
The Effect of Computer-Assisted Language Learning (CALL) on Reading Comprehension in Iranian EFL Context

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Abstract

This study is an attempt to examine the effect of Computer Assisted Language Learning on reading comprehension in an EFL context. It was hypothesized that CALL has positive effect on reading comprehension. Forty male learners of English at an intermediate level of linguistic proficiency after a proficiency test were randomly selected as the participant of this study and were assigned into two groups of experimental and control on the base of their performance in reading comprehension. The experimental group treatment was by computer and control group had same materials on the printed texts. T-test was employed as the means of statistical analysis. The result of T-test supported out hypothesis that there was a significant difference between experimental and control groups. The findings of this study carry important implication for foreign language syllabus designers, curriculum planners and language instructors.

Key Words: CALL, computer, reading comprehension, EFL, T-test

I. Introduction

1.1. Background

Until quite recently, computer-assisted language learning (CALL) was a topic of relevance mostly to those with a special interest in computers. Recently, 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 (Warschauer, 1996).

The abbreviation CALL stands for Computer Assisted Language Learning. It is a term used by teachers and students to describe the use of computers as part of a language course (Hardisty &

Windeatt, 1989). It is traditionally described as a means of 'presenting, reinforcing and testing' particular language items.

In the last decade, research has illustrated how computer technologies support meaningful educational experiences. Although the notion of face-to-face classroom instruction is still very prevalent in many organisational and educational settings, with a steady increase rather than a decrease, there is a rush and enthusiasm for computer-based learning. The global popularity of the computer over the past decade has brought about innovative uses of the computer in education and in foreign language learning and teaching (Belz & Kinginger, 2003; Blattner & Fiori, 2009).

Although there were some innovative uses of software which contain drills, practice and exercises. As the technology advanced, we began to see more interactive uses of CALL as well as an increase in the integration of various media into the computer system (Pusack & Otto, 1990).

Kulik and Kulik(1991) surveyed more than 500 studies which compared learners who received computer-assisted instruction with the learners who received traditional instruction. They found that learners tend to learn more and in less time with computer-assisted learning.

This study will examine the effect of Computer Assisted Language Learning on reading comprehension in Iranian EFL context. The research question stated below:

- Does computer assisted language learning has positive effect on reading comprehension?

According on this research question, the following hypothesis was formulated:

- Computer assisted language learning has positive effect on reading comprehension.

II. Methodology

2.1. Subjects

A total of 53 EFL learners initially participated in this experiment but after selection they became 40. The participants were Iranian male intermediate EFL learners with the age range of 18 to 25. The participation was voluntary and they had already enrolled in English Language

Institute. They share the same linguistic and cultural background. The first language of the students were involve in this research was Azeri Turkish.

2.2. Instrument

For the purpose of the study and to investigate the hypotheses, several instruments were utilized. Proficiency test is taken to be one of the important instruments which are used in almost all investigation which related to FL learning. By using proficiency test (Cambridge ESOL Preliminary English Test), the result was based on 12 score and above, so the two groups it is certainly were homogeneous in term of their FL proficiency.

In proficiency test, 40 item tests presented to participants to measure their knowledge in general English. It was objective test with 40 multiple choice questions. So students randomly divided for two experimental and control groups.

All the multiple choice questions had a same format; one correct answer and three distracters. It was tried order and form was not in the predictable way. The pre-test was also used as the post-test to avoid any inequality between them. Every item was graded dichotomously: one point for a correct answer, zero for an incorrect one. The allotted time for each test was 30 minutes. All the pre-test and post-test questions was standard reading comprehension tests. In this study for multiple choice tests questioner was used. All the pre-test and post-test questions were 20.

2.3. Design

In this study one group was taught by using computer-assisted instruction while the other group was taught using a traditional method of instruction in a traditional classroom setting. Treatment was including the some English learning soft wares about reading comprehension and control group didn't have such a treatment with computer they treat traditionally with printed texts. The group makes our experimental group called group A, and the others make our control group called group B. The name of soft ware which was used in this study is: Rosetta Stone, VOA (Voice of America) and Learn to Speak English series.

Rosetta Stone is software for learning more than 30 different languages. It is covering the 4 skills. This software is base on multimedia which is present picture and sound. Multimedia cause learning process becomes faster and more interesting for students and it can increase the

motivation. The reading part of this software is based on relation between picture and text. One of the specialties of this software (Rosetta Stone) is immediate feedback which can students see their progress immediately.

The second software is VOA (Voice of America) Special English and it is based on the reading comprehension. It has 40 texts in different interesting subjects for reading comprehension. This software can read the text for learner so there is opportunity for learner to learn correct pronunciation. The specialty of this software is presenting a dictionary which name is Babylon. Babylon is a dictionary which can present the meaning of words in about more than 50 different languages. Learners can get the meaning of the word which is in text just by one left click.

The third software is Learn to Speak English; it is software which is engage with four skills. This software is based on multimedia which is present picture, sound, practice and drills. This software can record the learners sound and check for correct pronunciation. In reading part this software present the text with motion picture. In this part student can follow a text with a multimedia which it can increase the comprehension.

2.4. Procedure

A Cambridge ESOL Preliminary English Test (PET) was administered to the participants to determine homogeneity of them with 53 English learners in Tabriz private institutes. By using proficiency test (Cambridge ESOL Preliminary English Test) the result was based on 12 score and above, so the two groups it is certainly were homogeneous in term of their FL proficiency. After the result indicated no significance differences between two groups, so one of them assign as control group and the other as experimental group.

The study was carried out in spring 2011 for 20 sessions (each group had 10 sessions). The students in control group read texts from the printed pages during ten sessions in a conventional classroom, while the other group (experimental) read the same texts from the computer screen. The two groups followed the same aim and scope of the course and they were taught by the same teacher.

In the first week before the treatment began, both groups took a pre-test to establish initial differences or similarities in their knowledge in English reading comprehension. The result using

t-test showed no statically significance difference between two groups, so the two groups it is certainly were homogeneous in term of their FL proficiency.

In the second week group A received their software leaned how to use it. This instruction session lasted an hour and all of the students question answered. This treatment lasted 2 month. In the last session both group A and B had the post-test. The result significantly shows the positive effect of these soft wares on student reading comprehension.

2.5. Data Analysis

This study was an experimental, so it was needed to use statistical tools to analyze the data. To analyze the data, the researcher used SPSS using *t-test* to compare the mean scores and the significance level of experimental and control groups at pre-test and post-test.

III. Result and Conclusion

3.1. Result

To groups were selected randomly as experimental and control groups. For groups to be comparable and for an experiment like this to be meaningful, the experimental and control groups should show no significance difference in knowledge at the pre-test.

What this means for the present study experiment was that the two groups had to have same level of knowledge in English reading comprehension at the beginning. This way, it was possible to compare the two groups at the end of experiment, see if different kind of treatment had yielded different test result, and consequently different degrees of learning.

In order to make sure that the participants in both control and experimental groups were the same proficiency level at the beginning of study concerning the reading comprehension a 20-item test in reading comprehension was used. As shown in Tables I difference between the mean score on the pre-test and significance level 0.253, were not statistically significant. This suggests that students in the two groups were fairly homogeneous in the reading comprehension knowledge at the beginning of the study.

TABLE I
 INDEPENDENT T-TEST BASED ON PRE-TEST FOR EXPERIMENTAL AND CONTROL GROUPS

	Group	N	Mean	Std. Deviation	Levene's Test for Equality of Variances		t-test for Equality of Means		
					F	Sig.	t	df	Sig. (2-tailed)
pre-test	Control	20	12.20	2.19	1.349	.253	-.317	38	.753
	Experimental	20	12.45	2.76					

To answer the research question, the ANCOVA: A widely used model which various statistical methods are based, was used to compare the two groups at post-test. Analysis of covariance is a sophisticated method of analysis of variance. It is based on inclusion of supplementary variables (covariate) into the model. This let the researcher account for inter group variation associated not with the treatment itself, but with covariate (s). If covariates (s) are associated with the treatment effect, then the analysis of covariance may have more power than analysis of variance. Computing ANCOVA as you can see from Table II it showed that experimental group's gain was statistically significant.

TABLE II
 ANCOVA COMPARISON OF TWO GROUPS SCORES

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
test	137.813	1	137.813	45.272	.000	.544
Group	32.512	1	32.512	6.808	.013	.152
test * Group	21.012	1	21.012	6.903	.012	.154
Error(test)	115.675	38	3.044			
Error(Group)	181.475	38	4.776			

As can be seen in Table III, the mean improvement of post-test for control group was 13.80 and that of experimental group 16.10 and significance level was .458. This means that CALL had a positive effect on reading comprehension.

TABLE III
INDEPENDENT T-TEST BASED ON POST-TEST FOR EXPERIMENTAL AND CONTROL GROUPS

	Group	N	Mean	Std. Deviation	Levene's Test for Equality of Variances		t-test for Equality of Means		
					F	Sig.	t	df	Sig. (2-tailed)
post-test	Control	20	13.80	1.36	.563	.458	-5.741	38	.000
	Experimental	20	16.10	1.17					

According to the result of this study, computer can enhance and improve the reading comprehension between EFL learners. As the results of this study indicate, the students who were taught by CALL instructional significantly performed better than students who were taught by the traditional printed text.

Result of this study showed the computer has a positive effect on reading comprehension. Using computer in other instruction can have the same result. This study showed that computer can enhance the students reading comprehension so it can enhance the other skills (listening, speaking and writing) too.

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