The Effect of Computer-assisted Language Learning and E-learning on Vocabulary Learning

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ABSTRACT

The purpose of this study was to investigate the importance of CALL and e-learning on vocabulary learning. Vocabulary was an on-going process. Although many studies have been done on vocabulary learning, there are still many learners who have problem. So this study represents the effect of computer and internet on vocabulary learning. The paper was based on data gathered in Iran language institute that involved 45 15-, 16-year-old learners of English. The findings from (one-way) ANOVA analyses showed statistically significant differences between two experimental groups in learning vocabulary (p<.005). It was found that students learning with the new system learned significantly more vocabulary than students in traditional language learning class.

INTRODUCTION

Vocabulary is one of the most essential components of language and occupies an important position in language learning. Many researchers studied new methods on how we can teach and learn vocabulary. For example, the learner-based teaching proponents have encouraged the students to use tool and strategies for learning independently (O’Malley and Chamot, 1990; Oxford, 1990).

Today, the role of technology as a resource for instruction of foreign language learners is increasing, as educators recognize its ability to create both independent and collaborative learning environments in which student can acquire and practice a new language and vocabulary is often viewed as a sub-component of e-learning (multimedia package) and computer assisted language learning (CALL) program.

In the field of computer assisted learning, studies have shown that the web significantly impacts language learning in the notion of self-directed learning, in which learning individualized their needs (Romiszowski, 1997; Thomos, 1997) and in the field of e-learning which is the application of electronic systems and its aim is to reduce the amount of the education expenses, studies have shown that language learning through distance education prevails all words and it can be done via internet, multimedia, CDs, DVDs, and in many other forms.

Since language learning is challenging and time consuming and cost highly in some cases, by using distance education and e-learning, we can reduce the amount of expense and time and also despite the fact that different methods have been used for teaching vocabulary, considerably less attention has been paid to computer and internet in teaching vocabulary.

The study reported in this paper intended to discuss the use of the computer and e-learning for vocabulary learning in terms of linking CALL and e-learning with vocabulary acquisition and search for affective ways to use CALL in vocabulary instruction. The current philosophy of CALL puts a strong emphasis on student-centered material that allow learners to work on their own and CALL is essentially a tool to help learner to become independent and also help teachers to facilitate the language learning process. It can be used to reinforce what has already been learned in the classrooms.

The research described in this article is on the basis of experiment. Therefore the aim of this paper is to discuss the following questions:

1. What is the effect of CALL on vocabulary learning through WUFUN software?
2. How Internet can influence on learning vocabularies?

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Literature review:

In the eighties, the application of technology in language classrooms included the use of film, radio, television, language labs with video tapes, computers, and interactive video (Cunningham, 1998). Various types of computer-assisted language learning (abbreviated CALL) also began to become more commonplace (Landoli, 1990). Although there were some innovative uses of software such as Maclang, the majority of CALL uses were limited, informal, to drill and practice exercise. As the technology advance, we began to see more interactive uses of CALL as well as an increase in the integration of various media in to the computer system (pusackv& Otto, 1990).

This research focuses on the potential of technology as a powerful tool for foreign language instruction. This is indeed an important and a current direction in foreign language teaching. The range was narrow, probably because previously computers were less powerful and language teachers did not have sufficient knowledge of programming(Goodfellow, 1995). The aim of using the computer–based instructional technologies is to provide more visually stimulating course material and incorporate authentic materials found on the world wide web and finally promote on-line communication in target language.

According to Wikipedia: Developments in Internet and multimedia technologies are the basic enabler of e-learning, with content, technologies and services being identified as the three key sectors of the e-learning industry. To learn a language like English via using multimedia technologies, students should be self-directed and use new strategies. Through using Internet and web, students can reinforce their communicative competencies, familiarize with different cultures and strengthen their necessary skills like: listening, speaking, reading, and writing. In web-based and Internet learning, anxiety is reduced and responses are transferred quickly and learners get more confident.

Segers and Verhoeven (2003) have studied about training by computer in kindergarten. Intensive vocabulary Training by computer was undertaken in a two-year kindergarten programmed in the Netherlands. In the intervention, 67 native and immigrant children in the first and second years of kindergarten played vocabulary games on the computer twice a week for a period of 15 minutes over 15 Weeks. A control group of 97 kindergartners followed the regular curriculum. In a pre-test-training–post-test-retention test design, Positive effects of the computer training were found on a curriculum-dependent vocabulary test. A trend was found towards positive effects of the computer training on a curriculum-independent test for children in their second year of kindergarten.

Turgut and Irgin (2009) have studied young learners ‘language learning via computer games in Turkey. This qualitative research based on phenomenological theoretical framework investigates young learners ‘experiences of language learning while playing computer games in internet cafes. The data was collected through observations and semi-structured interviews and analyzed through phenomenological data analysis steps. The results indicated that young learners ‘playing online games promotes language learning and especially vocabulary skills.

DeHaan, Reed and Kuwada (2010) have investigated the effect of interactivity with a music video game on second language vocabulary recall. Their experimental study investigated to what degree video game interactivity would help or hinder the noticing and recall of second language vocabulary. Eighty undergraduates were paired based on similar English language and game proficiencies. One subject played an English-language music video game for 20 minutes while the paired subject watched the game simultaneously on another monitor. Following game play, vocabulary a recall test, a cognitive load measure, an experience questionnaire, and a two week delayed vocabulary recall test were administered. Results were analyzed using paired samples t tests and various analyses of variance. Both the players and the watchers of the video game recalled vocabulary from the game, but the players recalled significantly less vocabulary than the watchers. This seems to be a result of the extraneous cognitive load induced by the interactivity of the game; the players perceived the game and its language to be significantly more difficult than the watchers did. Players also reported difficulty simultaneously attending to game play and vocabulary. Both players and watchers forgot significant amounts of vocabulary over the course of the study.

The philosophy of CALL and e-learning put a strong emphasis on student-centered material that allows learners to work on their own. In this study, approach to vocabulary learning can be generally considered under lexical approach. It is an approach to language teaching and learning that is based on the view that lexicon and lexical chunks play a much more central role in language organization than grammar, functions or other units of organization. The principles of lexical Approach have been around since Michael Lewis published the lexical approach 10 years ago.

3. Method:
3.1. Participants:

The present experiments were performed with 45 young students in Iran. The student (22 girls & 23 boys) with ages ranges from 15-16 and were all Iranian. In selecting the participants, the researcher tried to sample students evenly from the same region and country and attempt to distribute them in the same group. In this study, 20 words have been selected from one of the unit of academic course book which has not been covered in
the class yet. Therefore, it was assumed that the students do not know those words. This research was held in Iran Language Institute (ILI) and chose one of the levels of ILI book.

3.2. Design:
This is an experimental study which uses a pre-test, post-test and delayed post-test. The results of the standard proficiency test will determine the level of learner's homogeneity. The pre-test which learners are supposed to attend in, is a vocabulary test based on course material. According to what Song has done, the aim of this pre-test is to indicate the unknown words to the researcher (2011). The statistical analysis of post-test and delayed post-test will present whether it is significant or not. The participants are assigned to three groups beforehand, two experimental groups and one control group. These three groups started the semester as beginner level students. This case is on purpose so that the students are at the same proficiency level. These classes also have been working on the same material and program since the beginning of the semester. Thus the level of instruction and the knowingness of the words are not different in each class.

3.3. Material:
Subject of the study was selected from Iranian Language Institute (ILI) and also the students selected in this study, were studied in this institute. In the experiment groups, the researcher uses WUFUN software and Internet web page which can motivate students in learning vocabulary.

3.4. Testing instrument:
In order to collect data, the researcher used the standard proficiency test of vocabulary which use in the context. So before starting the instruction, subjects will be given a vocabulary test which is based on their course book. This test helps the researcher to find out unfamiliar vocabulary. During the instruction, immediately after each session and one after two weeks, the post-test and delayed post-test were given to students. The collected scores will be discussed based on SPSS software.

3.5. Procedure:
This study will be conducted in Iran Language Institute (ILI). In each group the number of students is 15. They are distributed in to 3 groups beforehand. Randomly 2 groups will be selected as an experimental groups and the third group as a control group. One group received vocabulary through traditional instruction. In this case the students have only repetition and memorization of vocabulary by L1 definition and using them in the context. This is our control group which received no treatment. The second group learned vocabulary through WUFUN computer software. Vocabulary learning in WUFUN is addressed in a holistic way; learning is situated in context with particular attention being paid to the items. The originality of this software consists in the integration of a listening approach and memorization techniques and in sensitizing the learner to cultural differences.

The third group received vocabulary through e-learning. In this class, the researcher use Internet for learning vocabulary. In this method we introduce the same material through the web page. The student can learn their material at any time and any pace. It is fast and reduces the amount of expenses. In this technique, the researcher sends the material to student’s e-mail. After the student received the vocabulary, they must find the meaning and the picture of each word from the web page. Then, they should send them to their friends to share information. In the experimental groups, learners practice vocabulary with their own techniques.

In the first session, the researcher introduces the techniques and students will be asked to participate in the pre-test. After having held the pre-test, the students received the targeted vocabulary. Then the researcher performed the post-test and also immediately after 2 week, they will be given the delayed post-test. Then, the researcher can analyze the scores of these 3 groups to compare experimental group from control group or with group outperformed others.

Results:
One way-ANOVA was used in the current study to analyze the data. The following findings have been obtained:
Table 1 presents descriptive statistics for learner’s performance in three testing occasions for number, mean and standard deviation.

Table 1: Descriptive

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test N</th>
<th>Pre-test M</th>
<th>Pre-test SD</th>
<th>Post-test N</th>
<th>Post-test M</th>
<th>Post-test SD</th>
<th>Delayed N</th>
<th>Delayed M</th>
<th>Delayed SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>CALL</td>
<td>15</td>
<td>11.93</td>
<td>1.90</td>
<td>14.20</td>
<td>2.65</td>
<td>12.13</td>
<td>1.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-learning</td>
<td>15</td>
<td>11.33</td>
<td>1.98</td>
<td>14.53</td>
<td>2.64</td>
<td>12.40</td>
<td>1.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>15</td>
<td>11.33</td>
<td>1.87</td>
<td>11.40</td>
<td>1.91</td>
<td>11.33</td>
<td>1.17</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
As post hoc table indicates, while the experimental and control groups performed nearly the same in the pretest, the experimental groups outperformed the control groups in both post and delayed posttest. As it can be seen from the table, the means of pre-test scores (M=11) in 3 groups are nearly the same. In this level, the students didn’t know the words before instruction. However, the mean scores in experimental groups are higher than the mean score of control group in post- and delayed test occasion.

The results of one way-ANOVA analysis indicated that the 2 means (post & delayed test scores) are significantly different from each other.

In order to further specify the effects of treatments for each group, one way-ANOVA were performed for the post- and delayed post-test occasion to compare subject’s knowledge of target forms in the experimental and control groups.

Table 2: ANOVA

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Delayed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>df</td>
<td>F</td>
<td>Sig</td>
</tr>
<tr>
<td>Between group</td>
<td>2</td>
<td>.486</td>
<td>.619</td>
</tr>
<tr>
<td>Within group</td>
<td>42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>44</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

One way- ANOVA on the pre-test revealed no statistically significant difference between the three groups, F (2, 42) = 0.48, p=.619 One way-ANOVA on post-test scores revealed a significant difference among the groups, F (2, 42) = 7.53, p<0.01. Post hoc (table 3) comparisons revealed that e-learning group outperformed computer and control groups. No statistically significant difference was found between the computer and control groups. In the delayed post-test, no statistically significant difference was found between groups.

Table 3: Estimated Marginal Means

In order to investigate learning gains from the pre-test to the delayed post-test, a mixed between-within group ANOVA was performed with time as a within group independent variable, instruction as a between-group independent variable and total score as a dependent variable. As table 3 indicates there are main effects for time and instruction meaning that (a) the instruction was effective (b) learners across the groups had statistically significant gains over times. Regarding e-learning group, the within group ANOVA indicated a significant difference among learners’ scores in the three testing period.

Table 4: Multivariate test

<table>
<thead>
<tr>
<th>Source</th>
<th>F</th>
<th>Sig</th>
<th>error of df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>11.152</td>
<td>0.00</td>
<td>41</td>
</tr>
<tr>
<td>Time * instruction</td>
<td>2.786</td>
<td>0.032</td>
<td>82</td>
</tr>
</tbody>
</table>

As table 4 indicates, no statistically interaction effect was found between time and instruction, meaning that the patterns of development from the pre-test to the post-test and delayed post-test were the same for all groups.
Discussion and conclusion:
The current study attempted to investigate the effects of computer and e-learning on vocabulary learning and compare them with traditional techniques of vocabulary learning. We try to explain different types of material such as WUFUN software and internet and also estimate their effects on vocabulary learning. Then we finally try to answer our research questions. The results indicated that computer-assisted vocabulary item and e-learning both had significant effects on learning. ANOVA (table 2) resulted that the treatment was effective and Post hoc table showed that e-learning group outperformed computer and control groups. Observing the reaction of the participants when presented with these new techniques, it was evident that young learner were excited when presented vocabulary with computer and internet. So they have statistically significant effect on learning vocabulary. Therefore, we, teachers, should increase our abilities to be able to work with these techniques and also increase our knowledge about it. We should arrange some programs to teach our learners and also teachers, how to use internet and computer and enhanced their information about multimedia and other new device which can be useful for language learning.

REFERENCE

http://www.aensiweb.com/old/aeb_online.html