RESEARCH ARTICLE

TEACHING VOCABULARY ELECTRONICALLY: DOES IT WORK FOR IRANIAN INTERMEDIATE EFL LEARNERS

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ABSTRACT

This study investigated the impact of electronic learning (E-learning) on vocabulary learning by Iranian EFL Learners. Out of 80 intermediate English learners at Daneshpajouhan Higher Education Institute in Isfahan, 61 were selected based on the Oxford Placement Test (OPT). An experimental-control group method was used. The experimental group was taught in E-learning for seven sessions using techniques like Computer Aided Vocabulary Learning (CAVL) through Wordwazir software; the control group was taught via traditional method (i.e. word definitions…). The instruments included the same test used as pre and post-test and a delayed post-test consisting of 40 English words based on the students' textbook. Independent and paired samples t-tests and one way ANOVA were used. The results showed that E-learning enhances EFL learners' vocabulary achievement.
Keywords: E-learning, Computer Aided Vocabulary Learning (CAVL)

INTRODUCTION

Vocabulary is the building block of language learning and without an adequate knowledge of vocabulary; students have difficulty performing the tasks required. According to Richards and Renandya (2002), vocabulary is a core component of language proficiency, and provides much of the basis for how well learners speak, listen, read, and write. Zhang (2009) concerning English, states that the effective learning of new lexical items seems to be one of the major aims for learners of English. Decarrico (2001) points out that vocabulary learning is central to language acquisition whether it is a second, or a foreign language. Even in a learner's mother tongue, there is an incessant learning of new words.

Technological advancement and widespread access to computers and electronic devices have rather changed different aspects of language learning and teaching in general and vocabulary learning and teaching in specific. Therefore, a paradigm shift is needed to alter the education, training, and preparation of the current generation of learners (Oblinger, 2005). Printed books can no longer be the primary means for preparing our students for the 21st century. Until quite recently, computer-assisted language learning (CALL) was a topic of relevance mostly to those with a special interest in that area. Recently, though, computers have become so widespread in schools and homes and their uses have expanded so dramatically that the majority of language teachers

must now begin to think about the implications of computers for language learning. Using computers provides a number of advantages for language learning (Warschauer, 1996):

[1]. Repeated exposure to the same material is beneficial to learning.

[2]. A computer can present materials on an individualized basis, allowing students to proceed at their own pace.

[3]. The process of finding the right answer involves a fair amount of student choice, control, and interaction.

[4]. The computer can create a realistic learning environment, since listening can be combined with seeing, just as in the real world.

[5]. Multimedia and hypermedia technologies allow a variety of media to be accessed on a single machine. Hence, skills are easily integrated, since the variety of media makes it natural to combine reading, writing, speaking and listening in a single activity.

[6]. Internet technology facilitates communications among the teacher and the language learners.

1.1. Vocabulary Instruction

Since students mostly point to the lack of vocabulary as their primary problem in second language learning, the recognition of the importance of vocabulary in language learning by many researchers has propelled the search for effective pedagogical methods of teaching new words. One pedagogical method that has gained the interest of many researchers is introducing new words through a meaningful context. Shrum and Glisan (1994) provided many pedagogical methods for foreign language learning. They expressed the view that new vocabulary should be introduced in a context using familiar vocabulary and grammar. One of the problems confronting most teachers in this regard is how to provide the context from which the new vocabulary can be taught. Suggested techniques for teaching vocabulary in context are songs, field trips to Zoos, museums charts, television, filmstrips and movies. It was stated by Hunt and Beglar (2005) that second language vocabulary learning lacks the concentration on the methods acquiring vocabulary. Moreover, Meara (2005) confirmed the same opinion that most of these studies did not

investigate different methods for word retention; however, they concentrated instead on the target vocabulary knowledge (as cited in Pigada & Schmitt, 2006). Now there are two lines of thoughts to consider. The first one is explicit vocabulary language leaning and the second one is the implicit vocabulary language learning.

1.1.1 Indirect & Direct Vocabulary Learning

Many researchers advocated implicit or indirect vocabulary learning; for example, Coady (1993) and Meara (2005) claimed that vocabulary acquisition in the reading context has become prominent currently for both foreign and second language learners. However, incidental vocabulary acquisition has many deficiencies, such as being time-consuming, and making it an unpredictable process. Other researchers have advocated explicit vocabulary learning; for instance, Nation (2005) indicated that multiple exposures have a positive effect on vocabulary acquisition. He suggested that the primary focus in teaching at the beginning should be focusing on increasing the size of vocabulary of the learner through direct vocabulary teaching.

Ellis (1995) and Nation (2005) claim that there should not be a distinction between explicit and implicit learning because students should use them interchangeably. In other words, production and formal recognition depend on implicit learning, while meaning relies on explicit and conscious processes.

Since the emergence of computers in education, the research scope for effective methods of teaching and learning vocabulary has extended to the use of computers in the form of Computer Assisted Language Learning (CALL). (CALL) is the use of the computers to assist in language learning. It is commonly used to refer to tutoring applications such as drill and practice, tutorials, simulations, and games (Rieber, 1994).

1.2. E-learning

The origin of the term electronic learning or E-learning is not certain, although it is suggested that the term most likely originated during the 1980's. While some authors explicitly define E-learning, others imply a specific definition or view of E-learning in their article. These definitions

materialize, some through conflicting views of other definitions, and some just by simply comparing defining characteristics with other existing terms. In particular, Ellis (2004) disagrees with authors like Nichols (2003) who define E-learning as strictly being accessible using technological tools that are either web-based (web-distributed) or web-capable. Mylott (2008) refer to the following types of E-learning:

Synchronous E-learning: This type of E-learning requires learners and instructors to communicate online at the same time from different places. This type needs modern equipment and good network connection. However, it has the advantage of immediate feedback and live online interaction. Some examples of the synchronous E-learning are video conferencing, audio conferencing and chat rooms.

Asynchronous E-learning: This type of E-learning does not require students and teachers to be online at the same time. Sussman (2006) believes that the advantage of asynchronous E-learning is that the student can choose the suitable time for him to access what he needs, and will allow him to do his learning at his own pace. On the other hand, with this type of E-learning students will be unable to get immediate feedback from the instructor. But as yet in both types of E-learning the students need to be motivated for learning in order to overcome the negative effects of the separation from one another and from their instructor (Ellis, 2004). Regarding the aforementioned issues about E-learning, this research was an attempt to make a contribution towards improving the teaching of vocabulary. To reach that end, two methods of learning were examined and compared as to their effectiveness on students' achievements. These methods included E-learning and the traditional learning. To put it another way, the study tried do so through investigating and comparing the possible effects of CALL and internet based instruction as the basic means of asynchronous E-learning on one hand, and traditional method of vocabulary learning on the other hand, on Iranian intermediate level EFL learners' vocabulary achievement.

Because of the rather novelty of the term E-learning not much research has been conducted on the subject, especially in Iran, here just a brief glimpse is taken to the literature that exists about E-learning. An attempt by Al-Jarf (2008) was made to use online learning in EFL vocabulary instruction from home. Comparisons of the pre and posttest mean scores of 53 freshman students showed significant differences indicating that online instruction had an effect on vocabulary development. It was concluded that in situations where technology is unavailable to EFL students and instructors, use of technology from home and even as a supplement to traditional classroom techniques helps motivate and enhance EFL students' learning and acquisition of English vocabulary.

Kawauchi (2005) conducted a study on 63 students at Kurume University during 20 weeks. He tried to teach vocabulary to the students using a software called, Power Words. This study revealed that CALL-based vocabulary learning was effective for the students of the lower level. In his study Son (2001) explored CALL on vocabulary learning and came to this conclusion that CALL is an effective way to teach vocabulary.

Although results of the above studies proved that there was significant difference between the achievement of the students who taught by traditional method and electronic method, there are some other studies that do not show a meaningful difference such as (Al-Zahrani, 2002; Al-Mubarak, 2004). Iheanacho (1997) in a study explored the effects of two multimedia CALL programs on vocabulary acquisition. Participants were randomly assigned to one of two treatment groups. Students in group one viewed a program with Motion Graphics and text. Students in group two viewed a program that had Still Graphics and text. Their task was to study ten names of hand and power tools. Both groups took the pretest, viewed the video of the tools, and had an immediate posttest and a two-week delayed posttest. The results yielded no treatment effects.

Kaya (2006) investigated the effectiveness of adaptive computer use for learning vocabulary on a sample of 200 students in Fukuoka University of Education in Japan. This study also showed no significant differences between the group that used the computerized vocabulary instruction and the other group that did not use the program. On the

other hand, Ghabanchi and Anbarestani (2008) in a study explored the effects of CALL on vocabulary learning. The results indicated that CALL produced better results in contextualized vocabulary learning, plus better pronunciation.

Hassan (2010) conducted a research on the effect of CAVL software called "Arab CAVL" on students' vocabulary acquisition. It was hypothesized that students who use the Arab CAVL software in blended learning environment will surpass students who use traditional vocabulary learning strategies in face-to-face learning environment even though both groups were using the same framework for introducing vocabulary. The results of the treatment group exposed to Arab CAVL software were clearly higher than those of the control group. Finally, the results supported the previously mentioned hypothesis, and it was shown that students had a positive attitude toward the software.

Two of the most recent researchers on the topic under question are Tehrani and Tabatabaei (2012) who investigated the impact of blended online and face-to-face classroom on Iranian EFL learners' vocabulary knowledge. The results of this study showed that blended learning provided more authentic and real-life language contexts for learners when it is compared with traditional and paper-based learning situations.

Regarding gender impact on online learning, Monteith (2002) gave a report on the findings of a study conducted on a higher education online course run by the University of Stirling. This project aimed to consider whether learning styles were gendered online and whether the Internet as a medium of higher education was suited to men, women or both? Content analysis techniques were used to examine the resulting transcript of texts for evidence of gendered learning styles within a community of learners. Findings indicated that gender is not masked in the text driven discussions on the Internet. It was the contention of this study that the distinction between male and female learning styles has become blurred.

Majeed (2011) under a study investigated "gender differences" affecting the development of e-learning and how these factors can be overcome. This paper identified a number of gender problems

associated with e-Learning in Pakistan. It measured the degree to which these factors affect male and female students. The findings showed a positive attitude among students regardless of their gender in consideration of using e-learning either currently or in the future. However, male students have tended to be exposed and encouraged more in the use and development of e-learning as compared to female students.

1.3. Purpose of the Study, Research Questions & Hypotheses:

Despite all the efforts being made so far, there is still an urgent need for more research to provide a clear vision about the effects of E-learning on vocabulary enhancement. These studies also indicated that the tasks or activities in the program can motivate students' positive attitude in English language learning. In addition, most of the previous studies have investigated the effectiveness of the use of a single CALL course ware to develop and enhance students' English language skills. Finally, as the literature review revealed, not many studies to date have conducted a comparative study measuring the degree to which gender differences affect e-learning. The final and ultimate goal of this study was therefore to make an attempt to contribute and fill this gap.

The following questions were the foci in the current study:

1. Is there any meaningful difference in short term vocabulary recall of learners instructed through electronic learning and learners instructed via traditional method?

2. Does the electronic learning lead to the enhancement of intermediate level EFL learners' long term vocabulary recall?

3. Does gender have any meaningful effect on learning vocabulary through electronic learning?

Based on the above questions the following hypotheses were formulated:

H1. Electronic learning does affect vocabulary recall among learners instructed through electronic learning compared to learners instructed via traditional method.

H2. There will be no significant difference in vocabulary scores across the three tests (Pretest - Posttest - Delayed posttest). In other words

JAFAR EIZADPANAH, MEHDI GHAEDRAHMAT

electronic learning has no effect on the intermediate level EFL learners' long term vocabulary recall enhancement.

H3. Gender has no meaningful effect on learning vocabulary through electronic learning.

2. METHODOLOGY

2.1. Participants

The participants of the present study were a total of 61(29 males and 32 females) out of 80 learners who initially participated in this experiment. They were intermediate level English language learners enrolled for studying English in EFL department at Daneshpajouhan Higher Education Institute, Isfahan, Iran. Their age range was between 19 and 28 years. The two groups of the study and their participants were then arranged; using stratified random sampling to assure the same proportion regarding their gender, in the following way:

1. Quasi-experimental group, QEG, or group A, that had to receive instruction based on E-learning method. There were initially (31) students in this group, (16) female students and (15) male students who started the experiment. But during the experiment (4) students (2 males & 2 females) were dropped out. The total number of participants who finished the course were then (27) students (13 males & 14 female).

2. Control group, CG, or group B, that had to receive the usual treatment which was the traditional learning method. There were initially (30) students in this group, (16) female students and (14) male students who started the study. But during the experiment (4) students (1 male & 3 females) were dropped out. The total number of participants who finished the course were then (26) students (13 males & 13 female).

2.2. Materials and Instruments

The materials and instruments utilized in this study included an Oxford Placement Test (OPT), a pre-test, a post-test and a delayed post-test consisting of 40 new English words, a typical computer with internet access, CAVL Software named WordWazir with 40 preplanned new English words based on the students' textbook, which are described in the following sections.

2.3. Procedures for Data Collection

The first step was then to establish the homogeneity of the participants, so they were chosen from among the learner population who were able to pass the Oxford Placement Test (OPT) with a score higher than 40-60 out of 100. The 61 final participants were those whose scores were within the aforementioned range. The second step was to make sure of students' unfamiliarity with the to-be-learned words and to eradicate possible students' background knowledge so a test of vocabulary was utilized prior to the experiment. The researcher first prepared a fifty-item multiple-choice test based on the students` textbook and did a pilot study on a smaller group. 10 items were discarded and some changed. Therefore, the revised test composed of 40 multiple-choice items used as pre-test that were the same for both groups. In order to determine the reliability of the test, It was pilot studied on the L2 learners (n = 20) who were similar to the learners of the main study in terms of age, sex, and proficiency level. The results of Cronbach's alpha analysis showed that the test was reliable (r = 0.84). The content validity of the test was evaluated by three experts who were PhD holders of applied linguistics. The pre-test was given to both groups to verify the vocabulary knowledge of the participants. This test would reveal that all to-be-instructed words in this study are new and unfamiliar for all the participants and ultimately any change in the vocabulary knowledge of the participants would be because of the treatment they received. By this test it was also made sure that the pre test scores of all the participants were almost the same.

The experiment at hand took place over 8 sessions (25 minutes each) including an introductory session and seven sessions of vocabulary learning through electronic method. Three other sessions of tests (25 minutes each) also were put to practice so the total time for the study composed of 11 sessions. The participants of the QEG Group were then asked to load the CAVL software and practice new vocabulary in the form of electronic flash cards. The library of Let's Speak prepared by researcher comprised the session's words only, but the students could also try other words from the library of the software. The researcher guided the students whenever they had problems. To facilitate the

learning of the new words, the students could also use asynchronous site of institute in several ways like taking required tests which were designed for each unit, checking their scores, downloading the CAVL software and related materials. The students in control group received ordinary classroom instruction in each session. In order to teach the new words the students were asked to close their books, repeat new words, read them, and then explaining each word by giving examples and writing the definitions, synonyms and antonyms on the board.

A vocabulary test serving as pretest, posttest, and delayed posttest was constructed by the researcher based on the students' textbook (Let's Speak). He, first, chose some units of the book (1-7) which were supposed to be studied during the term. Fifty three students out of sixty one took part

in the posttest, and delayed posttest. They were given twenty five minutes, as required by the test to choose the correct answer out of four possible answers. The students' overall achievement was assessed by the 40-item posttest after the treatment. To avoid the memorization effect the order of the test was different from the order in which the target words were instructed. The students' vocabulary recall was measured after a period of two weeks through utilizing a delayed posttest. The collected data were coded into computer by means of the Statistical Package for Social Sciences (SPSS) version number 20.

3. RESULTS

The obtained data of the OPT were calculated and analyzed, the result of which appear in the table below.

Table 1. Descriptive Statistics for the Mean Comparison of the OPT between QEG and CG

	VAR00002	N	Mean	Std. Deviation	Std. Error Mean
VAR0000	1	27	48.4444	5.18380	.99762
	2	26	48.8462	3.58544	.70316

1= Quasi-experimental group, QEG, or group A; 2= Control group, CG, or group B

Table 2. Results of the Independent Samples Test of the OPT between QEG and CG.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						95% Confidence Interval of the Difference	
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference		Lower	Upper
OPT	Equal variances assumed	4.364	.042	-.327	51	.745	-.40171	1.22884		-2.86871	2.06529
	Equal variances not assumed			-.329	46.353	.744	-.40171	1.22053		-2.85800	2.05458

As it is shown in table 1, there was no statistically significant difference between the mean scores of QEG and CG groups (the mean score for experimental group is 48.4444 and that for control group is 48.8462 that is a difference of .4018 which is not a significant difference). In order to be more objective regarding the claim of homogeneity of the

two groups an independent sample t-test was run between the scores of OPT of control and experimental groups, the results of which are presented in table 2. As it is shown in this table the t-observed is -.327 which is lower than the t-critical from the table of t-scores, so it can safely be claimed that the two groups are homogeneous in terms of

JAFAR EIZADPANAH, MEHDI GHAEDRAHMAT

their proficiency level. As a result, the study went on

3.1. Investigating the first Hypothesis

The first hypothesis was that electronic learning affects vocabulary recall among intermediate learners instructed through electronic learning compared to learners instructed via traditional method. Therefore, the following steps were taken in order to test the hypothesis.

The scores on the pre-test were first analyzed and tabulated in table 3. Accordingly, the pre-test will be

safely with these two groups.

seen from three different perspectives in order to serve the first two research questions as follow: First, it will be used as an indicator for making sure that both groups are starting from the same level; second, it will be used for measuring the vocabulary gain after the treatment, and; third, it will be used as the delayed post-test for measuring long term vocabulary recall.

Table 3. *Descriptive Statistics for the Mean Comparison of the Vocabulary pre-test between QEG and CG;* Group Statistics

	Group	N	Mean	Std. Deviation	Std. Error Mean
Pretest	Control	26	3.1346	1.65262	.32411
	Experimental	27	3.0185	1.70114	.32738

According to the statistics depicted in table 3, the mean difference of pre-test for the two groups is 0.1161 (the mean for control group being 3.1346 and for experimental group 3.0185) which is not statistically significant. This could mean that all of

the participants' vocabulary knowledge at the onset of the study was nearly the same, so any change in their behavior could be attributed to the treatment used in the study.

Table 4. Descriptive Statistics for the Mean Comparison of the Vocabulary Post-test between QEG and CG

	Group	N	Mean	Std. Deviation	Std. Error Mean
posttest	Control	26	11.3846	1.84015	.36088
	Experimental	27	16.2037	2.02987	.39065

Table 5. Results of the Independent Samples t- test between Scores of Pre and Post-tests of QEG and C G

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Pretest	Equal variances assumed	.136	.714	-.252	51	.802	-.11610	.46094	-1.04146	.80927
	Equal variances not assumed			-.252	50.995	.802	-.11610	.46068	-1.04095	.80876
Posttest	Equal variances assumed	.443	.509	9.044	51	.000	4.81909	.53283	3.74938	5.88879
	Equal variances not assumed			9.061	50.820	.000	4.81909	.53183	3.75130	5.88687

JAFAR EIZADPANAH, MEHDI GHAEDRAHMAT

As it is clearly shown in table 4, the post-test mean for QEG, or group A is 16.2037 which is higher than that of CG, or group B being 11.3846 having a mean difference of 4.8191. So it can safely be claimed that the two groups have changed in terms of their vocabulary proficiency level and that this change is considered to be statistically significant. Even though the difference of the two groups seems to be obvious regarding the descriptive statistics, the item at hand needs more exact clarification which will be taken care of in the following parts.

In order to ascertain that the mean difference between the pre and post-tests of QEG and CG group is significant, an independent sample t-test was run between the pre and post-test scores. Table 5 illustrates the results of this t-test.

Since t-value for QEG is equal to 9.061, which is greater than -.252 for that of CG group with

an alpha= 0.05 and df= 51; therefore, the difference is statistically significant and that shows that Group A outperformed Group B. As a result, it can be concluded that quasi-experimental group (QEG) did much better than control group on the post-test and that E-learning turned out to be positive in assisting students with gaining new vocabulary well.

3.2. Investigating the second Hypothesis

In the present study, the second hypothesis stated that electronic learning has no effect on the intermediate level EFL learners' long term vocabulary recall enhancement. To test this hypothesis, the participants of the QEG were asked to take the delayed post-test. The test was the same test as their pre and post-test with the same item arrangement as the pretest which the students took two weeks after the treatment. The obtained data was then calculated and analyzed, the result of which appear in the Table 6.

Table 6. Descriptive Statistics for the Mean Comparison between Scores of Post-test and Delayed-test of QEG

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	posttest	16.2037	27	2.02987	.39065
	Delayed test	15.7963	27	2.00125	.38514

According to the statistics depicted in tables 6 it can be seen that the mean difference of post and delayed post–test for experimental group is 0.4074 (the mean for post–test being 16.2037 and for delayed post–test 15.7963) which does not seem to

be significant. In order to statistically be more reasonable a paired sample t-test was run between the scores of post and delayed post–test scores of the participants in experimental group. The results are shown in table 7.

Table 7. *Results of the Paired Samples t- test between Scores of Post-test and Delayed Post-test of QEG*
Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair1	Posttest-delayed test	.40741	.41688	.08023	.24250	.57232	5.078	26	.000

JAFAR EIZADPANAH, MEHDI GHAEDRAHMAT

As it is clear the t- observed of the scores (5.078) is greater than the t-critical (2.056), therefore the second null-hypothesis is rejected. (p<.05)

3.3. Investigating the third Hypothesis

The third hypothesis stated that gender has no meaningful effect on learning vocabulary through electronic learning. It was required to insure that both the control group and the experimental groups were equivalent in terms of gender. To this end, the two groups of the study and their participants were arranged; on the onset of the study, using stratified random sampling to assure the same proportion regarding their gender. Table 8 illustrates the frequency distribution of the two groups.

Table 8. Frequency Distribution of Gender by Treatment Conditions

Treatments	N	males	%	Females	%
E-learning	27	13	24.1	14	25.9
Traditional	26	13	25	13	25
Total	53	26	49.1	27	50.9

As shown in Table 9 below, posttest means in QEG for males is X = 15.7308 and for females equals X = 16.6071. The same results for posttest means in CG for males and females are X = 10.9615 and X = 11.8077, respectively. So a difference in posttest means in behalf of females in both groups could be observed. But it is not clear yet whether the difference is significant or not.

Table 9. Means Comparison of Males and Females of both Groups

Means Comparison

Posttest

Group	Mean	N	Std. Deviation
Experimental Male	15.7308	13	2.11754
Experimental Female	16.6071	14	1.50867
Control Male	10.9615	13	1.98391
Control Female	11.8077	13	1.65250
Total	13.8302	53	3.03338

The next step was then to run a one-way analysis of variance (ANOVA) on the results of the post-test to compare the achievements of both genders of both groups and to see whether the difference is statistically significant or not. Table 10 represents the results.

Table 10. One-way Analysis of Variance on the Post-test of Males and Females of QEG and CG

ANOVA

Posttest

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	315.075	3	105.025	31.495	.000
Within Groups	163.397	49	3.335		
Total	478.472	52			

This table gives both between-groups and within-groups sums of squares, degrees of freedom, F value, etc. The significant value is smaller than .05 (.000), so there is a significant difference somewhere among the mean scores on the independent variable (post-test scores) for the four sub groups. As you can see, these results coincide with what you observe in means table further above (Table 2.10), where the mean tended to change with each group in the case of the post-test. It is difficult, however, at this point to tell if this significant difference occurred in males or females and whether

JAFAR EIZADPANAH, MEHDI GHAEDRAHMAT

the difference occurred in QEG or CG group, since an ANOVA provides information on whether or not these groups differ, but it provides no information as to the location or the source of the difference.

Having received a statistically significant difference, we can now look at the results of the post-hoc tests provided in Table 11 to be able to locate the source of significance in our data.

Table 11. Results of Post-hoc Tests
Multiple Comparisons
Dependent Variable: posttest
LSD

(I) VAR0001	(J) VAR0002	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1.00	2.00	.87637	.70335	.219	-.5371	2.2898
	3.00	4.79945*	.70335	.000	3.3860	6.2129
	4.00	5.64560*	.70335	.000	4.2322	7.0590
2.00	1.00	-.87637	.70335	.219	-2.2898	.5371
	3.00	3.92308*	.71625	.000	2.4837	5.3624
	4.00	4.76923*	.71625	.000	3.3299	6.2086
3.00	1.00	-4.79945*	.70335	.000	-6.2129	-3.3860
	2.00	-3.92308*	.71625	.000	-5.3624	-2.4837
	4.00	.84615	.71625	.243	-.5932	2.2855
4.00	1.00	-5.64560*	.70335	.000	-7.0590	-4.2322
	2.00	-4.76923*	.71625	.000	-6.2086	-3.3299
	3.00	-.84615	.71625	.243	-2.2855	.5932

*. The mean difference is significant at the 0.05 level.

1= Females QEG;2= Males QEG;3= Females CG;4= Males CG

As Table 11 shows, in column called "mean differences", there are some asterisks next to the values listed. Asterisks show that the four groups being compared are significantly different from one another at p level. The exact significant value is given in the column labeled sig. In the results presented above, sub-group 1 or females QEG which received instruction through E-learning, is statistically and significantly different from sub-groups 3 and 4 (.000). That is, females QEG sub-group outperformed females CG and males CG both receiving traditional method of vocabulary learning. Group1 (females QEG) has also surpassed sub-group 2 (males QEG) which received the same treatment (E-learning), but the difference was not significant (.219).

According to the statistics depicted in this table, it is not the sole females QEG which defeated both sub groups of CG, but sub-group 2 winning the second place, has also reached a statistically significant different from sub-group 3 and 4 (.000).

The significant value of females CG (group 3) and males CG (group 4) is more than .05 (.243), so they are not significantly different from one another at p level.

These results tell us that even though females in QEG performed better on post-test than all other groups, since the difference was not statistically significant comparing to that of males in both groups, we cannot reject the hypothesis. To put it in other words, we have to accept the null hypothesis expressing that gender has no meaningful effect on vocabulary acquisition through E-learning. That means that E-learning is an effective way for improving vocabulary achievement regardless of gender and that E-learning is not gender specific. Thus, it can be concluded that there was no meaningful interaction between gender and E-learning and that the observed difference may or may not occur in other similar situations.

JAFAR EIZADPANAH, MEHDI GHAEDRAHMAT

DISCUSSION & CONCLUSIONS

This study aimed at investigating the impact of E-learning and traditional learning on the teaching and learning of new English words among Iranian intermediate EFL students. To this end, two classes of EFL Iranian male and female students at the intermediate level enrolling to continue their language learning course at Daneshpajouhan Language Institute, Isfahan were selected as the experimental (n=27) and control groups (n=26). In order to answer the second question of the study the same test as the pre-test was used as the delayed post-test. Finally the post-test results of all the participants of the study were analyzed via appropriate statistical procedures to arrive at conclusions regarding the purpose of the study.

According to the data gained from this study it is obviously clear that E-learning has a significant effect on the vocabulary achievement of the Iranian intermediate EFL learners. Given its many benefits and advantages e-learning is considered among the best methods of education. These benefits have been referred to by a number of researchers (Al-Musa & Al-Mobark, 2005; Akkoyuklu & Soylu, 2006; and Hameed, Badii & Cullen, 2008).

The results of the study also indicated that though both methods enhanced vocabulary development of the learners from the pretest to the posttest, the experimental group seemed to be better than the control group. That is, the experimental group students had significantly better vocabulary gain scores than the control group students at the end of the study. A positive point which is worth mentioning is that during the instruction period, students themselves found that they benefited from this method.

This conclusion is in line with some previous research about the effect of E-Learning method which had a significant positive impact on students' achievement. The results are also in harmony with those gained by Son (2001) and Kawauchi (2005) which support the outcome of this study as in their study CALL-based vocabulary learning was effective for the students of the lower level.

The findings of the study at hand; however, are against some other studies that do not show a meaningful difference for E-learning such as (Al-Zahrani, 2002; Al-Mubarak, 2004). Moreover, Kaya (2006) also found that there are no significant differences between electronic method, conventional and blended approaches with regards to the effect of them on the students' outcome.

Regarding the effectiveness of the E-learning programs on vocabulary achievement of the students, the outcomes s of this study is also in harmony with that of Hassan (2010) who concluded that the results of the treatment group exposed to Arab CAVL software were clearly higher than those of the control group. Finally, it was shown that students had a positive attitude toward the software. Tehrani and Tabatabaei (2012) investigating the impact of blended online and face-to-face classroom on Iranian EFL learners' vocabulary knowledge, also concluded that blended learning provided more authentic and real-life language contexts for learners when it is compared with traditional and paper-based learning situations. Moreover, these situations provided enthusiasm and excitement for learners.

Based on the results of the dependent t-test administered on the results of post and delayed post-test, it was concluded that long-term memory is enhanced by the E-learning. This result is parallel with what the other researchers in the field gained as a case in this point.

However, these findings are not totally on the contrary to that of Iheanacho (1997) who explored the effects of two multimedia CALL programs on vocabulary acquisition. The results yielded no treatment effects. The study conducted by Ghabanchi and Anbarestani (2008) further supports the outcome of this study as in their study the results indicated that in using CALL program, learners have an intensive mental processing which results in long term recall of words.

There were a number of reasons for the greater effectiveness of E-learning for vocabulary retention. The CAVL software provided learners with opportunities to encounter vocabulary repeatedly. Teaching through internet based learning was also more memorable because students were motivated by using them with each other.

According to the statistics both methods had a positive contribution to the students'

achievement, experimental group being the sole group which outperformed the control group. Although there seemed to be an improvement in the results, regarding gender, some points should be taken into account. First of all, the difference between females and males in the control group regarding English vocabulary learning was not significant. Second, even though females in QEG surpassed males, the difference between females and males was not so much significant too. Third, females in both quasi-experimental group and control group outperformed males. This means that E-learning is an effective way for improving vocabulary achievement regardless of gender and that E-learning is not gender specific. Thus, it can be concluded that there was no meaningful interaction between gender and E-learning and that the observed difference may or may not occur in other similar situations.

The third findings of this study is not against Majeed (2011) assertion that reported a positive attitude among students regardless of their gender in consideration of using e-learning; even though, male students had tended to be exposed and encouraged more in the use and development of e-learning as compared to female students. These findings also lend support to the study conducted by Monteith (2002) whose project aimed to consider whether learning styles were gendered online and whether the Internet as a medium of higher education was suited to men, women or both? Findings indicate that gender is not masked in the text driven discussions on the Internet. It was the contention of this study that the distinction between male and female learning styles has become blurred. Finally, considering the above mentioned results of the present study and due to the results of the aforementioned studies, it can be concluded that, even though females in both groups of the study at hand represented a better results comparing to males, gender has no effect on E-learning and any observed difference may be related to the population under this experiment.

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JAFAR EIZADPANAH, MEHDI GHAEDRAHMAT

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