A SMALL SCALE EXPERIMENTAL STUDY: USING ANIMATIONS TO LEARN VOCABULARY

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ABSTRACT
This study attempts to investigate whether a difference exists between learning vocabulary via animation and via traditional paper-based method. This small scale study was conducted at Karadeniz Technical University in academic year 2009-2010. Two pre-intermediate classes were randomly selected as the experimental group (n=17), and control group (n=22) as each class accommodated that number. Results obtained from the data gathered with a pre-test and a post-test applied to each group was analyzed using t-test in SPSS 16.00 version. The findings show that although there is no statistically significant difference between post-tests of each group, there was an increase in the post-test scores of animation group as compared to the pre-test scores. This increase implies that using multimedia such as animations contribute to students' achievement in vocabulary learning. Besides, the teachers' observations and students' opinions indicate that there were relatively positive attitudes towards using such kind of animations in vocabulary learning. They were useful since they address more senses than using paper-based texts; however, they can be distractive if teachers do not pay attention to the proficiency level of students and the content presented. The study supports the idea that multimedia applications can be integrated into language classes not as an alternative way but as an additional way to contribute positively to the atmosphere of class and motivation of students.
Keywords: CALL, animation, vocabulary learning, multimedia.

INTRODUCTION

One of the biggest symbols of our modern age is the computer. Computers are almost everywhere. It is not wrong to say that the world has totally digitalized. Education has definitely been effected by the digital world. The fast moving technology provides people in the area of education with limitless opportunities. With the global interest in computers, innovative teaching methods have been oriented to foreign language learning environments. These teaching methods present different functions for educational environments. Computers have potential advantages to both the teachers and the student. Animation, though one small part of the computer revolution is very important part of high technology.

Vocabulary learning constitutes a basic and an important part of foreign language learning. Without vocabulary building, it is difficult to study grammar, speaking, listening, writing etc. However, it is not an easy task to memorize a large amount of vocabulary. It is relatively difficult to learn new words, to keep words in mind and to recall them when needed. With the help of innovative methods and materials that multimedia provides, language learning environments can be more colourful, motivating and at the same time more supportive for students in the learning process. It seems difficult to learn a new language with such a bulk of words just by looking up a word or a term in dictionaries. Therefore, introducing words using a new method is necessary. This new method uses an animation to present the words. As a tool, an animation makes students more focused on the words because it is interactive and addresses almost all senses as well. While they try to understand the meaning of words associating the scenes that they watch on the screen, they are also exposed to the pronunciation of words and the written form of words simultaneously. It is thought that vocabulary will be interesting and exciting activity for the students in the language learning process. To learn words in a context but with animation is thought to make learning process much easier for students.

Today, one of the most serious problems in Turkey is foreign language learning. To teach students in large diverse classrooms is not easy and students have little chance to get first-hand knowledge through conversations with natives. For such a problem, learning with computers can be one of the effective ways to help students in

the learning process. With the rapid increase in computers at schools in Turkey in recent years, students now have more chance to learn foreign language in CALL-based environments.

In this respect, this study aims to find out whether CALL-based vocabulary learning better facilitates vocabulary learning when compared to the traditional method. This does not intend to find a favored medium for vocabulary learning but just to see if there any difference exists between two different environments in our case.

Computer Assisted Language Learning (CALL)

Computer assisted language learning (CALL) dates back to 1960. After the invention of personal computers (PC) towards the end of 1970s, CALL gained ground and broadened its field in the 1980s (Davies, 2002). It is briefly defined as "the search for and study of applications of the computer in language teaching and learning" (Levy, 1997:1). In time, applications of computers have changed to meet the needs of both students and teachers in language classrooms. Indicating this change in educational environments, Warschauer (2004, p. 21-22) clarifies:

> There has been a general transformation in CALL over the years, with new ideas and uses of computers being introduced. The first phase of CALL development was Structural CALL, an approach used during the1960s and 1970s that followed the teaching techniques of structural linguistics. Here CALL primarily took the form of drill and practice programs. However, by the end of the 1970s, such behavioristic approaches to language learning had given way to communicative approaches focusing on the meaning of language in use rather than on its form, and this was reflected the changed nature of CALL activities.

This permanent use of CALL shows that there are endless uses and functions that CALL can serve in language classrooms although the approaches and activities may differ in time. Thanks to CALL, teachers have more to offer students in the process of language learning. After uses of devices such as "tape recorders, slide projectors, overhead projectors and videotape recorders", teachers now have even more opportunities to introduce language skills in more than one form. (Price, 1987: 155). Rather than the traditional method of teaching, computers combine the features of projectors, tape-recorders and lecturing. This means that students can process knowledge of language through different channels simultaneously, which is the outcome of CALL.

There is also general tendency towards a changeover from books to computers since computers are regarded as more powerful and have wider knowledge than books. In accordance with this idea, Harmer (200, p. 146) points out the foremost use of computers and he defines them as "a reference tool". Instead of searching from books or dictionaries, teachers and students can make great use of CD/DVD-ROMS and internet via computers for gaining knowledge and improving their language skills. In addition, CALL changes teaching methods employed by language teachers. Hai-peng and Li-jing (2007) claim that language teachers have been turning book-oriented classes into students-oriented classes. This feature of CALL contributes to students' self-confidence and autonomy.

As it is clear that CALL has a place in language learning, it is valid for language acquisition, as well. Kavčič et al. (2006, p. 95) inserts that CALL has three different roles in language acquisition and the computer can act as:

- a tutor (e.g. for delivering instructional materials to the learner),
- a stimulus (e.g. to stimulate discussion, writing, or critical thinking), or
- a tool (e.g. word processors, spelling and grammar checkers, and concordances).

Presenting these roles, it is inevitable to make use of computers in language classrooms in this age of technology. That's why CALL should be integrated into the curriculum of language courses. Similarly, Ayres (2002: 248) suggests that "CALL is a tool to supplement the classroom, and needs to be tied into the curriculum closely". The studies carried out by McCarthy (1999) and Redfield and Campbell (2002) proved that integration of CALL into curriculum worked effectively (cited in O'Connor and Gatton, 2004).

All things considered, there are lots of plausible reasons to use CALL in the language learning process. Baş and Kuzucu (2009) list some of them: "experiential learning, motivation, enhancement of student achievement, authentic materials for study, greater instruction, individualization, independence from single source of information and global understanding"(para.8).

Computers and Vocabulary Learning

In the language learning process, it is really a challenge to teach the basic skill of a language, vocabulary. Computers are like safeguards in overcoming this challenge. There are numerous ways for using computers in vocabulary learning such as dictionaries available on CD-ROMs, websites including vocabulary games, exercises, activities and tests, reading passages that enable students to learn words in a context, online dictionaries with a huge amount of words, spoken and written language corpora, concordances, and various computer programmes like CAVOCA[1] . Multimedia glosses are among the popular ways of using computers in vocabulary learning. Lin (2009) states that using glosses and multimedia annotations are found to be effective in vocabulary learning according to results of some studies.

Ma and Kelly (2006) assert that learning vocabulary is one of the most popular subjects in CALL programs. There have been lots of studies conducted till today. The researchers (Ellis, 1995; Goodfellow, 1995; Conrad, 1996) with their studies proved that remarkable interest has been given on vocabulary learning in CALL (cited in Ghabanchi and Anbarestani, 2008).

1.1. Why animation?

Using animation is an easy way to integrate computers into a foreign language classroom. Since this kind of multimedia tool provides students with learning via multi-sensory channels, it is thought that language learning process can be more fruitful and encouraging for students. Collin and Rayen affirms that (2009, p. 396) "The advent of the high–powered multimedia kept the learner close to authentic situations where learning simultaneously involved listening, seeing, reflecting, doing and participating". Unlike the traditional method of teaching, employing animations in classrooms aids students in understanding since they appeal to both visual and audial memory. Learning with animation is theoretically based on dual-coding theory. As it is described by Pavio (2006) the dual-coding states that processing language knowledge in both verbal and visual channels make learning effective. Animation functions by addressing all 5 senses and its interactivity can contribute to students' autonomous learning. These features mentioned above results in permanent learning as well. In his article indicating benefits of using multimedia in language classrooms, Hoogeveen (1995) states:

> 'Firstly, learners respond to multimedia in a complex way and give the feeling of experiencing information instead of simply acquiring it. Secondly, the man-machine is more friendly interaction. Thirdly, students feel more fun from multimedia and learning becomes a happy process.'
>
> (cited in Hai-peng & Li-jing, 2007, p. 56)

As it is stated, students learn by experiencing language knowledge. Joy and learning combine when using animation and the education environment turns into "edutainment" (Boswood, 1997: 202). In his paper about the influence of animation on learners, Devi (2005) lists some positive and negative aspects of using animations.

> - Some positive aspects from this study on using animation in learning are given below.
>   1. Increases motivation
>   2. Removes affective filters
>   3. Lowers the anxiety level
>   4. Improves contextual comprehension because of the display of caption along with the animation.
>   5. Helps in the retention of concepts is superior when compared to the use of just text
>   6. Fosters visual and verbal literacy
> - A few negative aspects were also observed:
>   1. Distracts the learner to watch the cartoon repeatedly.
>   2. Affects the learning process if learners with difficulties in vision use it repeatedly.
>
> (para. 23)

[1] CAVOCA is an acronym of "Computer Assisted Vocabulary Acquisition". Groot (2000) describes this programme in his online article. For more information about the programme, please see http://llt.msu.edu./vol4num1/groot/default.html

As it is clearly shown in this list, there are relatively few negative impacts on students in comparison to the great many positive impacts it has on students. Even if it were possible to eliminate all of the negative impacts, these positive impacts are still enough to use animations in language learning process.

Another aspect of using animations in language classrooms is that they make the language courses suitable for students with different learning styles. Butler-Pascoe and Wiburg (2003, p. 7) refer to this aspect of multimedia:

> Multimedia provides the multiple modalities needed to meet the needs of students with different learning styles and strategies. The aural, visual, tactile, and kinaesthetic learners have access to a variety of computer-based activities that are well suited to their preferred learning styles.

Considering various different learning styles in a language class, using multimedia devices like animation can contribute to the motivation level of students in a positive way because all different learners can find something attractive in the language learning process.

METHODOLOGY

Participants

The participants in this study were the English preparatory class students at pre-intermediate level attending School of Foreign Languages in Karadeniz Technical University in the academic year 2009-2010. Two pre-intermediate classes were randomly selected as the experimental group (n=17), and control group (n=22) as each class accommodated that number.

Research Design

This small scale experimental study aims to find whether any difference exists between the students having a traditional text-based method and those having computer-based method. To do this, an experimental and a control group were formed. Both groups were given the same pre-test including four different part of vocabulary exercises. For the class with traditional method, students were allowed to complete the worksheets including vocabulary exercises in 20 minutes and later the text on water cycle were distributed to read in 10 minutes. At the end of the class, the same worksheets were given the students again and they were allowed to do it in 20 minutes. For the class with computer-based method, students were given the same pre-test and post-test and in the same length of time they were allowed to fulfil the task. The only difference was that this group was shown an animation on the same topic to students. The students watched the animation, heard the utterances and also saw them on the screen.

Material and Target Words

For this research, the 'water cycle' was chosen as the content for the class. For the control group, a text telling the process of the water cycle was given on a paper. This text included all the target words that were asked in the achievement test. The statements in this text were the same as the utterances in the animation version. Therefore, the students in both the control and the experimental group were introduced to the same content but in different forms. In the animation version, they were moving scenes displaying each phase of the water cycle, students could watch the process, hear and see the utterances simultaneously.

Instruments

The instrument for this current study included an achievement test with four different parts. It was prepared by obtaining expert opinions. The same test was used in the pre-tests and immediate post-tests. The test had 40 items including target words regarding the content, water cycle. For the first part, students were asked to complete a puzzle including 12 words. For the second, they were asked to find the match the 7 words given. In the following part, the students were asked to recall the 8 words with its first letter and meaning given. In the last part, students were asked to write the Turkish equivalence of the 13 words given. After the study carried out in both classes, the class teacher who taught both classes was asked about his observations during both applications. Also, students in the experimental group were asked their opinions about learning English and vocabulary via animations. In this way, apart from the tests, opinions were also obtained on this issue.

Data Analysis

Each correct answer in the tests was counted one point while the wrong was zero. The maximum score of the test was 40. After the results were obtained, they were analyzed by t-tests in SPSS 16.00. The expected result of this study was that students in the animation group would outperform those in text-based group in the post-tests as compared to the pre-tests.

In this part, the data obtained from the vocabulary tests applied to both groups will be presented. The scores were analyzed independently using t-tests. In the first table, achievement scores and t-values based on the pre-tests and post-tests are compared.

Table 1. Comparison of achievement scores of students in the experimental and control groups

Tests	Groups	N		Sd	t	P
Pre-test	Control	22	20,95	3,99	1,084	0,285
	Experiment	17	22,41	4,37		
Post-test	Control	22	21,45	4,44	1,754	0,088
	Experiment	17	24,06	4,78		

Note. Maximum score = 40

According to the data presented in the table, the average scores of pre-tests applied to experiment group ($X_{experiment}$ = 22,41) and control group ($X_{control}$ = 20,95). These results show that there is no statistically significant difference between the average scores of pre-tests applied to both groups when analyzed independently using a t-test (p>0,05). The analysis of post-tests show that there is no statistically significant difference $X_{experiment}$ = 24,06 ; $X_{control}$ = 21,45) between the experimental group who learned using animation-based method and those who learned using paper-based text in a traditional language teaching method (p>0,05).

Table 2. Comparison of Pre-test and Post-test achievement scores of students in the experimental group

	N		Sd	df	t	P
Pre-test	17	22,41	4,37	16	-2,297	0,035*
Post-test	17	24,06	4,78			

It is seen that in table 2, the average score of pre-tests applied to experiment group is x =22,41 and the average score of post-tests of the same group is x =24,06. To determine whether there is a statistically significant difference between the average scores of both pre and post-tests applied to this experiment group, the results were analyzed using a dependent t-test analysis. This analysis shows that t(16) =-2,297 and p<0,05 (.035). Considering the total score of the tests as 40, it can be claimed that there is a statistically significant difference between the average scores of pre-tests and post-tests applied to this experiment group.

Table 3. Comparison of Pre-test and Post-test achievement scores of students in control group

	N		Sd	df	t	P
Pre-test	22	20,95	3,99	21	-0,807	0,429
Post-test	22	21,45	4,44			

Table 3 presents that the average score of pre-tests applied to control group is x =20,95 and the average score of post-tests is x =21,45. According to the dependent t-test analysis used to see if there is any difference between these average scores, the results are $t_{(21)}$ =-0,807 and p>0,05 (.429). These results affirm that there is no statistically significant difference between the average scores of pre-tests and post-tests applied to the group who employed paper-based text in a traditional way.

The analysis of the data implies that while there is a statistically significant difference between pre-tests and post- tests of the experimental group, there is no statistically significant difference between the experimental group who learned using animation-based method and those who learned using paper-based text in a traditional language teaching method.

Observations of the Teacher and Students' Opinions

During the applications in both classes, neither group was given any extra instruction or any information on the content. The teacher has no role as a tutor but a guide to direct students to complete the tasks. When the teacher was asked his observations about both groups he stated that there was considerably more enthusiasm for the activity presented in animation-based method as compared to the one presented in traditionally paper-based method. The students to whom the text is presented on paper complained about having difficulty understanding the text and words. They expressed that they needed to refer to a dictionary for the unfamiliar words. On the other hand, in animation-based class, the students were more excited and more eager to learn. They were trying to focus on the issue presented in animation. They did not tell anything regarding a need to use dictionary.

When students in animation-based class were asked about their opinions at the end of the application, they were positive about the application in general. They found the animation activity useful. To characterize the common view some quotations were given as follows:

"It has positive impact on learning. Meanings of words are catchier for us since we can make inferences to understand the meanings of words." (informant 17)

"Both seeing and hearing make learning and remembering words easier. Also, we can infer the meaning from the visuals in the animation." (informant 12)

"We can comprehend a context full of unfamiliar words not just by reading but also seeing and hearing in easier way." (informant 8)

"This is a better method in learning words than learning words on a paper-based text."(informant 3)

Some students, though finding it interesting, still wanted to have some extra information on paper in hand (informant 14). Furthermore, one of them found the animation difficult to follow as the subtitles were changing in different phases of water cycle too fast, making it difficult to understand. However, same student found this animation activity useful for acquiring words (informant 11).

CONCLUSION

The findings showed that there is no statistically significant difference in scores of achievement tests between the control group students who worked on vocabulary on paper and the experimental group on animation form. However, it is clear from the tests scores that experimental group outperformed control group indicating that animation-based technique contributed to students' vocabulary learning. As indicated in students' self-reports animation-based technique allowed the students to use both aural and visual channels while dealing with the task. The findings of teacher's observations and opinions of students also show that there was a common positive attitude towards using animations in the class. At the end of the animation application, students became aware of its contribution to their vocabulary knowledge. They wanted to see such kind of activities more often since they attracted students' attention and motivated them for learning.

It appears that there is a need for further research to fully investigate the efficacy of using animations in vocabulary learning with a larger sample. The use of animation can be extended to the other language skills as well, including grammar.

It is concluded that animations may assist students in learning vocabulary but it is important to know how and where to decide using them. Animation should not be allowed to monopolize the whole session. On the contrary, it should be considered as a motivator and powerful tool that aids learning process. It should not be regarded as an alternative way replacing with traditional method totally, but as an additional technique to use for the class.

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