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THE EFFECT OF E-LANGUAGE LEARNING TASK ON IRANIAN EFL LEARNERS' READING COMPREHENSION ABILITY

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ABSTRACT

The present investigation was an attempt to study the effect of e-learning on Iranian EFL learner's reading comprehension ability. To that end, a PET test was administered to 100 university students learning English language in institutes. Learners who scored between one above and below the standard deviation were selected. 40 learners were selected and they were divided into experimental and control group, each group contained 20 learners. A reading comprehension test was administered to both groups as a pre-test to take their initial knowledge of listening comprehension. The reading section of the TOEFL test was selected to test the reading ability of the participants. The experimental group received treatment in order to help them improve their computer and the Internet use in ten sessions. The control group received no treatment. Finally both groups sat for the post-test of the same reading comprehension test. The results were analyzed through ANCOVA and it was explored that e-learning had a positive effect on Iranian EFL learner's reading comprehension ability.

Key Words: *Reading Comprehension, E-learning, Multimedia*

INTRODUCTION

Reading comprehension is essential for academic achievement. Daniel *et al.*, (2006) state that learners "with poor reading and accompanying academic difficulties may experience increasing frustration, low self-esteem, and loss of motivation for learning as they progress through school". These negative effects are not only restricted to the school environment, but also effect learner's personal lives. It is thus imperative for all teachers to help learners improve their reading ability. The purpose of this study is to investigate whether teachers could improve learner's reading comprehension by using technology. This research will focus on how technology can be used as an intervention measure in classes where learners struggle with foreign language reading comprehension.

Statement of the Problem

With the increased use of computers and the advent of the Internet, e-mail, digital materials, e-journals, to get information is not only from paper but also from computers. Online reading serves as one of the sources of input for L2 readers. Electronic texts introduce new supports as well as new challenges that can have a great impact on an individual's ability to comprehend what he or she reads. Today, computer technology has been integrated into almost every aspect of learning in higher education. In fact, "the Internet has become an important part of college student's lives, not only for their studies and daily routines, but as a tool for getting to know other people and the rest of the world" (Chou and Hsiao, 2000). Since a wealth of reading materials is available via the Internet, learner's reading format appears to have shifted emphasis from reading the printed text to the use of the electronic medium to retrieve information. However, some researchers remain cautious of technology adoption. It is generally assumed that computer users need a special literacy competence to control monitors when reading on screens. However, such beliefs are largely lacking in empirical verification. Even though some studies (i.e. Gould *et al.*, 1987a; Tapscott, 1998; Eveland and Dunwoody, 2001; Clariana and Wallace, 2002) have been conducted to examine whether the past experience of using computer may affect reading comprehension, the results are inconsistent.

Significance of the Study

The current study intends to examine the effects of e-learning on student's reading comprehension in the Iranian college English context. It is believed that the results of this study have some benefits for Iranian

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College English reading instruction, reading instructors as well as non-English majors in their online teaching and learning.

Recent advancement in computer monitors, and software means that mainstream technology provides the users with unprecedented control over the screen/text image with which they interact (Douglas *et al.*, 2001). Computers and the Internet play an increasingly important role in the lives of L2 readers. Online reading serves as one of the sources of input for thousands of L2 readers besides reading from traditional printed materials.

Review of the Related Literature

Chun and Plass (1996a, 1996b) emphasize that, when words or phrases are presented with different types of media, retention is easier. They state that “foreign words associated with actual objects or imagery techniques are learned more easily than words without” (1996a). Lomicka (1998) investigated the way multimedia annotations influence the level of comprehension. The participants were 12 college students in a second-semester French course who read a text under one of three conditions: full glossing, limited glossing, or no glossing. The results indicated that computerized reading with full glossing promoted a deeper level of text comprehension. Lomicka proposed that the multimedia annotations were the key to text comprehension. More specifically, the multimedia annotations affected the generation of causal inferences and the construction of a situation model.

That is, the computerized glosses helped learners in the construction of a situation model and led to the generation of causal inferences.

Hong (1997) examined the effectiveness of multimedia computer-assisted reading in business Chinese using a software program, entitled *A Multimedia Chinese Reader for Advanced Students*, compared to the conventional paper-pen-dictionary method. They were instructed to read two passages each with two versions, a computerized version and a printed version. Students who read the computerized version had access to multimedia software, which allowed them to have access not only to an online glossary, but also the audio pronunciation of any character or phrase to help students connect each character pronunciation to its written form. The author concluded that the multimedia method is more helpful for improving reading comprehension than the conventional paper-pen-dictionary method.

MATERIALS AND METHODS

The study was conducted with 40 Iranian sophomore students who are studying English at Ghaemshahr Azad University, Iran. Researcher tried to have the same number of female and male participants in both experimental and control group.

Data Analysis Procedure

The results of post test were analyzed for further discussion via ANCOVA on the scores obtained from experimental and control group to see whether e-learning had any effects on EFL learners reading comprehension.

Results

A descriptive statistical analysis was done on the collected data of PET (Preliminary English Test) test. The results are shown in Table (1).

Table 1: Descriptive Statistics for the Proficiency Test

N	Mean	SD
100	32	10.32

This table shows the result obtained from the proficiency test, PET. The mean and standard deviation are presented.

Table (2) shows the number of students who took the pre-test and post-test. It should be mentioned that no one excluded.

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Table 2: Number of Students Participated in Pre-test and Post-test Cases

	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
Pre-test*group	40	100%	0	0%	40	100%
Pre-test*group	40	100%	0	0%	40	100%

Forty participants were selected for this study. They were divided into two groups, experimental and control.

The descriptive statistical analysis done on the collected data of pre-test and post-test is shown in table (3).

Table 3: Descriptive statistical analysis done on the collected data of pre-test and post-test

Group		Pre-test	Post-test
Experimental	Mean	59.9	68.4
	N	20	20
	SD	4.8	4.7
Control	Mean	58.45	58.1
	N	20	20
	SD	5.64	5.2
Total	Mean	59.15	63.25
	N	40	40
	SD	5.216	7.121

Interpretive Statistics

Analysis of covariance (ANCOVA) is particularly appropriate when subjects in two or more groups are found to differ on a pre-test or other initial variable. In this case the effects of the pre-test and/or other relevant variables are partialled out, and the resulting adjusted means of the post-test scores are compared. Through ANCOVA differences in the initial status of the groups can be removed statistically so that they can be compared as though their initial status had been equated. In this study, in order to investigate the research hypothesis "e-learning has no effect on Iranian EFL learner's reading comprehension ability", the differences between mean scores of pre-test and post-test of control and experimental group were calculated through ANCOVA. Before running ANCOVA, the following hypotheses were examined:

1. Linear relationship between variables (pre-test and post-test)
2. Equality of Variances
3. Homogeneity of regression

In order to examine the equality of variances, Levines Test of Equality of Error Variances was run. It tests the null hypothesis that the error variance of the dependent variable is equal across groups.

Table 4: Levine's Test of Equality of Error Variance

F	df1	df2	Sig
.26	1	38	.61

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According to table (5) the calculated F is not meaningful. So there is equality of variances and ANCOVA can be run.

The data in table (6) are related to test of homogeneity of regression. Before running covariance, between-subjects effects of pre-test-group should be investigated.

Table 5: Tests of Between-Subjects Effects

Source	Type III Sum of Square	df	Mean Square	F	Sig
Corrected Model	1879.82	3	626.61	230.93	.00
Group (a)	17.86	1	17.86	6.6	.015
Pretest (b)	802.97	1	802	295.95	.00
Group*pretest(a*b)	.41	1	.41	.15	.7
Error	97.68	36	2.71		
Total	46200	40			

As table (6) shows, between –subjects effect (a*b) is not significant ($F=0.15$, $Sig=0.7$). It shows that the data supports homogeneity of regression. Therefore, covariance should be run just for between – subjects effect of post-test and group to show whether mean scores of two groups are the same or not. The results of this analysis are demonstrated in table (7).

Table 6: Mean and Corrected Mean of Reading Comprehension Ability

Source	Posttest		Corrected Mean	
	M	SD	M	SE
Experimental	38.4	4.7	37.77	.36
Control	28.1	5.11	28.72	.36

Table (7) shows the corrected means of dependent variable reading comprehension ability. The data demonstrate that the means of experimental group are upper than control group.

Sum of analysis of covariance (ANCOVA) of reading comprehension ability in experimental and control group after eliminating between-subjects effect is demonstrated in table (8):

Table 7: Sum of analysis of covariance

Source	Type III Sum of Square	df	Mean Square	F	Sig	Partial Eta Squared
Corrected Model	1879.415	2	939.71	354.48	.00	.95
Pretest	818.52	1	818.52	308.76	.00	.89
Group	805.42	1	805.48	303.84	.00	.89
Error	98.08	37	2.65			
Total	46200	40				

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As it can be seen, the corrected model ($f=00$, $F=354.48$) is statistically significant. The results ($F=303.84$, $Sig=.00$, $Eta=.89$) shows that there is a difference between two groups. It means that there is significance difference between experimental and control group. As a result the null hypothesis “e-learning has no effect on Iranian EFL learners reading comprehension ability” will be rejected, so it can be concluded that e-learning has an effect on Iranian EFL Learners reading comprehension ability.

Conclusion

As expected, the results show that students who had access to computers and the Internet performed significantly better than students who only had a text without computers on the reading comprehension test. Participants in experimental group had higher reading comprehension scores than those of control group. This suggests that e-learning have a positive impact on reading comprehension. This result supports previous research (Davis, 1989; Hong, 1997; Leffa, 1992), which reported a positive impact of e-learning on reading comprehension.

The main effects of e-learning were found for reading comprehension. The result revealed that e-learning affected the student's reading comprehension. The finding supported the results concluded by previous studies that computer literacy affects performance (e.g. Attelwell and Juan, 1999; BECTa, 2000; van Daal and Reitsman, 2000; Taylor *et al.*, 1998). According to Hess and Miura (1985), the less experience and less exposure to the computer the subjects have, the more interference they may encounter in the reading process via computers.

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