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The Development of Passive and Active Vocabulary in a Second Language: Same or Different?

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The study investigates the gains in three types of English as a Foreign Language vocabulary knowledge, passive, 'controlled active' and free active, in one year of school instruction It also examines how these aspects of lexical knowledge are related to one another,and what changes occur in these relationships after one year Gains in vocabulary were measured by comparing two groups of learners with six and seven years of instruction Relationships among the three areas of knowledge were investigated by comparing them within the same individuals The results show that passive vocabulary size (as measured by Vocabulary Levels Test) progressed very well, controlled active vocabulary (as measured by the productive version of the Levels Test) progressed too but less than the passive Free active vocabulary (as measured by Lexical Frequency Profile) did not progress at all Passive vocabulary size was larger than controlled active in both groups of subjects, but the gap between the two types of knowledge increased in the more advanced group Passive and controlled active size scores correlated with each other well Free active vocabulary, on the other hand, did not correlate with the other two types The results raise several questions about the nature of vocabulary knowledge and the effect of instruction on vocabulary growth

BACKGROUND

The process of learning a second language has often been described as the learner's progress along the Interlanguage continuum from a non-existent knowledge towards native-like competence without necessarily reaching it If this is the view we take of L2 acquisition, then vocabulary learning should involve a gradual increase in the learner's vocabulary size as the most striking difference between foreign learners and native speakers is in the quantity of words each group possesses For example, graduates of Israeli high schools are expected to have learnt about 3,500–4,000 word families in English as a foreign language while 18-year-old native speakers of English are reported, according to modest estimates, to have mastered 18,000–20,000 word families at the end of high school (Nation 1990) We realize that progress in vocabulary learning is not only a quantitative issue Knowledge of words may progress from superficial to deep at various stages of learning (For a discussion of the notion of vocabulary depth, see for example Read 1993,

Wesche and Paribakht 1996) Yet we consider vocabulary size rather than depth to be of crucial importance to learners Vocabulary size was found to be a good predictor of reading comprehension (Anderson and Freebody 1981, Koda 1989, Coady *et al* 1993) and to correlate well with writing quality (Linnarud 1986, Astika 1993) It is an important component of fluency in speech and learners themselves associate progress in language learning with an increase in the number of words they know

Investigating the progress of learners' vocabulary size can be of considerable value to language research and pedagogy For example, teachers might want to know how much instruction is needed before students have reached the vocabulary threshold level which is necessary for the comprehension of written authentic prose For English, a threshold of 3,000 word families (5,000 lexical items) was suggested for 'minimal comprehension' (Laufer 1992) and 5,000 word families (8,000 lexical items) for reading for pleasure (Hirsh and Nation 1992) For Dutch, a higher threshold is claimed to be necessary for a similar population of university students, 10,000–11,000 lexical items (Hazenberg and Hulstijn 1996) Information on learners' vocabulary size at different stages of instruction can show how realistic the expectations of a given lexical syllabus are, or what would constitute an optimal syllabus As for research, some topics related to increase in vocabulary size are the relationship between vocabulary growth and different input conditions, such as comprehension-based versus production-oriented instruction, the effect of language learning context (second or foreign) on vocabulary growth, similarities and differences between the developments of passive and active vocabulary

And yet there are very few quantitative studies where vocabulary size is measured at different stages of language learning over a long period of time Yoshida (1978) is a case study where the final vocabulary size of the subject is only 300 active words Other studies dealing with vocabulary growth mostly measure small increments resulting from different testing tasks, learning tasks, teaching methods, or input conditions (Cohen and Aphek 1981, Palmberg 1987, Lupesku and Day 1993, Joe 1994, Hulstijn *et al* 1996) The studies usually investigate the acquisition of words which have specifically been chosen for the experiment rather than changes in the global vocabulary size

The paucity of studies in the area of L2 vocabulary size development could be due to the difficulty researchers have experienced with defining the nature of language knowledge and with designing valid and reliable tests which measure this knowledge Researchers differ in their definition of vocabulary knowledge Yet in spite of the differences, it is nevertheless agreed by most that lexical knowledge is not an all-or-nothing phenomenon, but involves degrees of knowledge. The differences among researchers lie in the characterization of these degrees and consequently in the types of tests required to measure them (See, for example, Nation 1990, Read 1993, Henriksen 1996, Meara 1996, Wesche and Paribakht 1996) In most models, however, it is acknowledged that the learning of a word usually progresses

from receptive to productive knowledge (For criticism of this distinction, see Melka-Teichroew 1982) Therefore, a word that can be correctly used should also be understood by the user, when heard, seen or both The opposite, however, is not necessarily true In our opinion, mere memorization of a word form in a given context without understanding the word's meaning cannot be called productive knowledge If the learner can repeat the memorized word with its context in a test situation without understanding it, this is mechanical reproduction, not production Consequently, passive vocabulary size is considered to be larger than the active size even though no substantiated specification is provided as to how much larger it is

As for tests of vocabulary knowledge, we do not as yet have one instrument measuring both size and depth of vocabulary, that is one test where the number of items is sufficiently large to represent the learners' vocabulary size and where, at the same time, all degrees of knowledge are tested For example, Meara and Jones' (1990) yes-no size test does not specify what type of knowledge is tested, Nation's (1983) Levels Test is a size test of vocabulary comprehension, Arnaud (1992) measures what he defines as 'lexical quality' of writing Wesche and Paribakhts (1996) measure several aspects of vocabulary knowledge, but with a limited number of words

Since vocabulary knowledge is not an all-or-nothing phenomenon and since no single test of vocabulary size and depth is available, we suggest a 'multiple test approach', i e the use of a battery of tests where each test measures a different aspect of vocabulary knowledge The advantages of the multiple tests approach for vocabulary development research are twofold First, taken together, the results can provide a comprehensive picture of learners' vocabulary at different stages of language development Second, by comparing test results for each individual, we can find out about the relationship among different aspects of lexical knowledge in the same learners and the changes that may occur in these relationships with progress in learning.

In this paper we investigate the development of three components of word knowledge the basic receptive (passive) knowledge, i e understanding the most frequent and core meaning of a word, e g 'solution' as in 'solution of a problem' rather than 'chemical solution', and two types of productive knowledge controlled and free (For a discussion of the notion of core vocabulary, see Carter 1987) The first type entails producing words when prompted by a task An example is having to complete the word 'fragrant' in 'the garden was full of fra____ flowers' Free productive knowledge, on the other hand, has to do with the use of words at one's free will, without any specific prompts for particular words, as is the case of free composition The distinction between controlled and free active vocabulary is necessary as not all learners who use infrequent vocabulary when forced to do so will also use it when left to their own selection of words We do not underestimate other aspects of knowledge, such as understanding peripheral meanings, or awareness of words' paradigmatic and syntagmatic relations Yet we regard

the three types of knowledge investigated here as the most basic in L2 learning for the reasons discussed below With regard to comprehension, studies relating vocabulary to reading have tested the learners' understanding of words' core meanings It has also been demonstrated that the general vocabulary rather than jargon (i e vocabulary frequent only in specialized topics) creates most comprehension problems (Cohen *et al* 1979) This is why we focus on the most frequent meaning of words The first type of productive knowledge, the cued recall, resembles a real life situation where a speaker/ writer tries to access a specific word which best fits the context that has been created for him/her, for example, by an interlocutor, or by short written questions which have to be answered As for free production in which a large portion of context is created by the language user, this type of vocabulary use abounds in letters, reports, oral presentations Another important consideration in the choice of the three areas of lexical knowledge for investigation is their amenability to measurement Each one was tested by a different measurement instrument These three instruments will be described in the study section

THE STUDY

Aim

The purpose of the study was twofold. first, to examine the development of three types of vocabulary knowledge passive, controlled active, and free active over one year of school instruction and second, to examine the relationship among these three types of knowledge at different stages of vocabulary learning

Research questions

The specific research questions were as follows

1 What developments occur in the three types of vocabulary knowledge over one year of study?
2 How are the three types of vocabulary knowledge related to one another in the same individual?
3 How do these relationships change after one year of study?

Subjects

The subjects were two groups of learners in a typical comprehensive high school in Israel Group One consisted of twenty-six 16-year-old 10th graders who studied English for six years in school Group Two consisted of twenty-two 17-year-old 11th graders who studied English for seven years The two groups were studying English in the '5 point stream', i e the advanced curriculum in the Israeli school system (as opposed to 3 and 4 point streams) All the subjects were native speakers of Hebrew None had English-speaking

parents and none had lived outside Israel Since English is a foreign language in Israel, most of the input is received from formal instruction All schools follow a syllabus of the Ministry of Education and use materials that are authorized by it At the end of high school instruction, i e at the end of grade 12, all students take a government exam in English Exposure to English outside the classroom consists mainly of English-speaking TV programmes with Hebrew subtitles and of computer games Occasionally, teenagers may communicate with English-speaking tourists

As our subjects were middle-class children, we can assume that exposure outside school was similar for all of them since most watch the same English TV programmes and occasionally use computers at school, home or friends' homes The two groups of subjects were from the same school and were taught by the same teachers Thus the two groups of subjects were as closely matched as possible with regard to input conditions, in school and outside it, with regard to teachers, socioeconomic status, and mother tongue In sum, even though the study was not longitudinal, the groups were carefully matched on all variables except the additional year of school in group two Therefore, we postulated that the difference between the groups in their respective English vocabularies can be attributed to this additional year of study

Research instruments and procedure

Three instruments were used to measure three dimensions of the subjects' vocabulary knowledge (1) The Vocabulary Levels Test (Nation 1983, 1990) for passive vocabulary size, (2) the productive version of the levels test (Laufer and Nation, in press) for controlled active vocabulary size, and (3) The Lexical Frequency Profile (Laufer and Nation 1995) for lexical richness in free written expression

In the Vocabulary Levels Test, learners are required to match groups of three words out of six with their paraphrases as in the following example

1	original	
2	private	——————complete
3	royal	
4	slow	——————first
5	sorry	
6	total	——————not public

The test includes samples from the 2,000 most frequent words, the 3rd thousand, the 5th, the University World List (Xue and Nation 1984) and the 10th thousand The target words are tested in isolation so that no contextual clues are provided We are not interested in the guessing ability of the subjects but in their sight vocabulary, which is the amount of words they can understand without any contextual clues The answers are scored as correct or incorrect Each correct answer is given one -point Each frequency level

section consists of 18 items There are five sections in the tests, the maximum score is therefore 90 In the present study, the 10th level section was not included since high-school syllabus requires teaching about 4,000 words by the end of school Therefore the maximum score for the test was 72 (18 per frequency level × 4 levels)

The test of Controlled Productive Knowledge (Laufer and Nation in press) is modeled on the levels passive test It uses the same vocabulary frequency bands and the same items In this test, however, the items are not provided but elicited in short sentences In order to avoid elicitation of non-target words which may fit the sentence context, the first letters of the target words are provided For example,

They will restore the house to its orig___ state

The scoring is in terms of correct (1 point) or incorrect/blank (0 points) An item is considered correct when it is semantically correct, i e the appropriate word is used to express the intended meaning If used in the wrong grammatical form, for example, stem instead of past tense, it is not marked as incorrect A word with a spelling error which does not distort the word (e g * recieve instead of receive) is not marked as incorrect either Most of the incorrect answers included non-words, like *origan*, or existing words which were incorrect in the provided context, like *origami* in the example above As in the test of passive vocabulary size, the maximum score is 90, but in the study it was 72 since the 10,000 section was not included

The two tests are available in four parallel versions Each version has a sample of items from different frequency levels, yet the items themselves are different Therefore when subjects are tested both on the passive and active tests, or on one of them twice, in pre- and post-tests, administering different versions ensures that the same items do not reappear In this study the subjects received two parallel versions for passive and controlled active tests versions A and C

The test of free productive vocabulary consists of a composition of about 300–400 word tokens and its analysis in terms of LFP—Lexical Frequency Profile (Laufer and Nation 1995) This measure shows the relative proportion of words from different vocabulary frequency lists in the composition Here is an example of how this calculation is done Let us imagine a composition consisting of 200 different words Among these, 150 belong to the first 1,000 most frequent words, 20 to the second, 20 to the UWL—University World List, and 10 are not in any list These figures are converted into percentages out of the total of 200 word types The LFP of the composition is therefore 75%–10%–10%–5% The entire calculation is done by a computer programme which matches vocabulary frequency lists with a text that has been typed into the computer The LFP can be converted into a condensed profile consisting of the percentage of basic 2,000 words, i e the sum of scores on the first two lists and the percentage of the beyond-2,000 words, i e the sum of scores on the UWL and 'not on the lists' (For advantages of the beyond-2,000 measure, see

Laufer 1995) For the LFP analysis to be performed, the compositions are typed into the computer with the following modifications spelling errors that do not distort the word are corrected in order to make the word recognizable by computer, proper nouns are omitted (they are not considered as belonging to the lexis of a given language) and words that are semantically incorrect (e g wrong meaning, wrong collocation) are omitted as well since they cannot be regarded as known by the learners In this study, all learners were required to write on the following topic *Should a government be allowed to limit the number of children in families?* Except for the words in the topic, no vocabulary was provided in the prompt

In all three tests, a 'word' is defined as a base form with its inflected and derived forms, i e as a word family For example, *happy, happily, happiness, unhappy* was considered one 'word' even though they are different lexical items and therefore different dictionary entries (For a more precise description of word families, see Bauer and Nation 1993)

The three instruments had been found to be valid tests of vocabulary size The passive test showed a substantial degree of implicational scaling (Read 1988) The two other tests were shown to discriminate among learners of different language proficiency levels (Laufer and Nation 1995, Laufer and Nation in press) In the study, the reliability of the passive test was 88 using the Kuder-Richardson 21 formula, and the reliability of the controlled active test was 82 The LFP measure cannot be analysed for internal consistency as it does not consist of discrete items However, in the validation study of the measure (Laufer and Nation 1995), the LFP was found stable across different compositions of the same learners

The three tests were given during three different lessons within one week They were presented to students as part of their normal class work The first two tests took about 20–30 minutes each to complete (Less advanced students did not attempt to do the difficult parts which tested the low frequency vocabulary and therefore used less time) The time allocated to composition writing was 90 minutes For each subject, three scores were calculated the passive vocabulary score, the controlled active score and the Lexical Frequency Profile—a 4 score-detailed profile and a condensed two-score profile

Results

To answer research question one, the two groups of students were compared on the three vocabulary scores Means, standard deviations and *t*-test results are presented in Tables 1, 2 and 3 Table 4 summarizes the comparisons of the three tables In Tables 1, 2 and 3, the individual frequency level scores for passive and controlled active tests are out of the maximum of 18 (see previous section), the totals are out of the maximum score of 72 The LFP and beyond-2,000 scores are given in percentages of the words as each frequency level

The differences between the two groups of learners are presented in terms of *t*-test results

Table 1 Comparison of passive vocabulary size

	10th graders (n = 26)		11th graders (n = 22)		Difference	
	Mean	SD	Mean	SD	*t*-value	*p*
2,000	13 24	2 89	16 7	1 79	4 39	0 0001
3,000	7 95	3 31	13 64	3 55	5 10	0 0001
UWL	2 32	3 06	10 17	5 53	5 90	0 0000
5,000	0 64	1 80	7 58	4 87	6 53	0 0000
Total	24 15	8 10	48 09	15 86	6 57	0 0000

Table 1 shows that the passive vocabulary has grown considerably in one year If we express the raw scores in terms of numbers of vocabulary families, the total of 24 15 represents roughly 1,900 word families and 48 09 represents 3,500 [1] If we compare the passive vocabulary sizes of the two groups, we can see that it has increased by 84 per cent in one year of study

Table 2 Comparison of controlled active vocabulary

	10th graders (n = 26)		11th graders (n = 22)		Difference	
	Means	SD	Means	SD	*t*-value	*p*
2,000	11 83	3 39	15	2 29	3 72	0 0005
3,000	6 29	2 34	9 30	3 84	3 25	0 0002
UWL	2 58	2 33	5 26	3 29	3 20	0 0003
5,000	1 04	1 45	3 86	3 20	3 91	0 0003
Total	21 74	7 67	33 42	10 87	3 87	0 0005

Table 2 shows that the controlled active vocabulary has increased too Converted into numbers of word families, the growth is from the total of 1,700 in the 10th grade to 2,550 in the 11th grade, i e about 50 per cent

Looking at the two tables, we can see that the growth of the two types of vocabulary knowledge is not identical In one year learners added about 1,600 word families to their passive vocabulary and 850 word families to controlled active lexis In percentages, there was 84 per cent growth in the passive vocabulary and 50 per cent in the controlled active

Table 3a Comparison of lexical profiles

	10th graders (n = 26)	11th graders (n = 22)	t-value
1st 1,000	86 3%	85 6%	n s *
2nd 1,000	6 45%	7 46%	n s
UWL	2 80%	3 20%	n s
Other	4 30%	3 53%	n s

*Not significant

Table 3b Condensed profiles

	10th graders (n = 26)	11th graders (n = 22)	t-value
Basic 2,000	92 7%	93%	n s
Beyond 2,000	7 1%	6 7%	n s

Tables 3a and 3b show that there was no significant progress in the free active vocabulary of the learners Even though their passive and controlled active vocabularies have improved, they use the same proportion of frequent and non-frequent vocabulary in a free writing activity

Table 4 Vocabulary growth—summary

	Passive	Controlled active	Free active (beyond 2,000)
	(in word families)		
10th graders	1,900	1,700	7 1%
11th graders	3,500	2,550	6 7%
gain in %	84%	50%	—

To answer research questions 2 and 3, we calculated the ratio between passive and controlled active vocabulary for each group of subjects (active size × 100% · passive size) and also correlated the passive, controlled active and beyond 2,000 scores for each individual in each group Table 5 presents the ratios, Table 6a and 6b—the correlations

With regard to the relationship between the three types of vocabulary, we can see that the passive vocabulary is larger than the controlled active, but the

Table 5 Comparison of passive–controlled active ratios

	Passive	Controlled active	Ratio
	(in word families)		
10th graders	1,900	1,700	89%
11th graders	3,500	2,550	73%

Table 6a Spearman correlations among individual test scores (10th graders)

	Controlled active	Beyond 2,000 (free active)
Passive	0 67	0 078
	p= 001	p= 75
Controlled active		0 25
		p= 28

Table 6b Spearman correlations among individual test scores (11th graders)

	Controlled active	Beyond 2,000 (free active)
Passive	0 78	0 16
	p=0.002	p=0 62
Controlled active		0 08
		p=0 78

ratio between the two is different in the two groups In the 10th grade it is 89 per cent while a year later it decreases to 73 per cent This means that the gap between the two types of lexical knowledge has widened at a higher level of language proficiency (The higher the ratio between two figures, the closer the figures are) Tables 6a and 6b show that there is a high and significant correlation between the two This means that the learners who have a higher passive vocabulary size are also those who have a higher controlled active vocabulary size Bearing in mind the lower ratio of the more advanced group, the results in Tables 5 and 6 suggest that the higher one's passive vocabulary size, the wider the gap between it and the controlled active vocabulary

As for the free active vocabulary, since it was measured in terms of proportion between frequent and non-frequent vocabulary and not in terms of knowledge of specific items, it was impossible to calculate the ratio between free active vocabulary and the other two types (It is unlikely that we can devise a test measuring how many words a person can use at free will, unless his vocabulary is very limited) What we measured in the study is the relationship between free active vocabulary as expressed in the beyond-2,000 score with the other two scores Tables 6a and 6b show that free active knowledge does not correlate at all with the passive and the controlled active knowledge This indicates that learners who could recognise more words than other learners and produce them if forced to, were not necessarily those who would use more infrequent vocabulary in free expression The non-significant and almost non-existent correlation in the group of 11th graders shows that the lack of relationship persisted even after an additional year of instruction [2]

Discussion

In research question one, we asked what developments occurred in the three types of vocabulary knowledge over one year of study Our results showed that passive vocabulary increased by 1,600 word families in one year of school instruction Bearing in mind that a school year consists of roughly 180 hours of instruction (5 hours a week × 36 weeks), the average vocabulary gain per lesson was about 8–9 word families This is an encouraging figure since it suggests that many words can be learnt in a second language within a relatively short period of time From Table 1, we can see that the most impressive growth occurred in the University Word List This may be the result of a more difficult authentic non-fiction reading material that is introduced in grade 11 These findings are not very different from another study (Laufer 1995) in which university students of engineering who were taking an EFL course acquired 300 word families in one semester, in about 50 hours of instruction These students were much less motivated than the high school learners preparing for matriculation exams and yet they managed to learn about an average of six word families per an hour of instruction Nation (1982) surveys experiments of vocabulary learning in lists which show impressive gains over a period of hours The present study investigated vocabulary learning in a normal classroom setting and not in an experimental situation Yet the conclusion seems to be the same—a large number of words can indeed be learnt even when the learning context is not 'natural', i e when learners are not exposed to the new words in the language speaking environment These results underscore the fact that classroom instruction can provide an optimal setting for vocabulary learning

If passive vocabulary size can improve so well in one year, one may wonder why it took the 10th graders in our study 6 years of instruction to learn 1,900 words if 1,600 words can be learnt in one year Is it the case that teachers underestimate learners' ability for vocabulary learning and do not require

enough? Or does this non-linear progress reflect the nature of L2 vocabulary learning which may proceed slowly in the first years and gain momentum later? The results of controlled active vocabulary exhibit a similar picture of non-linearity The 11th graders knew 850 words more than the 10th graders If one year is enough for learning 850 words why should it take 6 years to learn 1,700 words?[3]

Nation (1990) presents a summary of L1 vocabulary size development between the ages 1 3 and 18 At the age of 5 5, vocabulary size is 1,528 word families, at 10 7–7,020, at 15–12,000 and at 18–17,600 These figures suggest that the development is rather linear, about 1,000 words every year If vocabulary learning in L1 and L2 were the same, the answer to the question above would be teachers had underestimated their learners' ability and had missed an opportunity to teach them much more than they did Yet L2 quantitative lexical learning, particularly instructed learning, cannot be identical to L1 vocabulary acquisition First, L2 learners who learn English between the ages of 10 and 18 are cognitively more developed than children with the same vocabulary size in English as L1 (ages 6–7) Second, the amount and nature of exposure to the language is different in the two cases Third, by the age of 5–6 the basic grammar in L1 has been mastered But after 5–6 years of learning a foreign language, grammatical problems still exist and therefore learners and teachers may not be willing to devote too much time and effort to lexis Our tentative conclusion, taking into account the linearity of vocabulary learning in L1 and also acknowledging the differences between the two processes, would be the following even though about 1,600 words were learnt passively and 850 actively in one year, in the 11th grade, this does not imply that in the preceding 6 years the same amount of words could have been learnt each year However, more time and effort could be spent on helping students increase the size and control of their L2 lexicon Consequently, a larger target vocabulary for 10th graders could have been aimed for

As for free active vocabulary, the lack of progress of 11th graders means that in spite of an impressive increase in passive vocabulary and a good progress in controlled active vocabulary size; learners did not put this knowledge into use when left to their own choice of lexis To put it differently, the free active vocabulary reached a plateau beyond which it did not progress According to Laufer (1995), the beyond 2,000 vocabulary of first year university students is about 13 per cent while that of native speaking high school graduates reaches 23 per cent These figures suggest that there was certainly room for improving the beyond-2,000 score with an additional year of instruction Even though 11th graders are not expected to reach the level of university students, we would have thought that some of the additional 1,600 words that they learnt passively would have filtered into their free expression The plateau in free active vocabulary may be the result of the lack of incentive to use more advanced, infrequent, and error-prone words Communicatively oriented teachers may be satisfied with the learners' ability to get meaning across

Grading conventions in school emphasise correctness and seldom reward lexical richness These do not encourage the learner to take a risk and use more difficult vocabulary Also conventional re-write exercises usually focus on alternative structures rather than on alternative vocabulary Swain (1995) and Swain and Lapkin (1995) claim that learners will not progress beyond a given stage of competence unless pushed to exploit all their resources Output 'pushes learners to process language more deeply (with more mental effort) than does input In speaking or writing, learners "stretch" their Interlanguage to meet communicative goals' (Swain 1995 126–7)

Hence the importance of output in addition to input If our learners had been given exercises and tasks which were specifically designed to elicit the new vocabulary that was taught, they might have been more willing to incorporate it into their free production

In research question two, we asked how the three types of vocabulary knowledge were related to one another in the same individuals, in question three, how these relationships changed over one year of study The decreasing ratio between the passive and controlled active vocabulary indicates that some of the additional words that were learnt in the 11th grade did not enter the active vocabulary Taking these results together with the correlations in Table 6, we can conclude that an increase in one's passive vocabulary will, on the one hand, lead to an increase in one's controlled active vocabulary, but at the same time lead to a larger gap between the two These findings are not unreasonable When one's passive vocabulary is low, it consists of the most frequent useful words that cannot be avoided in expression Repeated use of these words reinforces their active knowledge But as the passive vocabulary size expands, less frequent words are learnt The learner can often convey meaning without using these words If not 'pushed' to use them, they may never be activated and therefore remain in passive vocabulary only The higher the passive vocabulary size, the higher the number of words that may not enter the active lexis and hence the lower ratio between the two

With regard to free productive vocabulary, the lack of correlation between it and the other two types of knowledge substantiate the findings discussed in relation to research question one Better passive and controlled active vocabulary do not seem to be reflected in free production This is true for each proficiency group and across proficiency levels The learners seem to have 'fossilized' their free vocabulary at an average of 7 per cent of beyond-2,000 words per composition and do not progress even when their passive and controlled active vocabularies improve [4] The strategy of learners of using few resources (managing with as little as possible) can be referred to as a risk-avoiding strategy, task simplification, or simply, taking the easy way out If not discouraged, learners may perpetuate this convenient performance strategy

SUGGESTIONS FOR FURTHER RESEARCH

The results of the study raise several interesting questions which could be explored in the future

1 We found that learners could learn a large amount of vocabulary (passive and controlled active) in one year, but learnt a much smaller number of words per year in the preceding six years of instruction The question is whether this non-linearity reflects the nature of vocabulary learning, or simply the requirements of the school syllabus This question could be investigated in two stages The passive/controlled active ratio could be studied at different stages of language learning We may find that the gap between the two widens as learning progresses, or that it changes, narrowing and widening at different stages of learning Secondly, parallel groups of learners could be assigned different vocabulary-size learning goals We would then check the following (a) whether learners can cope with any load assigned to them, or whether there is a 'vocabulary size learning threshold', i e a limited number of words that can be learnt irrespective of syllabus, and (b) whether the vocabulary size that can be acquired is in any way related to the level of learner proficiency

2 The study showed that gains in passive and controlled active vocabulary were not reflected in lexical profiles of free writing Two explanations of this finding are possible One is that the gains found in our study are insufficient for any effect on free expression The nature of vocabulary learning may be such that much larger quantities of words have to be learnt passively before some of them are used at learners' free will Another explanation has to do with the nature of classroom instruction which may not have forced the learner to stretch his/her Interlanguage resources and use the words that have been taught Further research should look at a wider range of learners' passive and controlled active vocabulary size Maybe a larger passive vocabulary size than that of our learners will affect the lexical profiles of writing Furthermore, vocabulary teaching methods could be compared in order to see whether an 'output-oriented' approach to vocabulary teaching would affect the free productive use of vocabulary

3 The results showed that the gap between the passive and the controlled active vocabulary increased with progress in learning. The question is whether the more words we learn passively, the fewer of these we can activate (though some of them do enter the active lexicon), or whether our learners were not provided with sufficient opportunities to activate their vocabulary in the classroom Further research could look at second, as opposed to foreign, language learners' vocabulary Since second language learning context provides better conditions for using new words, it would be interesting to see whether the gaps between passive and controlled active vocabulary would be smaller than in our study and whether free active vocabulary would be differently affected as well

4 The tasks used in the study were all written The LFP measure could also

be used to analyse spoken language It might be interesting to compare lexical richness of spoken and written language samples of the same people

In this study we provided some quantitative results on the development of passive and active lexical knowledge in a second language Whether the development pattern as reflected in the results is a consequence of classroom instruction, or whether it reflects the nature of lexical learning, or both, is still not clear Further research may tell

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NOTES

1 The figures are approximations of the actual vocabulary size The calculation is done as follows

The first 1,000 level and the second are assumed to have the same score, the 4th 1 000 level score is taken as an average of the 3rd and 5th levels The sum of the scores at all the levels is multiplied by 5,000 (as the test without the 10th level represents a size of 5,000 word families) and divided by 108 (18 items per level for 6 levels—1 2, 3, 4, 5, UWL) Even though learners were tested on 72 items (4 levels +UWL), two missing levels, 1 and 4 are filled in' The UWL is not a separate frequency level, but consists mainly of words at 4th and 5th level Therefore it is added to the 5,000 sample

2 A larger sample with a more diverse population proficiency-wise yielded moderate and significant correlations between the controlled active and the free active measures (Laufer and Nation 1995) In this study however we're concerned with two levels of proficiency and progress from one to another

3 We do not attribute slow vocabulary growth until grade 10 to quality of teachers or lack of interest on the part of the learner English *teachers in Israel are college graduates (for* grades 4–6) and university graduates (for grades 7–12) The latter hold a BA in English Language and Literature and a Teaching Diploma Learners are fully aware that English is one of the major subjects in Israeli schools

4 The term fossilisation' is used here in the wider sense of stopping the process of learning at a certain point on the Interlanguage continuum and not in the sense of fossilising errors

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