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Comparative study of acquisition rates between English vocabulary sets intentionally taught via post-reading writing and post-reading speaking skills

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Abstract:

The aim of this research study was to examine the differences, if any, in intentionally taught English vocabulary acquisition rates via post-reading writing and post-reading speaking skills. There were three groups to study. In the first group mostly post-reading writing skills, in the second group mostly post-reading speaking skills, in the third group reading, speaking and writing skills were applied. To measure the breadth of the vocabulary the following procedures were applied. 1) Translation into Turkish, 2) Fill in the blanks questions (productive writing skill), 3) Multiple choice questions (reading and understanding). To measure the depth of the taught vocabulary VKS (Vocabulary Knowledge Scale; Wesche & Paribakht, 1996) was applied. Besides, oral production with a visual support was measured according to a checklist. In the group, where the tests were piloted, reading, speaking, and writing skills were applied. The results showed that the two groups where reading, speaking and writing skills were practiced outperformed the reading/speaking and reading/writing group in the four tests except for the fill in the blanks test. The reading/writing group showed the best result in the fill in the blanks test. However, the delayed tests administered three weeks later demonstrated that the retention rate is higher in the reading/speaking group. The data also revealed that speaking activities generated more enthusiasm in comparison with the writing ones.

Keywords: *Vocabulary Acquisition, Integrated Skills, Assessment.*

1. Introduction

Considering foreign language learning in a formal setting it can be seen that writing and reading are the main skills through which language acquisition is taking place. There is an interesting observation made by Hyslop and Bruce (1988) who stated that the distribution of language skills is different in school and out of school. Their conclusions were based on findings

stated in a research study conducted by Wilt (1950), which show that people spend 45 percent of their time on listening, 30 percent on speaking, 16 percent on reading, and 9 percent on writing.

Looking at the aforesaid figures one can see the short period of time devoted to speaking in an academic setting. Listening and speaking are the skills that are not practiced widely. Although this may be valid for other disciplines, in a language class focusing on all the four skills make language learning more complete.

With a demand for staff that can collaborate with counterparts from foreign countries, the number of people who want to learn a foreign language is constantly growing. Warschauer (2000) argues that taking into consideration technological developments and dynamics of world population, the role of English to cooperate and communicate will increase. According to Genç (2012) the first foreign language being asked for in job vacancies from fifteen different sectors is English. In this context it is highly important to apply effective techniques in teaching English in order to increase opportunities for job candidates.

Nation (2001) states that one of the effective ways to set a short term goal in teaching a foreign language is to define the most frequent vocabulary that can enable learners to fulfill many tasks. A focus on the most needed and most frequently used words will allow learners to gain time when learning a foreign language. Due to the gradual nature of vocabulary acquisition the matter of time might be especially important. In one of his research studies Schmitt (1998) calls the acquisition of second language vocabulary incremental. The use of the term ‘‘incremental’’ implies the process of internalizing a foreign word.

Learning and teaching a language is a process with mutual efforts. Undoubtedly all parties involved in the process have to contribute greatly to achieve a target. Besides, one should keep in mind a number of classes per week during which a teacher should fulfill numerous tasks regarding language activities in addition to vocabulary work. So keeping in mind the importance of vocabulary learning, knowing what words to teach and how to teach them effectively will help teachers and learners manage their time more constructively.

Vocabulary practice is one of the most important components of vocabulary knowledge construction. Although there is not only one way of achieving vocabulary mastery, there might be an outline that would guide teachers and students in pursuing the target of vocabulary acquisition. In course books vocabulary sets are usually practiced through written exercises involving matching and filling in the blanks with no distinct focus on oral production of new lexis. Practicing a word in written form is more likely to lead to written mastery, whereas oral production might be left untrained. Thus, including activities with focus on post reading speaking activities in this research study may help us understand whether practicing a word verbally is more likely to support a student’s mastery to use a word both in written and oral form. Application of the tests immediately after the treatment and three weeks later gives an opportunity to compare the rates in vocabulary attrition after applying three different methods.

The purpose of the study is to define any differences in vocabulary acquisition and vocabulary attrition after applying activities with post reading writing skills and post reading speaking skills in two groups. The following research questions guided this study:

1. Are post-reading writing skills more effective than post-reading speaking skills in supporting acquisition of intentionally taught vocabulary?
2. Is vocabulary retention more significant when applying post-reading speaking skills than in post-reading writing skills in supporting acquisition of intentionally taught vocabulary?

2. Literature Review

According to Waring and Nation (1997) 3,000 to 5,000 word families is sufficient to set up a foundation for comprehension. They state that there are 54,000 word families in English and 20,000 of these word families are recognized by educated native speakers. An idea of the approximate number of the vocabulary the students you are going to teach know may help you decide on their proficiency level, especially when you meet the class for the first time.

At the end of the 20th century according to Council of Europe (2016) a set of descriptions was developed to define how learners of foreign languages can perform on the basis of several levels with the following letters assigned to each level A1, A2, B1, B2, C1, C2. Since the participants of this study are beginners, on the basis of the study by Milton and Alexiou, (2009) it might be suggested that A1 level learners know not more than 1500 lemmas.

It is thought to be more expedient to integrate the skills when practicing vocabulary, thus to reflect the more natural flow of language acquisition. Integrated skills are a part of a whole language approach. According to Bergeron (1990, p.319), whole language consists of the use of real literature and writing including meaningful and collaborative experiences to foster students' motivation and interest during learning. Taking into consideration that vocabulary knowledge is both receptive and productive it can be assumed that employing receptive and productive skills when teaching vocabulary makes it possible to focus on form recognition, meaning, and pronunciation at the same time. ''Rather than being forced to plod along through a course that limits itself to one mode of performance, students are given a chance to diversify their efforts in more meaningful tasks''(Brown, 2001, p.233). Being able to apply a word using various language skills is more likely to provide a quicker retention by addressing a greater amount of learning intelligences. According to Gardner's theory (1983), teaching can be presented in many different ways. These multiple methods appeal to multiple intelligences. Jack (2015) emphasizes that various ways of interaction with a word helps its internalization.

There have been interesting vocabulary acquisition studies conducted in Turkey. For instance, in a study by Ferrell Tekmen and Daloğlu (2006) incidental vocabulary acquisition, level of proficiency and word frequency were examined. According to the aforesaid study, groups with more advanced levels acquired more vocabulary. Another study conducted by Merç (2008) investigated the difference between vocabulary acquisition rates with explicit and implicit teaching. In the aforesaid study target vocabulary was taught directly through definitions in one group and through a context in another group. The assessment of the treatments was conducted via immediate posttest and a retention test that took place two weeks later. According to the results of the study, the group that was learning words on the basis of context performed better than the group that learnt the words with definitions. These results were confirmed by a retention test.

Regarding vocabulary learning strategies employed by learners one could have a look at a study by Subaşı (2014), in which the researcher came to the conclusion that the participants were using context and dictionaries to understand the meaning rather than rote learning. Another study conducted by Durmuşoğlu Köse and Yüksel (2013) emphasizes the multidimensional nature of vocabulary knowledge. As results of the study show, in spite of knowledge of academic vocabulary, the number of academic words was limited in essay writing. According to the results of the study, it could be concluded that receptive and productive knowledge of a word differ. Tokaç (2005) conducted a study to investigate the difference in teacher led vocabulary acquisition and computer assisted vocabulary learning. The results of the study showed that there was no a significant difference between the two methods.

There have been long discussions whether explicit or implicit vocabulary teaching is more effective. McKeown and Beck (2004) defend explicit vocabulary teaching. Marzano and Marzano (1988) argue for a cluster approach based on semantic relations when teaching vocabulary. Zeeland and Schmitt (2013) conducted a study, where they found that for incidental vocabulary acquisition through listening, a word should be encountered more than fifteen times. According to a study conducted by Pigada and Schmitt (2006), incidental learning while reading improved knowledge of target words by 65%.

Koizumi and In'nami (2013) found that vocabulary knowledge significantly improves speaking proficiency. Eide (2010) conducted a research study in Norway to compare reading only and reading plus exercises in vocabulary acquisition. The results of the study show that reading plus exercises lead to more effective vocabulary acquisition in comparison with reading only. Brown, Waring and Donkaewbua (2008) investigated incidental vocabulary acquisition rates with reading, reading-while-listening, and listening treatments. According to the results of the study, in all the three treatments most of the vocabulary was not acquired. According to a study conducted by Joyce (2015) in Japan the participants' performance was much better when translating the target words into L1 in comparison with other types of vocabulary testing.

However, there is not much research regarding integrated skills in supporting vocabulary acquisiton in large multilevel classes. Therefore, the present study tries to investigate vocabulary acquisition rates via reading/writing/speaking skills, reading/writing skills and reading/speaking skills in classes with approximately 30 pupils in each.

3. Methodology

Research Design

The present research study is a comparative inquiry into the groups where different treatments were applied. The cross data comparison allowed drawing conclusions about degrees of effectiveness of the treatments. The study had a quasi-experimental design. The most significant peculiarity of experimental designs among other research designs is its randomly assigned treatments (Gay, Mills & Airasian, 2009, p.241). However, according to Mertens (2005), in educational and psychological research it is impossible to assign treatments randomly, so quasi-experimental designs emerged. Ary, Jacobs, and Razavieh (2002) view quasi-experimental designs, as designs, where random assignment of participants to groups is not possible (p.316). In this study the researcher matched the groups with the treatments on a random basis but the students remained the same in their own classes. Working in a school the researcher studied the existing classes according to the lesson program without any changes.

The groups in this study were intact classes that had been set up randomly at the beginning of the year. So, the study had a quasi-experimental design, where five quantitative methods and one qualitative method were applied. The reason, why the researcher used mixed methods with quantitative techniques predominating, is that the participants and the researcher are more accustomed to taking tests, thus more trained in quantitative methods.

Setting and Participants

The research study could be generalized for a school similar to the one where the study took place, namely a state high school in İstanbul, Turkey. Multilevel classes were set up randomly at the beginning of the academic year. The number of students in one class varies from

29 to 35. The classrooms are equipped with smartboards. Reading, writing, listening and speaking skills, along with vocabulary and grammar knowledge are practiced in English classes. Reading and writing skills are easily practiced during lessons.

Ninth graders, who have six hours of English per week, participated in the study. 117 students participated in the pretest. All of them are male students. Their ages vary from 14 to 15. All students are native speakers of Turkish. All of them have studied English for four years at middle school so they have some basic knowledge about grammar and most frequent words. When asked about English they usually say that they want to learn the language.

According to the results of the pretest 71 students were identified as the ones who didn't know the target words. When the post tests were conducted with a 3 week interval the number of students whose answers were taken into consideration for data analysis decreased to 43 since some submitted tests were either incomplete or the students were absent on one of the days when the post tests were being conducted.

Data Collection Procedures

Four types of sampling were used in this study. The pretest was conducted on the basis of convenience sampling. The researcher conducted the pretest for all the students available in the four classes. Since the study had a quasi-experimental design without random assignments of the participants, it was highly important to identify the equivalence of the groups. The students, whose test results were used in the data analysis, were selected on the basis of purposive sampling. The criterion for the sample at this stage of the study was the fact that the participants did not know the target words. To identify this, a pretest with translation of the target words into Turkish was conducted. The study also had a comprehensive sampling. At the second stage of the study all participants who didn't know the target words were included in the study. Assignment of treatments was done on the basis of simple random sampling. Reading/speaking, reading/writing, and reading/speaking/writing treatments were assigned to the groups randomly.

To collect quantitative data for the study a pre-test and post-tests were used. Observations written down after classes were used for qualitative data. To measure the breadth of the vocabulary the following post tests were administered. (a) Translation into Turkish, (b) Fill in the blanks questions (productive writing skill), (c) Multiple choice questions (reading and understanding). To measure the depth of the taught vocabulary the following procedures were applied: (a) VKS, (b) Oral production with a visual support checklist. The aforesaid tests were conducted immediately after the treatment that lasted for two weeks. Besides, the same posttests were administered on the third week after the treatment to measure retention rate among the groups. The students were also asked to produce a target word in a picture naming task. This was done to balance the skills while testing and see the learnt vocabulary being orally produced.

In the study, the treatment included activities where reading was supported with writing and reading supported with speaking. Taking into consideration background information regarding the students' proficiency level it was decided to apply intentional vocabulary teaching both when introducing and practicing the vocabulary through the skills being investigated. Although it is inevitable that the listening skills are employed as well, it was used only according to the textbooks with the main focus on reading supported with writing and reading supported with speaking activities.

The data for this research study were collected through a pretest, 15 minute vocabulary sessions per one lesson that lasted over a period of two weeks, to be more specific, 3 hours per group in total, posttest 1 and posttest 2. The pretest was a translation test. The posttest 1 and the

posttest 2 were the same and included a translation test, a fill in the blanks test, a multiple choice test, the Vocabulary Knowledge Scale and an oral production checklist. Each test aimed at measuring a different dimension of vocabulary knowledge. Translation of a word was used for measuring unprompted word recognition. The fill in the blanks test was used for measuring productive skill. The multiple choice test was used to measure prompted word recognition. The Vocabulary Knowledge Scale was used to measure a particular stage of word knowledge. The oral production checklist was used to measure students' ability to produce the target vocabulary orally.

Data analysis procedures: The researcher used descriptive statistics (means and standard deviations) to analyze the quantitative data, specifically, the translation into Turkish test, the fill in the blanks test, the multiple choice test, and the oral production checklist. Marking was done as follows: the correct answers in the translation, multiple choice, fill in the blanks tests and oral production checklist were counted as one point. The scores were computed through SPSS and the means were compared. Specifically, the Kruskal Wallis test was used to define whether there were any significant differences between the scores across the four tests for each mode. The Kruskal Wallis test is applied with 3 or more groups with less than 30 participants. According to Hinton, McMurray, and Brownlow (2014), the Kruskal Wallis test is used for a nonparametric analysis with more than two samples (p.262).

Wilcoxon matched pairs tests were carried out to see if there were any significant differences between the scores comparing the two data times for the four tests at each mode. Wilcoxon matched pairs test is a nonparametric test applied to compare sample medians of two groups (Jackson, 2012, p.266). In addition, this test is used to compare two sets of scores from the same participants (Greene & D'Oliveira, 2005, p.27).

Marking of the categories in the VKS was done on the basis of Table 1 and Table 2.

Table 1. Vocabulary Knowledge Scale **(**Wesche and Paribakht, 1996)

I. I don't remember having seen this word before.
II. I have seen this word before, but I don't know what it means.
III. I have seen this word before, and I think it means _____ (synonym or translation).
IV. I know this word. It means _____ (synonym or translation).
V. I can use this word in a sentence: _____ (write a sentence).

Table 2. Meaning of Scores in Vocabulary Knowledge Scale (Wesche and Paribakht, 1996)

Score	*Category*
1	The word is not familiar at all.
2	The word is familiar but its meaning is not known.
3	A synonym or translation of the target word is correct.
4	The target word is used with semantic appropriateness in a sentence.
5	The use of the target word is both grammatically and semantically correct in a sentence.

The data analysis of the vignettes was conducted according to Gay, Mills and Airasian's (2009, p.454) recommendations:

1. Common items or topics that were noticed by the researcher were listed.
2. The items were grouped into categories.
3. The categories were organized into patterns.

The researcher read the notes many times very carefully focusing mainly on the setting and students' attitude. After scrupulous examination of the notes the researcher grouped the information under the aforementioned categories. Generalizations based on the coding of the setting category and students' attitude category were drawn and compared across the groups.

4. Results

The pretest consisted of 30 verbs that were found in the tasks of the first unit of the Ortaoğretim English Student's Book by Gezmiş Ceyhan & Özmen (2015, pp. 9-22). It was assumed that knowledge of the vocabulary being used in the tasks might be helpful for the students. The students were asked to translate the verbs into Turkish. In Table 3 one can see the least recognized verbs and the number of students who knew the verbs.

Table 3. Students' Knowledge Regarding the Verbs with Least Recognition on Class Basis in Numbers.

	Understand	Describe	Draw	Bring	Match	Correct	Hear	Meet	Tell	Look
Class 1 n=29	4	5	5	0	0	4	2	2	7	0
Class 2 n= 32	9	1	2	1	0	0	0	0	2	0
Class 3 n= 25	2	0	3	1	1	0	1	0	1	1
Class 4 n= 31	4	2	7	3	3	0	4	2	7	0

The students' pretest sheets were thoroughly checked. The students who did not know the target verbs from each class were identified. Although all the students were getting treatment and answering the tests, only answers of the students who were identified as the ones who had not known all of the nine verbs (The verb ''To look'' as in ''It looks nice.'' was considered to be too difficult for the students and was not included in the study.) and who participated in the posttest 1 and posttest 2 were considered during the data analysis.

To answer the first research question whether post-reading writing skills are more effective than post-reading speaking skills in supporting acquisition of intentionally taught vocabulary, receptive and productive skills were tested. Namely, translation into Turkish, fill in the blanks and multiple choice tests were conducted. Moreover, a checklist to measure oral production was administered.

Table 4 presents the data for the three input modes in the four groups and the four test types at the immediate posttest (i.e. at Posttest 1). S.D: stands for standard deviation. The data are presented graphically in Figure 1. Data for the retention tests are reported later.

Table 4. Mean scores for the four groups for the three tests by the three input modes at Posttest 1

	Reading/writing/ speaking group A (pilot) n=13	*Reading/writing/ speaking group B* n=10	*Reading/speaking group* n=10	*Reading/ writing group* n=8
Translation Mean	*7,3*	*7,7*	*4,8*	*6,88*
S.D.	*1,45*	*1,57*	*2,15*	*2,997*
Fill in the blanks Mean	*7,38*	*6,9*	*5,9*	*8,75*
S.D.	*1,5*	*2,38*	*3,63*	*,46*
Multiple choice Mean	*8,46*	*6,3*	*4,9*	*5,38*
S.D.	*,78*	*3,4*	*2,64*	*2,5*
Oral production Mean	*6,38*	*8,2*	*4,5*	*6,38*
S.D.	*2,18*	*,92*	*3,21*	*2,2*

According to the translation test, 81 % of the verbs in the reading/writing/speaking group A (pilot), 85,6 % of the verbs in the reading/writing/ speaking group B, 53% of the verbs in the reading/speaking group and 76% of the verbs in the reading/writing group were learnt. According to the fill in the blanks test, 82% of the verbs in the reading/writing/speaking group A (pilot), 76,7% of the verbs in the reading/writing/speaking group B, 65,6% of the verbs in the reading/speaking group, 97% of the verbs in the reading/writing group were written correctly. The 97 % percent of success in fill in the blanks test with the reading/writing group, where controlled orthographic skills were required, may be explained by the intensive training in writing. According to the multiple choice test, 94% of the verbs in the reading/writing/speaking group A (pilot), 70% of the verbs in the reading/writing/speaking group B, 54 % of the verbs in the reading/speaking group and 60 % of the verbs in the reading/writing group were answered correctly. The oral production checklist showed gains of 71% of the verbs in the reading/writing/speaking group A (pilot), 91 % of the verbs in the reading/writing/speaking group B, 50% of the verbs in the reading/speaking group, and 71 % of the verbs in the reading/writing group.

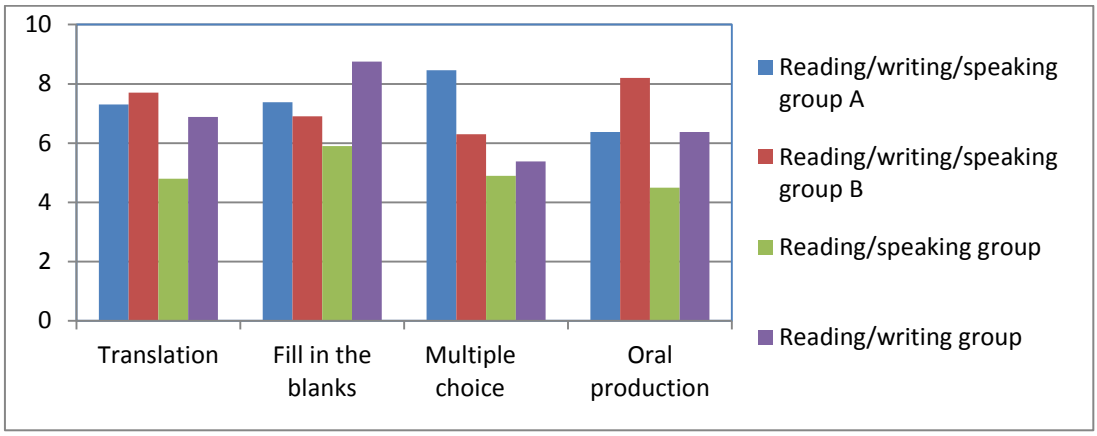


Figure 1. Overall mean scores for the four tests by the three input modes at Posttest 1.

Taking into account the number of participants and the number of the groups, nonparametric independent samples test, specifically, Kruskal Wallis test was conducted. Kruskal Wallis test results revealed significant differences between the translation (TR), fill in the blanks (FB), multiple choice (MC), and oral production checklist (OP) for the three modes (reading/writing/speaking, reading/speaking, and reading/writing modes). Significant differences in test scores emerged in the three modes for the Tr. test *p<.028*, FB test $p < .043$, MC test p<.001, and OP checklist p<.032. To determine where the differences between the tests were, post hoc tests were conducted for the four tests by three input modes. The results are presented in Table 5.

Table 5. P Values on the Basis of the Groups According to the Test Results

	Reading/writing/ speaking group A n=13				*Reading/writing/ speaking group B n=10*				*Reading/speaking group n=10*				*Reading/ writing group n=8*			
	T	*FB*	*MC*	*OP*	*T*	*FB*	*MC*	*OP*	*T*	*FB*	*MC*	*OP*	*T*	*FB*	*MC*	*OP*
Reading/writing/ speaking group A(pilot)	*X*				*,592*	*,741*	*,043**	*,055*	*,019**	*,741*	*,000*	*,230*	*,859*	*,022**	*,002**	*,986*
Reading/writing/ speaking group B	*,592*	*,741*	*,043**	*,055*	*X*				*,007**	*1*	*,119*	*,986*	*,759*	*,014**	*,242*	*,086*
Reading/speaking group	*,019**	*,741*	*,000**	*,230*	*,007**	*1*	*,119*	*,986*	*X*				*,024**	*,014**	*,766*	*,294*
Reading/ writing group	*,859*	*,022**	*,002**	*,986*	*,759*	*,014**	*,242*	*,086*	*0,24*	*,014**	*,766*	*,294*	*X*			

*The significance threshold is determined at .05

TR -Translation
FB - Fill in the blanks
MC - Multiple choice
OP - Oral production

To analyze the setting and the student's' attitude towards the modes of teaching the researcher wrote vignettes after lessons. The content analysis was conducted according to the setting category and the students' attitude category. After analyzing the notes it was found that the four groups were very enthusiastic about the activities during the treatment. An element of novelty had a positive effect on the students' participation. Active participation of the students played a positive role in the acquisition of the target vocabulary. This can be seen in the following comments regarding the setting category.

> *Visual slides drew students' attention. They were eager to guess the meanings. It was not easy to manage the class since most of them wanted to answer. (October 12, 2015;Reading/writing/speaking group A, pilot)*

> *The students were willing to come to the board and perform the tasks. The teacher had to be very careful when calling on the students trying to address all of them, since most of students wanted to participate or be leaders in a task.(October 13, 2015; Reading/writing/speaking group B)*

> *The students were participating in the activities enthusiastically. The atmosphere of the class was dynamic and lively. (October 14, 2015; Reading /speaking group)*

The activities that required movement were beneficial for general flow of the session since made most of the students engaged and willing to participate. (October 27, 2015; Reading/writing/speaking groupB)

On the basis of the notes, it can be stated that the reading/speaking group encountered a more unaccustomed approach since they were practicing the target verbs through speaking skills without writing them down. During the speaking activities there was some noise, which needed to be addressed. The teacher used a counting technique to calm down the students. Classroom management in large classes is of vital importance since uncontrolled noise may easily turn into a disruption. The students' attitude category was a very important aspect to be observed by the researcher, as she believes that intrinsic motivation is vitally important for learning. This category is reflected in the following comment:

Taking into consideration the age of the students, they were very surprised when asked to participate in games. Speaking activities were met with more enthusiasm rather than writing ones.(October 13, 2015; Reading/writing/speaking group A, pilot)

Games presented a particularly interesting part in the research study. The students were both surprised and excited. Especially with the reading/speaking group the teacher was very happy to be able to engage unwilling students as well.

Using reading, speaking and writing activities gave a chance to address more dimensions of word knowledge. Besides, students with different learning styles were addressed. In high school, sometimes it may be difficult to engage students in writing, so teaching words through an alternative way to writing could be a good chance to engage students. The reading/writing group practiced the target verbs via the skills the students are very familiar with. The students in the reading/writing group were less surprised and more prepared to participate.

The reading/writing group participated in the writing activities in a usual mode without asking many questions. The students were participating in the activities in a regular mode. (October 14, 2015; Reading/writing group)

All in all, the students in all groups were engaged in the activities quite well. After the treatment, students, from the classes involved, kept on asking if we were going to continue with the studies.

To answer the second research question of the study if vocabulary retention more significant when applying post-reading speaking skills than in post-reading writing skills in supporting acquisition of intentionally taught vocabulary, the same post tests were administered after three weeks from the treatment. The retention data expressed in means for the three input modes at the two test times are shown in Table 6.

Table 6. Retention Data by Input Mode over the Two Test Periods

Mode	*Immediate posttest*				*Three week delay*			
	T	*FB*	*MC*	*OP*	*T*	*FB*	*MC*	*OP*

Reading/writing/ speaking group A n=13	*7,3*	*7,38*	*8,46*	*6,38*	*6,77*	*7*	*7,85*	*4,85*
Reading/writing/ speaking group B n=10	*7,7*	*6,9*	*6,3*	*8,2*	*5,6*	*6,1*	*5,5*	*4,2*
Reading/speaking group n=10	*4,8*	*5,9*	*4,9*	*4,5*	*4,8*	*5,5*	*4,7*	*4,3*
Reading/ writing group n=8	*6,88*	*8,75*	*5,38*	*6,38*	*6,25*	*7,5*	*5,88*	*5,25*

TR-translation
FB-fill in the blanks
MC- multiple choice
OP- oral production

Wilcoxon matched pairs tests were carried out to determine if there were any significant differences between the scores across the two data times for the four tests for each mode. Here are the results: on the translation test, the reading/writing/speaking group A (pilot), $p <$ .375, the reading/writing/speaking group B, p<.027, the reading/speaking group, p<.673, the reading/writing group, p<.102; on the fill in the blanks test the reading/writing/speaking group A (pilot), $p <$ .713, the reading/writing/speaking group B, p<.396, the reading/speaking group, p<.572, the reading/writing group, p<.197; on the multiple choice test, the reading/writing/speaking group A (pilot), $p <$ .167, the reading/writing/speaking group B, p<.474, the reading/speaking group, p<.633, the reading/writing group, p<.673; on the oral production the reading/writing/speaking group A (pilot), $p <$ .031, the reading/writing/speaking group B, p<.012, the reading/speaking group, p<.732, the reading/writing group, p<.497. Interestingly, the retention rate in the reading/speaking group was the highest.

Among the other tests, the VKS was administered two times to define vocabulary knowledge stages and its retention. Analyses of immediate posttest and three-week delay posttest for each group word were conducted to follow the retention rates for the three modes of teaching. These are presented in Table 7.

Table 7. Frequency Distributions of Posttest 1 and Posttest 2 for the Four Groups. VKS (Wesche & Paribakht, 1996)

		Scoring category				
		1	2	3	4	5
Reading/writing/ speaking group A n=13	*Posttest 1**	*8,55%*	*12,82%*	*58,97%*	*17,09%*	*2,56%*
	Posttest 2	*5,13%*	*22,22%*	*72,65%*	*0%*	*0%*
Reading/writing/ speaking group B n=10	*Posttest 1*	*24,44%*	*6,67 %*	*31,11%*	*8,89%*	*28,89%*
	*Posttest 2**	*25,56%*	*15,56%*	*50%*	*6,67%*	*2,22%*
Reading/speaking group n=10	*Posttest 1**	*30%*	*24,44%*	*37,78%*	*3,33%*	*4,44%*
	*Posttest 2**	*13,33%*	*32,22%*	*43,33%*	*7,78%*	*3,33%*

Reading/ writing group n=8	*Posttest 1*	*33,33%*	*11,11%*	*38,89%*	*16,67%*	*0%*
	Posttest 2	*8,33%*	*23,61%*	*65,28%*	*1,39%*	*1,39%*

* Totals do not equal 100% because of rounding.

The results of the two reading/writing/speaking groups moved significantly forward on the scale at the posttest 1 in comparison with the other two groups where only two skills were engaged. Specifically, in the reading/writing/speaking group A 78,62 % of the students selected ‘‘Known’’ categories (3-5), in the reading/writing/speaking group B 68,89% of the students selected ‘‘Known’’ categories (3-5), whereas in the reading/speaking group only 45,55% of the students selected ‘‘Known’’ categories (3-5) and in the reading/writing group 55,56% of the students selected ‘‘Known’’ categories (3-5).

Nevertheless, the results of the posttest 2 show that learning of reading/writing group and reading/speaking group is more stable and durable. Namely, in the posttest 1,78,62 % of the students in the reading/writing/speaking group A (pilot) selected ‘‘Known’’ categories (3-5), whereas in the posttest 2, 72, 65% of the students selected ‘‘Known’’ categories (3-5).

In the first posttest, 68,89% of the students in the reading/writing/speaking group B selected ‘‘Known’’ categories (3-5), whereas in the posttest 2, 58,89 % of the students selected ‘‘Known’’ categories (3-5). In the reading/speaking group, in the first posttest 45,55 % of the students selected ‘‘Known’’ categories (3-5), but in the posttest 2, 54, 44% of the students selected ‘‘Known’’ categories (3-5). As to the reading/writing group, 55,56% of the students selected ‘‘Known’’ categories (3-5) in the first posttest and 68,06 % of the students selected ‘‘Known’’ categories (3-5) in the second posttest.

So, in the reading/writing/speaking group A (pilot) there is a decrease in the word recognition by 5,97%, and in the reading/writing/speaking group B by 10%. However, in the reading/ speaking group and reading/writing group there is an increase in word knowledge by 8,89% and 12,5% respectively. Increase of scores over time, even though the students were not exposed overtly to the target vocabulary, have taken place in some other vocabulary studies as well (e.g. Brown, Waring & Donkaewbua, 2008). This might be explained by the continuing development of vocabulary knowledge of the students who scored higher in the delayed test.

As can be seen from the VKS, the vocabulary gains did take place at the three modes of teaching. The three modes of treatments provided gains to different degrees, though. In addition, the results of the scale are in harmony with the results of TR, FB, MC and OP for the groups, which shows that the highest retention rate was assessed mostly in the reading/speaking group. However, although the results of the three week delayed VKS for the reading/writing group showed increase in vocabulary knowledge, only the result of MC for the reading/writing group confirmed it, whereas the results of TR, FB, and OP for the reading/writing group showed a decrease in knowledge over time.

On the whole, the results of the study have shown that there are gains in all modes of teaching. Furthermore, the treatment was met with enthusiasm and interest by all groups, with different degrees though. Moreover, groups practicing the target vocabulary via reading, writing and speaking skills learnt more vocabulary at different levels of knowledge, except for the fill in the blanks test, where the reading/writing group was more successful. As to the retention tests, the delayed assessment suggests that learning in the reading/speaking group was more durable.

5. Discussion of the findings

According to the results of the study the two groups where three language skills were applied outperformed the reading/speaking and reading / writing group in the four tests except for the fill in the blanks test, where the reading / writing group showed the best result. That the involvement of more skills into learning leads to better results is in accordance with a study conducted by Akçin and Bektaş Çetinkaya (2014) with 11th graders in which an experimental group after having practiced Multiple Intelligence Theory based activities outperformed the control group, where more accustomed methods were applied, both in the immediate posttest and retention posttest (p. 71).

The findings of the present study also support the results of a study conducted by Atay and Kurt (2006) where an experimental group that practiced vocabulary through a set of written tasks and interactive tasks outperformed a control group that practiced written tasks only. As was found in the present study, the groups where the three language skills were practiced outperformed the groups where only two language skills were practiced. Interestingly, the reading/speaking group was outperformed by the other groups in the oral production as well. This finding might echo a result shown in a study conducted by El-Koumy (1998), in which it was shown that writing skill being practiced improved the speaking skill of an experimental group. As it was designed in the present study, the three groups had a writing element in the treatment and the reading/speaking group did not practice the writing skills. So it might be assumed that writing activities may reinforce oral production as well. The results of the aforesaid tests were in harmony with results of the Vocabulary Knowledge Scale (Wesche and Paribakht, 1996), which showed the greatest gain with the two reading/writing/speaking groups, less gain with the reading/writing group and the least gain with the reading/speaking group.

Undoubtedly, addressing multisensory styles of learning, the researcher was more likely to involve more learners and generate more interest, so it is reasonable that the reading/writing/speaking groups outperformed the rest of the groups in most of the tests. Besides, the highest result of the reading/writing group in the FB test confirms better performance in students' writing through reinforcement by practicing in writing. Moreover, it could be said that practicing speaking skills only through speaking may not be enough to improve speaking skills. Alternatively, teachers can use reading and writing skills as well to reinforce speaking skills. Finally, practitioners might be recommended to integrate all the skills by accommodating the chosen methodology of teaching to a particular group's needs.

The findings regarding the second research question, which suggest the highest retention rate of the reading/speaking group in the TR, FB and OP tests are in accordance with a study conducted by Alloway et al. (2005, p.417), according to the results of which, phonological awareness was linked to writing, reading and speaking skills. The authors of the aforesaid study argue that awareness of phonological structure may predict learning progress. According to the authors, being able to manage phonology might show long term success. In the present study the results of the reading/ speaking group, where the speaking aspect was focused on, showed more durable result as well.

Furthermore, the results of the retention tests, in which the reading/speaking group outperformed the other groups, are in harmony with the results of a study conducted by MacLeod, Gopie, Hourihan, Neary and Ozubko (2010), who argue that information being studied aloud is ''more accessible to retrieval'' (p. 681). Besides, the authors argue that ''the production effect is robust and substantial'' (2010, p. 681). In the present study the retention rates of the reading/speaking group were the highest in most of the tests. So, it might be assumed that the oral production element did have a robust effect on the students' retention.

The data of the delayed VKS echo some results in a study by Brown, Waring and Donkaewbua (2008), where some vocabulary gains increased over time. Specifically, in the mentioned study, where vocabulary acquisition was taking place through reading-only, reading-while-listening, and listening-only modes, there was an increase in some means scores in one week delay and three month delay tests. In the present study increase of vocabulary knowledge of some students in the reading/speaking and reading/writing groups took place as well.

Retention results for the TR, FB, MC and OP of the reading/speaking and TR, FB, and OP of the reading/writing group showed a decrease in knowledge over time, whereas the three week delayed VKS of the same groups report an increase in knowledge. This might be explained by the fact that the aforesaid tests (TR, FB, MC and OP) required higher level knowledge than the VKS.

The delayed MC test for the reading/writing group reported an increase in knowledge. The same finding is observed in the study conducted by Brown, Waring and Donkaewbua (2008), which also suggested an increase in vocabulary acquisition over time in the multiple choice test, whereas translation tests showed a decrease in mean scores at all the modes. Increase in knowledge for delayed MC test of the reading/writing group in this study might be explained by prompted recognition, which according to Pawlik and Rosenzweig (2000), requires ‘‘lower strength’’ than recall tests (p.127).

Moreover, observation notes showed that speaking activities were more dynamic. The students were eager to participate actively. The students from all the groups were more enthusiastic when completing the oral production tests rather than the other tests. So, an element of speaking included in vocabulary practice added enthusiasm to the flow of the activities. A similar finding was identified in a research study conducted by Oradee (2012), who studied the attitude of the 11^{th} graders with various levels of proficiency when teaching speaking skills through communicative activities. According to the aforesaid researcher, the participants enjoyed speaking activities, which fostered motivation and satisfaction (p. 533).

6.Conclusion

The findings of the first research question show that employment of multisensory activities might lead to more successful learning in several dimensions of vocabulary knowledge. Besides, taking into consideration various learning styles, it might be suggested that students' needs are more likely to be addressed through employing a spectrum of senses. This study also revealed that focus on writing activities is more likely to provide for better performance in writing. However, the practicing of speaking activities did not affect oral production in short term and the reading/speaking group didn't outperform the other groups in the oral production test.

Considering the retention tests it can be stated that although the reading/writing/speaking/ groups still had higher results in the tests in a three week period, the reading/speaking group had the highest retention rates at all of the tests, except for the MC test with the reading/writing group. Besides, increase in vocabulary gains was found in the reading/speaking and reading/writing groups in the three week delayed VKS, which could be explained either by overall development in language knowledge or the fact that the retention tests results (TR, FB, and OP), which showed a decrease in knowledge for all the tests, except for MC in the reading/writing group, require higher level of knowledge without prompted recognition rather

than the VKS. Moreover, the observation notes led to a conclusion that involvement of students into speaking activity generated more enthusiasm and dynamism of the classroom. Also, students' motivation expressed through active participation and lively atmosphere might have led to better retention. All in all, considering language skills when teaching vocabulary, it might be expedient to choose a balanced set of exercises to provide enjoyable, meaningful and durable learning. In this regard, this study might have implications for developing those kinds of activities that would suit a particular group of students, especially for students who study English in large multilevel classes. In-service training to widen teachers' skills in effective speaking activities for beginners might be particularly helpful in this regard.

7. Limitations of the Study

Although the research study has some interesting findings, the results should be suggestive due to the following limitations. First, because the study took place in a high school, its results could be generalized for high school students, namely ninth graders. Besides, all of them are male students. At the beginning of the academic year a diagnostic test was conducted to define the English language level of the students. According to the results of the test, there are beginners and students at elementary level. The students are not placed into classes based on the English language knowledge. So, there are multilevel classes that require differentiated instruction. The participants study two foreign languages at school. These are English and Arabic. Thus, the results should not be generalized for the entire population of ninth graders studying in İstanbul, either. The research was also limited by number of students' results taken into consideration since the retention tests were to be applied with the same participants.

8. Recommendations for Future Research

Taking into consideration the beginning stage of language acquisition being studied (in terms of teaching separate verbs), further research studies regarding vocabulary acquisition in a phrase, sentence and text stages can be eventually conducted with adult learners to observe long term patterns. This study was conducted with male ninth graders and it is not certain whether the results would have been similar, had girls participated in the study. Therefore, further studies might be conducted with participation of both female and male students. Furthermore, the present study examined verbs, so additional research studies could cover other parts of speech and observe their peculiarities during vocabulary acquisition. Besides, although the students were part of the learning process, no interviews were held to investigate the students' perception regarding the modes of teaching. In this regard learners' attitude from their point of view may be studied in the future. In addition to the aforementioned, a further research regarding a correlation between motivation and retention might be suggested.

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