

The effect of keeping vocabulary notebooks on vocabulary acquisition

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Vocabulary notebooks are frequently advocated as a way for students to take control of their vocabulary learning (Fowle, 2002), with the added benefit of improvements in vocabulary learning (Schmitt and Schmitt, 1995; Laufer and Nation, 1999). The study described in this article attempts to lend empirical support to these claims, by investigating the effect of vocabulary notebooks on EFL students' vocabulary acquisition. Students in three lower intermediate EFL classes participated in the study. A vocabulary notebook program was implemented in one class over a 4-week period, with the remaining two classes acting as control groups, following the same curriculum with the same materials but without keeping vocabulary notebooks. Receptive and controlled productive vocabulary tests revealed significantly greater learning of the target words in the treatment group. In addition, students in the treatment group demonstrated a greater tendency to use the target words in free writing compositions. However, a positive impact on learner autonomy – as has been reported in previous studies (McCarthy, 1990) – was not observed. These findings lead the authors to conclude that vocabulary notebooks can be an effective learning tool in EFL classrooms, but positive impacts on learner autonomy may not be seen in the absence of appropriate motivation for language learning.

Keywords: vocabulary, vocabulary acquisition, vocabulary notebooks, learning strategies, learner autonomy

I Background

1 Introduction

Effective strategies for language learning are of concern to researchers and teachers alike, as language practitioners turn their attention to promoting learner autonomy through strategy instruction. At a time when the area of vocabulary is experiencing a resurgence of interest, effective vocabulary learning strategies are particularly interesting. The study described here looks at the effectiveness of one particular vocabulary learning strategy, that of keeping a vocabulary notebook.

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2 *Review of the literature*

Language learning strategies are defined as ‘any sets of operations, steps, plans, routines used by the learner to facilitate the obtaining, storage, retrieval, and use of information’ (Wenden and Rubin, 1987, p. 19). While many researchers have studied, described, and categorized language learning strategies (Naiman *et al.*, 1978; Rubin *et al.*, 1987; O’Malley and Chamot, 1990; Oxford, 1990), Schmitt (1997) has described a taxonomy of learning strategies specifically aimed at learning vocabulary. This taxonomy distinguishes between:

- discovery strategies, i.e. those strategies used to find out the meaning of a new word; and
- consolidation strategies, i.e. those used to store the new word in long-term memory.

Within these two categories, specific strategies are further classified as determination, cognitive, metacognitive, memory, or social strategies.

Among the 58 vocabulary learning strategies included in Schmitt’s (1997) taxonomy, keeping a vocabulary notebook is classified as a cognitive strategy within the larger division of consolidation strategies. A vocabulary notebook can best be regarded as a kind of personal dictionary; learners record the words they encounter, along with their meanings and any other aspects of the word deemed important, such as part of speech, other word forms, collocations, synonyms, antonyms, and perhaps a context sentence. Vocabulary notebooks are frequently suggested as effective tools for students to use to take charge of, organize and manage their vocabulary learning (Ledbury, n.d.; McCarthy, 1990; Nation, 1990; Schmitt and Schmitt, 1995; Lewis, 2000; Fowle, 2002). Schmitt and Schmitt (1995) offer suggestions for the design of a vocabulary notebook, as well as a sample program for incorporating vocabulary notebooks into class work.

In spite of the fact that keeping a vocabulary notebook is listed as a single vocabulary learning strategy in Schmitt’s (1997) taxonomy, it seems clear that the very act of keeping a vocabulary notebook will involve the practice of a variety of different vocabulary learning strategies. Fowle (2002) points out that learners may use multiple determination strategies to discover meaning and other aspects of unknown words: they may use monolingual or bilingual dictionaries, guess from context, or seek the help of teachers or classmates. Consolidation strategies are also used when adding to the information in the notebook, and when studying new words in the notebook. Use of the notebook in class work also supports the use of consolidation strategies, as students return to the notebook to retrieve words, use the words in classroom activities, and share their words with their classmates. Thus, vocabulary notebooks offer learners the chance to expand their repertoire of vocabulary learning strategies, and they have the potential to enhance vocabulary learning, perhaps more than any other single vocabulary learning strategy used on its own.

The effectiveness of vocabulary notebooks has been, perhaps, assumed, given that they have been advocated by so many (Fowle, 2002; Ledbury, n.d.; Lewis, 2000; McCarthy, 1990; Nation, 1990; Schmitt and Schmitt, 1995). Several benefits have been ascribed to the use of vocabulary notebooks:

- enhancing vocabulary study (Schmitt and Schmitt, 1995);
- improved ability to use dictionaries and guess from context (Ledbury, n.d.);
- keeping teachers informed about learners' progress (Fowle, 2002; Nation, 1990); and
- enhancing learner autonomy (Fowle, 2002).

The positive effects of vocabulary notebooks have also been explored through students' and teachers' attitudes (Fowle, 2002; Tezgiden, 2006). However, thus far there has been no empirical study of the effectiveness of the use of vocabulary notebooks by language learners in the classroom setting. The study described in this article seeks to investigate the effect of the use of vocabulary notebooks in an EFL classroom setting on students' vocabulary acquisition, as well as the attitudes of the students and teachers involved in the vocabulary notebook implementation.

3 Research questions

The following research questions were addressed:

- 1) How does the use of vocabulary notebooks affect students' vocabulary acquisition (receptive, controlled productive, and free productive)?
- 2) What are students' and teachers' attitudes towards the use of vocabulary notebooks?

II The study

1 Setting

The study was conducted at the Zonguldak Karaelmas University English Language Preparatory School, in Zonguldak, Turkey. The preparatory school is a one-year program, whose aim is to increase the students' English language proficiency to the level required by the university. Zonguldak Karaelmas University is a Turkish-medium university, but a specified level of English proficiency is a requirement for graduation. Students study English for 30 hours per week, in a program that consists of a grammar-based main course, reading, writing, and listening-speaking classes, and video- and laboratory-based classes. Following a placement test at the beginning of the academic year, students are placed into one of two proficiency levels: intermediate or lower intermediate.

2 *Participants*

Sixty students from three intact lower intermediate level (main course) classes took part in the study, along with their teachers. Due to logistical constraints, it was decided to limit the study to one proficiency level. One class served as the treatment group, and the remaining two classes constituted the control groups (Groups A and B). The treatment group was chosen because of the teacher's willingness to incorporate vocabulary notebooks into her class, and the control groups were chosen randomly from the remaining lower intermediate classes. The students' ages ranged from 17 to 20 years. In the treatment group there were 12 males and 8 females, while in control Group A there were 13 males and 7 females, and in control Group B there were 10 males and 10 females.

3 *Vocabulary notebook implementation*

A 4-week schedule for the implementation of the vocabulary notebooks was drawn up, adapted from Schmitt and Schmitt (1995) and Ledbury (n.d.). Eighty target words were chosen from the 4 coursebook units that would be covered over the 4-week period. In the coursebook, 50 to 60 words are highlighted or otherwise singled out to be noticed in each unit, and the 80 target words, 20 from each unit, were chosen from these words. One main criterion for the choice of target words was level of frequency. In order to ensure that the target words would be largely unknown to the students at the beginning of the study, relatively low frequency words were chosen, by subjecting the pool of words to analysis using Vocabprofile (lexutor.ca/vp/eng/). Of the 80 target words, 20 appear on the Academic Word List (AWL; Coxhead, 2000), and the remaining 60 were identified as 'off list' (i.e. not appearing in the 2000 most frequent words in English or on the AWL; Francis and Kucera, 1982).

At the beginning of each week the 20 words chosen from the unit for the week were presented to the students, to be recorded in the notebook, along with some aspect of word knowledge for some of the words provided by the teacher; the students were expected to complete the same information for the remaining words by themselves. The information provided by the teacher included such aspects of word knowledge as part of speech, first-language translations, second-language synonyms, antonyms, derivations, and collocations. Each day of the week the teacher provided more information about some of the words, with students filling in similar information for the remaining words. The implementation schedule also included activities for incorporating the notebooks into classroom activities. Each week, time was set aside for students to share the information in their notebooks with their classmates, and to test each other on the notebook words. One more, variable activity was included in each week of the schedule; for example, in the first week, the variable activity was writing example sentences for the target words. The complete implementation schedule can be seen in Appendix 1. At the end of

each week, the teacher collected the notebooks and checked to see that the students had added the assigned information. Students were aware that their notebooks would be graded as part of their final grade. The notebooks were returned to the students on the following Monday.

4 Instruments

a Vocabulary tests: In order to investigate the effectiveness of the use of vocabulary notebooks, two vocabulary tests – a receptive test (modelled on Nation’s 1990 Vocabulary Levels Test) and a productive test (modelled on Laufer and Nation’s 1999 Productive Vocabulary Levels Test) – were created using the vocabulary words that appeared in the units to be covered over the 4-week period. The vocabulary tests, used as both pretests and posttests, included both target words (those that would be included in the vocabulary notebooks) and non-target words (those that were highlighted in the units but not specifically included in the notebooks).

The receptive vocabulary test included 72 target words and 78 non-target words. The non-target words included in the test were also chosen with level of frequency in mind, consisting only of AWL words and words outside the 2000 most frequent words in English. Below is an example of an item from the receptive vocabulary test:

- a) execution
- b) prey ___ a society that is developed
- c) tribute ___ killing someone as a legal punishment
- d) restraint ___ something that you say to express respect, or admiration for someone
- e) stare
- f) civilization

In each item, the test-taker must match the definitions with the target vocabulary words. There are three definitions and six vocabulary words. In preparing the test items, care was taken to ensure that words used in the definitions were of higher frequency than those being defined. The complete test (25 items, 6 words per item, 150 words in total) was first checked by another experienced EFL teacher, and then piloted with two other lower intermediate classes. It was found that the students in these classes were unable to answer any of the items correctly; this was an expected result, since the classes had not yet covered the units from which the words were taken.

Below is an example of an item from the controlled productive vocabulary test:

The mouse was an easy pr__ for the cat. Cats can easily catch mice.

In these items a context and some letters are given in order to elicit the intended word. The controlled productive test was made using the same pool of target words as in the receptive vocabulary test. The test consisted of

50 items, using 29 target words and 21 non-target words. It was considered too time-consuming for the productive vocabulary test to include as many vocabulary words as the receptive test, due to the increased reading load of the productive test. Again, care was taken to ensure that frequency of the words used in the context sentences was higher than that of the intended responses. This test was also checked by another experienced EFL teacher and piloted with the same two classes. As with the receptive test, students were unable to correctly answer any of the items, as expected.

These tests were given as pretests three weeks before the implementation of the vocabulary notebooks, and as posttests in the week following the end of the 1-month implementation period.

b Free vocabulary use compositions: In order to investigate the effect of the vocabulary notebook implementation on free use of the target words, students were assigned a topic at the end of each week, and asked to write a composition on the topic. The topics were consistent with the theme of each week's lessons. The compositions were assessed only for the frequency of appropriate use of the target vocabulary words.

c Interviews: To discover the students' and the teacher's attitudes towards the use of vocabulary notebooks, interviews were conducted during the week following the vocabulary notebook implementation period. The teacher who had implemented the vocabulary notebooks in her class was interviewed individually, while the students in the treatment group were interviewed in groups of five. The students' interviews were conducted in Turkish, to allow them to express themselves clearly, and the interview with the teacher was conducted in English. The students were asked whether they found keeping vocabulary notebooks useful, what they liked or disliked about using the notebooks, and whether they would continue keeping vocabulary notebooks even if their teacher did not check it and give marks. The participant teacher was also asked her perceptions about using vocabulary notebooks in the classroom, and whether she would continue having the students keep vocabulary notebooks. The control group students and teachers were not interviewed.

5 Procedure

The vocabulary pretests were given to the students in all three classes, during a regular class session; three weeks later, the implementation of the vocabulary notebooks began in the treatment group. The vocabulary notebook program did not replace the usual vocabulary instruction in the experimental classroom, but rather supplemented it. Non-notebook words were dealt with in the same way as in the control groups. During the 4-week implementation period, the two control groups continued to follow the same curriculum as the treatment group; they were exposed to the same lessons, the same course

materials, and the same target words as the treatment group, but they did not keep vocabulary notebooks. The teachers of the control groups followed their usual routines in dealing with the vocabulary words in each lesson. This generally consisted of writing the target words on the board, along with their parts of speech. Sentences were made using the words, sometimes by the students, and sometimes by the teachers. Definitions were provided either in first language or second language, depending on the teacher's perception of the difficulty of the word.

At the end of each week, all students, in both the treatment and control groups, were asked to write a composition on a topic consistent with the theme of the week's lessons. They were not given any instructions about vocabulary use in the compositions, and they were not told that their vocabulary use would be assessed. At the beginning of the week following the 1-month implementation period, the vocabulary posttests were administered to all groups, and the interviews were conducted with the students and teacher of the treatment group.

The data from the pre- and posttests of receptive and controlled productive vocabulary knowledge were entered into SPSS, and descriptive statistics were calculated. Differences among the groups were investigated using ANOVA with *post hoc* comparisons (Scheffe tests). The alpha level for all analyses was set at .05 for tests of significance. The interview transcriptions were translated into English and analysed for key words and recurring themes.

III Results

1 Receptive vocabulary acquisition

Means for target and non-target words on both pre- and posttests of receptive knowledge were calculated separately, and they are presented in Table 1.

It can be seen in Table 1 that control Group A appeared to demonstrate slightly greater knowledge of both target and non-target words on the receptive vocabulary pretest than either the treatment group or control Group B, and one-way ANOVAs performed on these means reveal that these differences are significant (target words, $F(2,57) = 3.401, p < .04$, non-target words $F(2,57) = 10.014, p < .000$). The fact that one of the groups performed better on the pretest was surprising, given that a pilot administration of the receptive vocabulary test revealed no differences in the performance of the two groups involved. However, it was not considered to be a concern, as improvement from pretest to posttest was the focus of the study.

Table 1 also shows that while all groups demonstrated some improvement on both target and non-target words on the receptive vocabulary posttest, the most marked improvement is seen in the treatment groups' performance on target words. The groups' mean gain scores for both target and non-target words were subjected to an ANOVA, which revealed a significant difference

Table 1 Pretest and posttest results, receptive vocabulary, target vs. non-target words (SD is given in brackets)

	<i>n</i>	Target words*		Non-target words**	
		Pretest mean	Posttest mean	Pretest mean	Posttest mean
Treatment group	20	2.75 (4.18)	14.55 (5.69)	2.35 (3.00)	4.05 (3.72)
Control group A	20	4.40 (3.08)	6.35 (3.25)	5.35 (3.48)	6.35 (2.83)
Control group B	20	1.75 (2.15)	2.50 (2.59)	1.40 (2.09)	1.65 (1.98)

Notes: *mean of raw score, 36 possible; **mean of raw score, 39 possible

among the groups' gain scores for target words ($F(2,57) = 59.033, p < .000$), but the difference among their gain scores for non-target words was not significant ($F(2,57) = 1.140, p < .327$).

In order to investigate the source of the significant difference in gain scores for the target words, a Scheffe test was conducted as a *post hoc* comparison, the results of which can be seen in Table 2. It reveals significant differences between the mean gain score of the treatment group and those of both control groups. It is also apparent that there is no significant difference in the mean gain scores of the two control groups. Thus, it can be concluded that the treatment group has made significant improvement in receptive knowledge of the target words, both in contrast to their knowledge of non-target words, and in comparison to the participants in both control groups.

2 *Controlled productive vocabulary acquisition*

The results of the pre- and posttests of controlled productive vocabulary acquisition of the target words can be seen in Table 3, divided into target and non-target words. From Table 3, it can be seen, first, that initial productive knowledge of the target words was very low, and prior productive knowledge of non-target words was non-existent. In order to determine the extent of any initial differences among the groups, a one-way ANOVA was performed on the target word mean scores, revealing that the differences among the groups are not significant ($F(2,57) = .653, p < .524$). Table 3 also reveals that all groups appear to show at least some slight degree of improvement in terms of target words, but the improvement in the treatment group appears far greater. In addition, while the treatment group's improvement on non-target words is very slight, the control groups continue to demonstrate no productive knowledge of the non-target words. A one-way ANOVA was conducted on the groups' mean gain scores to investigate whether the observed differences were indeed significant. The ANOVA revealed a significant difference among the groups in the mean gain scores for target words ($F(2,57) = 71.76, p < .000$), but no significant difference among their gain scores for non-target words ($F(2,57) = 2.58, p < .085$). The results of the *post hoc* comparisons for the target word mean gain scores are given in Table 4.

Table 2 *Post hoc* comparisons, receptive vocabulary test gain scores, target words

	Mean difference	Standard error	Significance
Treatment – Control group A	9.850	1.1160	.000
Treatment – Control group B	11.050	1.1160	.000
Control group A – Control group B	1.200	1.1160	.564

Table 3 Pretest and posttest results, controlled productive vocabulary, target vs. non-target words (SD is given in brackets)

	n	Target words*		Non-target words**	
		Pretest mean	Posttest mean	Pretest mean	Posttest mean
Treatment group	20	0.68 (1.41)	10.35 (4.79)	0.00 (-)	0.425 (1.18)
Control group A	20	0.38 (1.18)	1.48 (1.79)	0.00 (-)	0 (-)
Control group B	20	0.30 (0.50)	0.53 (0.75)	0.00 (-)	0 (-)

Notes: *mean of raw score, 29 possible; **mean of raw score, 21 possible

Table 4 reveals that the mean target word gain score of the treatment group is significantly greater than those of the two control groups. It can also be seen that there is no significant difference between the two control groups. Thus, it appears that, as was seen with the receptive vocabulary test results, the treatment group has shown significantly greater improvement in productive knowledge of the target words than either control group. In addition, the treatment group’s performance on target words is significantly better than that for non-target words.

3 Free productive vocabulary acquisition

The weekly compositions written by the students in all groups were examined for the presence of the target words. In the initial analysis of the compositions, they were sorted into two categories, those that included the use of any target word, and those that did not. This initial categorization revealed that only one student in the control groups exhibited free productive use of one target word in the composition for one week, while in the treatment group, target words were used in every week, by several students. The next analysis involved examining the use of the target words. In the compositions, target words were counted only if their use was appropriate in the context in which they occurred; spelling mistakes were ignored, as long as it was clear which word was intended. For the purposes of the analysis, target words were only counted one time; if one student used a particular target word more than once, or if more than one student used that target word, it was only counted once. Table 5 below shows the pattern of target word use in the 4 weekly compositions.

Table 4 *Post hoc* comparisons, controlled productive vocabulary test gain scores, target words

	Mean difference	Standard error	Significance
Treatment – Control group A	8.575	.8718	.000
Treatment – Control group B	9.450	.8718	.000
Control group A – Control group B	.875	.8718	.607

Table 5 Free productive use of target words in weekly compositions

	Week 1	Week 2	Week 3	Week 4
Control group A (<i>n</i> = 20)	–	–	1 student, 1 word	–
Control group B (<i>n</i> = 20)	–	–	–	–
Treatment group (<i>n</i> = 20):				
• Number of students using target words	2	6	9	11
• Number of target words used	3	6	10	9
• Average number of words (types) used per student	2	2	2	2

It can be seen from Table 5 that as the vocabulary notebook program progressed, more students used the target words in their compositions, although the average number of word types used per student remained the same. In addition, more of the target words were being included in the compositions. One more result, not shown in the table, was that, in the third and fourth weeks, several target words from the previous weeks also appeared in the weekly compositions. Thus, by the end of the program, roughly half of the students were using some of the vocabulary words that they had recorded in their notebooks in their compositions. This use of target words in the weekly compositions is in sharp contrast to the almost total lack of free productive use by the control groups.

4 *Students' attitudes to vocabulary notebooks*

a Attitudes towards keeping vocabulary notebooks: The students were overwhelmingly positive about the usefulness of vocabulary notebooks; however, their positive remarks are colored by a feeling that vocabulary notebooks are a tool for those students who genuinely want to learn a language, a desire they apparently do not share. Selected excerpts are given below:

Student A: This vocabulary notebook can be more useful for the ones who have a habit of studying regularly. It was difficult for me, but I can't deny that it is useful.

Student C: Actually, this tool was useful for our learning vocabulary, but it is good for the ones who can carry it out. For example, it is not good for me. The student must love writing and English.

b Attitudes toward the classroom vocabulary notebook activities: Students appeared to enjoy the vocabulary activities in class, and seemed to appreciate the connection between the notebooks and the activities, several of them commenting on the opportunities provided to work with words repeatedly. Some of their comments are given below:

Student F: We always consulted our notebooks during the vocabulary notebook activities, so it was good for our remembering words. Activities reinforced our learning these words. For example, in the crossword puzzle activity we looked in our notebooks when we couldn't find the meaning of the word in the sentence provided for us. The notebook was good for us.

Student G: As we regularly dealt with one word with many activities, we quickly learned and remembered the word.

Student H: Vocabulary notebook activities were fun. I think that the more we look in the notebook the more we deal with the words, the better we learn. We put them in our brains, in the long term memory.

c Difference between previous study methods and vocabulary notebooks: When the students were asked to compare the use of vocabulary notebooks with the ways that they previously studied vocabulary, they generally agreed that the vocabulary notebooks were better than their previous techniques. Some of their comments are given below:

Student K: I used to write the new words that my teacher showed us on small pieces of paper. I used to write their Turkish meaning at the back of the small paper, and I was studying like that. Yet, we write many aspects of word knowledge of one word. Therefore, this is better now.

Student H: My former method is nothing when I compare it with this vocabulary notebook. I used to take notes somewhere, but of course not regularly, sometimes, I mean whenever I want.

Student M: I used to keep a notebook, but it was not like this notebook. I only wrote Turkish definitions, and when the word is in Turkish I used to write an English word next to the unknown word.

d Intention to continue the use of the notebooks: In spite of their appreciation for the usefulness and effectiveness of the vocabulary notebooks, the majority of the students admitted that they would not continue to use vocabulary notebooks if their teacher did not continue the implementation. Some of their comments illustrate this attitude:

Student L: I know and I believe that it was very useful for me, and it would be better if I continue, but I will not.

Student K: When I compare my notebook with my former notes, this is more beneficial for me, but it requires more studying. I think I will not continue. I will take the easier way out.

e Other themes: Apart from the themes suggested by the questions asked during the interviews, several other themes emerged. A few students mentioned that the vocabulary notebook program made them more responsible language learners, as illustrated in the following comment:

Student F: We liked using notebooks because it was beneficial for our vocabulary learning. It made us study English. Every day when we went to the dormitory, we had to add some new information to the words of the week and make sentences with them. It made us responsible.

However, in spite of enhancing the learners' sense of responsibility, the use of vocabulary notebooks does not appear to have, as is suggested in the literature, promoted a sense of learner autonomy, as the following comments indicate:

Student H: As we are under discipline, we feel it compulsory to keep this vocabulary notebook, and it affects our learning positively. If it was not compulsory, none of us would keep it. Maybe one or maximum two of us would do.

Student B: For example, I remember one of my English teachers telling us to write unknown words at the back of our notebooks, but as she never checked it I stopped writing them after two weeks. Everything must be under discipline. It is not enough to say that it is useful.

Only two students indicated that they would continue using the notebook, even if the teacher did not give any grades for it; however, Student P does not consider it a fully independent learning tool.

Student P: I would keep it because our teacher told us that it is useful, but I must see my mistakes, so it must be checked. She may or may not give marks.

Several students commented on the difference between their vocabulary notebooks and a dictionary, as the following student describes:

Student G: As we made these vocabulary notebooks on our own, we know what is there and where it is, and we can find it easily. We know that the information we are looking for is under this word or that word, but the dictionary is not like this. We must search whether it is under this word or another word. It is a waste of time, and the person gets bored while looking up in a dictionary.

However, some students also commented on how the vocabulary notebook and associated activities enhanced their ability to use dictionaries:

Student Q: I can find an unknown word more quickly.

Student G: I can use a dictionary better now.

The students also commented about the effect of the use of vocabulary notebooks on their receptive knowledge of vocabulary:

Student E: I could not use the words while speaking, but I could understand the words while listening. For example, *bother* means *rahatsız etmek*. Our teacher used it, and I understood.

Student P: As we always did something with the words, we acquired them subconsciously. When I see the words in a different context, I can easily recognize them.

One more positive point about vocabulary notebooks raised by the students was that in recording the words of the week in their notebooks, they learned many other new words, in addition to the target words. Their comments below illustrate this point:

Student L: While we were studying one word, we learned many words at the same time, such as synonyms, antonyms, derivations.

Student B: Words are stuck in our minds. It is a good tool. We learned many words from one. Even while making sentences with the twenty words we looked up in our dictionaries, and we learned many words.

Some negative points about the vocabulary notebooks were also raised during the interviews. These comments seem to be directed at the actual process of keeping a vocabulary notebook:

Student M: The thing that I did not like is looking in dictionaries every evening and writing the information in the notebook. For example, some of the words seem to be the synonyms of the words that I was looking for, but they have different meanings in sentences. Therefore, it was difficult to find synonyms.

Student D: I hate looking up words in a dictionary, and writing word knowledge every day.

However, one student, who apparently valued the vocabulary notebook, complained about a specific aspect of the vocabulary notebook implementation procedure:

Student C: For example, as the teacher collected the notebooks on Fridays, I could not study and complete the missing information in the weekend, so neither my teacher nor I could benefit from it.

The students' comments give an encouraging picture of students' reactions to a vocabulary notebook implementation, even though there are some doubts about whether the program has fulfilled its promises in enhancing learner autonomy.

5 The teacher's attitude to vocabulary notebooks

a Effect of vocabulary notebooks on vocabulary acquisition: The teacher's impression of the effect that the vocabulary notebook program had on her

students' vocabulary acquisition was very positive. She appeared convinced that they had benefited a great deal from using the notebooks, and she felt that this benefit was evident in the classroom, as her comment below illustrates:

They benefited a lot. They could remember the words as they studied on them a lot, and they could use them in sentences or in their speeches. For example, particularly in our *Quartet* [the main course book] lessons I realized that they could use the words productively. I am not talking about the speaking lesson. I am talking about the speaking activities that I did in my lesson. As the vocabulary notebook included the words in their main course, they did not have any difficulty in understanding the passages that consisted of the vocabulary notebook words. They could even use the synonyms they found for the target words.

b Learner autonomy: The teacher's opinion as to whether the notebooks had enhanced her students' sense of autonomy matched those of her students. She agreed that the students would probably not continue to use the notebooks if she did not continue to collect them, check them, and grade them.

c Disadvantages of vocabulary notebooks: The only disadvantage mentioned by the teacher in the course of the interview was the fact that the implementation required quite a lot of time, particularly in class. This was a major concern to her because of institutional requirements regarding syllabus coverage. She found it difficult to stick to her required curriculum, and still make time for the vocabulary notebook and associated activities. Her comment below illustrates this point:

I had to create extra time for the vocabulary notebook. You must spend at least one hour on that. It may look like a 10-minute job, but it is not that easy. It may last for 10 minutes, for example, if you hand the puzzle in the first 10 minutes. Yet, I thought that doing the activity with the manipulation of the words would work better. Activities and the notebooks are complementary.

d Intention to continue: When asked whether she would continue to implement the vocabulary notebook program in her class, she expressed her desire to continue, but reiterated her concern about being able to fit it into the required curriculum:

I would like to continue, as I have told you before we cannot spend much time on vocabulary because of our curriculum. I hope that my students would like to continue, too.

Again, the teacher's reaction to the vocabulary notebook implementation is encouraging, but her concerns about the time it requires are important ones. In addition, her comments reinforce the lack of effect on learner autonomy seen in the students' comments.

IV Discussion

1 The findings

In terms of the first research question, the quantitative results of the study tend to support the effectiveness of vocabulary notebooks on both receptive and productive acquisition of target vocabulary words. Not only did the treatment group out-perform both control groups on the receptive and controlled productive vocabulary tests, but this group also demonstrated more receptive and productive knowledge of target words, in contrast to words that were also included in the lessons, but were not recorded in the vocabulary notebooks. In addition, the treatment group was able to use some of the target words in free writing, an ability that the control groups did not exhibit. Thus, it appears that one implicit advantage of vocabulary notebooks, that of enhancing vocabulary, has been empirically confirmed by this study.

It might be claimed that the positive effects seen on vocabulary acquisition in the treatment group are simply a result of enhanced attention to and an increased focus on the target words through classroom activities. This may, in fact, be the case; however, it should be pointed out that all of the words appearing on the tests were identified as vocabulary words in the lesson materials, and that attention was also given to these words in the control groups. When the teachers of the control groups were asked how they dealt with the vocabulary words in the units, they said that they generally wrote the target word and its different forms, such as verb form and adjective form, on the board. They sometimes asked the students to make sentences with the words, and sometimes they made sentences for the students. When the word was not difficult to understand in English, the teacher gave its meaning in the target language, but if it was difficult, the teacher gave a first-language (Turkish) translation. Thus, even though there was a difference in the amount of attention given to the target words, it is clear that there was some attempt at direct teaching of vocabulary in the control groups, with the aim of intentional learning on the part of the students. This way of dealing with vocabulary words is not dissimilar to the way vocabulary is handled in many EFL classrooms. The results of this study demonstrate clearly that vocabulary notebooks are more effective in helping students to learn the target vocabulary in a set of course materials, in direct contrast to a more traditional method of addressing vocabulary.

One explanation for the difference seen in the treatment group between target and non-target words might derive from the Involvement Load Hypothesis (Laufer and Hulstijn, 2001), which posits that vocabulary is more likely to be retained when the involvement load – consisting of gradations of three components, namely need, search and evaluation – is higher. This hypothesis arose from a desire to operationalize the notions of ‘depth of processing’ (Craik and Lockhart, 1972) and ‘elaboration’ (Craik and Tulving, 1975), which have

been accepted as explanations for the observation that vocabulary words seem to be better retained when students are asked to work with and manipulate vocabulary words. In a study conducted to test the Involvement Load Hypothesis, Hulstijn and Laufer (2001) compared the vocabulary retention of EFL learners exposed to tasks with different involvement loads; they found that the tasks for which the involvement load was higher resulted in better retention of vocabulary words encountered in the tasks. While the involvement load of the tasks in which students were involved in the present study cannot be calculated, it would seem logical to assume that the involvement load of vocabulary notebook tasks was higher than that of the more traditional vocabulary instruction activities. This would thus provide a possible explanation for both the experimental group's better performance on target notebook words than non-notebook words, and for their superior performance over the control groups.

The second research question asked about the attitudes of students and teachers towards vocabulary notebooks. The interviews with the students revealed very positive attitudes about the usefulness of the vocabulary notebooks, even though they found the discipline required to maintain the notebooks quite difficult. They also appeared to enjoy using the notebooks in classroom activities, and fully grasped the utility of returning to the notebooks for various activities. The teacher also reported a positive attitude toward the implementation of vocabulary notebooks in her class; she appeared to enjoy the opportunity to focus on vocabulary in the classroom, and she was able to see how her students benefited. Her only reservation about the notebooks was the difficulty of fitting them in to a fairly rigid curriculum. The positive attitudes observed in this study mirror the findings of Fowle (2002) and Tezgiden (2006), in whose studies both teachers and students were positive about vocabulary notebooks.

It might also be said that the students acquired valuable training in, and appreciation for, the use of an effective vocabulary learning strategy. This, coupled with the positive attitudes towards the vocabulary notebook program, is a beneficial aspect that may impact language learning in general.

One promised benefit of vocabulary notebooks has been the enhancement of learner autonomy (Fowle, 2002), or at least independent vocabulary study (Schmitt and Schmitt, 1995). Unfortunately, in the context in which this study was carried out, this benefit was not observed, at least not in declared intentions to continue the use of vocabulary notebooks.¹ The students almost unanimously agreed that they would only continue their use of vocabulary notebooks if it were required, and that if they continued to use them, they wanted them to be checked, and graded, by the teacher. One aspect of the learning situation that emerged several times in the students' comments was the fact that they were learning English not because they desired to learn English, but because they were obliged to learn English. Thus, it seems that an essential ingredient for learner autonomy may be appropriate motivation

for learning. This relationship between autonomy and motivation is also suggested by Spratt *et al.* (2002), in contrast to the reverse relationship (autonomy promotes motivation) proposed by many researchers (Oxford and Shearin, 1994; Dörnyei and Csizér, 1998; Cheng and Dörnyei, 2007). It is interesting to note that, in this classroom, the fact that the students actually invested the time and effort into the vocabulary notebooks, to the extent that they were able to benefit from them, appeared to be due to their regard and affection for their teacher. It seems that teachers can provide their students with a reason for learning in the classroom, but the motivation for continuing that learning beyond the classroom probably needs to spring from a different source.

2 Limitations

The study has several limitations. Two control groups were included in the study to control for the possible effects of teacher differences. It was thought that if only one control group was employed, any differences between the groups might be explained by differences between the teachers. For the same reason, two treatment groups should have been included; with only one treatment group, there is the danger that the better performance of the students might simply be due to their positive feelings for their teacher. Another limitation of the study is its limited scope; a larger-scale study would have produced more generalizable results, and the inclusion of more proficiency levels would have contributed more to our knowledge about which students are most suited to a vocabulary notebook program. A final limitation has to do with the durability of the learning seen. Time limitations for the study did not allow a delayed posttest to be conducted; thus, it is not known whether the students' newly acquired knowledge of the target words was retained over time.

3 Pedagogical implications

The implications for teaching are clear: If we want our students to be able to recognize and use the vocabulary words we teach them, vocabulary notebooks are a useful addition to the language classroom, particularly for motivated students. However, if students are not motivated, it may be that vocabulary notebooks should be included as a graded part of the syllabus in order to be useful. The comments of one particular student make it clear how vocabulary notebooks ought to be implemented:

Student B: As we were not used to studying regularly, we found it difficult for these four weeks to write word knowledge regularly in our notebooks. If we had started to keep this tool from the very beginning, it would have been better. If we had got the discipline, we could keep on using our notebooks.

Incorporating a vocabulary notebook program into the curriculum right from the start of a term would give students the chance to develop a useful vocabulary learning habit, and perhaps increase the chances of its being used throughout the language learning process. In addition, the inclusion of the vocabulary notebook program in the curriculum, i.e. making time available for its implementation, would answer the concerns of the participating teacher.

As so eloquently stated by one of the students, vocabulary notebooks are personal things:

Student H: It is my own, my personal dictionary. We made it ourselves. We take care of it.

The vocabulary notebook as implemented in this study was perhaps more prescribed than advocates of vocabulary notebooks would approve of. Ideally, students would choose the words that they include in their notebook, structure the notebooks themselves, and choose what information should be included (McCarthy, 1990; Schmitt and Schmitt, 1995). Outside the context of a research study, vocabulary notebooks can be more personal, and perhaps more flexible.

Finally, it should be noted that the students in the experimental group learned only about 40% (on average) of the tested target words receptively, and about 33% productively. While these students learned more than the students in either control group, there were still many words that were not learned, in spite of being included in the vocabulary notebooks. This indicates that a vocabulary notebook, as implemented in this study, is clearly not the ultimate solution when it comes to vocabulary instruction, and that more attention should be focused on vocabulary instruction if students' vocabularies are to expand.

V Conclusions

In this study it has been demonstrated that the use of vocabulary notebooks was effective in enhancing vocabulary development, and that both teachers and students had positive attitudes to their use, as well as to their inclusion in classroom activities. However, in this setting, it appears that students will only use vocabulary notebooks if their teacher requires them to. In addition, it was found that the implementation of vocabulary notebooks requires that sufficient time be set aside in the curriculum to allow vocabulary notebooks to be incorporated into classroom activities.

Vocabulary notebooks have been advocated for many years, but their benefits have been largely descriptive or speculative. This study has demonstrated empirical support for those claims for the benefits of vocabulary notebooks in terms of vocabulary acquisition. Further, both students and teacher have exhibited positive attitudes to not only vocabulary notebooks themselves, but

also toward the inclusion of vocabulary notebook activities in the language classroom. One claim that has not been supported, however, is the idea that the use of vocabulary notebooks enhances learner autonomy. This study has shown that vocabulary notebooks themselves may not be enough to promote learner autonomy, in the absence of appropriate motivation for language learning. However, it seems safe to say that, in the right setting, vocabulary notebooks can enhance vocabulary acquisition. It remains to be seen whether they can also create more independent language learners.

Note

¹ However, as pointed out by Ledbury (personal communication), the students may be doing other things that may signal or lead to an increase in learner autonomy, such as using dictionaries more effectively, beginning to explore the environments around words, and being selective about which words to focus their attention on.

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Appendix 1 Vocabulary notebook implementation schedule

	Week 1	Week 2	Week 3	Week 4
Day 1	Introduction to vocabulary notebooks	20 target words introduced. Part of speech for 5 words recorded in class, remaining, and previous, for homework.	20 target words introduced. Collocational information for 5 words recorded in class, remaining (and previous) for homework.	20 target words introduced. Collocational information for 5 words recorded in class, remaining for homework.
Day 2	20 target words introduced. L1 translations/L2 synonyms for 5 words recorded in class, remaining for homework.	Derivations for 5 words recorded in class, remaining and previous for homework.	Derivations for 5 words recorded in class, remaining for homework.	
Day 3	L2 antonyms for 5 words recorded in class, remaining for homework.	L1 translations /L2 synonyms for 5 words recorded in class, remaining for homework.		
Day 4	Example sentences for 5 words recorded in class, remaining for homework.	Crossword puzzle.	Game based on Taboo®.	Matching exercise (target words and L2 definitions).
Day 5	Students share notebooks with their classmates, in pairs, and test each other on their notebook words. Teacher collects notebooks to check accuracy and completeness. Marks given for completeness.			

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