

Methods of Target Vocabulary Previewing : the Relationship between Preferences and Academic Scores

Nicole Sonobe, Tomohiro Ogata

Department of Health and Nutrition Sciences, Faculty of Health and Nutrition Sciences, Nishikyushu University

(Accepted : January 10, 2017)

Abstract

Computer aided language learning (CALL) and more recently Mobile aided language learning (MALL) are an integral part of university English language learning education. Vocabulary activities are readily accessible online. Nowadays most students possess a smart phone and when language labs are unavailable such online activities can be completed in a regular classroom or at home for homework. Vocabulary previewing is an activity where students are required to preview target vocabulary for each unit prior to class. This reduces time spent on introducing target words during valuable class time. This paper compares two different methods of learning target vocabulary for homework : (1) a traditional method using a notebook, a pen, paper and a dictionary in semester 1 and (2) a CALL/MALL method using a free online app (www.quizlet.com) in semester 2. The subjects were all enrolled in English Conversation 1 in semester 1 and English Conversation 2 in semester 2. Both of these courses are electives for freshmen. Firstly, the subjects took a 100 question vocabulary test in class time at the end of semester 1 and, at the end of semester 2, after completing 10 units of the textbook per semester for homework. Students' test scores for semester 1 and 2 were recorded and compared to determine if there was a change in their vocabulary acquisition score. Secondly, at the end of semester 2, the subjects completed a Likert based questionnaire. The data from this questionnaire verifies student preference for using apps and it also showed that academic score averages for final vocabulary tests increased in semester 2. In particular, students who used computers to complete their homework achieved well above the average score.

Key words : vocabulary previewing, computer aided language learning, mobile aided language learning

1 Introduction

This study is an interim report of an on-going research project to discover whether or not Japanese university students studying English conversation get higher scores on their vocabulary tests when they use apps for previewing vocabulary homework as opposed to using a more traditional method of vocabulary acquisition for previewing vocabulary homework. To answer this research question some simple assumptions were made : 1. Using apps, devices, cell phones are second nature to the current generation ; 2. Students would be more inclined to study using free software ; 3. Students would find this option faster, easier and more enjoyable. The desired conclusion would be that the student preference would be for using online apps and as a result their scores on vocabulary tests would be higher. As an underlying base of this research, the aim of setting regular homework aims to inspire students be motivated to achieve mastery goals and performance goals¹⁾ and have a positive attitude towards learning²⁾.

Vocabulary acquisition research acknowledges receptive methods of achieving vocabulary knowledge³⁾. Receptive or passive knowledge is associated with listening and reading and involves being able to draw on vocabulary knowledge to encompass knowing the meaning of words once they have been presented. Passive tests for second language vocabulary acquisition are numerous with the most common being the Vocabulary Levels Test (VLT)⁴⁾ and the Vocabulary Size Test (VST)⁵⁾. In this study students were being passively tested with only the meaning of the word being the focus.

Target vocabulary research shows that when an explicit focus has been observed the results is a faster gain as well as increased chances of vocabulary retention⁶⁻⁹⁾ and in the case of intentional learning techniques, the use of flashcards has been identified as an effective method in studies over the last decade, allowing students to memorize large numbers of words in a minimal amount of time^{6,8,10)}.

In this study an explicit focus was put on the target vocabulary with a total of 188 possible words to be tested in semester 1 and a total of 150 possible words in semester 2.

The target vocabulary was assigned unit by unit for homework and was accessible in the back of the textbook. The final test for both semesters (in class time) consisted of 50 words, with one point for the English spelling and one point for the Japanese meaning. The use of flash cards

encourages student-centered learning¹¹⁾ by giving students exposure to various methods with the aim of student's learning to develop personal learning strategies. By offering students online flash cards via Quizlet, which was in this case compiled by the teacher using the textbook lists, students have unlimited access and can take advantage of this convenient method of vocab study using their smartphones or devices¹²⁾.

Studies focusing on comparisons between traditional pen and paper method and online approaches for tertiary students have reflected greater gains when using the latter^{9),12-14)} and have also shown that students find the latter approach more enjoyable⁹⁾ and more motivating¹³⁾. The initial assumption that was made at the beginning of this research also reflects these outcomes of earlier studies.

2 Method

This study was conducted at N University in Saga, Japan. All students were enrolled in English Conversation 1 in semester 1 of 2014 and English Conversation 2 in semester 2. English Conversation 1 and 2 are elective subjects for students in the Faculties of Health and Nutrition Science, Health and Welfare and Rehabilitation Science. For students in the Faculty of Children's Studies English Conversation 1 and 2 are compulsory subjects.

This research compares two different methods of learning target vocabulary for vocabulary acquisition : 1) A traditional method using a notebook, a pen and a dictionary in semester 1 and 2) a CALL/MALL method using a free online app in semester 2. CALL method is computer aided language learning and MALL is mobile sided language learning. The students were required to preview target vocabulary prior to class as a homework exercise. The vocabulary was set according to the unit in the textbook and there was a list of the words in English and their Japanese meaning at the back of the textbook. In semester 1 the subjects were required to write down the English word followed by its Japanese meaning and then they were required to make a sentence in English using the target word, followed by the meaning of the sentence in Japanese. The target vocabulary was to be under-lined in red in the example sentence. Students were asked to use a dictionary when making sentences. In semester 2, students were required to use a free app (Quizlet) and all study was completed online for homework prior to class.

Quizlet was chosen as the online app for this research project because this was the app used when the researcher

was doing research collaboration at K University in Fukuoka. Quizlet ([www. quizlet. com](http://www.quizlet.com)) uses online flashcards as one of the main methods of self-centered learning. There are 6 available functions of Quizlet when using a computer. These are Flash cards, Learn, Speller, Scatter, Space Race and Test. However, depending on the brand of the device students had access to, the number of functions differed. To make it fair, students were allowed to complete any 3 functions on a device of their choice and one had to be Flash cards. Again after 15 weeks of semester and after having completed 10 homework assignments, the subjects took a 50 question vocabulary test in class time and gained a score out of 100.

Two different approaches to vocabulary acquisition were taken. In semester 1, students completed weekly homework assignments for the target vocabulary for each unit of the text book. Students wrote the word in English and its meaning in Japanese in a notebook. Then they made a sentence using that word in English followed by the Japanese meaning of the sentence. Using a dictionary was highly recommended. Finally they highlighted the word in the sentence. This approach was implemented to expose them not only to the word and its meaning, but also to show them how that word is used.

After 15 weeks of semester 1 and after having completed 10 homework assignments, the subjects took a 50 question vocabulary test in class time and gained a score out of 100. The testing of vocabulary was simple. The students listened to the word being pronounced by the teacher, they wrote it down in English and then wrote down the Japanese meaning. The usage of the word was not tested.

In semester 2, students were asked to join Quizlet. Original signing up was done in the university computer lab using a computer, but after that students were able to choose the device they wished to use to complete the online homework. Out of the 152 students only one student didn't own a smart phone, however all students had access to computers on campus. Ownership of a smart phone was not a prerequisite but as this was a homework assignment smart phone usage was as high as 79.6% (121 out of 152).

With these points in mind, the method implemented in semester 1 was a more traditional approach and the method implemented in semester 2 encompassed the usage of the Quizlet app which has online flashcards as one part of the format. The students filled out a questionnaire at the end of semester 2 to determine which method they

found more effective, more enjoyable and easier to use. Scores for semester 1 and 2 were compared and data was examined.

A questionnaire was compiled in English and then translated into Japanese (see Appendix for the original version). The reason why it was translated into Japanese was because the researcher felt it was easier for the students to complete the survey in their native language. The aim of the questionnaire was to determine how students felt about the two methods of vocabulary acquisition. It consists of : 7 questions evaluated on a 6 point Likert scale ; 2 closed questions and one optional section for comments. A 6 point Likert scale was used rather than a 5 point scale to avoid students taking the easy way out by choosing the middle option. The scale was 1 strongly disagree, 2 disagree, 3 somewhat disagree, 4 somewhat agree, 5 agree, 6 strongly agree.

The 7 statements are : 1. Quizlet is an effective way to study vocabulary ; 2. Quizlet is easy to use ; 3. I enjoyed using Quizlet for vocabulary study ; 4. Semester 1's method (notebook) is better than Semester 2 ; 5. Semester 2's method (Quizlet) is better than Semester 1 ; 6. I prefer visual stimulation (games, computers, etc) ; 7. I prefer writing activities. The next part of the questionnaire has two closed questions asking students to choose the device they used mainly when completing the homework and they could choose from 1. cell phone, 2. personal computer or 3. tablet. They also had to fill in the amount of time (in minutes) it took them to complete their homework in both semesters. Finally there was an open section to illicit free comments about Quizlet or about the course in general.

Several methods of analysis were used to interpret the data collected. The difference between scores for the vocabulary test in both semester 1 and semester 2 was tested using the *t*-test. To compare the relationship between the first semester test scores and the responses to the questionnaire and the second semester test scores and the responses to the questionnaire were tested using Pearson's correlation coefficient. After using Quizlet for vocabulary previewing of the homework, the test scores were broken up into two groups : the high score group and the low score group (using the average mark as the cut-off point) and they were each compared to the responses to the questionnaire using Pearson's correlation coefficient. To compare the difference between the average vocabulary scores in semester 2 for each device (computer, cell phone, tablet) one-way ANOVA was used.

Table 1 Correlation between test results and student opinion of study methods in semester 1 and semester 2

	Sem 1 score	Sem 2 score	effective	easy to use	fun	notebook is better	quizlet is better	visual	writing	*1 study time	*2 study time
Sem 1 score r	—	.73**	-.01	.04	.07	.02	.01	.11	.00	.05	-.08
Sem 2 score r	.73**	—	.12	.21**	.23**	.03	.13	.23**	.11	.13	-.01
Mean	87.0	90.4	4.5	4.3	4.5	3.8	4.1	4.2	4.0	36.3	26.1
SD	15.6	13.3	1.1	1.4	1.2	1.3	1.4	1.1	1.2	21.1	19.3

*p < .05 **p < .01 n = 152 r = Pearson's correlation coefficient

*1 study time for homework in semester 1 (minutes) notebook

*2 study time for homework in semester 2 (minutes) quizlet

3 Results

In this first year of the study, there were 152 participants, 66 males and 86 females. Students were all freshmen with the average age being 19.1 ± 1.9 . The average score for the vocabulary test was 87.0 in semester 1 and increased to 90.4 in semester 2. The data from the questionnaire was used to try and find the reason why the test scores actually did increase in semester 2.

The correlation between test results and student opinion of study methods in semester 1 & semester 2 is shown in table 1. This table shows the correlation between the increased test scores and how students felt about Quizlet as a method of previewing vocabulary. On the horizontal axis are the seven points of the questionnaire that were evaluated according to the Likert scale of 1-6 and the closed question component about the study time (the amount of time in minutes it took for the student to complete the vocabulary homework in their notebook) for semester 1 and the study time (the amount of time in minutes it took for the student to complete the vocabulary homework using Quizlet) for semester 2 (the average being 36.3 minutes and 26.1 minutes respectively). According to the data from the questionnaire, Quizlet is fun rated the highest at 4.5 ± 1.2 followed closely by Quizlet is effective at 4.5 ± 1.1 and Quizlet is easy to use at 4.3 ± 1.4 .

This table summarizes the correlation between test results in semester 1 and semester 2 and offers an explanation as to why the scores increased after the implementation of Quizlet. It can be said that there is a slight possibility that because the students felt that using

Quizlet was fun, their scores increased. Also, it can be said that there is a slight possibility that because students were more stimulated by visual aids (as opposed to the reading and writing method) their test scores improved. There is only a slight possibility, but from this data we can conclude that because Quizlet was easy to use, fun to use and was visually stimulating the resulting consequence was that test scores increased. The percentages are indeed only very slight and it is difficult to say whether the increase in test scores in semester 2 was because students felt the above three reasons, or whether it was because they achieved higher scores they felt the above three reasons.

Students were divided into two groups (low score group and high score group) based on the results of their semester 2 vocabulary test scores, to see if any conclusion could be made. In table 2, a comparison between semester 1 scores and semester 2 scores (low/high score groups) is shown. In this table, students who achieved a lower than average score on the semester 2 test are in the low score group and students who achieved a higher than average score are in the high score group. In other words if students scored 86 or lower on the test (49 students) they were put into the low score group and if students achieved 87 or higher (103 students) they were put into the high score group. The data shows that the students in the higher group were not really affected by the change in study method in semester 1 and semester 2. It can be said that the high achievers would have achieved a high score regardless of the method they used. It is interesting to note that from this data we can conclude that the low achievers in semester 1 using the pen and paper method felt

Table 2 Comparison of semester 1 scores and semester 2 scores (low/high score groups)

		Sem 1 score	Effective	easy to use	fun	notebook is better	quizlet is better	visual	writing	*1 study time	*2 study time
Sem 2 low score group (n = 49)	r	.584**	.284*	.366**	.349*	.086	.278	.330*	.256	.294*	.092
	Sem 2 Mean	70.1	4.6	4.2	4.4	3.7	4.0	3.9	4.0	38.2	30.0
	SD	18.1	1.1	1.4	1.2	1.2	1.3	1.1	1.0	24.6	24.9
Sem 2 high score group (n = 103)	r	.373**	.066	.036	.062	-.112	.066	-.017	.069	.106	.077
	Sem 2 Mean	94.7	4.5	4.4	4.6	3.8	4.1	4.3	4.0	35.4	24.3
	SD	4.6	1.1	1.3	1.2	1.4	1.4	1.1	1.2	19.3	15.7

*p < .05 **p < .01 r = Pearson's correlation coefficient

*1 study time for homework in semester 1 (minutes) notebook

*2 study time for homework in semester 2 (minutes) quizlet

the Quizlet app was easy to use and fun compared to semester 1 and this could attribute to an increase in the average score on the test.

In addition a comparison of semester 2 vocabulary test scores by device was carried out.

The 152 subjects were asked in the questionnaire which device (cell phone, computer or tablet) they used to complete the semester 2 homework. Cell phone users had the highest number with 121 users. Computer users were second with 23 users, with tablet users at 7. One student failed to answer this question so the data is for 151 responses.

The results (n = 151) were as follows : computer users (n = 23) scored an average of 96.2 ± 3.8 , tablet users (n = 7) scored 89.9 ± 11.6 with cell phone users scoring the lowest at 89.4 ± 14.4 . The results of the one-way ANOVA test showed that there was no significant statistical difference when comparing device usage and the average score for the vocabulary test. The students who used computers to complete their homework achieved the highest average compared to the tablet users and cell phone users. A possible explanation for this may be because of the numerous functions available only on the computer site for Quizlet, but this possibility hasn't been proved using any testing methods.

The last part of the questionnaire included a space for students to write comments (optional). Some students commented about using the notebook for vocabulary homework, others commented about Quizlet while others

commented about this subject and English study in general. The last section of the questionnaire was optional therefore not all students wrote a comment. Most comments were about how fun, how effective, how interesting Quizlet was.

Advocates for method 1 in semester 1 (notebook) made comments like 'writing it down stuck in my head'; 'using the word in a sentence is a more practical approach to studying vocabulary' and 'using a cell phone meant the word was already in the frequently used category so it wasn't necessary to remember the word after the original input'; 'in the test, there was no keyboard so writing down the word is better in that sense'.

Advocates for method 2 in semester 2 (Quizlet) made comments such as 'it was good for pronunciation practice too'; 'it was a good way to review for the test'; 'it was like playing a game; the visual image remained in my head'; 'I wish we had done vocab study this way in semester 1 too'; 'this kind of study can be done anywhere, anytime'; 'it took less time than semester 1'; 'there were a variety of functions, so this way is more effective for studying vocab'.

Additional comments were 'the method of vocab study was different in semester 1 and semester 2, so I didn't get sick of vocab study' and 'I really hated English when I was a high school English, but now I like it!'

4 Conclusion

The result of this on-going study is that university

students in Saga studying English conversation get higher scores on their vocabulary tests when they use apps as opposed to using a more traditional method of vocabulary acquisition. The simple assumptions that were made : 1. Using apps, devices, cell phones are second nature to the current generation ; 2. Students would be more inclined to study using free software ; 3. Students would find this option faster, easier and more enjoyable proved correct from the data taken. The desired conclusion that the student preference would be for using apps and as a result their scores on vocabulary tests would be higher has been proven.

The results of the data showed only a slight possibility that using Quizlet played some part in the increased average score in semester 2. More data is being taken and on a larger scale, so in the future a more comprehensive data base will be available. There are many flaws in the way vocab was introduced and tested. The researcher is aware that 'a large vocabulary is required for language use for communication (Schmitt, 2010¹⁵)' so teaching 188 words in semester 1 and 150 words in semester 2 and testing 50 words per semester is really not much of a triumph. The method of testing is only testing receptive vocabulary not testing productive output, which may be disputed. However, for non-English majors at this level, this seems to be the most suitable approach.

For future research with this aim, changing the method dynamics would be beneficial ; for example, Group 1 only uses the traditional method and Group 2 only uses the Quizlet method or Group 1 uses Quizlet in semester 1 and the traditional method in semester 2 and vice versa ; however issues of ethicality may become an issue. In Saga Prefecture now, all high school students possess a tablet and are using them in the classroom every day. The first round of these students graduated in March, 2017 so research conducted after this date should reflect the improved device literacy of those students and may show that students prefer to use a tablet to complete the homework.

Vocabulary testing is important to assess how well

learners know words that are useful for communicative purposes. Making lists, having students preview vocabulary to be used in the classroom and then testing student acquisition at the end of each semester is a beneficial way to assess student acquisition as well as providing useful vocabulary for students to use in a communicative way. In the future, rather than word lists from the textbook, well selected word sets by the instructor will help students by providing the founding bricks for students to gain proficiency in communicative English.

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Appendix : Questionnaire about methods of vocabulary study (English version)

Questionnaire

Methods of vocabulary study

Name : _____

Student No : _____

Course : _____

Please use the following scale to answer questions 1-7.

1	2	3	4	5	6
Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree

1. Quizlet is an effective way to study vocabulary. 1 2 3 4 5 6
2. Quizlet is easy to use. 1 2 3 4 5 6
3. I enjoyed using Quizlet for vocabulary study. 1 2 3 4 5 6
4. Semester 1's method (notebook) is better than Semester 2. 1 2 3 4 5 6
5. Semester 2's method (Quizlet) is better than Semester 1. 1 2 3 4 5 6
6. I prefer visual stimulation. (games,computers,etc) 1 2 3 4 5 6
7. I prefer writing activities. 1 2 3 4 5 6
8. Which device did you use mostly for Quizlet?(circle ONE) Cell phone PC Tablet (ipad,etc)
9. How long did it take you to complete the vocabulary homework? (write in numbers)
Sem 1's method (notebook) _____ mins Sem 2's method (Quizlet) _____ mins
10. Comments (optional)

Thank you for your co-operation!