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EFFECTS OF COMPUTER ASSISTED LANGUAGE LEARNING IN ENGLISH CLASSES ON STUDENTS' ACHIEVEMENT LEVELS AND ATTITUDES TOWARDS THE LESSON

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Abstract

The purpose of this study was to examine the effects of Computer Assisted Language Learning (CALL) on students' achievement levels and attitudes towards the lesson in the 6th grade students' English lesson. The research was carried out in 2009-2010 education-instruction year in an elementary school in Nigde, Turkey. Totally 40 students in two different classes in the 6th grade of this school participated in the study. The pre/post-test control group research model was used in this study. The data obtained in the study were analysed by the statistical software SPSS 15.0. The arithmetic means and standard deviations were calculated for each group. In order to test the significance between the groups, the t-test and Mann Whitney-U test were used. The significance level was taken as .05. The results of the research showed a significant difference between the attitude scores of the experimental group and the control group in favour of the experimental group. It was also found out that the CALL was more effective in the positive development of the students' achievement levels. At the end of the research, it was revealed that the students educated by CALL were more successful and had a higher motivation than the students who were educated by the traditional language instruction methods.
Keywords: Computer assisted language learning, English teaching, elementary education

INTRODUCTION

It has been witnessed a wide spread of digital technologies in the schools over the last two decades. Among a number of developed countries, U.S. is leading these efforts and many developing countries are trying not to fall behind in providing cutting-edge educational opportunities for their youth (Şahin & Toy, 2009). In this regard, the most important development of the last few years in the world is the rapid growth and spread of information technology in numerous areas. It is generally accepted that information technology increases materialistic and moral value, and is widely used in areas of education, economy, health, agriculture, social life, and entertainment (Uzunboylu, 2004).

There is no question that information and communication technologies play very important roles. The rise in computer technology in recent years has given way to its use as an instructional tool in educational settings (Hainline, 1987; Şahin & Yıldırım, 1999; Akkoyunlu, 2002; Ateş, Altunay & Altun, 2006; Şahin, 2009; Baş & Kuzucu, 2009; Kazancı & Okan, 2009; Teo, 2009; Baş, 2010; Zehir-Topkaya, 2010). Technology has become an integral part of teaching and learning (Alkan, 1996). There is a widespread expectation that the technology will change the nature of instruction and provide the learners with cognitively challenging, attractive materials. Through the use

of the Internet, multimedia etc., learners can engage in individualised instruction where they can investigate and learn concepts and content to meet their specific needs (Şahan, 2005; Kazancı & Okan, 2009). It is widely believed that because students are highly motivated through rich, interesting and engaging learning experiences, their understanding of the subject is enhanced. Thus students cannot help but pay attention to information that is presented in dynamic and memorable ways (Kazancı & Okan, 2009; Teo, 2009). Both teachers and learners greatly benefit from using the computer technology. Computer technology enables teachers to address to different learning styles, helps provide effective instruction by assisting them in every activity in the teaching process. Further, it increases learner motivation, minimises pressure and fear, and enhances social development of learners (Şahin & Yıldırım, 1999; Akkoyunlu, 2002; Demirel, 2006; Koç, 2005).

There is no doubt that technology has been incorporated into our school systems. Computers are used not only as a means of helping schools analyse data, computers have become a pervasive tool towards optimising student learning (Traynor, 2003). Today, the worldwide web is on the way of being an important learning environment which provides students with a new and rich style of learning. The web is able to offer a world-wide democratic learning context to students, who are from different cultures, speak different languages without gender discrimination (Kurubacak, 2000). Developments in web based education have provided students with a wide variety of teaching/learning alternatives that have expanded the educational process beyond the traditional classrooms (Erdoğan, Bayram & Deniz, 2008).

Technology in the classroom emerged as an issue for both teachers and students in the early 1980s. Since then, a number of studies have been done on how technology is used in the classroom, what advantages technology in the classroom may hold for teachers and students, and how technology is implemented in the classroom (Plumm, 2008). Creating effective learning environments with technology remains a challenge for teachers. Despite the tremendous push for educators to integrate technology into their classrooms, many have yet to do so and struggle to find consistent success with technology-based instruction (Groff & Mouza, 2008).

A number of empirical studies done in the field of Computer Assisted Language Learning (CALL) have also contributed to our understanding of how computers are used within particular classroom settings (Kern, 1995; Chun & Plass, 1996; Sullivan & Pratt, 1996; Warschauer & Healy, 1998; Laufer & Hill, 2000; Ateş, Altunay & Altun, 2006; Baş & Kuzucu, 2009). Studies reveal several benefits for students related to the general use of technology for foreign language learning (Stepp-Greany, 2002).

As Okan (2003) stated, a critical perspective on computers is lacking among modern educators. There are numerous reasons for that, according to Bloom & Hanych (2002 as cited in Kazancı & Okan, 2009) are as follows:

- It is believed that computers enhance learning.
- Educational software can motivate students to study topics deeply.
- It is beneficial for teachers too.
- Education has entered the digital age. It is inevitable.

- Digital learning has dynamic, interactive and visual features that cannot be provided by printed materials.
- Hypertext and interactive feature of the digital materials allow learners to develop a nonlinear thinking skill.
- Distance education also suggests solutions to many problems of educational systems.

In today's world, when the usage of technology in education is mentioned, the first thing that comes to mind is the usage of technologies related to computer. Thus, it is clear that computers cannot replace teachers since teachers are the key to whether technology is used appropriately and effectively (Kumar, Rose & D'Silva, 2008). In this regard, Harlen (2000) identifies three main aspects of the teachers' role: (1) setting up the learning environment, (2) organising classroom activities, and (3) interacting with students. Among these three aspects, the most important aspect is teachers' interaction with students during their teaching. A teacher has to help students in engaging them to think while performing the tasks given.

The successful use of technologies in the classroom depends on several factors such as funding, dynamic lesson plans, decisions concerning hardware, software, and so forth (Bitner & Bitner, 2002). The use of educational software in the school setting is not a simple task. Evaluating the software before applying it is even more difficult especially if the software claims that it blends education and entertainment in order to create a motivating and successful environment for learning (Kazancı & Okan, 2009).

Computer programmers have been able to create computer-assisted-instruction programs that have served to increase student learning by affecting cognitive processes and increasing motivation. Current research shows the mechanisms by which computer programs facilitate this learning: (1) personalising information, (2) animating objects on the screen, (3) providing practice activities that incorporate challenges and curiosity, (4) providing a fantasy context and (5) providing a learner with choice over his/her own learning (Traynor, 2003).

More and more instructors around the world are seeking to enhance their language instruction through activities and experiences made available through technology. Many have integrated a variety of technologies in the teaching of grammar in foreign and second language learning environments, such as websites and CD-ROM virtual environments (Al-Jarf, 2005). One recent educational technology for language teaching, more specifically English Language teaching, is the Computer Assisted Language Learning (CALL) method.

LITERATURE REVIEW

Computers are becoming important components of education and the number of computers used at schools is increasing. They are utilised throughout the field of education and in language learning and teaching (Koçak, 1997; Tuzcuoğlu, 2000; Makaracı, 2004; Baturay, 2007; Baş & Kuzucu, 2009). Computer technology can be regarded as an educational tool supporting English Language teaching (Liang & Bonk,

2009). In fact, a wide range of electronic technologies have been developed to supplement second language teaching and learning (Warschauer, 1996; Liang & Bonk, 2009). Although primarily used with adult language learners, these technologies include hardware delivery methods such as audiotape recorders, videotape recorders, computers and the Internet, combined with an educational approach to teaching other languages. In addition, there are many innovative electronic tools oriented to language such as speech production and recognition, text analysis, text translation, and software for visualisation and animation, electronic mail, list serve discussion groups, streaming audio and video and real-time synchronous as well as asynchronous communication opportunities that bring the target language environment to the learner (LeLoup & Porterio, 1997). Traditional learning–teaching environment, crowded classes, time and limited places affect students' participation to learning duration in a bad way. As a result of this, individualised learning, which is one of the effective circumstances, occurs (Demirel, 2005; Bintaş & Barut, 2008).

CALL may be defined as the search for and study of applications of the computer in language teaching and learning (Ford & Klicka, 1994; Levy, 1997). CALL is the term most commonly used by teachers and students to describe the use of computers as part of a language course (Koçak, 1997; Baş, 2010). CALL is a form of computer-based assisted learning with two important features: (1) bidirectional learning and (2) individualised learning. CALL materials are tools for learning. The focus of CALL is learning, and not teaching. CALL materials are used in teaching to facilitate the language learning process. CALL materials are student-centred, self-paced learning material, which promotes accelerated learning (Hardisty & Windeatt, 1989; Alkan, 1997; Koçak, 1997; Levy, 1997; Levy & Stockwell, 2006; Baş & Kuzucu, 2009). CALL originates from CAI (Computer-Assisted Instruction), a term that was first viewed as an aid for teachers. The philosophy of CALL puts a strong emphasis on student-centred lessons that allow learners to learn on their own using structured and/or unstructured interactive lessons. CALL can be used to reinforce what has been learned in the classrooms. It can also be used as remedial to help learners with limited language proficiency (Chapelle & Jamieson, 1986; Chapelle, 1990; Liddell, 1995; Levy, 1997).

The design of CALL lessons generally takes into consideration principles of language pedagogy, which may be derived from learning theories (behaviourist, cognitive, and constructivist) and second language learning such as "Krashen's Monitor Theory" (1985) (Baş & Kuzucu, 2009). Others may identify CALL as an approach to teaching and learning foreign languages whereby the computer and computer-based resources such as the Internet are used to present, reinforce and assess material to be learned. CALL can be made independent of the Internet (Liang & Bonk, 2009). It can stand alone for example in a CD-ROM format. Depending on its design and objectives, it may include a substantial interactive element especially when CALL is integrated in a web-based format. It may include the search for and the investigation of applications in language teaching and learning (Warschauer, 1996). Except for self-study software, CALL is meant to supplement face-to-face language instruction, not replace it (Pius, 2003). CALL has also been known by several other terms such as technology-enhanced language learning (TELL), computer assisted language instruction (CALI) and

computer-aided language learning (CAL) but all of these are essentially similar (Ehsani & Knodt, 1998).

Because of its reported positive effect on learning language skills, the use of technology as a medium has increased phenomenally in the last two decades (Greenfield, 2003). Computer-mediated language learning helps students develop their both productive and receptive skills (Ateş, Altunay & Altun, 2006). Furstenberg (1997) contends that CALL is a tool which enhances learner-learner interaction. In the same line, Warschauer (1996) believes that CALL helps learners use language in authentic situations. The reasons for using CALL include: (a) experiential learning, (b) motivation, (c) enhancement of student achievement, (d) authentic materials for study, (e) greater interaction, (f) individualisation, (g) independence from a single source of information, and (h) global understanding. The barriers inhibiting the practice of CALL can be classified in the following common categories: (a) financial barriers, (b) availability of computer hardware and software, (c) technical and theoretical knowledge, and (d) acceptance of the technology (Hardisty & Windeatt, 1989; Chapelle, 1990; Liddell, 1995; Warschauer, 1996; Levy, 1997).

The potential benefits of CALL cannot be underestimated in the contemporary world. There is a plethora of established findings on the instructional value of computer, particularly in advanced countries. There are now several CALL packages on different subjects. It is obvious that the current trend in research all over the world is the use of computer facilities and resources to enhance students' learning. This may be the reason why Handelsman et al. (2004) opined that many exercises that depart from traditional method are now readily accessible on the web, even though teachers do not use these facilities. They further showed that the interactive approaches to lecturing significantly enhance learning (Yusuf & Afolabi, 2010).

CALL increases motivation by providing a context for the learner that is challenging and stimulates curiosity (Malone, 1982). Activities that are intrinsically motivating also carry other significant advantages such as personal satisfaction, challenge, relevance, and promotion (Kinzie, 1990).

Fein (1981) has also found, apart from using computer programs, that involvement in fantasy is often highly intrinsically motivating. Providing students with choice over their own learning provides leaner-controlled instruction, which contributes to motivation. Increased motivation in turn increases student learning (Kinzie, Sullivan & Berdel, 1988).

As in other subject areas, there is a strong interest in technology use in foreign language teaching and learning as well. Two decades ago while the researchers were more concerned about describing and examining computer technology, today the focus is on investigating how to use it to teach and learn languages more effectively (Liu et al., 2002). Several studies have proved that the use of computer technologies have a positive effect on the achievement level of language learners (Baş & Kuzucu, 2009). Promoting learners' motivation (Hamerstorm et al., 1985; Lee, 2000) and self-esteem (Dunkel, 1990), providing experiential learning (Lee, 2000), enhancing specific language skills such as reading (Chun & Plass, 1996; Tozcu & Coady, 2004), writing

(Al-Jarf, 2004) and vocabulary learning (Liu, 1994; Tozcu & Coady, 2004) are all among the benefits of computer technology use in foreign language classrooms.

Using CALL, visual and auditory input delivered in a well-ordered sequence can lead the learner to understand the grammar, syntax and vocabulary of the target language with no need for text support. Learners can interact with the presentation, and have their interactions recorded into their study records and even influence the pace and level of the presentation (Knowles, 2004).

Hopefully, CALL will constitute the solution to overcome the language competency problem of school students. Due to its flexibility, students can use CALL inside and outside classroom. They can use it as drill-and-practice software. They can use it as reinforcement or a remediation tool to strengthen their English language competency (Almekhlafi, 2006).

However, little is known about the use of CALL in the Turkish education system particularly in foreign language learning settings. In addition, very few empirical studies exist in Turkey (Yalçınalp, 1993; Koçak, 1997; Aytürk, 1999; Kaplan, 2002; Makaracı, 2004; Baturay, 2007; Ateş, Altunay & Altun, 2006; Baş & Kuzucu, 2009) regarding the use of CALL in English lessons. Thus, much remain to be empirically studied on the effects of CALL in English language teaching in Turkey.

In the new Turkish curriculum the teaching must be "student-centred", but Turkish teachers have difficulty on changing their traditional language teaching methods (Demirel, 2005). This concern often centres on the perception that teaching across computers and other technological instruments (Eskil, Özgan & Balkar, 2010). Recent research, however, indicates that the adoption of technology in the classroom can lead to students' academic achievement and positive attitudes towards English courses at elementary school.

Statement of the Problem

The problem of the current research was to determine whether elementary students achieve higher achievement and attitude levels towards English courses when they are taught using CALL than when they are taught using the traditional methods of language instruction. Subsequently, the aim of this research was to summarise and evaluate the subset of literature that has special relevance to the comparison of CALL and traditional methods of language instruction.

Sub-problems of the study

In order to identify the differences between the students of the experimental group and the students of the control group, the following sub-problems were tried to be evaluated in the light of the acquired data in the study:

1. Is there a significant difference between the achievement test scores of the students in the experimental group and the students in the control group in terms of the usage of CALL in the teaching process?

2. Is there a significant difference between the attitude towards English test scores of the students in the experimental group and the students in the control group in terms of the usage of CALL in the teaching process?

METHODOLOGY

Research design: Pre-test/post-test experimental design with a control group was used in the study (Kerlinder, 1973). The pre/post-test group research model is one of the most widely used research models in educational sciences (Dugard & Toldman, 1995). In this study, an experimental method with a control group (Karasar, 2005) was used in order to find the difference between the students who were taught with CALL method in the experimental group and the students who were taught by traditional language teaching methods.

Both groups were employed a pre-test prior to the experimental process. The subjects were given an achievement test and an attitude scale test towards English lesson as a pre-test. Meanwhile, the same tests (the achievement and the attitude scale tests) were employed to both groups after the experimental process as a post-test.

Subjects of the study: Two classrooms of 6th grade class students from an elementary school in Nigde, Turkey formed the subjects of the study. This study was performed amongst 40 elementary school students. 20 students from the 6-C class formed the experimental group and the rest of the students (20 students) from the 6-B class formed the control group of the study. The main reason for choosing this level was that in the reaching sequence of English classes, topics related to "living beings" unit is introduced to students at this level in elementary English courses. All of the students in the study were about 12 years old. There were 11 (55%) male, 9 (45%) female students in the experimental group and 10 (50%) male, and 10 (50%) female students in the control group. The families of the students in both groups had similar socio-economic backgrounds. The groups can be seen in the experimental design in Table 1 below:

Table 1. Organisation of the experimental and the control groups

Experimental Group	The group on which computer assisted language learning method was applied
Control Group	The group on which traditional language instruction methods were applied

In order to investigate students' academic achievement levels and their attitudes towards English lesson, a specific lesson plan was prepared for the students in the experimental group. The academic achievement and the attitude scale tests towards elementary English courses were administrated to both groups in a single session as a pre-test. In four weeks, the experimental group was applied to CALL in the teaching session, but not the control group. Four weeks later, each of the groups was applied the academic achievement test and the elementary English attitude scale test given as a post test. According to Manson & Bramble (1997), the longer the time spent, the greater the

probability that something could influence the subjects' environment that in turn would affect the results. Duration of four weeks was deemed appropriate to see the effects of the experimental treatment.

Procedures of the study: In the experimental group, the following procedures have been applied. In the control group, traditional instructional methods have been used in the process of the study. The design of the study can be described as in the table below:

Table 2. Experimental design used in the study

Groups	Pre-test	Experimental Design	Post-test
Experimental	T112	Computer Assisted Language Learning Method	T212
Control	T112	Traditional Language Instruction Methods	T212

$T1_1$ ⟶ English Academic Achievement Test
$T1_2$ ⟶ Elementary English Attitude Scale

As looked at Table 2, one can see the scales applied on the subjects of the study. The academic achievement and attitude scale tests were applied on the subjects of the study for two times before and after the experimental process.

In the experimental group, the following procedures were applied. In the control group, traditional language teaching methods such as Total Physical Response (TPR), Grammar-Translation, Audio-lingual have been used in the process of the study. The procedures in the experimental group are as follows:

First, the students were given both the pre-achievement test in English and pre-attitude scale towards the lesson. The students were assigned to different computers to study the stated subjects. All of the necessary equipments such as microphones, headphones, etc. were supplied to the students.

The students were educated on the usage and the benefits of the CALL for a week. For example, the students were instructed how to listen to typescripts, and fill in the blanks on the software. The students were instructed in the stated subjects by some language teaching-learning methods two hours a week. Target vocabulary and grammar patterns were introduced to the students in these lessons. After that, the students were educated formerly two hours a week by using CALL. In this phase, the students found opportunities to practise their learning in English classes using the language learning programme after formal lessons. Students practised their learning (especially the vocabulary) in the language learning software at school. Students discussed what they learnt in the lessons in the language learning software at school. Students took short exams after each unit and received feedback from the teacher on their performance. Students passed if they achieved at least 60 points on the exam. The students were given both the post-achievement test in English and the post-attitude scale towards the lesson. The teacher visited all of the students using the language learning software in the classroom and offered help when students needed it. The teacher also helped the students with technical problems they faced during the courses.

Instruments

English academic achievement test: In order to collect the data related to academic achievement of the students in English lesson, an "academic achievement test" developed by the researcher was conducted. A multiple-choice test including fifty items (each item is 2 points; total score is 100), the reliability and validity of which have been made. This test is used to measure the students' achievement levels in the "living beings unit".

The test was applied on a total number of seventy students in an elementary school. In the first place, the item and test statistics of the achievement test were computed for reliability and validity. The reliability of the knowledge test was done by KR_{20} method (Yılmaz, 1998) so that the reliability value of the test was found as .86 and the test difficulty (P_j) was found as .59 and the test discrimination (rjx) was found as .47 so that it is revealed that the test is reliable and it was applied on the students both in the experimental and the control groups. It was also found that the academic achievement test has a reliability of .86, an average level of test discrimination (.47) and an average level of test difficulty (.59). In the light of the data gathered for the knowledge test, it can be said that the test has a high level of reliability, a medium level of difficulty and a high level of test discrimination.

English attitude scale: In this research, the "Elementary English Attitude Scale Test" was used in order to measure students' attitudes towards elementary English courses. The scale was arranged by having done the reliability and validity studies and used to evaluate the attitudes of elementary school students towards elementary English courses by the researcher himself. In the reliability and validity studies of the scale, the survey model was used. The attitude scale test was applied to measure the attitudes of the students towards the environment in the study. The attitude scale test is a five-point Likert type scale (which was used to differentiate orientations from 1 as low and 5 as high) reliability and validity of which have been made by t-test, including 27 items that measure students' attitudes towards English. The reliability value of the attitude scale test was found as .87 and the Cronbach's alpha value was found as .92. The Kaiser-Meyer-Olkin (KMO) sampling adequacy result was found as .884 and the Bartlett test result was found as χ^2= 10134,161 (p= .000). These results show that there is a strong correlation amongst the items.

Analysis of the Data: In this study, the statistical techniques such as mean ($\overline{X}$), standard deviation (Std. Dev.), independent samples and related samples t-tests and Mann Whitney-U test were used in the analysis of the data. The statistical analyses have been made by means of SPSS 15.0 statistical package programme for windows.

Limitations of the Study

Small sample size is one of the limitations of the study. The number of the participants in the study was limited to the number of 6th grade class students (totally 40 students) in an elementary school in Nigde, Turkey. Another limitation arises from the subject of science and technology course since "living beings" unit was used in the

experimental and the control groups. In the experimental group, CALL was used. In the control group, traditional language instruction methods were used in the study.

It was aimed to examine and observe how CALL influences students' gaining of academic achievement and positive attitudes towards elementary English courses in this study. The findings obtained from this study cannot be generalised to other settings.

FINDINGS

The results given in tables were obtained from the students' answers to the academic achievement test and the attitude scale test towards elementary English course. In this part of the study the acquired data will be tried to be stated with calculated analyses in tables below.

1. Analysis of the I. sub-problem

The first sub-problem of the study was "Is there a significant difference between the achievement test scores of the students in the experimental group and the students in the control group in terms of the usage of CALL in the teaching process?"

Table 3. Comparison of pre-test scores of the students in the experimental and the control groups

Groups	η	$\overline{X}$	Std.Dv.	df	t	p
Experimental	20	15.4	6.60	38	0.225	0.98*
Control	20	15.6	7.42			

*p>.05

In Table 3, the pre-test academic achievement scores of the students in the experimental group and the control group have been compared. The average score of the students in the experimental group has been found as $\overline{X}$ = 15.4±6.60; and the average pre-test score of the students in the control group has been found as $\overline{X}$ = 15.6±7.42. The difference between the students of these two groups has been analysed through the independent samples t-test. The accounted t-value is $t_{[38]}$= 0.225. According to these results, there is no statistically significant difference between the pre-test scores of the students of these two groups at .05 level (p= .98, p>.05).

Table 4. Significant difference of Mann Whitney-U test in regard of pre-test results

	Pre Test
Mann-Whitney U	209.5
Wilcoxon W	520.000
Z	0.256
P	p= .94 p>.05

The degree of p value is found as .94 according to the result of analysis and as degree is $p>.05$, the difference is not statistically significant. A statistical significant difference between the experimental and the control groups does not occur. The post test results of the experimental and control groups are given in Table 5.

Table 5. Comparison of post-test scores of the students in the experimental and the control groups

Groups	η	$\overline{X}$	Std.Dv.	df	t	p
Experimental	20	66.2	12.0	38	3.64	0.0008*
Control	20	50.8	14.8			

*$p<.05$

The post-test academic achievement scores of the students in the experimental and the control groups have been compared in Table 5 above. The average post-test score of the students in the experimental group has been found as $\overline{X} = 66.2 \pm 12.0$; and the average post-test score of the students in the control group has been found as $\overline{X} = 50.8 \pm 14.8$. The difference between the two groups has been analysed through the independent samples t-test. The accounted t-value is $t_{[38]} = 3.64$. The students in the experimental group ($\overline{X} = 66.2$) showed significant academic achievement levels compared to the students in the control group ($\overline{X} = 50.8$). So according to these results, it can be said that there is a statistical significant difference between the post-test scores of the two groups at .05 level ($p = .0008$, $p<.05$). In this regard, it can be clearly stated that the students achieved more academic knowledge levels compared to those in the control group. Activities based on CALL have more positive impact on the students for gaining academic achieved knowledge than the students who are taught by traditional language instruction methods.

Table 6. Significant difference of test analysis of Mann Whitney-U test in regard of post-test results

	Post Test
Mann-Whitney U	314.0
Wilcoxon W	721.000
Z	3.083
P	$p = .001$ $p<.05$

After the result of analysis the degree of p value is found as .001 and as the degree is $p<.05$, the difference is statistically significant. When it is looked at the average of the experimental and the control groups, it is deduced that CALL education that is applied to the students in the experimental group is more effective than the traditional language instruction methods applied to the students in the control group. The comparison of achievement scores of the students in the experimental and the control groups is given in Table 7.

Table 7. Comparison of achievement scores of the students in the experimental and the control groups

Groups		Pre Test		Post Test		Achievement			
	η	$\overline{X}$	Std. Dv.	$\overline{X}$	Std. Dv	$\overline{X}$	Std. Dv	t	p
Experimental	20	15.4	6.60	66.2	12.0	50.8	3.94	11.88	.000*
Control	20	15.6	7.42	50.8	14.8	35.2	4.49		

*p<.05

Table 7 compares achievement scores and the t-values based on the pre-test and the post-test, the distribution of the post-test scores applied to both groups at the end of the research process. The average achievement of the students in the experimental group was $\overline{X}$ = 50.8±3.94 and the average achievement of the students in the control group was $\overline{X}$ = 35.2±4.49. The t-value between average achievement scores of the two groups was t= 11.88. This shows that the difference between the two groups is statistically significant (p= .000, p<.05).

Table 8. Test analysis significant difference of related samples test in regard of pre test-post test results

	Pre Test – Post Test
Z	823
P	p= .000 p<.05

As a result of analysis of p degree comes out as .000 and since it is p<.05, it means there is a statistical significant difference. This difference is indicator for that CALL is effective for the experimental group students. Students in the experimental group reached a significantly higher achievement level compared to those in the control group and showed that the CALL was more effective on the positive development of the academic achievement levels of the students in the experimental group than the students educated with traditional language teaching methods in the control group.

2. Analysis of the II. sub-problem

The second sub-problem of the study was "Is there a significant difference between the attitude towards English test scores of the students in the experimental group and the students in the control group in terms of the usage of CALL in the teaching process?"

Table 9. Comparison of pre-test attitude scores of the students in the experimental and the control groups

Groups	η	$\overline{X}$	Std.Dv.	df	t	p
Experimental	20	2.40	1.39	38	-0.113	0.91*
Control	20	2.45	1.38			

*p>.05

The pre-attitude scores of the students in the experimental and the control groups can be seen in Table 9. The average pre-test attitude score of the students in the experimental group has been found as $\overline{X}$ = 2.40±1.39; and the average pre-attitude score of the students in the control group has been found as $\overline{X}$ = 2.45±1.38. The accounted t-value between the average scores of the two groups is $t_{[38]}$= -0.113. The data obtained are not statistically significant at .05 level (p= .91, p>.05) since the pre-test attitude scores of the students in these two groups are similar.

Table 10. Significant difference of Mann Whitney-U test in regard of pre-test results

	Pre-Test
Mann-Whitney U	202.000
Wilcoxon W	725.000
Z	0.541
P	p= .96 p>.05

The degree of p value is found as .96 according to the result of analysis and as degree is p>.05, the difference is not statistically significant. A statistical significant difference between experimental and control groups does not occur. The post attitude test results of the experimental and the control groups are given in Table 11.

Table 11. Comparison of post-test attitude scores of the students in the experimental and the control groups

Groups	η	$\overline{X}$	Std.Dv.	df	t	p
Experimental	20	4.20	0.951	38	3.94	0.0003*
Control	20	3.00	0.973			

*p<.05

The post-attitude scores of the students in the experimental group and the control group can be seen in Table 11 above. The average post-attitude score of the students in the experimental group has been found as $\overline{X}$ = 4.20±0.951; and the average attitude post-test score of the students in the control group has been found as $\overline{X}$ = 3.00±0.973. The t-test value obtained from the average scores of the two groups is $t_{[38]}$= 3.94 which shows a statistical significant difference (p= .0003, p<.05). In light of the data acquired in the research, it can be said that the students in the experimental group have reached higher attitude scores compared to those in the control group. The experimental method

where CALL was applied has enabled the students to develop positive attitudes towards English lesson.

Table 12. Significant difference of test analysis of Mann Whitney-U test in regard of post test results

	Post-Test
Mann-Whitney U	325.500
Wilcoxon W	560.000
Z	3.394
P	p= .003 p<.05

After the result of analysis the degree of p value is found as .003 and as the degree is p<.05, the difference is significant. But when looked at the average of the experimental and the control groups, it is deduced that CALL education that is applied to the students in the experimental group is more effective than the traditional English education that is applied to the students in the control group.

Table 13. Significant difference of test analysis of related samples test in regard of pre test-post test results

	Pre Test – Post Test
Z	632
P	p= .000 p<.05

As a result of analysis of p degree comes out as .000 and since it is p<.05, it means there is a statistical significant difference. This difference is indicator for that CALL is effective for the experimental group students. Students in the experimental group reached a significantly higher achievement level compared to those in the control group and showed that the CALL was more effective than the traditional language teaching methods in the control group.

DISCUSSION AND CONCLUSIONS

There was a significant difference between the achievement levels of students educated using Computer Assisted Language Learning (CALL) and students who were educated using traditional language teaching methods. Students educated by CALL were more successful than the students educated by traditional language teaching methods. This confirms the findings of other researchers. Koçak (1997) investigated the effects of Computer Assisted Language Learning on vocabulary instruction for Turkish EFL students. In his research, students who were educated by CALL had higher achievement levels on English vocabulary than those who learned using traditional language teaching methods. Çevik (2001) investigated the effects of CALL on students' achievement in foreign language classrooms and it was found that CALL educated students had significantly higher levels of achievement than the students educated by traditional language teaching methods. In studies carried out by Ford & Klicka (1994),

İnan (1997), Kaplan (2002), Yılmaz (2004), Kılıçkaya (2005), Yarar (2005), Almekhlafi (2006), Yalçınalp, Geban & Özkan (2006) and Baş & Kuzucu (2009), it was found a statistical significant difference in knowledge learned by CALL (experimental group) and traditional language teaching (control group). Similarly, Makaracı (2004) investigated the effects of CALL for learning grammar in English classes. Students educated by the CALL method achieved higher than students educated by traditional language teaching methods, but the result was not significant at .05 level. Makaracı (2004) found a significant difference between the retention levels of the students in the experimental and the control groups. Students educated by the CALL had higher retention levels than students educated by traditional instruction methods. Yiğit (2007) researched academic success and retention on primary school second grade mathematics using educational computer games. Computer-aided math games were applied to the experimental group while the traditional (paper and pencil) methods were used by the control group. There was no significant difference between control and experimental groups in this study.

In terms of the students' attitude towards English lesson, there is a significant difference between the experimental group and the control group. Students educated by CALL have more positive attitudes to English classes than those educated by traditional language teaching methods. Koçak's (1997) study investigated the effectiveness of CALL on vocabulary teaching and learning. The hypothesis was that students are more positively motivated to use software materials than the usual textbook and that vocabulary development would be significantly better for the software (experimental) group than for the textbook (control) group. Both groups were given pre-test and post-test for 20 vocabulary items practised in isolation and in context over a two session, four-hour treatment period. The experimental and control groups were given a questionnaire to measure their attitudes towards using computers as a part of their course. It was found out that students educated by the CALL developed more positive attitudes towards the lesson than the students in the control group. Pekel (2002) investigated students' attitudes towards web-based independent learning at Bilkent University School of English Language. In her study, fourteen volunteer upper-intermediate level prep students from different disciplines were the participants. A six-week web-based independent learning course was designed and implemented. The teacher and students communicated through e-mail only. The pre- and post-treatment questionnaires were analysed quantitatively. Comparison of the results of initial and final questionnaires revealed that students' attitudes towards web-based independent learning changed positively, and in particular, their knowledge of how to learn on the internet increased considerably as a result of the study. Yalçınalp (1993), Ford & Klicka (1994), Meyveci (1997), Aytürk (1999), Önsoy (2004), Yalçınalp, Geban & Özkan (2006), Almekhlafi (2006), Ateş, Altunay & Altun (2006) and Baş & Kuzucu (2009) carried out studies to explore students' attitudes towards lessons by CALL. They found that there was a significant difference in students' attitudes towards the lesson. Students who were educated by CALL developed more positive attitudes towards the lesson than students who were educated by the traditional language teaching. These results correlate with the results of the current study. It can be said, based on the findings above, CALL was more effective on the development of students' attitudes towards lesson than the traditional language teaching methods.

In this study, the achievement level of experimental group students was significantly higher than the group taught using traditional language teaching methods. Students educated by CALL were more eager to learn English and actively participate in learning. It was observed that students in the experimental group developed listening and speaking skills beyond those of the control group. The researcher did not find a significant difference in writing skills between the two groups. This may be because students educated with CALL did not need to use pencils and papers. Both groups had chance for writing in formal instruction processes in class. Neither group received specific training to write better than the other.

Due to the length of the current research conducted, two of the four improvements were observed: improved academic achievement levels and positive attitudes towards elementary English courses improvements. Therefore, it can be concluded that as compared with the traditional instructional methods, CALL garners significant increases in several areas of importance to a student's academic, social, and emotional well-being. In the classroom, this task is accomplished by developing innovative learning materials and software that will meet the needs of a diverse learning population. In conclusion, on the basis of the gathered findings in the study it can be said that CALL can be used in English courses effectively.

As a result of this study, in which the effects of CALL on students' academic achievement levels and their attitude levels towards elementary English courses have been examined, the following suggestions can be given depending on the findings obtained in the research:

1. In light of the gathered data in the study, CALL has been found out to be more effective on students' academic achievement levels and attitudes towards English than the traditional language instruction methods. So, it is recommended that the teachers should use this method in English classes.
2. Elementary English school curriculum in Turkey does not correlate with CALL so that the elementary English curriculum should be integrated with the CALL method for schools.
3. Seminars and courses should be organised so as to train teachers both on the theory and practice to use this strategy effectively in their classrooms so that they can create a more positive classroom for CALL.
4. Elementary English teaching classes are very limited (4 hours a week) at national schools in Turkey so that the duration of English lessons should be increased to better apply the CALL in the classroom or at school.
5. Opportunities should be created for students to discuss, reflect on, and share of what they learnt.
6. Students should be taught computer skills so they can effectively use computers for learning.
7. Teacher education programmes should be reorganised to contain both the practice and the theoretical knowledge/framework of CALL.
8. Most schools in Turkey are in need of computers and computer labs (Baş, 2010). The Ministry of National Education of Turkey, known as MEB, should develop the technological infrastructure to implement CALL so that this method can be used in a greater extend in all schools.

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BİLGİSAYAR DESTEKLİ YABANCI DİL ÖĞRETİMİNİN İNGİLİZCE DERSLERİNDE ÖĞRENCİLERİN ERİŞİLERİNE VE DERSE YÖNELİK TUTUMLARINA ETKİSİ

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Genişletilmiş Özet

Problem (amaç): Bilim ve teknolojideki hızlı gelişmeler, dünyada pek çok kurumu ve süreci etkilediği gibi, okulu ve eğitim sürecini de derinden etkilemiştir. Bu gelişmeler, öğrenme-öğretme sürecine önemli değişiklikler getirmekle beraber, bu süreci de bilgisayar ve internet tabanlı bir boyuta taşımıştır. Bilgisayar ve internetin öğrenme-öğretme sürecine girmesi, öğretim yöntem ve tekniklerini de beraberinde değiştirerek, bu süreçte bilgisayardan daha fazla yararlanılmaya başlanmıştır. Bilgisayarın eğitimde kullanılmaya başlanması ile pek çok derste bilgisayar destekli uygulamalara geçilmiştir. Bu derslerden birini ise İngilizce dersleri teşkil etmektedir. İngilizce derslerinde bilgisayarın kullanılmaya başlanması ile bilgisayar destekli yabancı dil öğretimi gündeme gelmiş ve bu yöntemle ilgili yazılım programları geliştirilmiş, internette de pek çok çevrimiçi program bu amaçla kullanıma açılmıştır. Özellikle yurt dışında bilgisayar destekli yabancı dil öğretimi konusunda ciddi çalışmalar yapılmasına rağmen, ülkemizdeki bu çalışmaların sayısının oldukça az olduğu görülmektedir. Bu amaçla, ülkemizde bilgisayar destekli yabancı dil öğretim yönetiminin etkililiğini gösterecek daha fazla çalışmaya ihtiyaç bulunduğu belirtilmektedir. Bu bağlamda bu araştırmanın amacı, bilgisayar destekli yabancı dil öğretiminin 6. sınıf öğrencilerinin İngilizce dersindeki akademik başarılarına ve derse yönelik tutumlarını incelemektir.

Yöntem: Araştırma, 2009-2010 eğitim-öğretim yılında Niğde'de bir ilköğretim okulunda gerçekleştirilmiştir. Araştırmaya, bu okulun iki farklı sınıfından toplam 40 adet 6. sınıf öğrencisi katılmıştır. Araştırmada ön test-son test kontrol gruplu araştırma modeli kullanılmıştır. Araştırmada veri toplamak için "akademik başarı testi" ile "ilköğretim İngilizce dersine yönelik tutum ölçeği" kullanılmıştır. Araştırma kapsamında elde edilen veriler, SPSS 15.0 istatistik paket programı yardımı ile çözümlenmiştir. Her grup için aritmetik ortalama ve standart sapma hesaplanmış, gruplar arasındaki farklılığı test etmek amacıyla da bağımsız gruplar t-testi ile ilişkili gruplar t-testi ve Mann Whitney-U testi kullanılmıştır. Araştırmada anlamlılık düzeyi .05 olarak alınmıştır.

Bulgular: Araştırmanın sonuçları, grupların derse yönelik tutumları arasında anlamlı deney grubu öğrencileri lehine farklılıklar saptanmıştır. Ayrıca, deney ve kontrol gruplarındaki öğrencilerin dersteki akademik başarıları arasında da yine deney grubundaki öğrencilerin lehine anlamlı farklılıklar saptanmıştır. Araştırmanın sonunda, bilgisayar destekli yabancı dil öğretimi ile öğretim yapılan deney grubundaki öğrencilerin kontrol grubundaki öğrencilere nazaran akademik başarılarının ve tutumlarının da daha yüksek düzeyde olduğu sonucuna varılmıştır.

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Öneriler: Bu çalışmanın sonuçlarına bakarak, İngilizce öğretmenlerinin bu yöntemi derslerinde mümkün olduğunca kullanmaları ve bu yöntem hakkında bilgisi olmayan öğretmenlerin ise hizmet-içi eğitime tabi tutulması önerilmektedir. Bir başka taraftan, ülkemizde ilköğretimde İngilizce derslerinin haftalık sayılarının oldukça sınırlı olması, ders saatlerinin artırılmasını ve mevcut ilköğretim İngilizce öğretim programının bilgisayar destekli yabancı dil öğretim yöntemi ile bütünleştirilmesini gerekli kılmaktadır.

Anahtar Kelimeler: Bilgisayar destekli yabancı dil öğretimi, İngilizce öğretimi, ilköğretim