

Attitudes of Iranian EFL learners towards CALL: The effect of treatment length investigated

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ABSTRACT

The attitude of EFL learners towards CALL is one of the important elements that can be influential in implementing a CALL course. This study investigated the attitudes of three groups of young language learners towards CALL. In the control group, traditional classes were held while in the first experimental group computers were used for 15 minutes and in the second experimental group this lasted for 30 minutes. The results showed that generally young EFL learners had positive attitudes towards CALL but their attitudes were significantly different in the second experimental group. This shows that the duration of exposure to the computer-based activities can be an influential element in the EFL learners' attitudes.

KEYWORDS: Computer-assisted language learning, CALL, student attitudes, young learners, length of exposure

Introduction

With the emergence of new technologies that may serve the purpose of teaching more effectively than the other tools, teachers are more aware of the current waves in their teaching field. It is needless to mention that teachers are anxiously searching all the possible ways to add to the effectiveness of their teaching and hence contribute to learners' achievements. In this regard, the integration of new technologies in general and computers in particular into EFL classes are striking for teachers and consequently students can be considered to be in the middle of the explosion of these emerging technologies. Lasagabaster and Sierra (2003) state that learners are increasingly engaged in using CALL (Computer-Assisted Language Learning), and teachers make unravelling efforts to integrate CALL into the curriculum. The cautious students rapidly realize the necessity of adjusting their learning styles with these new technologies. However, it should be kept in mind learners' perceptions towards these novel technologies and their presence in their English classes as teaching tools may have a great effect on the success or failure of the teaching and learning processes. From Lasagabaster and Sierra's point of view (2003) learners are considered as potential contributors to the development of the language learning tools, hence researchers should take into consideration learners' opinions in evaluating CALL programs.. The identification of learners' perceptions towards the use of CALL may help teachers cope with the possible problems in the actual integration of computers in the learning process. Furthermore, since technology application is newly presented into the educational system of most developing countries, getting a wider snapshot of the attitudes towards its application may be helpful in dealing with possible obstacles. Kadel (2005) found that overcoming the usual obstacles that may discourage the utilization of technology for instruction requires an attitude that is extremely positive.

A significant number of studies address students' attitudes towards the application of computer technology in classrooms (e.g. Arkin, 2003; Bebell, O' Conner, O' Dwyer & Russell, 2003; Lam, 2000; Pekel, 2002; Smith, 2003; Tuzcuoğlu, 2000; Warschauer, 2003). In the following part some of these studies are examined in detail.

Stepp-Greany (2002, p. 165) reports students' perceptions in a TELL environment of a beginning Spanish class. She states that benefits for the students "include[d] increased motivation, improvement of self-concept and mastery of basic skills, more student-centred learning and engagement in the learning process, and more active processing, resulting in higher-order thinking skills and better recall" .

Some research found that learners have positive attitudes towards the implementation of computers in EFL classes. Greenfield (2003) reports that 10th and 11th graders in Hong Kong considered computer-based learning pleasurable and they gained more confidence while using computers. In another study, Lasagabaster and Sierra (2003) examined 59 university students' attitudes towards CALL and they found that the students considered CALL programs as complementary tools in language learning and that CALL created a less stressful environment for students as they could study on their own in a more flexible schedule. Similarly, Ayres (2002) studied learners' attitudes towards the use of CALL and found that though learners did not consider CALL as a valuable replacement for classroom-based learning, they believed that it was an important and extremely useful aspect of their studies. Al-Shammari (2007) investigated Saudi EFL learners' attitudes toward CALL at the Institute of Public Administration (IPA) in Saudi Arabia. He found that EFL learners' attitudes were positive and the t-test findings showed that Saudi female EFL learners had more positive attitudes toward CALL than their male counterparts.

However, there are not many studies that explore students' attitudes about CALL integration after the actual use of computers in their classes. Hence, in line with the studies mentioned above, this study attempted to bridge this gap by finding out young EFL learners' perceptions towards CALL after the implementation of computer-based grammar and vocabulary activities. Moreover, this study deliberately manipulated the length of exposure in doing these activities so it seeks to find whether this variable affects learners' perceptions or not, a feature which makes it distinct from other similar studies.

The present study addresses the following questions:

Q1: What are the attitudes of the control group towards CALL application?

Q2: What are the attitudes of the first experimental group towards CALL application?

Q3: What are the attitudes of the second experimental group towards CALL application?

Q4: Are there any significant differences in the attitudes of the groups with different lengths of exposure towards CALL?

Methodology

Participants

In order to get valid information about learners' attitudes towards CALL and to focus on the possible influence of length of exposure on their perceptions, the members of three intact classes were engaged. At first, 49 female elementary EFL learners who were 11-13 years old were engaged. In order to homogenize the participants in terms of language

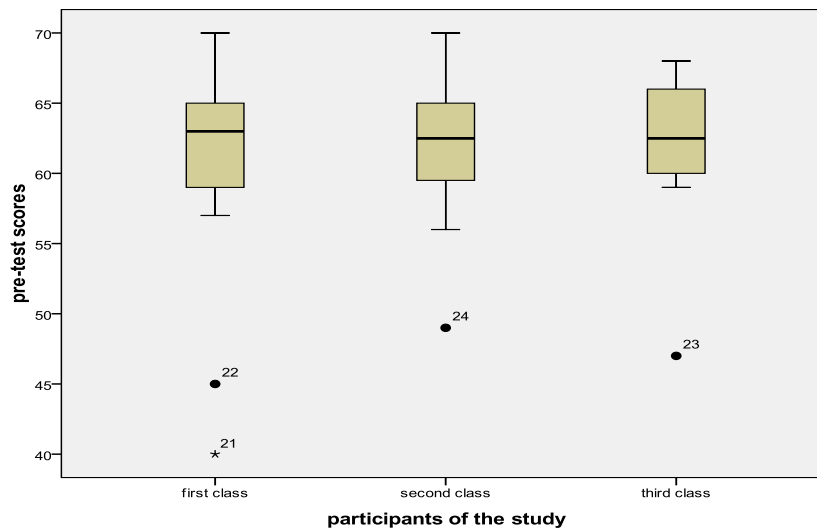
proficiency, the Cambridge Young Learners English Test was administered. The analysis of the obtained data from the proficiency test revealed the mean score of 60.82, 62, and 62.44 for the first, second, and third groups respectively (Table 1).

Table 1. Descriptive statistics for the proficiency test

	N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
first class	17	60.82	7.88	1.91	40	70
second class	16	62.00	5.31	1.32	49	70
third class	16	62.44	5.16	1.29	47	68
Total	49	61.73	6.19	.88	40	70

However, the results of the analysis led to the elimination of four outliers who got very low scores in comparison to others (Figure 1).

Figure 1. Box plot for the proficiency test



After the administration of the proficiency test, all the other participants were deemed to be homogeneous and they were all judged to be beginners in EFL learning. A semi-randomized procedure was utilized to tackle the problem of non-randomization. The groups were randomly assigned to two experimental groups and one control group, each consisting of 15 participants (Table 2).

Table 2. Descriptive statistics

	N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
Control	15	60.47	5.10	1.32	53	68
Experimental 1	15	60.47	4.24	1.10	51	66
Experimental 2	15	66.93	3.54	.91	61	74
Total	45	62.62	5.24	.78	51	74

Instruments

A-CALL questionnaire

The main instrument of this study was the *Attitudes towards Computer-Assisted Language Learning* (A-CALL) questionnaire (Jalali & Ardebili, 2013). This questionnaire consists of 20 items, structured in the form of statements. 5-point Likert Scale was used to rate the items, in which 5 stands for *strongly agree*, 4 for *agree*, 3 for *neutral*, 2 for *disagree*, and 1 for *strongly disagree*. With the exception of items 2, 3, 4, 5, 19, and 20, all the other items are written in positive direction. To ensure that the questionnaire was comprehensible to all the learners, its translated version was administered. To check the reliability and validity of the translated version of the A-CALL questionnaire, Jalali and Ardebili (2013) piloted it on 150 learners. The factor analysis was conducted, and the results were compared with Vandewaetere and Desmet (2009) (See Table 3).

Table 3. Factor analysis for the questionnaire

	Component		
	1	2	3
item 4	.75		
item 5	.68		
item10	.64		
item16	.62		
item 2	.61		
item8	.61		
item7	.60		
item17	.59		
item 3	.53		
item11	.52		
item 1	.47		
item9	.44		
item14		.85	
item15		.68	
item13		.67	
item19			.85
item20			.83
item18			.31

The results of the factor analysis showed that items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 16, and 17 all loaded on the first factor or component, Surplus Value of CALL. As can be observed in Table 3, all of the loadings were more than 0.3. The next factor of the questionnaire was Teacher Influence. The items loading on this factor were 13, 14, and 15. The above table shows that all of the loadings were more than 0.3. The third factor of the questionnaire, on which items 18, 19, and 20 loaded was Degree of Exhibition to CALL. The loading of item 6 was less than 0.3 and item 12 loaded on an unrelated factor; hence these two items were eliminated from the questionnaire.

Afterwards, the Cronbach's Alpha was estimated, and the results showed that the total Alpha was 0.81. This indicated that the modified version of the questionnaire enjoyed a good degree of reliability. Moreover, the Cronbach's Alphas of the three subsets of the questionnaire were found to be 0.84, 0.67, and 0.51, respectively. Since the number of items in two of the subsets was just three, a very high Alpha level could not be expected (Jalali & Ardebili, 2013).

Cambridge young learners English test

This test has been designed to homogenize the primary learners aged 7 to 12, with an approach to make testing fun. This test covered all four skills. Section one included five listening parts, with an overall number of 25 questions, each part consisting of five questions. Section two was devoted to reading and writing which had 35 questions being presented in seven parts; however, it should be noted that its writing section could be scored objectively. The last section examined learners' speaking ability through the utilization of 'find the difference, information exchange, and tell the story' tasks.

To check the reliability of the test, 30 learners who were similar to the target group took the test and the KR-21 method was applied and the results revealed a high degree of the reliability of the test, i.e. 0.76.

Family and friends 2 Multi-Rom

The publisher of this book provides a student Multi-Rom that contains computer-based activities, which are relevant to the grammar and vocabulary items presented in each unit. This software utilizes a combination of colourful images and sounds that enhance the quality of the activities.

In the vocabulary part, the students had to match the words with pictures and then their performance on these activities were checked by the software and remarks such as 'Congratulations' or 'Try Again' were provided. These remarks could be considered as a kind of immediate feedback provided by the software. In the grammar part, if the students could match the correct question with its answer, the sentence was marked green; if the correct answer was not chosen, it was marked red. This book was the material used for classroom teaching in all groups. However, the control group only received the book without its accompanying software. The student Multi-Rom was utilized in the experimental groups with different lengths of exposure as will be explained in the next section.

Procedure

This study investigated young EFL learners' perceptions towards CALL with a focus on the possible effect of length of exposure to computer-based activities on their attitudes. To do so, the following procedures were followed:

The first step in conducting the present research was the administration of the Cambridge Young Learners' English test as the homogenizing tool. In order to ensure the reliability of the test scores for the speaking part, another teacher was asked to provide her own scores for each participant and hence the inter-rater reliability was checked. The correlation between the two sets of scores was high enough, i.e. 0.81. After ensuring the homogeneity of the learners in terms of their general proficiency, the three intact classes were randomly assigned to one control and two experimental groups with 15 participants in each group.

In the 12 treatment sessions, the software was not utilized in the control group; however, similar paper-based activities were done in the class to make sure that this group had the vocabulary and grammar activities which were similar in terms of content to computer-based activities utilized in the other groups. These activities were used immediately after the teaching phase in groups of two.

Computer software was used in both of the experimental groups. The length of exposure was the only difference between the two experimental groups. One group used this technology twice as long as the other group; the first experimental group was given fifteen minutes to utilize the software and the second experimental group was given half an hour to do so. It must be emphasized that this Multi-Rom was not available to the participants in the control or experimental groups to be used at home.

The final step in the process of conducting the research was the administration of the questionnaire. Since the participants were young learners, the Persian version of the questionnaire was administered and whenever the participants asked for clarification of the questions, the teacher provided the appropriate explanation.

Data Analysis

The SPSS (Statistical Package for Social Sciences) software was utilized to analyse the obtained data. To examine the participants' attitudes towards the CALL application, the mean score and standard deviation for each item in the questionnaire was calculated. To observe the possible significant differences in the attitudes of the groups with different lengths of exposure to computer-based activities, the one-way ANOVA was applied.

Results and discussion

The main aim of the present study was addressing young EFL learners' perceptions towards CALL after its actual implementation. To do so, at first the attitudes of the participants in

the control group were examined. This group did some paper-based grammar and vocabulary activities similar to computer-based ones. Table 4 shows the percentages of the selected options by this group.

As it is observable from this table, the learners have positive attitudes towards the integration of CALL into EFL classes. However, in spite of this finding, a good percentage of the participants disagreed with the administration of EFL tests by computers, observable in responses to items 3 and 16 of the questionnaire. In item 3, the majority of the participants (53.3%) agreed with the statement that computer-based language tests can never be as good as paper-and-pencil tests. Moreover, the same percentage of the participants stated that they did not have faith in computer-based language tests. These findings may be due to the infancy of the CALL application in the Iranian EFL classes. Maybe more exposure to CALL in the Iranian contexts can modify the participants' attitudes towards computer tests. Meticulous examination of the items related to teachers' influence on the use of CALL reveals that 46.7% of the participants consider teacher proficiency to be crucial in attracting their students' positive attitudes towards the CALL application. It evokes the idea of improving teachers' computer literacy in teacher education programs. The third set of questions related to the degree of exhibition to CALL (items 18, 19, and 20 in the questionnaire). In item 18, which addresses whether the participants feel less inhibited when communicating in the foreign language via computer (chat) than in a face-to-face situation, 60% of the respondents selected the "no idea" choice. This response may be due to the lack of having any experience in communicating via computers. All the presented choices for item 19 attracted the attention of some of participants. That is why achieving any definite conclusion for this item is not possible. However, 33.3% of the respondents disagreed that in a face-to-face learning situation (classroom) they often experienced anxiety when speaking in the foreign language. The results for item 20 show that 40% of participants disagreed that the threshold to start a face-to-face conversation is bigger than starting a virtual (computer-assisted) conversation.

Table 4. The control group's attitudes towards CALL

	Strongly Disagree %	Disagree %	No idea %	Agree %	Strongly Agree %
1. My language learning will proceed more when this is assisted by a computer.	0	0	0	33.3	66.7
2. Learning a foreign language assisted by computer is not as good as learning it by oral practice.	40	20	20	6.7	13.3
3. Computer-based language tests can never be as good as paper-and-pencil tests.	6.7	6.7	20	53.3	13.3
4. Computer-assisted language learning is less adequate as the traditional language learning.	46.7	26.7	13.3	13.3	0
5. People who learn a language by computer-assisted learning are less proficient than traditional language learners.	26.7	40	0	13.3	20
7. Computer-assisted language learning gives more flexibility to language learning.	0	0	0	53.3	46.7
8. Computer-assisted language learning is as valuable as traditional language learning.	0	0	20	46.7	33.3
9. Computer-assisted language learning can stand alone.	13.3	33.3	26.7	13.3	13.3
10. Learning a foreign language by computer constitutes a more relaxed and stress free atmosphere.	0	20	40	26.7	13.3
11. Learning a foreign language by computer enhances your intelligence.	13.3	40	40	0	6.7
13. Teacher's attitude towards CALL largely defines my attitude towards the use of computers in language learning.	6.7	6.7	73.3	6.7	6.7
14. Teacher's enthusiasm towards CALL largely defines my motivation for using computers in language learning.	0	20	40	33.3	6.7
15. Teacher's proficiency of using computers in language learning largely defines my attitude towards computer use in language learning.	0	6.7	6.7	40	46.7
16. I have faith in computer-based language tests.	26.7	53.3	20	0	0
17. I have faith in computer-based language exercises.	6.7	0	13.3	46.7	33.3
18. I feel less inhibited when communicating in the foreign language via computer (chat) than in a face-to-face situation.	6.7	6.7	60	13.3	13.3
19. In a face-to-face learning situation (classroom) I often experience anxiety when speaking in the foreign language.	20	33.3	13.3	26.7	6.7
20. For me, the threshold to start a face-to-face conversation is bigger than starting a virtual (computer-assisted) conversation.	13.3	40	20	13.3	13.3

To figure out whether the actual utilization of computers in EFL classes has any significant influence on learners' attitudes, the A-CALL questionnaire was administered after 12 sessions of treatment in both of the experimental groups. As it was stated before, the first experimental group did some computer-based grammar and vocabulary activities for fifteen

minutes as post teaching activities. Table 5 demonstrates the first experimental group's attitudes towards CALL.

Table 5. The first experimental group's attitudes towards CALL

	Strongly Disagree %	Disagree %	No idea %	Agree %	Strongly Agree %
1. My language learning will proceed more when it is assisted by a computer.	6.7	13.3	26.7	46.7	6.7
2. Learning a foreign language assisted by computer is not as good as learning it by oral practice.	26.7	53.3	20	0	0
3. Computer-based language tests can never be as good as paper-and-pencil tests.	0	0	46.7	26.7	26.7
4. Computer-assisted language learning is less adequate as the traditional language learning.	13.3	33.3	33.3	13.3	6.7
5. People who learn a language by computer-assisted learning are less proficient than traditional language learners.	13.3	33.3	26.7	20	6.7
7. Computer-assisted language learning gives more flexibility to language learning.	13.3	6.7	33.3	33.3	13.3
8. Computer-assisted language learning is as valuable as the traditional language learning.	13.3	6.7	6.7	53.3	20
9. Computer-assisted language learning can stand alone.	0	13.3	33.3	33.3	20
10. Learning a foreign language by computer constitutes a more relaxed and stress free atmosphere.	0	0	40	53.3	6.7
11. Learning a foreign language by computer enhances your intelligence.	0	13.3	20	46.7	20
13. Teacher's attitude towards CALL largely defines my attitude towards the use of computers in language learning.	0	13.3	46.7	40	0
14. Teacher's enthusiasm towards CALL largely defines my motivation for using computers in language learning.	13.3	13.3	26.7	13.3	33.3
15. Teacher's proficiency of using computers in language learning largely defines my attitude towards computer use in language learning.	0	20	20	40	20
16. I have faith in computer-based language tests.	0	6.7	60	33.3	0
17. I have faith in computer-based language exercises.	0	0	46.7	40	13.3
18. I feel less inhibited when communicating in the foreign language via computer (chat) than in a face-to-face situation.	6.7	26.7	26.7	33.3	6.7
19. In a face-to-face learning situation (classroom) I often experience anxiety when speaking in the foreign language.	0	33.3	40	0	26.7
20. For me, the threshold to start a face-to-face conversation is bigger than starting a virtual (computer-assisted) conversation.	13.3	20	26.7	40	0

The responses provided by the first experimental group are to a great degree similar to those of the control group. This group admitted the value of CALL integration to EFL classes, and asserted the great role of teachers' proficiency in using computers on defining

their perceptions towards CALL. Moreover, the inhibition to take computer-based tests was still present in this group's answers. Similarly, any change in participants' attitudes was not noticed towards the exhibition to CALL, the participants of this group did admit the superiority of face-to-face conversations to virtual ones. Hence, it can be concluded that fifteen minutes of exposure to CALL did not leave any significant effect on participants' views towards CALL.

In the third research question, the second experimental group's views were examined. Table 6 shows the details of the results obtained. It is worth reminding that this group utilized the computer software for half an hour, which is twice as long as the other group. In line with the other two groups' positive perceptions towards CALL, the second experimental group showed stronger positive attitudes in all the examined areas, which are namely CALL value, teacher influence, and exhibition to CALL. However, the most prevalent change in participants' attitudes relates to the administration of computer-based tests. In item three, 40% of the learners stated that computer-based tests were as good as paper-and-pencil tests. Moreover, 53.3% of them revealed their faith in computer-based tests in item 16. This finding implies that as the familiarity with computer-based activities increases, learners show greater acceptance of computer-based test administrations. It must be reminded that this familiarity is achieved through longer exposure to computer-based activities.

Table 6. The second experimental group's attitudes towards CALL

	SD	D	N	A	SA
	%	%	%	%	%
1. My language learning will proceed more when it is assisted by a computer.	13.3	6.7	0	46.7	33.3
2. Learning a foreign language assisted by computer is not as good as learning it by oral practice.	46.7	40	6.7	6.7	0
3. Computer-based language tests can never be as good as paper-and-pencil tests.	20	40	26.7	6.7	6.7
4. Computer-assisted language learning is less adequate as the traditional language learning.	20	53.3	20	6.7	0
5. People who learn a language by computer-assisted learning are less proficient in than traditional language learners.	40	33.3	13.3	6.7	6.7
7. Computer-assisted language learning gives more flexibility to language learning.	6.7	6.7	6.7	53.3	26.7
8. Computer-assisted language learning is as valuable as the traditional language learning.	0	0	13.3	60	26.7
9. Computer-assisted language learning can stand alone.	0	6.7	6.7	60	26.7
10. Learning a foreign language by computer constitutes a more relaxed and stress free atmosphere.	0	0	0	46.7	53.3
11. Learning a foreign language by computer enhances your intelligence.	6.7	6.7	46.7	13.3	26.7
13. Teacher's attitude towards CALL largely defines my attitude towards the use of computers in language learning.	0	40	60	0	0
14. Teacher's enthusiasm towards CALL largely defines my motivation for using computers in language learning.	13.3	20	53.3	13.3	0
15. Teacher's proficiency of using computers in language learning largely defines my attitude towards computer use in language learning.	0	13.3	26.7	46.7	13.3
16. I have faith in computer-based language tests.	0	0	20	53.3	26.7
17. I have faith in computer-based language exercises.	0	0	20	40	40
18. I feel less inhibited when communicating in the foreign language via computer (chat) than in a face-to-face situation.	0	0	60	33.3	6.7
19. In a face-to-face learning situation (classroom) I often experience anxiety when speaking in the foreign language.	0	20	33.3	40	6.7
20. For me, the threshold to start a face-to-face conversation is bigger than starting a virtual (computer-assisted) conversation.	0	26.7	26.7	20	26.7

The final research question was an attempt to detect the existence of any significant differences in the attitudes of groups with different lengths of exposure to computer-based activities towards CALL. Table 7 illustrates the analysis of the data in relation to this question. As the table demonstrates, there are significant differences at the $p < .05$ level among the groups with different lengths of exposure: $F(2, 42) = 11.11, p = .0$. This implies

that there are significant differences among the mean scores on the dependent variable, although, this table does not show where these differences lie.

Table 7. ANOVA for groups with different length of exposure

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	418.18	2	209.09	11.11	.00
Within Groups	790.40	42	18.82		
Total	1208.58	44			

To detect the exact location of the difference, the post-hoc Tukey HSD test is presented in Table 8. As shown in Table 8, the asterisks are demonstrative of a significant difference between the two groups being compared. The mean difference for the groups is compared at $p < .05$. Post-hoc comparisons indicated that the mean score for the control group ($M = 60.47$, $SD = 5.10$) was not significantly different from the first experimental group ($M = 60.47$, $SD = 4.24$). However, the mean score for the control group ($M = 60.46$, $SD = 5.10$) was significantly different from that of the second experimental group ($M = 66.93$, $SD = 3.54$). Similarly, the first experimental group ($M = 60.47$, $SD = 4.24$) did differ significantly from the second experimental group ($M = 66.93$, $SD = 3.54$).

Table 8. Multiple comparisons for groups with different length of exposure

(I) participant groups	(J) participant groups	Mean Difference (I-J)	Std. Error	Sig.
Control	experimental1	.00	1.58	1.00
	experimental2	-6.47*	1.58	.00
experimental1	control	.00	1.58	1.00
	experimental2	-6.47*	1.58	.00
experimental2	control	6.47*	1.58	.00

Hence, it can be concluded that longer exposure to computer-based activities may be influential on learners' attitudes towards the CALL integration. This implies that maximizing the length of exposure to computer-based activities can be a great contribution to CALL's acceptance. The observed results for the control and first experimental groups may be attributable to technology phobia. Computer anxiety or computer phobia in EFL classes may be due to the novelty of their integration. Hence, it can be concluded that as learners become more familiar with computer as a teaching aid, learners will show more

enthusiasm in their presence in the EFL classes. Jalali and Dousti (2012) in their study focused on the application of computer-based activities in EFL classes to figure out any significant differences between control and experimental groups' achievement. However, such a difference was not observed and only learners' involvement and eagerness were apparent in their study. In another similar study, Sadeghi and Dousti (2013) examined the role of length of exposure to computer-based activities on young Iranian elementary EFL learners' grammar gain. The results of one way ANOVA demonstrated significant differences between the control and experimental groups in the immediate post-test. Moreover, the findings of the delayed post-test showed that a significant difference did exist between the control group and the second experimental group. To put in a nut shell, as the exposure to CALL increases, learners' achievement and positive attitudes towards CALL is also observable.

Conclusion

It goes without saying that computers play an undeniable role in human life in general and in the life of teenagers in particular because this new generation uses new technologies more than others. Hence, it is not a question of whether or not to integrate computers into the field of education. Instead, it is time to wonder about the most effective ways of their integration and exploitation in the EFL contexts. As Albirini (2004) states, people's attitude towards a new technology is a key element in its diffusion, and the findings of the present study demonstrated that approximately all the participants expressed their optimistic attitudes towards the integration of CALL in EFL classes. Taking into account the presence of such a status of CALL in learners' point of view, it can be recommended that stakeholders should be cognizant about this attitude and facilitate the possibility of incorporating computers into educational settings.

Furthermore, the researchers came to the conclusion that teachers' perceptions could greatly influence learners' attitudes. As a consequence, it is essential to promote teachers' attitudes towards CALL to better prepare learners for computer integration into EFL classes. This finding highlights the importance of special training for language teachers to familiarize them with new technologies.

On the basis of the research findings regarding participants' attitudes towards computer-based tests, it can be recommended that there is a need for expanding learners' exposure to computer-based activities to lessen their inhibition and anxiety. As the treatment suggested, the second experimental group with longer exposure to computer-based activities mostly

held positive attitudes towards computer tests. In spite of the presence of limitations in this study, as a final remark it can be stated that the findings may help us understand, appreciate, improve, and implement effective computer-based activities in the EFL contexts.

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