The Effect of Computer-Assisted Language Learning (CALL) On Learning Idiomatic Expressions: A case of Iranian EFL students

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Abstract

Computer Assisted Language Learning (CALL) deals with teaching of foreign or second languages via computer programs and softwares and can offer many potential benefits for both learners and teachers (Zinovjeva, 2005). A strong knowledge of idioms will help students to be better speakers and negotiators. This study seeks to find the most effective way of learning English language, to implement a computer program that supports and enhances the pedagogy, and then measures how effective people can learn idioms by using computer programs. The sample consists of 60 female university students who are 18-22 years old and are all Iranian and majoring in English Translation at Shahr-e-kord university. They were selected through the administration of Quick Placement Test (QPT) and were divided into 2 groups (the control group and the experimental group). The first part of the work was the development of a computer program for teaching the new idioms of English book 136 American English Idioms. The next step was teaching the new idioms of the lessons to two groups of 60 students, in one of which the medium of instruction of the idiom was Idiom LX software and in the other one the traditional method presented by a language teacher and the results were analyzed using SPSS. The results showed that the use of the above-mentioned software led to higher ability of the learners in long term recall of the English idioms and it can also be used as an effective educational material for improving the students' learning of English idioms and also for changing their negative attitudes toward learning English idioms as a difficult and in some cases an impossible task.

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1. Introduction

Language teaching is a rather difficult and complicated process that requires careful and diligent work. Educators in the field of language teaching always try hard to find ways to make language learning enjoyable and attractive for the learners. As technology developed, new programs came into use to create a more interactive and interesting environment for language learners and teachers than what was previously available in the traditional language classrooms. Many researchers, in search of the best way to acquire a foreign/second language, now use CALL in language classrooms to find out its effects on language learning. CALL is broadly defined as the application of computer systems to support and improve language learning settings (Egbert, 2005).

Expected advantages of CALL are that it can improve independent language learning environments, provide authentic materials, help learners to understand abstract concepts as concrete images, and improve learners' motivation (Lai & Kritsonis, 2006).

Given the breadth of what may go on in computer-assisted language learning, a definition of CALL that accommodates its changing nature is any process in which a learner uses a computer and, as a result, improves his or her language (Beatty, 2003).What is meant by 'computer'? And what is meant by 'improve'?

CALL as considered here does not include simply the canonical desktop and laptop devices we label computers. It also includes the networks connecting them, peripheral devices associated with them and a number of other technological innovations such as PDAs (personal digital assistants), mp3players, mobile phones, electronic whiteboards and even DVD players, which have a computer of sorts embedded in them (Levy & Hubbard, 2005).

The second question can be answered with respect to a number of different perspectives: Learning efficiency, Learning effectiveness, Access, Convenience, Motivation, and Institutional efficiency.

With computers and networks becoming more and more popular, numerous CALL programs and on-line materials have flooded the field of language teaching and learning, providing learners with a variety of learning activities, which have been a dream even decades ago. In addition, computers have brought about fundamental changes not only in the society outside the classroom walls but also within them.

1.1. Idioms

Idioms are also defined as non-literal phrases (e.g., kick the bucket) whose figurative meanings (here, to die) cannot readily be derived from the literal meanings of their individual words (here, kick and bucket) (Brinton, Fujiki, &

Mackey, 1985). Using idioms helps students go deeper into the language. It is a way of getting more in touch with the culture and tradition.

It is not always possible for listeners or readers to recognize that an idiom exists, and they may assume the literal meaning. Second, it is unusual to be able to substitute one word for another and provide a translation into non-idiomatic English. So without having access to a good dictionary providing examples for idioms, an idiom cannot often be translatable.

This study seeks to find the most effective way of learning idioms of another language, to implement a computer program intended for intermediate users of English that supports and enhances the pedagogy, and then measures how effective people can learn idioms by using computer programs.

2. Review of Literature

The abbreviation CALL stands for Computer Assisted Language Learning. It is a term used by teachers and students to describe the use of computers as part of a language course (Hardisty & Windeatt, 1989). Lasagabaster and Sierra (2003) point out that the number of students using CALL is always increasing and researchers and teachers make unravelling efforts to integrate CALL into the curriculum.

Computer-assisted language learning (CALL) was the expression agreed upon at the 1983 TESOL convention in a meeting of all interested participants. CALL is widely used to refer to the area of technology and second language teaching and learning despite the fact that revisions for the term are suggested regularly (Chapelle, 2001, p. 3).

The acronym CALL will be used as a short-cut term, for sake of brevity and convenience, which includes Computer-Assisted Instruction (CAI), Computer-Assisted Language Teaching (CALT), Computer-Assisted Language Testing (CALT), as well as e-learning (Gu, 2006).

According to Abu Naba'h et al. (2009), the scientific stream students, generally speaking, have relatively higher mental abilities than literary stream students, this is shown by the fact that they were accepted in the scientific stream which demands higher grades and also the scientific stream students are much more interested in studying and learning in general and better in learning languages in particular.

2.1. Structural / Behaviouristic CALL

It was conceived in the 1950s under the influence of Audio-lingual teaching method. Informed by the behaviourist learning model, this mode of CALL featured repetitive language drills, referred to as drill-and-practice. Further, it included extensive drills, grammatical explanations and translation at various intervals (Warschauer & Healey 1998).

2.2. Communicative CALL

An alternative to the instructional model is to use computers with a different goal: "Communicative competence": Communicative CALL emerged in the late 1970s and early 1980s. Communicative CALL stressed that computer-based activities should focus more on using forms than on the forms themselves, teach grammar implicitly rather than explicitly, allow and encourage students to generate original utterances rather than just manipulate prefabricated language, and use the target language predominantly or even exclusively (Jones & Fortescue,1987; Phillips, 1987).

2.3. Integrative CALL

Integrative CALL shifts to a perspective which seeks both to integrate various skills (e.g., listening, speaking, reading, and writing) and also integrate technology more fully into the language learning process. In integrative approaches, students learn to use a variety of technological tools as an ongoing process of language learning and use, rather than visiting the computer lab on a once a week basis for isolated exercises.

2.3.1. Studies on Efficacy of CALL

Most studies have based their findings on case, qualitative and research-based studies while discussing the efficacy of CALL. Yang (2001), in his study of fifty-five participants, second-year students in an applied linguistics program, discussed that students benefited from maximizing the language and learning link in computer-mediated environments, particularly web-based instruction. Bakar (2007) also showed that there are benefits and great opportunities for students to use L2 in computer-based learning environment . However, the learning benefits the students received from using computer-based activities are depending on many related factors that need to be studied.

Ghabanchi & Anbarestani (2008) in their study explored the effect of CALL on vocabulary learning. They indicated that in using CALL program, learners have an intensive mental processing which results in long term recall of words. CALL also produces better results in contextualized vocabulary learning than ordinary desktop dictionary method.

3. Statement of the Problem

Idiomatic expression learning has been a matter of wide-ranging debate among educators for some years. Idiomatic expressions usually put non-native speakers in hot water both in written and oral context. On the other hand, material writers and language teachers find it difficult to develop effective

materials and teach them effectively so that they relegate idioms to have a subsidiary place in syllabus. Also owing to unconvincing research findings in this area of study and lack of clear answers as to how to teach and learn idioms, addressing the question of whether using computer programs would lead to better retention compared with conventional methods may shed some light on the ambiguities (Collis,1987). All in all, to resolve, at least partly, the above-cited problems, in the present study the researcher has developed a software program for teaching some idioms to a group of language learners in order to make generalizations on any probable effect of CALL on idiomatic learning of EFL learners.

3.1. Research Questions

The present study attempted to investigate appropriate answers to the following questions:

1) Does teaching idioms via Idiom LX software program lead to the short-term improvement of idiom learning by EFL learners?
2) Does Idiom LX software program help Iranian EFL learners to improve their long-term recall of the English idioms?
3) Does Idiom LX software program have a positive effect on the attitudes of Iranian EFL learners toward using computer programs in learning English in general and idiomatic expressions in particular?
4) Does the number of hits (The number of times a student clicks on the options such as definition, example and Persian equivalence, related to an idiom in multimedia software) improve English idioms learning of EFL learners?

3.2. Objectives of the Study

An attempt has been made in this study to develop a computer software program to teach the new idioms of each lesson to increase the motivation of students Besides, evaluating the results of idiomatic expressions training through teacher- based and computer- based methods and deciding which one has been more effective in teaching idioms of English language are what the researcher seeks to explore. And finally, to identify whether idiom training is more interesting through a computer-assisted or merely teacher based instruction.

4. Method

4.1. Participants

The sample consisted of 60 female university students who were between 18 and 22 years old and were all Iranian with Persian as their mother tongue and majoring in English Translation at Shahr-e-kord University. These

participants were selected out of a larger group of learners through the administration of the Quick Placement Test (QPT); they were considered intermediate. Then they were divided into two groups, 30 students in the control group and 30 in the experimental group.

4.2. Instrumentation

4.2.1. Quick Placement Test (QPT)

Quick Placement Test (QPT) was administered to screen the subjects and homogenize them based on their level of proficiency.

4.2.2. Course book

The course book used in the conventionally instructed group was"136 American English Idioms" (Collis, 2004). This book was used because it is one of the course books of the English Translation and is taught during one academic semester. The first 20 idioms were selected for this study.

4.2.3. The Multimedia Soft Ware Program

The multimedia software program used in this study was developed with the purpose of teaching some of the new idioms of the English course book. The name of the software is Idiom LX. In the development of the above mentioned-software, the capability of multimedia CALL in combining different modalities has been considered and the emphasis has been put on the use of still visuals for conveying the meaning of the new idioms. Idiom LX software consists of the first 20 new idioms of the above mentioned course book. The software uses animated pictures, a context example, idiom pronunciations and the equivalence of the idioms in Persian language (see Appendix B).

4.2.4. Pre-test

At the beginning of the educational semester, a pre-test (T1) was administered to the students of the two groups. The pre-test was administered without any previous announcement and the aim was determining the students' knowledge of the new idioms before the beginning of the treatments. It consisted of 20 multiple-choice questions. The reliability of the test was estimated by using Kuder-Richardson 21 formula and it turned out to be .817.

4.2.5. Post-tests

There were two post-tests, the immediate post-test (T2) and the delayed post-test (T3). The immediate post-test (T2) was administered to the two

groups one day after the last treatment session. The delayed post-test (T3) was administered three weeks after the immediate post-test to examine how well the students can recall the idioms learned during the treatment sessions. Both of them were multiple choice tests. Each test consisted of 20 multiple-choice questions .The questions were designed on the basis of the 20 new idioms which were taught in the classes and by Idiom LX software.

Finally, the reliability of the test was estimated using Kuder-Richardson 21 formula and validity of the test was also estimated by expert judgment.

4.2.6. The Questionnaire

In order to investigate the experimental group participants' attitudes toward the use of computers in idiom learning, a questionnaire was also developed in the respondents' mother tongue, Persian, to ensure their full comprehension of the items and prevent any language barriers and it was administered to the experimental group students at the end of the treatment sessions The researcher examined the reliability of the questionnaire closely by the use of Cronbach alpha formula in a pilot study (see Appendix A).

4.3. Procedure

In the first step, one of the recent versions of Quick Placement Test was administered to the population of the participants out of whom 60 participants were selected and assigned to two groups. The next part of the work was the development of a computer program (Idiom LX) for teaching the new idioms of each lesson.

The third step was teaching the new idioms of the lessons to two groups of 60 students of Translation course, in one of which the medium of instruction of the idiom was Idiom LX software and in the other one traditional method presented by a language teacher. Before the beginning of the instruction, a pre-test was necessary to decide that the two groups had the same knowledge of English idioms.

The control group was conventionally instructed. In each session 5 idioms were taught to them. After learning the equivalence of the idioms they practiced new idioms in questions and texts.

The experimental group participants had to use the multimedia CALL software and practice every new idiom. After installing Idiom LX software on their own personal computers, they had to complete a short multimedia background questionnaire including questions about their age, gender and any visual or hearing problems .Next, by turning on their computers, they could hear a new idiom instead of the Start Up sound. Then the learner got to see the animated pictures related to them which conveyed the new idiom's meaning. Three frames were used for each idiom .There were various links (Example,

Definition and Persian equivalent) on the page so that the user could open new pages including additional information. The software has some features making it reliable:

Definitions, examples and Persian equivalences of the idioms were also read for the participants and every time they clicked on links they heard them completely. The soft ware was able to show the number of times participants used each link. So the author could measure the effect of number of hits on students' learning. The soft ware had this ability to show times when a new learner was using it so that the author was certain that the program had not been used by anybody else. In the last page they could return to the previous pages again (see Appendix B).

The last phase, or Data Analysis, was the evaluation of the two groups regarding their progress in learning the new idioms. By using SPSS the results were analyzed.

5. Results

Before continuing with the experiment and in order to make sure that the two groups were homogeneous, the results of the performance of the two groups on the QPT were compared.

Table 1. Descriptive Statistics for the Proficiency Test

Groups	No.	Min.	Max.	Mean	SD	SEM
Control	30	30	38	33.37	2.399	.438
Experimental	30	30	38	33.50	2.813	.514

It can be seen in Table 1 that there is a slight difference between the means; however, to make sure that this difference is not statistically significant, a t-test was run.

Table 2. The Results of the t-test for the Proficiency Test

t	df	Sig.	Mean Difference
-.198	58	.844	-.13

One can easily understand from Table 2 that the amount of t-observed (t-observed= -.198) is only significant at the probability level of p=.844 which is not statistically meaningful. Therefore, it can be said that the two groups were homogeneous with regard to their proficiency level.

It was also necessary to make sure that the two groups were homogeneous with regard to their knowledge of idioms. For this reason, their performances on the pre-test were compared. Table 3 reveals the descriptive statistics for the pre-test.

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Table 3. Descriptive Statistics for the Pre-test

Groups	No.	Min.	Max.	Mean	SD	SEM
Control	30	1	7	3.47	1.697	.310
Experimental	30	1	6	3.10	1.583	.289

Once again, the difference between the means revealed to be small; nevertheless, to find out if this difference is significant or not, another t-test was employed. Table 4 presents the results of this t-test.

Table 4. The Results of the t-test for the Pre-test

t	df	Sig.	Mean Difference
.865	58	.390	.367

According to Table 4, the amount of t-observed (t-observed= -.865) is only significant at the probability level of p= .390 which is not again statistically meaningful. Therefore, it can be claimed that the two groups were homogeneous in their knowledge of idioms.

5.1. Addressing the First Null Hypothesis

In order to test the first null hypothesis, the post-test performances of the two groups, that is, the control group and the experimental group were compared to see if there was any significant difference.

Table 5. Descriptive Statistics for the Post-test

Groups	No.	Min.	Max.	Mean	SD	SEM
Control	30	5	15	9.00	2.573	.470
Experimental	30	10	17	12.80	1.901	.347

To find out whether or not this difference is statistically significant, a t-test was employed.

Table 6. The Results of the t-test for the Post-test

t	df	Sig.	Mean Difference
-6.506	58	.000	-3.80

By studying Table 6, one can easily find out that the amount of t-observed (t-observed= -6.506) is significant at the probability level of p= .000 which denotes a statistically significant difference. In other words, the experimental

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group outperformed the control group in the post-test; therefore, the first null hypothesis can safely be rejected, and it can be claimed that using this software do help students learn idioms better.

5.2. Addressing the Second Null Hypothesis

After the students took part in the delayed post-test, the results of their test performances were compared to see if there was any meaningful difference between them. Table 7 indicates the descriptive statistics for the delayed post-test.

Table 7. Descriptive Statistics for the Delayed Post-test

Groups	No.	Min.	Max.	Mean	SD	SEM
Control	30	3	12	7.13	2.113	.386
Experimental	30	6	14	9.77	2.046	.374

Since Table 7 confirms that there was a difference between the means, in order to understand if this difference was significant or not, another t-test was applied to the results of the delayed post-test. Table 4.8 shows the results of this t-test.

Table 8. The Results of the t-test for the Delayed Post-test

t	df	Sig.	Mean Difference
-4.904	58	.000	-2.63

According to the above table, that is, Table 8, it can be understood that the amount of t-observed (t-observed=-4.904) is significant at the probability level of p= .000 which is also indicative of a statistically significant difference between the two groups. Therefore, once again, the second null hypothesis can be confidently rejected. In other words, it can be claimed that the group taught via the software could recall the meanings of the idioms better than the group which was taught through traditional method.

5.3. Addressing the Third Null Hypothesis

The other part of the study aimed at investigating the students' attitudes about the use of technology in English language learning. As stated before, the questionnaire was developed in Persian language which was the students' mother tongue and it was administered to the experimental group participants who had attended the computerized Idiom learning sessions. In order to arrive at the students' feelings and attitudes toward the use of CALL in language education, the frequency of selection of the choices in the multiple choice questions of the questionnaire were calculated (see Appendix A).

5.4. Addressing the Fourth Null Hypothesis

This hypothesis stated that, "the number of hits has no role in learning English idioms by EFL learners"; in other words, it needs to find out if the number of times each students clicked on different options related to each idiom had any effect on their post-test performances. Therefore, a Pearson correlation was determined between the number of hits and the post-test scores of the experimental group.

Table 9. The Results of the Pearson Correlation

		Post-test	Hits
Post-test	Pearson Correlation	1	.471[**]
	Sig. (2-tailed)		.009
	N	30	30
Hits	Pearson Correlation	.471[**]	1
	Sig. (2-tailed)	.009	
	N	30	30

**. Correlation is significant at the 0.01 level.

By referring to Table 9, one can easily see that the amount of correlation between the two sets of numbers is statistically significant (r=.471, p=.009). Therefore, the fourth null hypothesis is safely rejected, and it can be claimed that the number of times a student clicks on the options (definition, example and Persian equivalence) related to an idiom affects his post-test score, and since the correlation is positive, it can be said that the more the number of hits, the better the student's post-test score.

6. Discussions

The purpose of the study was not to experimentally reject teacher-based instruction but to explore the effect of computer programs on learning idiomatic expressions. The result of the t-tests showed that Idiom LX multimedia software used in this study had been effective in the students' idiom learning of Iranian EFL university students as significant differences occurred between the immediate post-test scores of the control and experimental groups. Abrams (2002); Al-Jarf (2004) and Brandl (2002) in their studies revealed that the computer technology has led to significant improvement of the participants in language learning.

The present study also showed that the use of the above mentioned software led to higher ability of the learners in long term recall of the English idioms. Xin and Rieth (2001) and Getkham (2004) also assert that computer technology increases the probability of idiom recall from one's long term memory. Ghabanchi & Anbarestani (2008) in their study explored the effect of CALL on

vocabulary learning. They indicated that in using CALL program, learners have an intensive mental processing which results in long term recall of words.

There are a variety of reasons which could be presented to explain the experimental group's significant progress in idiom learning and recall. As stated before, in developing the software for the current study, the highest emphasis was on the use of animated pictures for presenting the new idioms' meanings. Al-Seghayer (2001) indicates that the visuals' contextual richness and cultural authenticity might make the information more meaningful, and hence more memorable. Using multimedia technology to simultaneously present the audio, visual and textual information to the learners, the new idioms can be presented in a contextual setting which, according to studies such as Ghabanchi & Anbarestani (2008), leads to higher immediate and delayed post-test scores in comparison with learners who have access to merely textual information.

In order to know why in this study the scores were higher in the computer assisted instruction group, one could also refer to the dual-coding theory presented by Paivio (1971). According to this theory, memory and cognition are served by two independent and separate systems, one of which deals with verbal information, such as the words in a printed text or speech sounds, and the other deals with nonverbal information, like pictures and visible objects and environmental sounds. According to Paivio and Begg (1981), although the two systems are separate and independent, they are interconnected and thus representations in one system can activate those in the other.

According to the dual-coding theory, using multimedia technology to present nonverbal audio, visual information causes easier activation of the verbal information and consequently, it will be quite logical that the learners using the multimedia CALL treatment learn and remember the new idioms of a second/foreign language better than the students learning through conventional treatment in the simple setting of a classroom.

In order to addressing the third research question and investigating the experimental group participants' attitudes toward the use of computers in idiom learning, a questionnaire was also developed in the respondents' mother tongue, Persian, to ensure their full comprehension of the items.

The result of the questionnaire is in support of Bulut and AbuSeileek (2006)views who suggested that students in general have a positive attitude toward the integration of CALL into the curriculum for teaching basic language skills in the institute where they were exposed to CALL for Listening, Speaking, Reading and Writing skill.

Analysis of the students' responses to the questionnaire items indicated that they thought of computers interesting and motivating tools for learning English language.

The above analysis of the students' attitudes in this study showed that the university students in Shahr-e-kord had positive attitudes toward the application of computer technology in idiom learning.

As mentioned earlier this study also explored the effect of number of hits on students' idiom learning .Therefore, it can be claimed that the number of times a student clicks on the options (definition, example and Persian equivalence) related to an idiom affects his post-test score, and it can be said that the more the number of hits, the better the student's idiom learning.

7. Conclusion

The study was in fact an attempt to shed light on the point whether presenting idioms through CALL could bear any influence on the idiomatic understanding of Iranian language learners. As it was illuminated in the preceding section of the study, the findings of the study revealed that first; CALL is significantly effective in better comprehension and understanding of idiomatic expressions both in immediate and delayed post-tests. It was also delineated in the previous section that the current study findings strongly and positively are in line with almost all of the previous studies carried out on the same issue. For example, Nutta (2001) conducted a study comparing the computer-based grammar instruction and the teacher-directed grammar instruction .The results showed that for all levels of English proficiency, the computer-based students scored significantly higher on open-ended tests covering the structures in question rather than the teacher-directed instruction. The results indicate that computer-based instruction can be an effective method of teaching L2 grammar. Besides, Abu-Seileek (2004) conducted a study to explore the effect of a CALL program on students' writing ability in English by teaching the program cooperatively and collectively. The findings of the study revealed that there were statistically significant differences between the experimental group, who studied via computer, and the control group, who studied in the traditional method. The difference was in favour of the experimental group who studied via computer.

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Appendix A: The English Translation of the Questionnaire

1. How was practicing with the provided software (regarding the difficulty of working with the computer)?
   a. Easy
   b. A bit difficult
   c. difficult
   d. Very difficult

2. How necessary do you think it is to use computer programs in schools and universities for teaching English idioms?
   a. Not necessary at all
   b. Just a little
   c. To an average extent
   d. Very much

3. Which of the following methods do you prefer for learning English idioms?
   a. Teacher's instruction in the classroom
   b. the computer program
   c. Teacher's instruction in the classroom or the computer program
   d. both the computer program and the classroom

4. In comparison with the past, do you think the computer program has increased your motivation for learning English language?
   a. Not at all
   b. A little
   c. To an average extent
   d. A lot

5. Would you like to attend the computer laboratory if the presented software had been developed for the other lessons of your English language course book?
   a. No, not at all
   b. I am not sure
   c. Just for a few sessions more
   d. For all of the remaining sessions

6. Which part of the computer program was not useful at all?
   a. idioms pronunciations
   b. The animated pictures
   c. Textual explanations and examples
   d. All were useful

7. Specify a number for each of the following according to their importance (**1** for the most important, **2** for the second most important one, and **3** for less important one and **4** for the least important one).
   a. Idioms pronunciations
   b. The animated Pictures
   c. Persian equivalence
   d. Definitions and explanations

8. How much attention did you pay to learn the correct idiom pronunciations?
   a. Not at all
   b. A little
   c. To an average extent
   d. Very much

 9. How successful do you think you were in learning the correct pronunciation of the new idioms?
   a. Not successful at all
   b. Just a little successful
   c. Moderately successful
   d. Very successful

10. Were the new idioms practiced in each session (5 idioms) confusing and tiresome?
   a. Not at all
   b. A little
   c. To an average extent
   d. Very much

11. How helpful was reviewing of the practiced idioms through the computer software in memorizing the meaning of those idioms?
   a. Not helpful at all
   b. A little helpful
   c. Moderately helpful
   d. Very helpful

12. How helpful was reading examples and definitions in your language learning
   a. Not helpful at all
   b. A little helpful
   c. Moderately helpful
   d. Very helpful

13. How was the interval between showing idioms?
   a. Very short
   b. Short
   c. A little long
   d. Very long

14. Which parts of language do you prefer to learn by computer programs?
   a. Only for grammar
   b. For grammar and idioms
   c. Only for vocabulary
   d. For all parts and language skills

15. How was the relation between idioms and animated pictures?
   a. Not related at all
   b. A little related
   c. Moderately related
   d. Completely related

16. What do you think of language learning to be only computerized?
  a. Strongly disagree
  b. Disagree
  c. A little agree
  d. Strongly agree

17. Do you think that computer can help you to become an independent learner?
  a. Not helpful at all
  b. A little helpful
  c. Moderately helpful
  d. Very helpful

18. Do you know more about how to use computers after having taken CALL course?
  a. Not at all
  b. A little
  c. To an average extent
  d. Very much

19. In which one your achievement can be measured better?
  a. In computer mediated courses
  b. In teacher-centered courses
  c. Both of them
  d. None of them

20. Can CALL courses relieve stress in learners?
  a. Not at all
  b. A little
  c. To an average extent
  d. Very much

Appendix B: Software Screenshots