, Grammar-Translation Method may limit vocabulary growth (Dodigovic et al., 2017) and so could other methods which focus primarily on grammar at the expense of vocabulary (Dodigovic, 2005).

On the other hand, what facilitates vocabulary growth are factors such as repeated exposure to the most useful vocabulary in context, the use of teaching materials containing the vocabulary that is right for the learner, decontextualised vocabulary learning and the application of adequate vocabulary learning strategies (Nation, 2013). In this text, the term vocabulary learning strategies (VLS) refers to the procedures used by language learners to commit vocabulary to memory and learn how to use it more accurately or appropriately. It is often believed that poor strategies are partly responsible for failure to learn vocabulary (Pavicic Takac, 2008). Moreover, it is also believed that effective strategies can be taught to learners in order to facilitate their vocabulary learning (Agustin Llach & Canga Alonso, 2020; Pavicic Takac, 2008; Nation, 2013). Studies in this area often do not aim to quantify vocabulary learning (e.g. Pavicic Takac, 2008), as a result of which the relationship between the use of various strategies and vocabulary learning success remains elusive.

Moreover, it is suggested that up to a quarter of the available class time could be devoted to strategy training of students (Nation, 2007; 2013). Following this advice, Agustin Llach & Canga Alonso (2020) prove that it is possible to train learners in vocabulary learning strategies. However, there is a need for studies that would connect strategy learning to an increased vocabulary acquisition success. If educational resources are to be devoted to strategy training, and considerable class time rerouted from language teaching and learning to acquainting language learners with VLS, it is imperative that more evidence be gathered in support of the claims that strategies are indeed as useful as deemed.

It is therefore the purpose of this study to do exactly that – seek further evidence regarding the relationship between the use of VLS and vocabulary learning success. It seeks to accomplish this aim by creating an environment in which two approaches to reading, namely narrow reading and extensive reading, further defined in the literature review section, are used in combination with strategy modeling and previous strategy training to promote vocabulary growth in English as an additional language. In doing so, it attempts to answer the following research questions:

1. How conversant are learners of English as an additional language with vocabulary learning strategies?
2. How does such strategy use impact vocabulary growth in English as an additional language?

2 Literature Review

This section reviews previous research in the areas closely related to the variables under examination in the present study. These pertain to vocabulary growth and growth measurement via vocabulary size, vocabulary learning and the related strategies, as well as the relationship between strategy use and vocabulary learning and/or growth. Finally, it examines reading as a pathway to vocabulary learning, with particular emphasis on narrow and extensive reading. The goal of this is to define the space for the present study and its result.

2.1 Vocabulary growth and size

Vocabulary growth is the increase of a learner's vocabulary in size over a period of time. It is important to understand what kind of vocabulary growth can be expected of a learner of English as an additional language. While a native speaker child can learn on the average a minimum of 1,000 words per year (Schmitt, 2000), for a non-native speaker, this might depend on whether they are immersed in a language or not. According to a study conducted by Milton and Meara (1995), learners not immersed in the target language were able to learn on the average 275 words in six months, while under immersion conditions they learned 1,325 words over the same period of time, which is five times the non-immersion rate.

Vocabulary growth is usually measured using the construct of vocabulary size at two points in time (Dodigovic et al., 2020). Milton (2010) defines vocabulary size as the number of words and fixed expressions a learner has the command of. While a native speaker college student is thought to know 20,000 English words (Schmitt, 2000), the vocabulary size needed by a non-native speaker varies depending on the goal. It has been suggested that 3,000-5,000 word families are enough to begin reading authentic texts in English (Nation & Waring, 1997) and if the material is demanding, the number may be 10,000 word families (Hazenberg & Hulstijn, 1996 cited in Schmitt, 2000).

2.2 Vocabulary testing

A variety of vocabulary testing tools is available to date. The ones described here are those most relevant to the project at hand. One of the commonly used procedures in the development of such tests is their reliance on established word frequency lists (Schmitt, 2007). According to Schmitt (2007), the most useful English words are the most frequent ones, which are also easier to acquire and should be the first ones to learn. The first 3,000 most frequent words are the high-frequency level words (Schmitt & Schmitt, 2012). The mid-frequency level refers to 4,000-9,000 and low-frequency contains the words beyond 9,000 frequency levels (Schmitt & Schmitt, 2012).

2.2.1 Yes/No Test

The first of such tests is the so called Yes/No or the word/nonsense test, designed initially by Meara and Jones (1988) and later further developed by Milton and Alexiou (2020). As indicated by Mochida and Harrington (2006), this is a time and resource efficient test. The Yes/No test simply elicits the response of whether a given item is known or not. The items selected for this test are based on the first five thousand most frequent English words (Meara & Jones, 1988). For screening purposes, real words are additionally supplemented by nonsense words, thus making the task more challenging. The European Vocabulary Size Test only employs the first five thousand words and is built on the Yes/No or nonsense-word principle. According to Milton and Alexiou (2020), this test can help discriminate between CEFR proficiency levels.

2.2.2 Vocabulary size test (VST)

Another popular test is the Vocabulary Size Test developed by Nation and Beglar (2007). This is a proficiency measure which has the purpose of establishing how much vocabulary learners know (Nation & Beglar, 2007). The test consists of 140 items sampled from the most frequent 14,000 word families of English and applies multiple-choice format putting "the tested words in a short non-defining context" (Nation & Beglar, 2007, p.10). One shortcoming of this test is the possibility of getting the correct answer by guesswork, but this is typical for multiple-choice format. However, this test is reported to be both valid and reliable (Roghani & Milton, 2017).

2.2.3 Vocabulary levels test (VLT) and updated VLT (UVLT)

Vocabulary Levels Test (VST) is another vocabulary breadth test, which collapses frequency lists into three main levels, 2,000, 3,000 and 5,000, (Schmitt, Schmitt, & Clapham, 2001), while adding a list of academic vocabulary, otherwise known as Academic Word List (AWL), devised by Coxhead. Rather than sampling at 1%, like the VST, it samples vocabulary at 3% rate, which Schmitt and Schmitt (2012) find more representative, adding a further layer to test validity and reliability.

The updated Vocabulary Levels Test was developed by Webb et al. (2017). It is based on the 5 levels of most frequent words, by thousand. Items for the tests were sourced from Nation's (2012) BNC/COCA word lists. An advantage of this test is its online availability with the option for the results to be emailed to the teacher.

2.2.4 Category generation task

Category Generation Task (CGT) requires the taker to list words in a particular category (e.g. all animals one can remember). It is often applied in psychology research to assess cognitive development or language impairment (Roghani & Milton, 2017). It requires minimal explanation and is applicable to the learners of different language backgrounds (Roghani & Milton, 2017). This format allows for obtaining a measure of productive vocabulary size proportionate to receptive size measures (Roghani & Milton, 2017). While productive vocabulary is used in speaking or writing, receptive vocabulary is used in reading and listening. It is estimated that the size of receptive vocabulary could be two and a half times the size of productive vocabulary (Schmitt, 2000). This test can be very useful in a situation where in a group of learners each learner acquires a different set of words, so each learner's lexical knowledge expansion can be tracked to some extent, over a short period of time, a situation in which VLT or VST would not be adequate (Schmitt, 2000).

2.3 Incidental and intentional vocabulary learning

The crucial question of how language learners can learn a considerable amount of vocabulary has received much attention among researchers. Two principal processes of vocabulary acquisition have been identified: explicit, intentional or deliberate and implicit or incidental learning (Nation, 2006; Hulstijn & Ellis, 2005).

Deliberate learning happens intentionally (Barcroft, 2021) when the attention focus is directly on the words to be learned (Schmitt, 2000) and requires considerable amount of effort (Gass, 1999). This type of vocabulary learning is the introductory learning of word forms and root meanings (Wesche & Paribakht, 1999).

Incidental learning takes place "during language use" (Barcroft, 2021, p. 28), when learners try to comprehend the meaning of the input and it is called "incidental" because learners concentrate on something other than learning the word itself (Wesche & Paribakht, 1999). Gass (1999, p.322) describes implicit learning as "relatively effortless" and Schmitt (2000) mentions that it does not require the focused attention of explicit learning. Revisiting the definition of the implicit and explicit learning, Andringa and Rebuschat (2015, p.187) highlighted the main distinction between these two processes as "the absence or presence of conscious awareness".

2.4 Vocabulary learning strategies (VLS)

In order to facilitate vocabulary learning and retention, teachers can make learners aware of various VLS.

According to Schmitt (2007, p.755) some regularly used VLS are “simple memorization, repetition and taking notes on vocabulary”.

Different researchers have classified VLS differently, but, there are many overlaps. Gu and Johnson (1996) divided VLS into four categories: metacognitive, cognitive, memory and activation, whereas the four categories suggested by Xu and Hsu (2017) are Metacognitive, Cognitive, Memory and Socio-affective. Schmitt (2000) grouped VLS into two major classes: strategies effective to discover the meaning of a word and strategies effective for remembering the newly introduced word. While affective strategies are intra-personal, social strategies are inter-personal. Cognitive strategies refer to manipulating information, whereas memory strategies aim at committing it to memory. Metacognitive strategies, on the other hand refer to planning and organizing learning.

Research on strategies has most commonly looked at the inventory of strategies used by learners of another language (Xu & Hsu, 2017; Manoukian, 2020). An exception is a handful of early studies, such as Ahmed (1989), Porte (1988) or Graham (1997), which investigated the connection between the learning success and the use of strategies. According to Ahmed (1989), successful learners are aware of the use of strategies, which would imply a metacognitive approach (Schmitt, 1997). Porte (1988) found that weak learners do not know how to utilise strategies, which complements Ahmed’s (1989) conclusions. Graham (1997) on the other hand found that successful learners used more complex strategies, which is also what Schmitt (2000) believed. It could be that those promising outcomes have lead researchers such as Nation (2007; 2013) or Agustin Llach and Canga Alonso (2020) to believe that learners should be purposely taught VLS in order to make them more effective at vocabulary learning. The latter study (Agustin Llach & Canga Alonso, 2020) even proves that it is possible to learn strategies.

A study by Pavicic Takac (2008) differed somewhat in the results. It investigated the relationship between VLS and vocabulary teaching strategies (VTS) used by language teachers. The results indicate that there does not seem to be a direct causal link between the strategies used by students to learn new vocabulary and the strategies used by their teachers to teach the same vocabulary. This study throws some doubt on the idea that VSL could or should be taught to language students, as suggested by Nation (2007; 2013). However, the outcome of the study by Pavicic Takac (2008) may not suggest a direct causal link because it did not involve any explicit strategy teaching.

In contrast with Pavicic Takac (2008), Agustin Llach and Canga Alonso (2020) conducted a study which suggests that it is possible to learn VLS if taught both implicitly and explicitly and practiced in and out of class. This study, however, did not aim at establishing whether any improvements could be detected in vocabulary learning at the point at which the students adopted VLS.

Thus, the studies described so far have not produced a direct corroboration of the claim that VLS positively impact vocabulary learning. This is also the case with a comprehensive study by Dodigovic et al. (2020), in which they examine the relationship between strategy use and vocabulary size on a sample of 349 high-school and tertiary English learners in the Armenian context. This study failed to establish a strong relationship between VLS and vocabulary learning. While it did find that the learners with pronouncedly higher vocabulary sizes used more cognitive and metacognitive strategies, the difference was not statistically significant.

Dodigovic (2013) is a study with some similar conclusions, in which learners are explicitly instructed to create electronic word cards, including being trained in how to create them. The results of Dodigovic’s (2013) study suggest that even though familiar with certain strategies such as creating word cards, learners do not necessarily know how to use the strategies appropriately, thus exhibiting more advances in vocabulary learning when dependent on familiar strategies, i.e. those that have not been taught to them explicitly.

In line with the above is a study by Alemi and Tayebi (2011) which explicitly investigated the effectiveness of VLS by employing a vocabulary test to determine whether any of the preselected target words, previously unknown to the learners have been acquired. The final test in the study was

conducted with a sample of 30 learners, and three days after the treatment. While studies like this one are particularly important in attempting to understand the merits of VLS, one of the limitations of Alemi and Tayebi's (2011) research design is the small sample of participants. Another limitation is the fact that the post-test designed to measure the learning effect was administered only three days after the treatment. This meant that neither vocabulary consolidation (Schmitt, 2000) nor the attrition processes (Nation, 1999) could effectively take place before the post-test administration. It is also not clear what kind of learning burden (Nation, 2006) the target words presented to the learners. Nevertheless, they found the correlation between vocabulary learning and strategies to be weak. It would therefore seem that Alemi and Tayebi (2011) exclude the possibility of a relationship between vocabulary learning and strategy. They acknowledge this, while attempting to construct a justification for the usefulness of strategies on entirely argumentative grounds.

2.5 Reading

Vocabulary increase largely depends not only on the strategies incorporated in learning and teaching process, but also on the input provided. Reading is a major source of input. Apart from being a dominant source of input, reading is a cognitive task that develops comprehension. In order to understand the text, learners are eager to guess the meanings of a new word (Wesche & Paribakht, 1999) while reading, link it with their prior knowledge and not even notice that they are acquiring vocabulary while doing so. Thus, reading is a primary source of incidental (as well as deliberate) vocabulary learning.

According to Nation (2013), reading is an excellent way of learning vocabulary through input. Studies (Vidal, 2011; Restrepo-Ramos, 2015) indicate that reading is more conducive to incidental vocabulary learning than listening. Except for being a dominant source of input, with a larger number of words which are more varied in frequency (Thornbury, 2002), reading is a cognitive task which develops comprehension. In addition, multiple encounters with repeated words facilitate vocabulary learning (Nation, 2013). In this regard, two approaches stand out: narrow reading and extensive reading.

2.5.1 Narrow reading

Narrow reading is effective because the topic-related words are repeated more than once across the texts (Cho et al., 2005). It is based on the idea of reading various authentic texts, all of which are on the same topic (Schmitt, 2000). This type of reading is beneficial for vocabulary expansion because topic-specific words occur many times across the text and the words are learned incidentally, through guessing or inferring from the context, given a sufficient knowledge of the target language vocabulary (Laufer, 2020) or the topic (Dodigovic, 2005a).

Encountering the same word, a number of times facilitates a student's vocabulary learning process and reading comprehension. In this regard, narrow reading is an effective approach. It is "reading in only one genre, one subject matter or the work of one author" (Cho et al., 2005, p. 58) or "reading numerous authentic texts, but all on the same topic" Schmitt (2000, p.151). Thornbury (2002, p.59) defines narrow reading as "reading around the same topic over the course of a number of texts". This type of reading is beneficial for vocabulary expansion because topic-specific words occur many times across the texts and the words are learned incidentally, through guessing or inferring from the context.

Few researchers have investigated the impact of narrow reading on EFL learners' language performance. Four of the most recent studies are presented here. The first one, Chang & Millet (2017), investigated the effects of narrow reading on the participants' English language performance in terms of reading speed, comprehension and perceptions. The results showed significant increase in reading speed and comprehension, more in related than the unrelated texts. Participants' perceptions towards narrow reading were positive especially in the same title treatment.

Another study conducted in 2016 in Iran by Abdollahi and Farvardin aimed at exploring the effect of narrow reading on EFL learners' vocabulary recall and retention. The study was conducted in Iran with 60 students divided equally in experimental and control groups. The experimental group outperformed the control group in all post-tests (Abdollahi & Farvardin, 2016).

The third study was carried out with fourth grade EFL students in Korea in 2005. The results revealed that the participants improved their English competence, boosted enthusiasm for English and demonstrated evidence of recognizing the advantages of narrow reading (Cho et al., 2005).

Finally, Guerrero and Segura (2015) investigated the effectiveness of two instructional approaches in two groups of Spanish students' vocabulary acquisition. Narrow reading was applied in the first (NR) and reading plus vocabulary-enhancement activities in the second (RV) group over a 6-week period. The findings showed that both types of treatments (NR and RV) had positive effects on learners' vocabulary development. Regarding the receptive and productive vocabulary, the NR group's achievement was greater than that of the RV group in terms of receptive vocabulary (Guerrero & Segura, 2015).

2.5.2 Extensive reading

Extensive reading is reading for pleasure rather than information, like narrow reading, or vocabulary learning, such as a typical foreign language textbook. Elley (1991) established substantial improvements in language use and academic performance in connection with extensive reading. Nation (1997) laments the shortcomings of research into vocabulary growth as a consequence of extensive reading, including the one by Day et al. (1991), but expresses a deep conviction that such growth could be achieved.

One type of resource for extensive reading is found in the so-called graded readers. These are usually books with a limited vocabulary range, usually up to 5000 (Nation & Wang, 1999), so that the readers would experience a word coverage of up to 95%, which makes it possible for the comprehension and learning of new vocabulary to take place (Schmitt, 2000). Nation and Wang (1999) recommend reading one such book per week, in order to create enough repeated encounters with words, which are conducive to vocabulary learning.

In this study, both narrow and extensive reading are used to create a context for vocabulary learning. This is paired with attention to vocabulary through conducting CGT testing before and after reading as well as through various written and oral tasks (Restrepo-Ramos, 2015). While strategies are not explicitly taught in this study, the participant selection is based on the understanding that strategy training was a part of their English language curriculum and that those strategies were learnt and could be used at will. The purpose of the study is therefore to further our understanding of the use of strategies and its impact on vocabulary learning.

3 Methodology

3.1 Procedure

This study adopted a mixed method design centered around a seven-week online class including reading, writing and discussion. Based on the EVST pre-test, participants were divided into two groups. According to the groups' respective vocabulary command and interests, identified through entry interviews, topics for narrow reading and books for extensive reading were selected. The topics included identity theft, cybercrime, new diseases, murder mysteries and detective stories. While strategy per se was not explicitly taught to students, some strategy, mostly metacognitive, was modeled and encouraged by setting classroom tasks and assigning homework.

In both groups, reading was preceded by a category generation test and followed by thought-provoking, open-ended question-based discussion. Students were also required to summarize their readings for homework and prepare a creative oral response to the readings, in which they had to underline newly learned words. At the beginning of each lesson, a brief category generation task assessment was administered. This was used to create a specific word post-test, which was administered in week 7, along with a strategy survey.

3.2 Participants

The participants of the study were twenty adult learners of English, representing Armenia and Afghanistan, stationed in three countries: Armenia, Bulgaria and Afghanistan. Their age ranges between 17-33 years. The gender distribution was 6 males and 14 females. They had elementary to intermediate levels of English language proficiency (CEFR A1 – B1), with different educational, professional and cultural backgrounds, including university students and working professionals.

3.3 Instruments

In this study, Yes/No test (EVST), UVLT, VST, category generation test, specific word post-test, survey and focus group were used for data collection.

3.3.1 EVST

EVST, which is a Yes/No test was used to measure the participants' vocabulary knowledge based on the first five thousand most frequent English words.

3.3.2 UVLT

The Vocabulary Levels Test was applied at the entry stage of the project. This test was used to measure the breadth of participants' vocabulary knowledge before taking part in the sessions.

3.3.3 Vocabulary size test (VST)

The VST was applied to measure the participants' vocabulary size and to determine the vocabulary growth throughout the project.

3.3.4 Category generation tests

Participants were asked to contribute to sets of category generation tasks during the project. The topics of the tasks were based on the reading passages they were exposed to previously. Before a reading was assigned an initial category generation test was administered, requiring the participants to list words they associate with the topic of the reading being assigned. Each session started with a category generation test post-test, this time based on the topic of the previously assigned reading. The purpose of the test was to find out the participants' knowledge of the topic related vocabulary and to collect data for creating a specific word post-test which the participants took at the end of the project. The pre- and post-reading CGT lists were compared to make sure that the post-test only included the words used in the post-reading list, as this was interpreted as a sign that those words were learned in the reading process, especially when confirmed through comparison with the words identified as newly learned and therefore underlined in the student writing.

3.3.5 Specific word post-test

A specific multiple choice word post-test was developed considering the data from the category generation tasks and written responses. The aim of the test was to measure the growth in the participants' topic related vocabulary based on the readings they dealt with during the project.

3.3.6 Survey

The participants were asked to fill in a short questionnaire at the end of the project in order to gauge the frequency of their vocabulary learning strategy use.

3.3.7 Focus group

A focus group was conducted with a sizeable sample from both participant groups in order to gain information on how and when the participants familiarized themselves with the VLS they used.

3.4 Data collection

The data was collected at the beginning, during and at the end of the project using the instruments discussed in the "instruments" section. EVST and UVLT were used at the entry stage of the project for measuring the participants' vocabulary size and placing them in appropriate groups, 11 in Group 1 and 9 in Group 2. Category generation tasks were assigned during the project to determine the vocabulary uptake and to create the specific word pos-test. As for the specific word post-test and survey they were administered at the end of the project along with the relevant sections of VST. Based on CGT results, it was decided that Group 1, which was not fully proficient in vocabulary levels K2 and above was to be tested on levels K2 and K3, while the more advanced Group 2 was to be tested on levels K3 and K4 to estimate vocabulary growth at these levels.

3.5 Data analysis

For the purpose of placement, EVST and UVLT results were compared using a paired t-test. During the course, for each topic, a CGT pre-reading and post-reading test was administered, with the lists being compared in size and profiled using the VP Compleat vocabulary profiler at Tom Cobb's website (<https://www.lex tutor.ca/vp/comp/>). The results of the final VST were compared by section using paired t-test. The results of the survey on strategy use were correlated with each set of post-test results, including the VST levels and the final test, using Pearson Product-Moment Correlation Coefficient.

4 Results

4.1 Initial testing

This section conveys the results of this study, which are further discussed in the Discussion section. Initial tests, EVST and UVLT, were used to place participants in two different levels. According to Milton and Alexiou (2020), EVST is a vocabulary test whose results can place takers into CEFR levels. The first level, in further text referred to as Group 1, was comprised of participants whose test results predominantly pointed to CEFR level A1, while the rest were placed in Group 2, which was

predominantly equivalent to CEFR level B1. Group 1 was proven to have the command of approximately 1,500 English words, while Group 2, was mostly comprised of participants with a vocabulary size of over 2,000 English words.

Notable discrepancies translating into statistically significant differences were discovered between the results of EVST and UVLT at the lower end of the spectrum, K1 ($p = 0.0007$), K2 ($p < 0.0001$) and K3 ($p = 0.0065$), at 95% confidence interval. However, the difference was found to be not statistically significant at 95% confidence interval for levels K4 ($p = 0.6248$) and K5 ($p = 0.1103$).

4.2 Final testing

For Group 1, the VST based post-test focused on levels K2 and K3, while for Group 2, the focus was on K3 and K4. The scores on this test were compared with the scores on both the initial EVST and initial UVLT at the selected VST levels. For Group 1, none of the differences were statistically significant at the 95% interval, including EVST vs. VST K2 level ($p = 0.2158$), EVST vs. VST K3 level ($p = 0.2115$), UVLT vs. VST K2 level ($p = 0.1803$) and UVLT vs. VST K3 level ($p = 0.9546$). Since both groups took the VST at K3 level, results for all participants were compared at that level and the difference was found to be not statistically significant at 95% confidence interval, with $p = 0.2011$ for EVST and $p = 0.4160$ for UVLT.

In Group 2, the differences at 3K level were found to be not statistically significant at 95% confidence interval, including EVST ($p = 0.6883$) and UVLT ($p = 0.1829$). However, at K4 for level and 95% confidence interval, the difference between the initial EVST and final VST (Table 1) is found to be statistically significant ($p = 0.0415$), and even more so the difference ($p = 0.0053$) between the initial UVLT and the final VST (Table 2).

Table 1

EVST – VST pre & post Group 2 – Significant Difference

Group	K4 Group 2 Pre	K4 Group 2 Post
Mean	72	85.56
SD	12.69	12.36
SEM	4.23	4.12
N	9	9

Table 2

UVLT – VST pre & post Group 2 – Significant Difference

Group	UVLT G2 K4	VST G2 K4
Mean	73.33	85.56
SD	7.02	12.36
SEM	2.34	4.12
N	9	9

Another significant difference at 95% confidence level was found between the initial EVST and final VST ($p = 0.0415$) at K4 level in Group 2. The rest of the comparisons were found to be not statistically significant at 95% confidence level. These included the difference between EVST and final VST ($p = 0.0415$) at K3 level in Group 2.

The next set of results is connected to weekly CGT tests, administered to assess the uptake of vocabulary through narrow/extensive reading and homework activities. Due to the instability of internet connections across different countries, only 3 out of five pre-test – post-test sets are available for Group 1, while 4 out of 5 are available for Group 2. Table 3 below shows the number of words recalled by participants for each of these tests in the first two rows, while the last two rows indicate the number of words each set of lists had in common. It is evident that Group 2 showed more consistency in producing a larger number of words in the post-test with respect to pre-test than Group 1. The number of words shared by the pre-test and post-test remained fairly constant in Group 1, while it constantly declined over the first three weeks, and only increased slightly in the fifth administration.

Table 3

Word Type Totals Across CGT

Group	Pre 1	Post 1	Pre 2	Post 2	Pre 3	Post 3	Pre 4	Post 4
Group 1	29	83	113	81	62	54	51	
Group 2	177	236	160	139	97	151	141	268
Same words G1	17		16		16			
Same words G2		49		34		24		30

CGT word lists were also profiled for frequency ranks used. Group 1 was found to use fewer high frequency words with respect to low frequency words, which often went beyond 5K (20 – 60% K1, 4 – 17%K2). In contrast, Group 2 not only recalled more words, but proportionally, there was a much larger number of K1 and K2 words than in Group 1 (40-50% K1, 20-30% K2), but there was also a steady increase in the use of low frequency words.

4.3 Strategy use

Comparing and correlating the frequency and type of strategy use by group and success yielded the results found below in Table 4. The numbers next to strategy type designations refer to the survey questions pertaining to that group of strategies. Group 1 was found to have used VLS significantly more frequently than Group 2 ($p = 0.0164$) at 95% confidence interval. This was especially the case with cognitive strategies.

Table 4

Strategy Use

Strategy type	Avg. G1	Avg. G2
DET* - 1, 3, 6	3.93	2.3
SOC - 4, 5	1.09	0.1
MEM - 7-14, 18	2.99	2.32
COG - 15, 16, 17	4.93	2.3
MET - 2, 20, 25	4.51	3.5

Note: DET=determination, SOC=social, MEM=memory, COG=cognitive, MET=metacognitive

Strategy use frequencies were then correlated with final test results using Pearson Product-Moment Correlation Coefficient and all correlations were found to be weak. For Group 1, the correlation with

the final test was positive ($R = 0.3456$), and so was the correlation with K2 ($R = 0.4159$), whereas the correlation with K3 was negative ($R = -0.0223$). In contrast, with Group 2, all of the correlations were negative, including the one with the final test ($R = -0.1696$), with K3 ($R = -0.0252$) and K4 ($R = -0.0495$).

Focus group with a sub-sample of 6, approximately one third of the entire sample, confirmed that in the past the students had been purposely taught VLS from their first English class. At the beginner level, most commonly taught strategies were discovery strategies, such as using dictionaries and some cognitive strategies, such as creating vocabulary note-books or word lists or verbal repetition. Only a small number were taught memory strategies, such as creating word cards, while only two were taught meta-cognitive strategies such as reading and listening in and translation from the target language. Social strategies, such as studying words in tandem with other classmates and asking the teacher for the meaning of unknown words were not taught, but intuitively used by some of the participants.

5 Discussion

It does not surprise that the difference between the initial EVST and UVLT was statistically significant. According to Webb et al. (2017), UVLT is a levels test, designed to measure the taker's command of words at a particular 1000 level, while vocabulary size tests, such as VST, might provide a more accurate vocabulary size measure, as it goes beyond the levels included in the levels test. However, EVST also does not measure the entire vocabulary size of the taker, but rather makes approximations based on the recognition of sampled vocabulary within a limited range (Meara & Jones, 1988). On the other hand, UVLT is based on a selection of vocabulary made by Nation (2012) from the BNC/COCA corpora, while EVST might have used the older corpora, such as Brown (Laufer & Nation, 1999) or LOB, which aspect it might share with VST, thus making the comparison between the EVST pre-test and the VST post-test more meaningful than the one between the UVLT pre-test and VST post-test. However, the difference between the initial EVST and UVLT results is not statistically significant at 4K and 5K levels, which would suggest that any statistically significant growth occurring at either of these levels would be evidence of real vocabulary expansion, and not just of an inherent difference between the two tests.

In fact, the statistically significant vocabulary growth in Group 2 at K4 level is quite remarkable, given the length and frequency of this course, which met only once a week for 40 minutes for the duration of 6 weeks. According to Milton and Meara (1995), learners not immersed in the target language were able to learn on the average 275 words per half year. Group 2 in the present study probably exceeded that number in only a month and a half. This would average to approximately 183.33 words per month, vs. 45.83 words per month based on Milton and Meara's (1995) study, which is 4 times the volume of vocabulary normally acquired during that time span. This is fairly close to the result achieved in an immersion situation, in which vocabulary growth was 5 times faster than in a non-immersion situation (Milton & Meara, 1995).

While Group 2 does not seem to have made a significant progress at K3 level, based on the instructions for test results interpretation (Webb et al., 2017), this was hardly possible, as the participants in this group already tested at 80-85% and above at this level, which indicates sufficiently good command of this list of words. It is also true that there were no statistically significant gains for Group 1 at K2 and K3 levels. However, their initial EVST results at K2 level suggested that only one participant in Group 1 had the command of this vocabulary level at the beginning of the course, while that number increased to three participants on the final VST. Similarly, according to their initial EVST scores, only two participants were proficient at that level at the beginning of the course in the sense that they scored 80-85%, while this was the case with 5 participants at the end, based on the final VST scores. Possible reasons for the improvement in those participants are further examined in the context of vocabulary learning strategy use.

Regardless of individual success stories in Group 1, its overall learning outcomes significantly lag behind those achieved in Group 2. Since the teaching approach was designed by the research team, whose members also selected and, if necessary, adjusted the reading materials as well as the reading pace, other reasons must be looked at in order to explain the discrepancy. The use of VLS is one of the variables that could potentially provide some answers as to why some participants made more significant progress than others.

Whereas the frequency of strategy use was not significantly correlated with the success on any segment of the post-test, it is notable that it is mostly positively correlated with test scores for Group 1, while it is the opposite for Group 2, whose scores are consistently negatively correlated with strategy use. It is interesting that most strategies are associated with deliberate vocabulary learning, while incidental vocabulary learning mainly relies on reading for meaning, paying attention to vocabulary with increased mental effort, accompanied by what could be construed as text features such as repeated use of vocabulary at the right level and multimodal glosses (Restrepo-Ramos, 2015). Consequently, less reliance on vocabulary learning strategy, paired with significant uptake of words, would suggest that incidental vocabulary learning is the most likely process by which Group 2 acquired K4 vocabulary.

To clarify the process, the participants were, to start with, engaged in extensive and narrow reading, the kind that is by definition focused on meaning (Nation, 2013). Moreover, the tasks set, including the written summaries of readings as well as the weekly category generation tests, stimulated attention to vocabulary. Finally, most of the texts read were graded readers, which are adjusted to the level of the reader and enable an authentic reading experience (Nation, 2013). This subsumed frequent repetition of vocabulary, enabling repeated encounters with words. Besides, graded readers often come equipped with glossaries. Simple Google searches of target words, which did occur according to focus group results, could have had a similar effect.

Examining the outcome of the focus group, it was noted that it was some of the most successful learners who had used the pre-taught metacognitive strategies. Metacognitive strategies might indirectly set the stage for incidental vocabulary learning, as they promote reading for meaning and paying attention to vocabulary, which do contribute to vocabulary acquisition (Restrepo-Ramos, 2015). However, more research is needed to establish a causal link between metacognitive strategy training and incidental vocabulary learning.

Research also shows that new words can only be acquired when the learner understands at least 95% of the vocabulary in a text (Nation, 2013). Through all of the tests taken, especially the CGT, Group 2 participants showed the command and/or recall of vocabulary which is in sync with the usual profile of academic texts (Nation, 2013), involving a considerably larger proportion of more frequent words as opposed to the less frequent ones. This most probably gave them the required coverage of 95% of the text's vocabulary, thus facilitating the acquisition of K4 words.

Although the same text features and procedures were employed with Group 1, their vocabulary knowledge was not well in sync with the usual vocabulary profiles (Nation, 2013). In contrast, the vocabulary they knew and/or recalled was more evenly spread across the frequency spectrum, making it in fact very difficult for them to find themselves at the point of comprehending 95% of the text's vocabulary, which is why the conditions for incidental vocabulary learning were not met, and the students probably had to resort more frequently to deliberate learning strategies (Restrepo-Ramos, 2015). This is possibly an outcome of a curriculum out of tune with several decades of vocabulary research, as evidenced by Dodigovic (2005b).

The results echo the outcome of the Guerrero and Segura (2015) study which compares narrow and enhanced vocabulary reading, with the former proving to be more effective in terms of vocabulary learning. In this case, the application of strategy can be compared with vocabulary enhanced procedure from the Guerrero and Segura (2015) study. That both studies took place over a 6-week course is another similarity, making comparisons between the two more meaningful.

The above thus provides answers, though not definitive, to the research questions asked in this study. The first of those questions was: How conversant are learners of English as an additional language with vocabulary learning strategies? Both the survey and the focus group results suggest that the participants in the study were well conversant with diverse vocabulary learning strategies. Although the study sample was quite small, it nevertheless encompassed several countries, thus lending itself to some generalizability.

The second question was: How does such strategy use impact vocabulary growth in English as an additional language? All of the evidence points to the conclusion that strategies may not be necessarily responsible for vocabulary learning. It could be that certain groups of strategies might be more suitable to learning vocabulary at different levels. Thus the initial 3,000 might be better learned using the strategies of deliberate learning, such social, cognitive and memory strategies, while less frequent vocabulary, given the knowledge of the first 3,000 words could be probably guessed from context and learned using meta-cognitive strategies. The relatively small sample in the present study is countered by triangulation with other similar studies, thus again potentially crediting the conclusions with some generalizability.

The available instruments present another limitation, in particular the discrepancy between the vocabulary size and level tests used before and after treatment. However, re-using the same test after only 6 weeks could have caused learning from the test, giving the vocabulary growth the appearance of being larger than it was. Moreover, developing vocabulary size or level test is an undertaking that goes far beyond the delimitations of the study.

6 Conclusions

Despite using VLS significantly more frequently, Group 1 underperformed with respect to Group 2. Although all participants would have been taught strategies before participating in this study, it was the participants with a larger vocabulary size that were less dependent on strategy use. They also achieved greater vocabulary learning success. The fact that they were more successful at vocabulary learning than those who were more dependent on strategy use suggests that the majority of strategies associated with deliberate vocabulary learning may not be essential for vocabulary acquisition.

Thus, it would seem that strategy training may not necessarily have the effect expected by researchers such as Nation (2013) or Agustin Llach and Canga Alonso (2020). Consistent with the findings by Dodigovic et al. (2020), strategies overall might have a limited role in vocabulary learning. It might be that, as suggested by Thornbury (2002), lower-level strategies, including social, cognitive and memory strategies, may need to be employed in the initial period of learning another language, until the learner's vocabulary size has reached a critical mass, at which incidental learning, seemingly dependent on metacognitive strategies, can take place under the right conditions. Such conditions are created through sufficient input, especially reading (Restrepo-Ramos, 2015), with repeated encounters with words, associated with simple tasks such as summary writing or requests for vocabulary recall, which promote paying attention to words while reading for meaning and information.

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References

Abdollahi, M. & Farvardin, M. T. (2016). Demystifying the effect of narrow reading on efl learners'

- vocabulary recall and retention. *Education Research International*, Vol. 2016, 1 – 11.
- Ahmed, M.O. (1989). Vocabulary learning strategies. In P. Meara (Ed.), *Beyond words* (pp. 3-14). BAAL/CILT.
- Alemi, M. & Tayebi, A. (2011). The Influence of incidental and intentional vocabulary acquisition and vocabulary strategy use on learning L2 vocabularies. *Journal of Language Teaching and Research*, 2(1), 81-98.
- Andringa, S. & Rebuschat, P. (2015). New directions in the study of implicit and explicit learning, *Studies in Second Language Acquisition*, 37, 185 – 196.
- Agustin Llach, M.,P. & Canga Alonso, A. (2020). *Vocabulary strategy training to enhance second language acquisition in English as a foreign language*. Cambridge Scholars Publishing.
- Barcroft, J. & Muñoz-Basols, J. (2021). *Spanish vocabulary learning in meaning oriented instruction*. Routledge.
- Chang, A. C-S, & Millett, S. (2017, April). Narrow reading: Effects on EFL learners' reading speed, comprehension, and perceptions. *Reading In a Foreign Language*, 29(1), 1-19.
- Cho, K. S., Ahn, K.O., & Krashen, S. D. (2005). The effects of narrow authentic texts on interest and reading ability in English as a foreign language. *Reading Improvement*, 42, 58-64.
- Day, R.,R., Omura, C. & Hiramatsu, M. (1991). Incidental EFL vocabulary learning and reading. *Reading in a Foreign Language*, 7(2), 541-551.
- Dodigovic, M. (2005a). *Artificial intelligence in second language learning: Raising error awareness*. Multilingual Matters.
- Dodigovic, M. (2005b). Vocabulary profiling with electronic corpora: A case study in computer assisted needs analysis. *CALL Journal*, 18(5), 443-455.
- Dodigovic, M. (2013). Vocabulary learning with electronic flashcards: teacher design vs. student design. *Voices in Asia Journal*, 1(1), 15 – 33.
- Dodigovic, M., Ma, C., & Jing, S. (2017). Lexical transfer in the writing of Chinese learners of English. *TESOL International Journal*, 12(1), 75 – 90.
- Dodigovic, M., Gasparyan, R., Torosyan, S., & Karamanoukian, M. A. (2020). Vocabulary size and strategies of English learners in Armenia: What the research says. In Dodigovic, M. & Agustin Llach, M.P. (Eds.), *Vocabulary in Curriculum Planning: Needs, Strategies and Tools* (pp. 77 – 102). Palgrave/Macmillan.
- Elley, W. B. (1991). Acquiring literacy in a second language: The effect of book-based programs. *Language Learning*, 41(3), 357-411.
- Gass, S. (1999). Discussion. *Studies in Second Language Acquisition*, 21, 319–333.
- Graham, S. (1997). *Effective language learning: Positive strategies for advanced level language learning*. Multilingual Matters.
- Gu, Y., & Johnson, R. K. (1996). Vocabulary learning strategies and language learning outcomes. *Language Learning*, 46, 643-679.
- Guerrero, M. P., & Segura, L. E. (2015). EFL vocabulary acquisition: Narrow reading versus reading plus vocabulary-enhancement activities. A Case Study with Spanish Secondary School Students. *PORTA LINGUARUM*, 24, 93-105.
- Hulstijn, J. H., & Ellis, R. (2005). *Theoretical and empirical issues in the study of implicit and explicit second-language learning: Special issue*. Cambridge University Press.
- Laufer, B. & Nation, P. (1999). A vocabulary size test of controlled productive ability. *Language Testing*, 16(1), 33-51.
- Laufer, B. (2020). Lexical coverages, inferencing unknown words and reading comprehension: How are they related? *TESOL Quarterly*, 54(4), 1076 – 1085.

- Manoukian, H. (2020). Vocabulary learning strategies used by Armenian EFL students. In Dodigovic, M. & Agustin Llach, M.P. (Eds.), *Vocabulary in Curriculum Planning: Needs, Strategies and Tools* (pp. 103 – 120). Palgrave/Macmillan.
- Masrai, A. & Milton, J. (2017). Recognition vocabulary knowledge and intelligence as predictors of academic achievement in EFL context. *TESOL International Journal*, 12(1), 128-142.
- Meara, P., & Jones, G. (1988). Vocabulary size as a placement indicator. In P. Grunwell (Ed.), *Applied linguistics in society* (pp. 80-87). CILT.
- Milton, J. & Meara, P. (1995). How periods abroad affect vocabulary growth in a foreign language. *International Journal of Applied Linguistics*, 107(1), 17-34.
- Milton, J. (2010). The development of vocabulary breadth across the CEFR levels. *Communicative proficiency and linguistic development: Intersections between SLA and language testing research* (211-232). Swansea University, UK.
- Milton, J. & Alexiou, T. (2020). Vocabulary size assessment: Assessing the vocabulary needs of learners in relation to their CEFR goals. In Dodigovic, M. & Agustin Llach, M.P. (Eds.), *Vocabulary in curriculum planning: Needs, strategies and tools* (pp. 9 – 28). Palgrave/Macmillan.
- Mochida, A. & Harrington, M. (2006). The Yes/No test as a measure of receptive vocabulary knowledge. *Language Testing*, 23(1), 73-98.
- Nation, I.S.P. (1990). *Teaching and learning vocabulary*. Newbury House.
- Nation, (1997). The language learning benefits of extensive reading. *The Language Teacher*, 21(5), 13-16.
- Nation, I.S.P. (1999). *Learning vocabulary in another language*. Victoria University of Wellington.
- Nation, I.S.P., & Wang, K.M.T. (1999). Graded readers and vocabulary. *Reading in a Foreign Language*, 12, 355–380.
- Nation, I.S.P. (2006). Language education - vocabulary. In K. Brown (ed.), *Encyclopaedia of language*. Elsevier. Vol 6: 494-499.
- Nation, I. S. P., & Beglar, D. (2007). A vocabulary size test. *The Language Teacher*, 31(7), 9–13.
- Nation, I.S.P. (2007). Fundamental issues in modelling and assessing vocabulary knowledge. In Daller, H., Milton, J. & Treffers-Daller, J. (Eds.), *Modelling and Assessing Vocabulary Knowledge* (pp. 33-43). Cambridge University Press.
- Nation, I.S.P. (2012). Vocabulary Size Test. <http://www.victoria.ac.nz/lals/about/staff/paulnation> (accessed 31st August 2015).
- Nation, I. S. P. (2013). *Learning vocabulary in another language* (Second edition). Cambridge University Press.
- Nation, P & Waring, R. (1997). Vocabulary size, text coverage and word lists. In Schmitt, N. & McCarthy, M. (Eds.), *Vocabulary: Description, acquisition and pedagogy* (pp.2-18). Cambridge University Press.
- Pavicic Takac, V. (2008). *Vocabulary learning strategies and foreign language acquisition*. Multilingual Matters.
- Porte, G. (1988). Poor language learners and their strategies for dealing with new vocabulary. *ELT Journal*, 42(3), 167-172.
- Restrepo-Ramos, F. (2015). Incidental vocabulary learning in second language acquisition: A literature review. *PROFILE Issues in Teachers' Professional Development*, 17(1), 157-166. <https://doi.org/10.15446/profile.v17n1.43957>
- Roghani, Sh. & Milton, J. (2017). Using category generation tasks to estimate productive vocabulary size in a foreign language. *TESOL International Journal*, 12(1).
- Schmitt, N. (1997). Vocabulary learning strategies. In Schmitt & McCarthy (Eds.), *Description, acquisition and pedagogy* (pp. 199 – 227). Cambridge University Press.

- Schmitt, N. (2000). *Vocabulary in language teaching*. Cambridge University Press.
- Schmitt, N., Schmitt, D., & Clapham, C. (2001). Developing and exploring the behaviour of two new versions of the Vocabulary Levels Test. *Language Testing*, 18(1), 55–88.
- Schmitt N. (2007). Current perspectives on vocabulary teaching and learning. In Cummins J., Davison C. (eds), *International handbook of English language teaching*. Springer.
- Schmitt, N., & Schmitt, D. (2012). A reassessment of frequency and vocabulary size in L2 vocabulary teaching. *Language Teaching*, 47(4), 484 – 503.
- Thornbury, S. (2002). *How to teach vocabulary*. Longman.
- Vidal, K. (2011). A comparison of the effects of reading and listening on incidental vocabulary acquisition. *Language Learning*, 61(1), 219-258.
- Webb, S., Sasao, Y., & Ballance, O. (2017). The updated Vocabulary Levels Test. *ITL-International Journal of Applied Linguistics*, 168(1), 33-69.
- Wesche, M. & Paribakht, T., S., (1999). Introduction. *Studies in Second Language Acquisition*, 21, 175-180.
- Xu, X. & Hsu, W., (2017). A new inventory of vocabulary learning strategy for Chinese tertiary EFL learners. *TESOL International Journal*, 12(1), 7-31.

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