The Effect of Computer Assisted Cooperative Language Learning on Iranian High School Students' Language Anxiety and Reading Comprehension

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Abstract
This study explored the effectiveness of the two computer-assisted modes: cooperative and individual on improving Iranian high school students' reading comprehension. It was also concerned with investigating the effectiveness of the two computer-assisted modes on the participants' foreign language learning anxiety (FLLA). The sample of the study consisted of two intact groups, each containing 24 students, which were randomly assigned into a control and an experimental group. The control group completed the study according to the individual computer-assisted learning while the experimental group was taught via computer-assisted cooperative language learning. The participants in the experimental and the control groups, which consisted of 48 female students, took reading comprehension pretest and posttest. They were also given foreign language classroom anxiety scale (FLCAS) questionnaire both at the beginning and at the end of the treatment. The collected data were analyzed using SPSS 16.0. The results of the independent and paired samples t tests indicated that the experimental group, in which cooperative learning was integrated into computer-assisted language learning, outperformed the control group in terms of reading comprehension. In addition, the level of foreign language anxiety improved after the treatment in the experimental group. The findings of this study provide some insights for teachers to consider the integrating of cooperative learning into computer-assisted language learning setting.

Keywords: Computer-assisted cooperative language learning, cooperative learning, learning anxiety

The use of technology in language learning and teaching is not new. If the blackboard is considered as a type of technology, it can be said that technology has been used in education even for centuries (Dudeney & Hockly, 2008). Among different types of technology used in language teaching and learning, the computer is used by teachers and learners. Chapelle (2001) mentioned that the existence of CALL in the academic literature has been traced to the last 30 years. According to Levy's (1997) definition, CALL is "the search for and study of application of computer in language teaching and learning" (p.1). Therefore, the computer is used in teaching and learning language skills including reading.

However, Johnson and Johnson (2004) believed that in CALL setting, individualized learning has some drawbacks such as students' isolation, increasing language learning anxiety, frustration and boredom. Language learning anxiety experienced by learners, as McIntyre and Gardner (1991) stated, has negative effects not only on learners' performance but also on listening comprehension, vocabulary acquisition and retention, which consequently leads to the problems in reading comprehension. Johnson and Johnson (2004) believed that cooperative

working and interaction among students creates a less anxiety producing environment. They further stated that if cooperation and learning through computers are integrated, computerized cooperative learning is resulted, through which students feel more comfortable and learn with the least anxiety.

Accordingly, to encourage language learning through cooperative activities in CALL setting, this study aimed to examine the effect of computer and cooperation in reading comprehension on Iranian high school students. In addition, in this study, the researcher tended to find out the possible effects of computer and cooperative learning activities on the reduction of Iranian high school students' foreign language anxiety.

Background of the Study

CALL, Cooperative Learning and Language Anxiety

Since the focus of second or foreign language teaching has shifted from improving learners' linguistic competence to learners' communicative competence, learners are required to use the target language in different social contexts (Richards & Rogers, 2001). To achieve this goal, different affective variables like motivation, learning styles, and learning anxiety should be taken into account. Language learning anxiety is considered as a negative factor which leads to shortfalls in learning and performance (McIntyre & Gardner, 1989). Therefore, helping students to lower their anxiety is of great concern for language teachers.

In order to reduce students' language anxiety, the context in which learning takes place is very important (Slavin, 1982). Some believe that one way to improve language anxiety is through CALL environment. For example, Kelm (1992, as cited in Chen, 2008) observed a second language classroom where non-native speakers of Portuguese took part in discussion via a computer network. He concluded that computer-assisted class discussion may reduce students' language anxiety, improve their production and increase their ability to identify language errors.

On the other hand, there are some other researchers who believe that CALL itself is not enough in order to reduce the level of the learners' anxiety. For instance, Tan, Jacobs, and Lee (1999), Jacobs, Ward, and Gallo (1997) and Johnson and Johnson (2004) believed that CALL isolates learners and makes them bored, frustrated and anxious. In order to remove or at least to reduce the negative factors involving in language learning, teachers may use several techniques. Contrasted to teacher-centered classrooms, a small group of learners provide a friendly setting which decreases anxiety. In fact, cooperative learning has been considered as a possible solution to reduce the level of anxiety in classrooms (Johnson, Johnson, Holubec, & Roy, 1998). In addition, Jacobs and Mccafferty (2006) believed that cooperation among students or a small group of peers provides a relaxed setting and a supportive environment that leads to the reduction of the language anxiety. They further mentioned that cooperation among students raises motivation.

The use of cooperation in computer assisted environment contains different advantages (Tan, Gallo, Jacobs, & Lee, 1999):

- Computers isolated learners while cooperative learning brings a social element to computer based learning.
- Since computers contain various multi-media ways for gaining information through CD-ROMs and web sites, students, through cooperation, can work together to find and share knowledge.
- Cooperation both helps students to learn how to work with computers and provides students with new ways to cooperate with others like email and networked computer.

Reading Comprehension and CALL

According to Kim and Kamil (2002), in the beginning reading instruction through computer was regarded as a replacement of traditional reading activities such as electronic presentation of written texts, but progress in technology changed reading instruction. Nowadays, reading instructional programs include animations, sound effects and cartoon characters. These are incorporated in order to motivate students. Kim and Kamil (2002) further mentioned that reading instructional programs provides feedback to the learner. As students complete the lesson, they can observe their progress by doing different activities. Kim and Kamil (2002) believed that the beneficial effects of the ways of presenting text through electronic application are so unique that they cannot be compared with conventional printed texts. They mentioned that presenting information by using different kinds of media such as video or multimedia text may have significant effects on comprehension. The dynamic nature of multimedia presentation is proved to have a greater impact on both retention and comprehension than static images. For instance, Mayer and Moreno (1998, as cited in Kim & Kamil, 2002), found that when verbal and visual information was integrated and presented with multimedia presentation, reading comprehension improved to a great extent. In addition, Chun and Plass (1997) stated that within the multimedia environment visual and auditory information is added to the text in order to improve comprehension. They believed that since reading comprehension is a complex process in second or foreign language, the use of pictures, sounds, animated pictures or videos plays an important role in vocabulary acquisition and text comprehension.

Empirical Background of the Study

Some researchers believe that students learn better in computer based environment. In other words, CALL can improve language skills, reading, writing, speaking and listening. For instance, Warschauer (2000) reported a two year study of online learning in four college reading and writing classrooms in Hawaii. In that study, students used computer-mediated communication in the classroom to share their writings with their classmates to be checked for correction. They also wrote to long distance key pals (email pen pals) to be corrected by the teacher. In one of the classes, students used computer-assisted discussion to share their ideas. The participants reported that through technology they could overcome their communication disabilities.

In addition, Ghalami Nobar and Ahangari (2012) in Islamic Azad University in Tabriz examined the effect of computer-assisted language learning on improving Iranian EFL learners' task-based listening as a motivating device to enhance formation of positive attitudes. The study included one control and one experimental group. In experimental group each learner had access to a computer in an English lab where the participants received task- based listening comprehension materials and activities as well as some comprehension questions three times a week through their e-mails while for the control group computer was not used at all. The findings revealed that the experimental group had better results in comparison to the control group.

Moreover, another research study conducted by Esmaeilifard and nabifar (2011) in Urmia university examined the effect of computer-assisted language learning on reading comprehension in Iranian EFL context. Forty male learners of English at intermediate level of linguistic proficiency took part in the study. For the experimental group, reading comprehension was instructed through computers while the control group had reading comprehension instruction through printed texts. It was concluded that the experimental group outperformed the control group regarding reading comprehension.

On the other hand, some researchers believed that CALL will be advantageous in language learning when it is integrated with cooperative work. For instance, Abuseileek (2007)

researched about two kinds of settings of learning, cooperative vs. individual in a CALL environment. Two groups took part in the research. One group worked individually with the computer while the other group was divided into small International Journal of Foreign Language Teaching & Research – Vol. 1 – Issue 3 – Spring 2013] groups to work cooperatively with the computer. The second group did the activities with interacting or getting help from group mates. According to the results of this research, the group which used the cooperative computer technique achieved better results in the listening and speaking tests than the other group instructed based on individual computer-assisted language learning. Cooperative computer-based teaching was found to be advantageous to the students who were embarrassed to ask or speak.

Furthermore, Jonson, Johnson, and Stanne (1986) used three modes of instruction for three groups including computer-assisted cooperative instruction; computer-assisted competitive instruction; and computer-assisted individualistic instruction, to determine how students' performance, attitude, and interactions would be affected. At the end of the ten-day instructional period, students in the cooperative learning condition showed better achievement, more successful problem solving, and more task-related interactions with other students.

In this study, the researchers intended to investigate the impact of computer-assisted cooperative language learning on the improvement of EFL learners' reading comprehension, and also to see if it had any effect on the reducing of learners' anxiety level. To this end, four research questions were developed:

1. Does computer-assisted cooperative language learning affect Iranian high school students' reading comprehension?
2. Does computer-assisted cooperative language learning affect Iranian high school students' language anxiety?
3. Is there any significant difference between experimental and control groups after treatment regarding their reading comprehension?
4. Is there any significant difference between experimental and control groups after treatment regarding their foreign language anxiety?

Methodology

Participants

The population of this quasi-experimental study was first grade students of Farhang high school in Tabriz, Iran. A sample of 48 female students ranged between 14 and 16 in two classes was selected as the participants of the study. Each class contained 24 students. Based on their English proficiency scores, the participants were at the intermediate level of language proficiency. Due to the school limitations, the participants could not be selected randomly. As a result, the researchers had to use intact groups, but the researchers assigned the intact groups randomly into the experimental and control groups.

Instrumentation

For the purpose of this study several instruments were employed including:

Proficiency test. It was one of the instruments used in order to determine whether the two groups were homogeneous in terms of their English proficiency. Test 1 from Cambridge Key English Test (KET) was employed in order to measure the participants' proficiency levels. The proficiency test contained questions to measure the participants' knowledge of general English and included four parts of reading, writing, listening, and speaking. The proficiency test used in this research also contained multiple choice questions to measure the participants' knowledge of general English. All the multiple choice items contained one correct answer and three distracters.

Pre and Posttests. The researchers used a pre-test and a post-test to test the participants' reading comprehension skill. The pre-test and the post-test, selected from intermediate section of Hill (1980), each contained four passages along with twenty items in which one point was considered for a correct answer and zero for an incorrect answer. The allotted time for each test was 40 minutes.

Software. The software employed in this study included Photo story 3 for windows taken from http://www.download.cnet.com, Hot Potatoes (Dudeney & Hockly, 2008), Quandary (Dudeney & International Journal of Foreign Language Teaching & Research – Vol. 1 – Issue 3 – Spring 2013] Hockly, 2008) and Wondershare quiz creator taken from http://www.quiz-creator.com/online-quizmaker/.

- Photo story 3 is a computer application that helps teacher to create stories from pictures. This software can be used in reading comprehension instruction. The texts can be converted to stories through this software. Verbal and visual presentation at the same time makes the story interesting for the students.
- Hot Potatoes is an authoring tool in the field of language teaching which creates various exercises including Crossword, Multiple choice, Gap filling, Matching / Ordering, Short answer, Jumbled sentences.
- Quandary which is a maze authoring tool helps the teacher in creating interactive stories. Learners read the stories created by this software and make their choices on what they do at certain key points. This software is good for reading comprehension.
- Wondershare quiz creator, another software tool, is used to test students' reading comprehension. It consists of multiple choice, true false, and completion items, and it provides feedback so that each student can see the right answers and their total score on the computer screen.

Foreign Language Classroom Anxiety Scale (FLCAS). This scale is used to measure the participants' level of Foreign language anxiety. It is a 33 item questionnaire, designed by Horwitz, Horwitz, and Cope (1986). FLCAS, translated into Persian, was employed as a questionnaire to assess the degree of the anxiety in both groups (see Appendix).

Procedure

In this quasi-experimental study, 48 first grade female students participated. Having assessed the groups' initial homogeneity through KET test, the researcher randomly assigned the participants into experimental and control groups. The control group received computer-assisted individual language learning while for the experimental group cooperative learning was integrated with computer-assisted language learning. Each group contained 24 participants. The study, carried out in a networked computer lab, was conducted in 10 sessions, each lasting 60 minutes. The researcher herself instructed lessons for both groups. Each participant in the control group had access to one computer while in the experimental group each four-membered group had access to one computer.

Prior to the study, the two groups took a pretest in order for their reading comprehension to be assessed. Additionally, in order to determine the level of all the participants' foreign language learning anxiety (FLLA) at the beginning of the study, the researcher used FLCAS questionnaire. Initially, it was translated into Persian and piloted so as to determine its reliability. With the reliability of .96, it was confirmed that the test has a high reliability and internal

consistency. In addition, in order to determine its validity, the translated questionnaire was checked by three experts, one in psychology and two in language teaching field.

For the control and experimental groups, the lessons were instructed through computer in three steps including pre-reading, reading and post-reading stages. The instruction was the same for the two groups except that for the experimental group three cooperative activities including Think-Pair-Share, Students Teams-Achievement Division (STAD), and Round Robin were employed.

Procedure of the experimental group. In order to conduct cooperative activities in the experimental group, the researcher assigned the experimental group into six groups, each containing four members with certain responsibilities based on Kagan and High's (2002) classification. The roles assigned to the members included Checker, encourager, recorder, and reporter.

Prior to the study, the researcher explained three cooperative activities including STAD, Think-PairShare, and Round Robin employed through the treatment to the participants of the experimental group. The researcher also explained what each member was expected to do and what each member's responsibility would be during the treatment.

At the pre-reading stage, the researcher employed Think-Pair-Share which involved a three step activity to follow. First, the researcher introduced the topic of the text by showing a video clip. The participants were asked to watch the clip carefully in order to understand what the text was about. Then, the researcher asked students what they understood from the video clip. Students were given time to think about it individually. Then, they were asked to share their responses with their partners. In the third step, students shared their responses with the group. The recorder of each group wrote the answer which had been agreed upon by the group. At the end, the answer was reported to the whole class or to the researcher through computer by the reporter. Afterward, the researcher posed more questions about the topic and participants followed Think-Pair-Share to answer.

At the second stage which is reading stage, the researcher presented the text through computer twice: first, in the form of a story using photo story 3 and second, each group received the written text on their computer screens. The text was read through computer in order for the participants to receive the exact pronunciation of the words as well. At this stage, the researcher employed STAD, another cooperative activity. In four-membered groups, members worked together and made sure that everyone in the group had mastered the text. STAD started with the teacher's presentation of the text. Teams worked on the text until they mastered it. The lesson concluded with quizzes given individually without students' helping to each other. The quizzes at this stage were designed by the researcher by means of Wondershare quiz creator software which included feedback of right and wrong answers as well as the total score of each participant. Each member's score was important at this stage since the group's total score was the mean scores of the groups. Therefore, each member did her best to improve the team's score.

At the third stage, post-reading stage, the researcher designed two reading activities. One type of activity used here was designed by means of Hot Potatoes software. The activities were based on the text they had mastered. Round Robin was employed during this activity. Each member made her own contribution to complete the activity.

The other interactive reading activity was designed by the researcher through Quandary software, a maze authoring tool, which took the researcher away from direct practices and tests to the creation of interactive stories in which the students read stories and made their choices on what they did at certain key points. This authoring tool was good for reading comprehension

practice or for small group discussion through which cooperation and critical thinking was improved (Dudeney & Hockly, 2007). Round Robin was employed at this stage. Through this activity, the whole exercise was considered as a problem presented by the researcher. Then, within the groups each student contributed to solve the problem until the whole exercise was done.

Procedure of the control group. For the control group the instruction was the same as the experimental group except that all the activities were done individually. The instructions were made through computer in three steps including pre-reading, reading and post-reading.

At pre-reading stage, the researcher introduced the topic of the text by showing a video clip. The participants were asked to watch the clip carefully in order to understand what the text was about. Then, the researchers posed questions through computer in order to activate the participants' background knowledge and asked them to answer individually either to the whole class or to the researchers through computer.

At the reading stage, the researcher presented the text through computer twice. First, the text was presented in the form of storytelling using Photo story3 and then the written text was read to the learners via computer and the learners could see the written text on their computer screens. The participants worked on the text individually until they mastered it. First, they wrote the gist of the text individually. Then, they wrote questions while reading and tried to answer them. They reviewed the text until they mastered it.

At the post reading stage, the participants had three activities. The activities were designed by the researcher through different software and they were presented through computer to the participants. These activities are as follows:

a)The first activity, designed by the researcher in order to improve the participants' reading comprehension by means of Hot Potatoes authoring tool, was based on the text the participants had mastered. This activity consisted of multiple choice, gap filling, matching / ordering, short answer, crossword and jumbled sentences.

b) The second activity was a quiz designed by means of Wondershare quiz creator software which included feedback of right and wrong answers as well as the total score of each participant. This quiz was the same as that of the experimental group.

c) The third activity which was designed by means of Quandary authoring tool was the same as that of the experimental group. The participants did the activities on their own. Each reading lesson was mastered in two sessions.

During ten sessions, the participants in both groups mastered five texts as well as extra interactive exercises designed by the researcher. The texts for both groups were selected from Birjandi, Norozi, and Mahmoodi (2003). At the end of the study, both groups took a posttest. Then, the collected data were inserted into SPSS 16.00 for further analysis.

Results

In order to see whether the two groups were at the same level of homogeneity in terms of their general proficiency as measured through KET, the researchers used an independent samples t test. According to the results of the independent-samples t test in Table 1, there was no significant difference between the two groups' general proficiency measured by the KET test, $t(46) = -.38$, $p = .70$. Therefore, the two groups were homogenous regarding their language proficiency level before the treatment.

Table1. *Independent Samples of t test for the Proficiency Mean Scores*

						mean	Std.error
	f	**sig**	**t**	**df**	**sig**	**differences**	**differences**
Score Equal variances assume	.22	.64	-.38	46	.70	-.25	.65
Equal variances not assumed			-.38	45.93	.70	-.25	.65

Before conducting the main analysis, we had to be sure about the normality of the distribution of the pre/post test scores. To do this, the researcher conducted a One-Sample Kolmogorov- Smirnov test. Since the p value was more than 0.05, the normality of distribution was confirmed.

Research Question 1

The concern of the first research question was to examine the effect of computer assisted cooperative learning on Iranian high school students' reading comprehension. To this end, the researcher used a paired samples t test to analyze the experimental group's scores of the pretest and posttest. The results of this analysis are shown in Table 2.

Table 2. *Descriptive Statistics and Paired Samples t-Test of the Experimental Group*

	Mean	**N**	**Std.**	**T**	**Df**	**Sig.**
Pre-test	13.83	24	2.46	8.56	23	.000
Post-test	16	24	2.70			

As it is shown in Table 2, the difference between the mean scores of the pretest and the posttest of the experimental group was significant, t(23) = 8.56, p=.000. This implies that computer-assisted cooperative learning had a significant effect on the participants' reading comprehension skill.

Research Question 2

The second question investigated the effect of computer-assisted cooperative learning on the participants' foreign language anxiety. To answer this question, first the researchers translated the FLCAS originally developed by Horwitz, et al., (1986) into Persian and gave it to the two groups before and after the study. Then, the researcher used a paired samples t test in order to compare the mean scores of the participants' FLCAS questionnaire before and after the study.

Table 3 indicates the mean scores of the experimental group's foreign language anxiety before the treatment (SD = 24.54, M = 102) and after the treatment (SD = 22.28, M= 85.95), respectively. This table also indicates that computer-assisted cooperative learning had a significant effect on reducing the level of the participants' foreign language classroom anxiety, t(23) = 5.44, p=000.

Table 3. *Descriptive Statistics and Paired samples t test for the experimental Group's Anxiety in the Pre and Post test*

	Mean	**N**	**Std.**	**T**	**Df**	**Sig.**
Pre-test	102	24	24.54	5.44	23	.000
Post-test	85.95	24	22.28			

Research Question 3

Research question three examined whether there was a significant difference between the experimental and control groups after the treatment regarding their reading comprehension. In order to answer this question, the researcher compared the mean scores of the posttest of both groups. This analysis was made through an independent samples t test. Table 4 indicates that there is a significant difference between the post-test mean scores of the control group (SD=3.24, M=14) and the experimental group (SD=2.70, M= 16). As table 4 shows, there is a significant difference between the control and experimental groups regarding their reading comprehension, t(46) = -2.21, p= .031).

Table 4. *Descriptive Statistics and Independent t-test of the Experimental and Control Groups' Post-test*

	N	**Mean**	**Std.**	**t**	**df**	**sig**
Control	24	14	3.24	-2.21	46	.031
Experimental	24	16	2.70			

Research Question 4

For the last research question, the researchers tried to find out whether there was a significant difference between the experimental and control groups after the treatment regarding their foreign language classroom anxiety. In order to find the answer, the researcher analyzed both groups' responses to the FLCAS questionnaire after the treatment. To do this, the researcher used an independent-samples t test. Table 5 demonstrates the mean scores of the control and experimental groups' responses to the FLCAS questionnaire after the treatment (SD= 21.37, M= 98.58), (SD= 22.28, M= 85.95), respectively. Additionally, According to Table 5, The value of p is .048 confirming that there is a significant difference between the two groups regarding their foreign language classroom anxiety, t(46) = 2.03, p = .048).

Table 5. *Descriptive Statistics and independent t-test of the Experimental and Control Groups' Responses to the FLCAS Questionnaire After the Treatment*

	N	**Mean**	**Std.**	**t**	**df**	**sig**
Control	24	98.38	21.37	2.03	46	.048
Experimental	24	85.95	22.28			

Discussion

This study investigated the effect of computer-assisted cooperative language learning on Iranian high school students' foreign language anxiety and their reading comprehension. Two modes of instruction were compared: computer-assisted cooperative language learning and computer-assisted individual language learning. The data were collected via a pretest-treatment-posttest design and a pre/post FLCAS questionnaire for two homogeneous groups, and were analyzed through the statistical package, SPSS 16.0.

The results of the data analysis illustrated that reading comprehension scores improves when cooperative learning is integrated into computer assisted learning. The findings of the present study are in line with the study of Lihong (2008), who concluded that computer- assisted

cooperative learning creates a more effective environment for the students to learn English. This study is also supported by Johnson and Johnson's (2004) view that technology will be more efficient if it is used in combination with cooperative learning. In addition, the result of present study is compatible with Mills's (2003) belief that in computer-based educational setting, cooperation among learners and between teachers and students helps enhance learning. Furthermore, the results of the present study indicated that participants' foreign language classroom anxiety could be reduced in computer-assisted cooperative learning environment.

The results of this study are also consistent with Johnson and Johnson's (2004) idea that individualistic use of technology increases the learner's anxiety and supports their idea that the learners' anxiety can be improved if technology is used in combination with cooperative learning.

In addition, the findings of present study are also consistent with Steven's (2003) suggestion. He claimed that using cooperative activities contributes to the improvement of the participants' reading comprehension skills. Comparing the mean scores of the posttest of the two groups in this study supports Stevens's idea.

The results of the present study can be described concerning Krashen's (1982) input hypothesis, Long's (1981, as cited in Ellis, 2003) interaction hypothesis and Swain's (1993) output hypothesis. According to Krashen's (1982) input hypothesis, second language acquisition takes place if the learner is exposed to language that is comprehensible. Therefore, if the learners are exposed to the language that is far above their current level of second language proficiency, no acquisition will occur. In cooperative learning environment, input from group-mates or teachers as the form of teacher-talk or foreigner-talk in the classroom may have a facilitative effect on second language learning and helps the learner to understand the language better. In the present study the improvement of the reading skill of the participants in experimental group may be the result of the input they received during discussion within the groups.

According to output hypothesis, output plays a great role in helping language learning. When a learner speaks or writes, through this speaking and writing the errors are corrected and this helps language learning. Jacobs and Maccaferty (2006) noted that cooperative learning provides enough opportunities for learners to be able to speak and write. For example when students are divided into four small groups, they have four times opportunity to talk. The effectiveness of the treatment in experimental group could be the result of the amount of the output within the groups. Through speaking, the participants' errors could be corrected by their group-mates.

Furthermore, Long's (1981, as cited in Ellis, 2003) interaction hypothesis proposes that language acquisition can take place through the use of language in interaction. Jacobs and Mccafferty (2006) stated that interaction means negotiation for meaning. Through negotiation for meaning the amount of input seems to increase. In the present study, the participants in cooperative environment could have more time to negotiate for meaning. Through this negotiation their comprehension could be improved.

Generally, technology has a great effect on all aspects of our lives. Computer which is considered as a kind of technology is increasingly used in most of the educational settings and language learning is no exception. As a result, technology and language learning are closely related. It can be concluded, from the present study, that reading skill can be improved when pictures or videos are added into the text. Moreover, if the texts are designed in a way that learners interact with the text, reading comprehension instruction will be effective.

It is also concluded that working together and interaction among students creates a less anxiety provoking environment. In such an environment learners think better and feel more relaxed.

Conclusion

There are various variables and factors through which foreign language skills can be enhanced. On the other hand, one of the factors which has a detrimental effect on language learning is anxiety which affects learners' perception, retention and performance (Horwitz et al., 1986). The present study was an effort to clarify the efficacy of reading comprehension and reduction of foreign language anxiety in two computer assisted learning modes: cooperative and individual. The participants were randomly assigned into control and experimental groups. Both groups were instructed via computer. However, the experimental group experienced three cooperative activities during the study.

The results of the posttest and the participants' responses to the FLCA questionnaire of the two groups revealed that integrating cooperative learning activities into CALL settings might lead to the improvement of reading comprehension and reduction of foreign language anxiety.

The findings of the study are not exhaustive and every language teacher can offer different ways to reduce foreign language anxiety and improve reading comprehension. In this study, the researcher utilized computer to improve reading comprehension. Although applying CALL in language instruction is beneficial, it can isolate students and make students bored and anxious when it is used individually (Tan et al., 1999). In order to alleviate this problem, the researcher integrated CALL with cooperative learning. Therefore, this research may be beneficial for teachers since they can improve students' reading comprehension skill and decrease their language anxiety. In addition, this study can be of great benefit for the students since they feel relaxed and motivated when using cooperative activities in computer based learning setting.

Moreover, teachers need to be prepared to change and adapt their teaching styles to new development in the pedagogy of computer-based cooperative language teaching. On the other hand, students should also be trained in how to perform in computer-based cooperative learning settings. In other words, students should not only be trained how to do different cooperative activities, but they should also be familiar with how to use computer in language learning.

In addition, the participants of the present study were at intermediate level, so in order to generalize the results to the learners of other levels of proficiency, there is a need for further research to be conducted on other groups of EFL learners, ESL learners or native speakers. The findings also suggest that CALL will be more effective if it is integrated with cooperative learning in order to improve reading comprehension and foreign language anxiety. It is recommended that the effect of CALL in cooperative setting be examined on other language skills. Additionally, there might be other variables such as participants' cultural background and gender which may change the findings of the study if they are considered as research variables.

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Appendix

Persian version of foreign language anxiety scale

Appendix

Persian version of foreign language anxiety scale
Adopted from Horwitz, Horwitz, & Cope (1986)

دانش اموزان عزیز پرسشنامه ی صفحه ی بعد میزان اضطراب شما در یادگیری زبان انگلیسی را مورد ارزیابی قرار می دهد . نظرات خود را در مورد هر یک از سوالات را با گذاشتن علامت ضربدر در مقابل هر کدام از گزینه ها مشخص فرمایید. لطفا در پاسخنامه پاسخ دهید

Participant No……..

ردیف	سوالات	شدیدا موافقم	موافقم	نظری ندارم	مخالفم	شدیدا مخالفم
1	وقتی در کلاس زبان انگلیسی صحبت میکنم ،هیچوقت به خودم مطمئن نیستم.					
2	در کلاس زبان انگلیسی نگران اشتباه کردن نیستم					
3	اگر بدانم که قرار است در کلاس زبان انگلیسی از من درس پرسیده شود می لرزم.					
4	وقتی که معلم زبان انگلیسی به زبان انگلیسی صحبت می کند و من نمی فهمم که او چه می گوید، می ترسم.					
5	شرکت کردن در کلاسهای متعدد زبان برایم مسئله ای ندارد.					
6	سر کلاس زبان به مسئله ای که اصلا به زبان ارتباطی ندارد فکر می کنم					
7	دائم فکر می کنم که دانش اموزان دیگردر یادگیری زبان انگلیسی از من بهتر هستند.					
8	هنگام امتحان انگلیسی معمولا در ارامش هستم.					
9	اگر مجبور شوم بدون امادگی قبلی در کلاس زبان انگلیسی صحبت کنم، دچار اضطراب و ترس ناگهانی می شوم.					
10	نگران پیامد مردود شدن در کلاس زبان انگلیسی هستم.					
11	نمی فهمم که چرا برای بعضی از مردم اینقدر کلاس زبان ناراحت کننده است.					
12	اگر در کلاس زبان انگلیسی مطالبی را که می دانم فراموش کنم، عصبی می شوم.					
13	داوطلبانه پاسخ دادن به سوالات در کلاس زبان انگلیسی مرا خجالت زده می کند.					
14	وقتی با کسانی که زبان مادریشان زبان انگلیسی است صحبت می کنم ، دلهره ندارم.					
15	در کلاس انگلیسی ، وقتی نمی فهمم معلم چه چیزی را دارد تصحیح می کند، ناراحت می شوم.					

ردیف	سوالات	شدیدا موافقم	موافقم	نظری ندارم	مخالفم	شدیدا مخالفم
16	حتی اگر برای کلاس انگلیسی کاملا اماده باشم، دلواپس هستم.					
17	اغلب دلم می خواهد به کلاس زبان نروم.					

18	هنگام صحبت کردن در کلاس زبان انگلیسی کاملا اعتماد به نفس دارم					
19	از اینکه معلم زبان انگلیسی من همیشه اماده است که هر اشتباه مرا تصحیح کند، نگرانم.					
20	اگر قرار باشد معلم زبان انگلیسی مرا برای پرسش کلاسی صدا بزند، صدای قلب خودم را می شنوم.					
21	هر چه بیشتر برای امتحان زبان انگلیسی درس می خوانم، بیشتر گیج می شوم.					
22	برای کامل اماده کردن خود برای کلاس زبان انگلیسی تحت فشار نیستم.					
23	من همیشه احساس می کنم که دانش اموزان دیگر بهتر از من انگلیسی صحبت می کنند.					
24	در هنگام صحبت کردن جلوی سایر دانش اموزان در کلاس، خود اگاه وخجالتی می شوم.					
25	انقدر کلاس زبان انگلیسی به سرعت پیش می رود که نگران هستم که عقب بمانم.					
26	سر کلاس زبان انگلیسی بیشتر از سایر هم کلاسیهایم نگران و عصبی هستم.					
27	وقتی در کلاس زبان انگلیسی صحبت می کنم، گیج و عصبی می شوم.					
28	وقتی در حال رفتن به کلاس زبان انگلیسی هستم، بسیار احساس ارامش و اطمینان دارم.					
ردیف	سوالات	شدیدا موافقم	موافقم	نظری ندارم	مخالفم	شدیدا مخالفم
29	وقتی تمام کلماتی که معلم زبان انگلیسی میگوید را نمی فهمم، عصبی می شوم.					
30	از اینکه برای صحبت کردن به زبان انگلیسی این همه قاعده باید یاد گرفت، دچار سر در گمی می شوم.					
31	می ترسم وقتی که زبان انگلیسی صحبت می کنم، دانش اموزان دیگر به من بخندند.					
32	احتمالا وقتی در کنار کسانی که زبان مادریشان انگلیسی است هستم، احساس ارامش می کنم.					
33	وقتی معلم زبان انگلیسی سوالاتی را از من بپرسد که مطالعه قبلی درباره انها نداشته ام، عصبی می شوم.					