THE EFFECTS OF COMPUTER ASSISTED LANGUAGE LEARNING ON TURKISH LEARNERS' GRAMMAR AND LISTENING PERFORMANCE

Derin ATAY, Gökçe KURT, Gül EKŞİ, Sema KUTLU
Marmara Üniversitesi

ABSTRACT: Computers and computer-related technology have become an integral part of teaching and learning in the past decades due to the rapid development of information technology. Although a number of studies have reported the positive effects of technology use on student motivation, self-direction, sense of accomplishment, critical thinking and language skills (Van Scoter, Ellis & Railsback, 2001), recent research has shown that the integration of technology has not yet been fully acknowledged and accepted by teachers (Herman, 2002), particularly in the EFL countries. The aim of the present study is to investigate the effects of an 8-week CALL instruction as a supplement to face to face in class grammar instruction on the grammar and listening skills of Turkish EFL students. The participants are a hundred and seventy-four Turkish EFL learners enrolled at the English preparatory school of a state university in Istanbul, Turkey. Data were collected by means of grammar and listening tests.

Keywords: CALL, grammar and listening skills, EFL setting

1. INTRODUCTION

The rapid development of information technology has made computers and computer-related technology an integral part of teaching and learning in the last decades. More and more instructors around the world are seeking to enhance their language instruction through activities and experiences made available through technology. A significant amount of literature explored the potential of computer technology regarding teaching and learning languages more effectively. Benefits of multimedia, the Internet, and various forms of distance education were explored (e.g., Armstrong & Yetter-Vassot, 1994; Dunkel, 1990, Garrett,1991; Ruschoff, 1993) and many educators were particularly interested in the interactive capabilities of technology, such as providing immediate feedback and increasing learner autonomy, in addition to its capability of simulating real world situations using audio, video, and graphics (Chun & Brandl, 1992; Hoffman, 1995-1996; Jones, 1991; Legenhausen & Wolff, 1990). The impact of technology on L2 grammar development was investigated in a number of studies and the findings were highly contradictory. In a study with Japanese students Nagata (1996), for example, compared the effectiveness of Japanese Computer Assisted Language Instruction (CALI) with non-CALI workbook instruction. The ongoing computer feedback was found to be more effective than simple workbook answer sheets for developing learners' grammatical skills in producing Japanese particles and sentences. Nutta (1998) explored the effects of computer based vs. teacher directed instruction on the acquisition of English as a second language. Students in the former group were found to reach better scores than those in the latter group leading the author to conclude that computer based instruction can be an effective method of teaching L2 grammar. Collentine (2000) also found that computer assisted language learning software containing user behavior tracking technologies promoted the abilities of foreign language learners of Spanish in generating indirect speech. Jarf-al (2005) furthermore aimed to find out whether integration of online learning in face to face in class grammar instruction would improve EFL freshman college students achievement. Results showed that the experimental group made higher gains in grammar achievement than the control group as a result of using a combination of online and face to face in class instruction. On the other hand, Zhuo (1999) examined the effect of hypermedia on grammar instruction and learning, and found that participants' achievement significantly increased as a result of using hypermedia. The performance of learners did not significantly differ indicating that hypermedia based instruction could accommodate the needs and ability of different individuals. Similarly, Chen (2005) observed the impact of traditional class instruction with or without computer aid on the acquisition of parts of speech by 2 groups of Taiwanese EFL learners. After a 16 hour instruction both groups were

asked to produce a written narrative; overall no statistical difference was found between the groups.

Although there is substantial amount of research showing on how educational technology can enhance grammar development, there is still very little research on how technology may be utilized to support and enhance listening skills (Liu, et. al., 2003). One of the more recent studies was carried out by Zhang (2004) who found that the students generally agreed that the listening exercises were helpful in terms of giving instant feedback and giving them the opportunity to hear voices/accents other than their teacher's, it would appear the computer was essentially "used as a mechanical tutor" (p. 42). Results showed that the use of computers to deliver the multiple choice or true/false listening comprehension quizzes was only slightly better than the traditional method of using a cassette player because the computer allowed the students to see the questions on a screen and gave them their results when they submitted their quizzes.

All these results seem to indicate the need for more research in the area of integration of technology into foreign language learning. Thus, the present study aims to investigate the effects of CALL instruction as a supplement to face to face in class grammar instruction on the grammar and listening skills of EFL Turkish students.

2. METHODOLOGY

2.1. Participants

A hundred and seventy-four Turkish EFL learners, enrolled at the English preparatory school of a competitive state university in Istanbul, Turkey, participated in this study. All participants were elementary level students who were placed into their classes according to their scores of the proficiency exam, administered at the beginning of the term. All students had basic knowledge with computer skills but none had ever attended a training or seminar on technology. The average age of the students was 17.8. Eight groups, four from social science and four from medicine and engineering classes, were chosen from 16 intact groups, and four groups, two from each, was randomly assigned to control and experimental groups. A t-test applied to the proficiency scores of the students revealed no significant difference among groups in terms of their English proficiency prior to the study. All researchers were instructors at the institution.

2.2. Procedure

The present study took place in the first term of the 2008-9 academic year in the grammar course. In the second week of the term experimental group students were provided with a two-hour orientation session about the grammar program to be used and the potential benefits of it. All students in the experimental group were given a user account and a sample unit was demonstrated.

In the prep school, C level students have grammar instruction for 6 hours a week. During the 8 week study control group students had regular face to face instruction whereas experimental group students had in-class grammar instruction for four hours and computer assisted grammar instruction in the other two hours. In both groups the relevant grammar structure was first taught by the teacher during class time and some of the exercises in the books were completed in class. Experimental group students then went to labs and continued doing exercises on the computer. Control group, on the other hand, completed the exercises in their workbooks and checked their answers during class time.

2.3. Data Collection and Analysis

Data for the study were collected by means of the grammar and listening test prepared by the testing office of the prep school. The tests, administered before and after the study, consist of fill-in the blanks, multiple choice and open-ended questions with a total of 100 scores. The collected data were analyzed via SPSS 12 statistical package and independent samples t-test was applied to the data.

2.4. Procedure and description of the software

The computer program used in the present study aimed to help students practice what they learn in their language classes both in lab and outside class in their own free time through the internet access. Each unit in the program opens with an introduction which is followed by the 'rule' part. An overall description of the grammar point is given in this part. Each unit includes different types of questions, which change each time the students click the 'start again' option, to help students to assess their knowledge on their own. Besides, students have the opportunity to do every exercise and test an unlimited number of times and the scores of every attempt are recorded seperately. After doing the exercises, they can see the correct answers instantly by clicking the 'marking' button and they can get prompt feedback. During this process they can get help from their teachers any time they have a problem with a question. The 'marking' button also allows them to see their progress through percentile ranks each time they perform the tests and exercises. The 'progress' option enables students to see their progress and average scores for each unit and compare themselves with the rest of the group. The program also has a short cut to Cambridge Dictionary and students can look up the words in a new window by clicking Ctrl+the word.

Moreover, the program provides students with exposure to native speaker talk. Instructions used in the program are given orally by native speakers using different varieties of English and most of the exercises are 'listen and do' type, which helps students practice and improve their listening skills every time they work on the program. Finally, with the help of the 'test' function students could create their own tests according to their individual needs. The students can easily navigate through the units by using 'back' and 'forward' buttons. The program basically allows self study and helps students learn at their own pace. Each instructor has his own account to observe students' performances anytime he wants.

3. FINDINGS

Grammar: As above mentioned, the analysis of the pre-test scores showed no significant difference between the groups in terms of their grammar knowledge at the beginning of the study ($p<.405$). The t-test applied to the gain scores revealed that there was no statistically significant difference between the experimental and control groups regarding the grammar knowledge at the end of the study either (see Table 1).

Table 1: Gain score differences in grammar

Test	Group	X [a]	sd	df	t	p [b]
Pre	Control (N= 85)	68.62	12.03			
Post	Control (N= 85)	70.76	11.58			
				172	.178	.859
Pre	Experimental (N= 89)	68.98	13.90			
Post	Experimental (N= 89)	71.46	14.31			

Note. N (n): # of students
[a] The total scores are out of 100.
[b] $p<0.05$

Listening: At the beginning of the study, the t-test applied to the listening test scores of the control and experimental groups also revealed no statistical significance between the groups ($p<.408$). To find whether there were differences between the two groups in their listening performance at the end of the study, a t-test was applied to both groups' gain scores. As can be seen in Table 2, the gain score of the experimental group was significantly higher than that of the control group.

Table 2: Gain score differences in listening

Test	Group	X [a]	sd	df	t	p [b]
Pre	Control (N= 85)	65.05	13.86			
Post	Control (N= 85)	68.91	11.81			
				172	-2.102	.037
Pre	Experimental (N= 89)	63.57	9.32			
Post	Experimental (N= 89)	69.64	9.98			

Note. N (n): # of students

[a] The total scores are out of 100.

[b] $p<0.05$

DISCUSSION AND CONCLUSION

The effects of computer assisted language learning on the second/foreign language learners' development of language skills in general and grammatical development in particular have been the focus of several studies. While some studies have found a significant advantage for students receiving CALL compared to students receiving non-CALL instruction, others have found no significant difference between CALL and other teaching methods. The purpose of the present study was to find out the effects of CALL basically on the grammar development of EFL learners, as the focus of the relevant program was on teaching grammar. The findings of the present study are consistent with findings of prior studies showing no significant difference between instruction with or without computer such as Liou, Wang and Hung-Yeh (1992) and Chen (2005). At the end of the study, the participants of the both control groups and experimental groups showed an increased performance in the grammar test but there was no statistically significant difference between the groups' gain scores.

According to Joy and Garcia (2000) the reason for lack of significant difference can be the flaws in the experimental designs, i.e., small number of subjects, absence of random assignment to control or treatment groups, small number of observations, no specification of the amount of time spent on the task. For the present study, the reason can be that it was the first time prep students had lab classes formally. Although in previous years there were some attempts to conduct CALL lessons in the prep school, they were generally fruitless. At the beginning of the project, teachers of the experimental groups were given a three hour training but it was not sufficient to encourage them to take part in the project willingly and to make believe in the benefits of the system as they were not familiar with the system. Thus, the classroom teachers did not want to take students to labs and lose "valuable" class time there, so the administration decided that two teachers be responsible for the integration of this system into regular teaching for all experimental classes. Despite the efforts of these teachers, most of the students did not take the grammar lesson in the labs seriously. Results regarding the grammar scores led the administration and the teachers to go over the program. In the second term grammar teachers along with lab teachers entered classes and pop quizzes to be answered on the computers were assigned from time to time to make the students take the program seriously and benefit from it consequently. Second term grades in grammar are expected to be much higher.

Studies conducted to see the effects of technology on listening skills again did not demonstrate consistent results regarding the benefits of interacting with computer-based activities. For example, Adair-Hourck et.al, (1999) found that the treatment group performed equally well as the control group in listening and speaking but better on reading and writing achievement measures. The higher scores of the experimental group students may be the result of students' interest in listening to native speakers as they are not highly exposed to such talk.

To conclude, the overall results of the study showed that using technology in class does not guarantee the effectiveness and quality of learning a certain skill. Integration of technology into traditional instruction seems to take a longer period of time to be understood and well applied both by students and teachers.

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