

Synchronous and Asynchronous Multimedia and Iranian EFL learners' learning of collocations

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Abstract: The use of effective multimedia instructions such as mobiles, computers, and the internet in language learning has turned out to be useful since the last decades. The impact of multimedia and synchronous approaches of computer-assisted language learning (CALL) on English as a foreign language (EFL) learners' learning of language skills and components has been studied to some extent. However, the impact of computerized mediated instruction through multimedia (text and graphics) on learning collocations requires further investigations. This study aimed at investigating whether synchronous and asynchronous multimedia components: text and text with added graphics had any effects on EFL learners' learning of collocations. In doing so, 150 male EFL learners at pre-intermediate proficiency level were selected through convenience sampling. They were divided into six groups. The results of the study showed that computerized mediated instruction was more effective than non-computerized instruction. Also, synchronous computerized instruction was more effective than asynchronous computerized instruction. The results also showed that presentation through text with added graphics was more effective than presentation through simple text. The results are discussed and some pedagogical implications are presented.

KeyWords: Asynchronous, CALL, Collocations, Synchronous, Multimedia, Iranian EFL learners

1. Introduction

1.1. Theoretical Background

The digital era in which we live presents challenges for education systems. It offers opportunities for teaching, learning, and pedagogy (Battro & Fischer, 2012). The digital term

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is more associated with technologies such as multimedia environments and devices which can present information in the real time and at high speed (Gallardo-Echenique, Bullen & Marqués-Molíás, 2016).

The rapid growth in the application of digital technologies, especially the computerized mediated instruction devices such as Internet and computers, has a significant impact on education, society and many aspects of daily life (Jelfs & Richardson, 2012; McGlenn & Parrish, 2002). It seems that multimedia has the ability to change the ways that people learn and communicate; it can let them communicate with family and friends and, extend their social networks. It enables rapid synchronous as asynchronous communication (Jelfs & Richardson, 2012).

Advances in network technologies led to the emergence of virtual worlds to facilitate asynchronous (offline), synchronous (online), and communication between users. Of the many network technologies which are now being employed in CALL, immersive virtual environments seem to hold great potential as learning tools. The impact of the use of technology in general and computer in particular in the educational area is increasingly evident and teachers are fully aware of the terms such as education technology, science and technology, internet, multimedia, satellites, simulation, educational games, electronic networks, etc. The application of the above mentioned jargons shows the ongoing nature of the educational setting which turns out to be an important part of the new world order. Such an application of technology started to modernize the teaching/ learning process and therefore started to modify the way the educational system works (Son, 2008).

Abrams (2008) holds that computer-mediated instruction helps learners negotiate and interact with their peers actively to develop their communicative competence. She points out, "computer-mediated learner-to learner interaction offers L2 learners unique opportunities for active control of topic selection and management and provides rich opportunities for learners to recognize and adapt to diverse interactional patterns through collaboration among the interactants" (p. 1). The main focus of the present study is to investigate the effects of synchronous and asynchronous multimedia components: text and text with added graphics on EFL learners' learning of collocations.

1.2. Asynchronous and Synchronous modes

There are two main CMC modes: asynchronous and synchronous which seems to have different functions and they can be used for different pedagogical purposes. Also, they can be used to significantly promote linguistic interaction and negotiation between different groups

of learners, and as a result, lead to producing a large amount of language output. Fitz (2006) reported that CMC modes influence the quality and quantity of different discourse functions. As Abrams (2003) argues, synchronous and asynchronous modes can provide extensive learner-to-learner interaction and negotiation, more amount of output than face-to-face communication, and more talking time per learner (Abrams, 2003). The use of CMC is of much interest because it has a number of advantages in promoting communication, negotiation, interaction and socialization as summarized by several researchers (to name just a few, AbuSeileek, 2012; AbuSeileek & Qatawneh, 2013; Lee, 2011) for learners of foreign / second languages. Computerized mediated instruction has been reported to have several advantages and to:

- a. produce a large amount of target language output;
- b. allow more time to develop comments, which may lead to a greater precision of expression;
- c. promote a collaborative spirit;
- d. enhance motivation for language practice;
- e. promote student-centered atmosphere;
- f. focus on content rather than form;
- g. reduce students' anxiety from face-to-face communication in a foreign language class;
- h. provide opportunities for students to express their opinions; and
- i. develop student's linguistic performance (AbuSeileek & Qatawneh, 2013).

1.3. Multimedia and language teaching

The variety in media including text, audio, video, and graphics for delivering content has attracted and encouraged many teachers and learners to use the technology and internet for distance education (Ali, 2003). These multimedia components increase the learners' motivation and interest, which many scholars argue is of much significance when teaching to the internet generation.

Graphics and visual texts are some of the most popular tools in on-line learning. In some cases, graphics are used to represent important information and to support text (Liles, 2004). Some researchers have discussed the impacts of presenting information through multimedia components like spoken text, graphics, visual text, and videos on language learning (Kim & Gilman, 2008). The common finding is that information presented in spoken words, graphics, text, and video formats can be integrated to create an attractive, authentic,

and multi-sensory language input for EFL learners (Kim & Gilman, 2008, Sun & Dong, 2004).

It is also argued that the use of both effective multimedia instruction (Kim & Gilman, 2008) and technology such as mobile, computer, and internet in language learning (Thornton & Houser, 2005; Tabatabae & Heidari Goojan, 2012) has been an important issue.

1.4. Research Objectives

A number of studies (Son, 2008, Rezai & Zafari, 2010; Tabatabae & Heidari Goojan, 2012) exploited the impact of multimedia and synchronous approach of CALL on EFL learners' vocabulary learning. However, it seems that the impact of text, audio and visual aids on learning collocations has not been given appropriate attention. Moreover, no one has compared the effect of synchronous and asynchronous text, audio and visual aids on learning collocations which deals with combining words. The present study aimed at investigating whether synchronous and asynchronous multimedia components: text and text with added graphics has any effects on EFL learners' learning of collocations. The main objectives of the present study can be stated in the following research questions:

Q1. Does the use of multimedia components have any impact on developing EFL learners' collocations?

Q2. Does the use of multimedia, asynchronously and synchronously, have the same impacts on EFL learners' learning collocations?

2. Review of Literature

2.1. Related Studies on CALL

Different studies have investigated the role of synchronous computerized mediated instruction in different components and areas of language: grammar (AbuSeileek, 2012; Laborda, 2009; Lee, 2011; Liou & Penga, 2009; Shang, 2007; Tabatabae & Heidari Goojan, 2012; Son, 2008; Yanguas, 2010), vocabulary (Fotos, 2004), and pronunciation (Jepson, 2005). Among those, Kern (1995) found that learners produced more language in CMC contexts than in FTF interaction. Kern (1995) also revealed that grammatical accuracy of learners dramatically improved in CMC environments.

Among the related studies, Tabatabae and Heidari Goojani (2012) argued that that using short message service has a significant impact on vocabulary learning of Iranian EFL high school students. They also argued that both English teachers and students had positive perceptions about the application of SMS in the students' vocabulary learning.

In the same vein, Sadeghi and Ahmadi (2012) investigated the impacts of three kinds of gloss conditions: computer-based audio gloss, traditional non-CALL marginal gloss, and computer-based extended audio gloss on the reading comprehension of Iranian EFL learners. They found that extended audio gloss group comprehended online computerized L2 texts better than other groups. Moreover, all experimental groups performed better than the control group in comprehending the text. Their study offers clear evidence that utilizing computers and multimedia glosses can be influential in teaching language in general and online computerized second language text comprehension in particular.

Similarly, Saffarian and Gorjian (2012) argued that computer-based video games can vividly facilitate students' learning performance. They also concluded that EFL teachers can make use computer-based video games as an instructional approach in order to improve students' higher-order thinking. Moreover, they claimed that computer-based video games can improve students' achievement in higher-level cognitive thinking processes and problem-solving strategies.

Al-Masri (2011) investigated the effect of web-based curricula on Jordanian students' achievement in English language. The participants of the study were distributed into four groups (female experimental control group, male experimental, and control groups). The experimental groups were taught through web-based curricula while the control groups were provided with the traditional curricula. The results indicated that there was significant difference between the experimental groups and the control groups in favor of the experimental group. However, there was no significant interaction between gender and group.

Moreover, Kim and Gilman (2008) investigated the impacts of multimedia components such as spoken text, visual text, and graphics in a self-instruction program on increasing EFL learners' English vocabulary learning at Myungin Middle School in Seoul, South Korea. Their finding verifies the idea that the application of visual media supports vocabulary acquisition and helps EFL learners increase achievement scores. They also concluded that offering graphics to illustrate the definition seems to be an effective way to improve the learning of English vocabulary. Students were likely to be motivated when visual text was presented with graphics because text alone was not usually translated in a manner that was meaningful to the learners, while graphics allowed them to visualize the definition in a more meaningful way.

Kost (2004) examined the effects of synchronous computer mediated communication (S-CMC) on the development of oral proficiency and writing. He compared the mean scores

between the pre- and post-tests among three groups: two treatment groups (face to face and S-CMC) and one control group. The treatment included a two-stage activity: participants conducted a web search activity followed by a role-play. Unlike the control group, in the experimental group, the role-play was carried out in the classroom face to face and in the chatroom. His study did not find a significant difference in the development of oral proficiency among the three groups.

Abrams (2003) examined the effects of two types of computer-mediated communication (CMC) on oral performance to investigate whether or not these activities could be a good preparation for oral discussions. He compared the performance of three groups: synchronous and asynchronous CMC (S-CMC and A-CMC) groups, experimental groups, and FTF group. The participants had three discussion classes. In the first one, each group was given a reading assignment one week before each oral discussion session. In the other discussion class, the S-CMC group had a discussion on the Web-CT chat the day before the oral discussion, whereas the A-CMC group was given one week to discuss personal experiences and the assigned readings on the Web-CT bulletin board. The control group had regular classroom exercises, such as pair and group work activities. Findings from this study indicated that S-CMC is a more effective preparatory activity for the whole-class discussion than either A-CMC or small-group or pair work activities.

Moreover, Tozcu and Coady (2004) conducted a case study which examined the outcomes in vocabulary acquisition when using traditional materials as opposed to interactive computer-based texts. The goal was to determine the effect of traditional vocabulary training via print texts as opposed to direct vocabulary instruction via computer assisted learning. Moreover, the effect of this direct instruction on word recognition speed, reading comprehension, and reading rate were also analyzed. The findings suggested that the experimental group (who used a tutorial computer assisted courseware) outperformed the control group in all the analyzed areas: reading comprehension, vocabulary knowledge, and reading speed. The findings verify positive implications of integrating technology in foreign language classrooms for vocabulary development.

AbuSeileek (2009) explored the effect of a CALL program on students' writing performance in English by teaching the program collectively and cooperatively. The findings of the study showed that there was a statistically significant difference between the experimental group, who studied through computer, and the control group, who used the

traditional method. That is, the experimental group who studied via computer outperformed the control group.

Al-Qomoul (2005) conducted a study to investigate the effect of an instructional software program of English language functions on tenth graders' achievement. The results showed that the students who studied the English language functions through CAI lessons performed better than those who learnt by the traditional method. Shang (2007) examined the overall effect of using e-mails on the writing performance of Taiwanese students in English. Findings showed that students made improvements on syntactic complexity and grammatical accuracy. The results also revealed that the e-mail writing was a positive strategy that helped improve their foreign language learning and attitudes towards English.

2.2. Review of Collocation Studies

Probably, in the first systematic attempt to categorize English collocations, Benson, Benson and Ilson (1997) in their BBI Combinatory Dictionary of English categorized collocations into two major groups: grammatical collocations and lexical collocations. Grammatical collocations consist of a noun, an adjective, or a verb plus a preposition or a grammatical structure (e.g. *need to*, *to be afraid that*). Lexical collocations consist of various combinations of nouns, adjectives, verbs and adverbs. There are several structural types of lexical collocations: verb+noun (e.g., *inflict a wound*), adjective+noun (e.g., *heavy drinker*), noun+verb (e.g., *water freezes*), noun+noun (e.g., *a world capital*), adverb+adjective (e.g., *closely related*), verb+adverb (e.g., *affect deeply*).

Hassanabadi (2003) used a multiple-choice test of collocation in order to evaluate the performance of Iranian EFL learners on lexical and grammatical collocations. Findings suggested that there was a significant difference between the participants performance on different subcategories of lexical collocations which was slightly in favor of verb+noun collocations. Among grammatical collocations, participle+adjective+preposition was the easiest and preposition+noun was the most difficult.

Zughoul and Abdul-Fattah (2003) investigated the collocational competence of Arab learners of English using receptive and productive tests of collocation. They found that although the participants of their study were advanced language learners, they still had difficulties with collocational sequences. The learners' performance in the receptive task (multiple-choice test) was significantly better than their performance in the productive task (translation test). Faghih and Sharafi (2006) also used a multiple choice test of lexical collocations. The multiple choice test included verb+noun, adjective+noun, and other

collocations. The results indicated that adjective+noun was the most difficult and collective noun+count noun was the easiest types of collocations.

Shehata (2008) studied the collocational competence of ESL and EFL learners of English. The ESL group had different non-English majors. The EFL students were studying English. They were given productive and receptive collocation tests. She found a moderate positive correlation between learners' knowledge of collocations and their amount of exposure to the language. In addition, verb+noun collocations were found to be easier than adjective+noun collocations and knowledge in receptive test was broader than knowledge in productive test.

Chen (2008) investigated the collocational competence of non-English major students. The participants' scores on English subject of College Entrance Examination were compared with their performance on a multiple-choice test of collocation including both grammatical and lexical collocations. The findings showed that verb+noun collocations were the most difficult lexical collocations, whereas noun + preposition collocations were the most demanding of grammatical collocations.

Shokouhi and Mirsalari (2010) used a multiple-choice collocation test including grammatical and lexical collocations. This collocation test was divided into six parts each devoted to one type of collocations. The results showed that grammatical collocations were more difficult than lexical collocations for learners to acquire. Among the subcategories of lexical collocations, noun+verb was the easiest and noun+preposition was the most difficult to acquire. Noun +preposition collocations were more difficult than preposition+noun collocations.

3. Method

Participants

In order to accomplish the objectives of the study, 150 male EFL learners at pre-intermediate proficiency level were selected through convenience sampling. They were all within the age range of 20-24. They were learning English at language institutes (Zabansara and Oxford) in Ahwaz, Iran. The participants were randomly assigned to six classes: asynchronous simple text (Group A), synchronous simple text (Group B), synchronous simple text with added graphics (Group C), asynchronous simple text with added graphics (Group D), paper text (Group E) , and paper text with added graphics (Group F). In order to make sure that the participants were from the same level of language proficiency, an adopted version of Oxford

Solution Test was utilized. Placement results confirmed that there was no initial difference between the participants' receptive knowledge of grammar, vocabulary, and collocations. The groups which received instructional materials synchronously received the collocations either through short messages or through chatting online with the teacher. Each group received 30 collocations each week through short messages and spent one hour a week chatting with teacher online receiving the collocations and responding to the teacher messages. However, the groups which received the materials asynchronously received 30 e-mails from the teacher every week. Each mail contained one collocation and the students were required to respond to each mail. The paper and pencil groups received collocations through pamphlets, each week 30 collocations were given to the students. The instructional sessions lasted 10 weeks.

Instrumentation

To carry out the study, three different instruments were used, which are detailed below.

a. Placement test

To explore the homogeneity of the group, a modified version of Oxford Solution Test (OST) was administered, which constitutes two sections. The first section, adapted from OST, entailed 50 multiple choice items on grammar and vocabulary. The second section, consisting of 30 multiple choice items, aimed to test collocations. Of note is that the second part was adapted from sample TOEFL preparation textbooks. Taken together, the placement test intended to measure receptive knowledge of collocations, vocabulary, and grammar. It is noteworthy that some measures were taken to explore the reliability and validity of the placement test. For example, the content validity of it was examined through expert judgment. The panel was asked to comment on the appropriacy of the test in terms of language, content, and level of difficulty. Afterwards, the test was piloted with a group of students ($n = 30$) who were at the same level of language proficiency with the participants. The reliability of the instrument, estimated through KR-21, was acceptably high (85).

b. Post-test

The post test was adapted from test preparation textbooks. It consisted of 50 multiple choice recognition items delineating with the participants' receptive knowledge of collocation. The content of the test covered the materials taught during the course. Different types of collocations including noun+noun, adjective+preposition, verb+ preposition, verb+adverb, and adjective+noun were tested. Each item consisted of a stem and four options. The participants were required to select the best choice to fill in the blanks. The reliability of the instrument was estimated through KR-21 approach. The reliability index was 0.78 which is acceptable.

Procedure

After selecting the participants, they were assigned to six homogenous groups at random. Afterwards, each of the groups received a specific treatment on the basis of the procedures detailed below.

Group A and B were instructed by means of simple texts synchronously and asynchronously, respectively. That is, Group A received each collocation in different simple sentences through e-mails (synchronously), but Group B was instructed via short messages and on-line chatting (asynchronously). Put it differently, they received the same number of sentences for each of the target collocations through either short messages or on-line chatting. It should be noted that after each instruction setting, both groups received the same completion exercises through pertinent instructional tools.

For Groups C and D, the instructional materials were accompanied with relevant supporting graphics. Group C was instructed synchronously, while it was presented asynchronously for Group D. Like Group A and B, these two groups received the same completion exercises after each instructional setting.

The other two groups were instructed through textbooks. Precisely put, Group E was instructed through text books (Group E received the materials only through simple text) whereas Group F received the same texts in the same textbook which were accompanied with pertinent graphics. Furthermore, it should be noted that the same competition exercises used for the previous groups was given to these two groups but in printed form. Once the instructional sessions were over, the same posttest consisting of the collocations covered in the course of the instruction was administered to all groups.

Afterwards, the collected data were entered into SPSS (version 20) and analyzed via different statistical procedures. Descriptive statistics such as mean, median, and standard deviations were estimated to summarize the data. Additionally, a Univariate Analysis of Variances (ANOVA) was run to compare all groups' means on the posttest. Then, through a post-hoc Scheffe test, the place of differences among different levels of the two factors (Computer and Multimedia) were detected.

4. Results and Discussion

Results of Placement Test

To compare the mean scores of the participants on the placement test, a one way ANOVA was run. The results are shown in Tables 1 and 2.

Table 1. Test of Homogeneity of Variances for Proficiency Test

Levene Statistics	df1	df2	Sig.
1.837	5	144	.1

In order to check the homogeneity of variances, the significance value is checked and since it was 0.1, which exceeds 0.05, the assumption is not violated (Table 1). As the assumption of the homogeneity of variances was not violated, in the next step, it was checked whether there was any significant difference between the groups or not. As it is demonstrated in Table 2, there was no significant difference at the $p < .05$ level in proficiency test scores for the six intact classes [$(F_{5, 144}) = .4, p = .84$. This result demonstrates that groups were of the same level of language proficiency at the beginning of the study (See Table 2).

Table 2. ANOVA for Proficiency Test Scores

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	34.3	5	6.87	.400	.84
Within Groups	2475.9	144	17.19		
Total	2510.2	149			

Table 3. Descriptive Statistics of the Post-Test

Computer	Media	Mean	SD
Synchronous	Text	35.8	2.8
	text with added graphic	44.88	1.2
Asynchronous	Text	28.9	2.1
	text with added graphic	39.3	2
non-computerized	Text	23.1	2.2
	text with added graphic	34.4	2.4

As shown in Table 3, the mean of the group who received non-computerized instruction through text (23.1) was the lowest and the mean of the group who received synchronous computerized text with graphics (44.8) was the highest. Also, the mean score of the group who received synchronous computerized text (35.8) was different from the mean of the group who received the same instruction asynchronously (28.9). The results also show that the mean score of the group who received synchronous computerized text with added graphics (44.8) was different from the mean of the group who received the same instruction asynchronously (39.3).

As there were two factors (computer with three levels, and multimedia with three levels) and one dependent variable (the participants' score on the posttest), a Univariate analysis of the variances (ANOVA) was run. The results are shown in Table 4.

Table 4. Univariate Analysis of the Variances of the Groups

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	10084.	5	2016	331	.001
Intercept	158425	1	158425	2.6	.001
Computer	2896	2	1448	238	.001
Media	5488	2	2744	451	.001
computer * media	47	1	47	7.8	.006

The results in Table 4 show that there was a significant difference between the means of the participants [$F_{(331)}$, $df(5)$, $p=0.001$ / $p < 0.05$]. The results also show that there was a significant difference between the means of the groups who received instruction through different multimedia (text and text with added graphics) [$F_{(451)}$, $df(2)$, $p=0.001$ / $p < 0.05$]. Results also reveal that there was a significant difference between the groups which received computerized- mediated instruction and the group which received non-computerized instruction (paper and book) [$F_{(238)}$, $df(2)$, $p=0.001$ / $p < 0.05$]. Moreover, the interaction between computer and multimedia was significant [$F_{(7.8)}$, $df(1)$, $p=0.001$ / $p < 0.05$]. The results of follow-up post hoc tests (i.e. Tuckey), run to locate the sources of the differences between the two factors, are portrayed in Tables 5 and 6.

Table 5: Tuckey Test for Locating Sources of Differences between Computer Factors

(I) computer	(J) computer	Mean Difference	SD	Sig
sync-computerized instruction	asy-computerized instruction	4.5	.501	.001
	non-computerized instruction	15.8	.618	.001
asy-computerized instruction	non-computerized instruction	11.3	.525	.001

As demonstrated in Table 5, the difference between synchronous and asynchronous computerized instruction was significant in favor of synchronous computerized instruction

[mean difference = (4.5) $p=0.000/ p< 0.05$]. The results also show that the difference between groups which received synchronous computerized instruction and the groups which received non-computerized instruction was significant [mean difference = (15.8) $p=0.000/ p< 0.05$]. Moreover, the difference between the groups which received asynchronous computerized instruction and the groups receiving non-computerized instruction was significant in favor of asynchronous-computerized instruction [mean difference = (11.3) $p=0.000/ p< 0.05$].

Table 6. Pairwise Comparisons between Different Media

(I) media	(J) media	Mean Difference	Std. Error	Sig.
Text	text static graphic	-10.522*	.380	.001

As shown in the above table, the difference between the groups who received instruction through simple text and the groups who received through instruction through text with added graphics was significant in favor of the group receiving instruction through text with added graphics ($p=0.001/p<0.05$).

4. Discussion

The main objective of the study was to investigate whether synchronous and asynchronous multimedia components, text and text with added graphics, had any effects on EFL learners' learning of collocations. The results of the study indicated that the participants who received instructional materials through computer had a better performance than the participants who were not provided with computerized instruction. This finding is compatible with the results of several scholars (Abraham, 2008; Abrams, 2003; Al-Qumoul, 2005; Liles, 2004; McGlenn & Parrish, 2002; Safarian & Gorjian 2012; Shang, 2007; Son, 2008) who argued for the use of technology in teaching. The superiority of computerized instruction can be ascribed to the fact that CALL can enhance students' motivation to read (Gallardo-Echenique, et al. 2016). In fact, due to the raise in motivation, the students were more motivated to read the instructional materials with a more careful noticing and attention. As Schmidt (2010) underscored, the level of attention can affect the quality of attention. That is, the higher the level of motivation, the more profound the quality of attention, and consequently, the learners have a better opportunity to turn input into intake.

The results also showed that sync-computerized instruction had a more significant impact on EFL learners' learning of collocation than asynchronous computerized instruction.

The results of this study are compatible with previous studies (Son, 2008, Rezaei & Zafari, 2010; Tabatabae & Heidari Goojan, 2012) as they pointed out that S-CMC can develop language learners' oral proficiency. One possible explanation for the outperformance of sync-CMC lies in the fact that sync-computerized instruction opened up opportunities for the participants to negotiate and remove initial ambiguities. In fact, the participants had the time to ask questions and to co-construct the meaning and use of collocations.

The results also showed that the media of the text with added graphics had more a more significant impact on the participants' performance than simple media. The results are in line with numerous related studies (e.g., Al-Seghayer, 2001; Kim & Gilman, 2008). Therefore, it could be argued that instructional materials presented in graphics and text can be integrated to create an authentic and attractive language input for EFL learners (Kim & Gilman, 2008; Sun & Dong, 2004).

Moreover, in keeping with the findings of the present study and the review of the literature, it could be concluded that the use of both effective multimedia instruction (Kim & Gilman, 2008) and technology such as mobile, computer, and internet in language learning (Traxler, 2006; Tabatabae & Heidari Goojan, 2012) can be very effective in EFL classroom and it can provide faster and more effective access to instructional materials.

In light of the findings, EFL teachers are recommended to provide their language learners with opportunities to benefit from different media in their instructional programs; moreover, they can enrich their instruction by making use of graphics along with text rather than working on texts without any graphics.

References

- Abrams, Z. I. (2003). The effect of synchronous and asynchronous CMC on oral performance in German, *The Modern Language Journal*, 87, 157-167.
- Abrams, Z. I. (2008). Socio-pragmatic features of learner-to learner computer-mediated communication. *CALICO Journal*, 26(1), 1-27.
- Abraham, B. (2008). Computer-mediated glosses in second language reading comprehension and vocabulary learning: A meta-analysis. *Computer Assisted Language Learning*, 21(3), 199-226.
- AbuSeileek, A. (2009). The effect of using an online based course on the acquisition of grammar inductively and deductively. *ReCALL Journal*, 21(3), 20-38.

- AbuSeileek, A. (2012). The effect of computer assisted cooperative learning method and group size on EFL learners' achievement in communication skills. *Computers and Education*, 58(1), 231–239.
- AbuSeileek, A.F., & Qatawneh, K. (2013). Effects of synchronous and asynchronous computer-mediated communication (CMC) oral conversations on English language learners' discourse functions. *Computers & Education*, 62, 181–190
- Ali, A. (2003). Instructional design and online instruction: Practices and perception. *TechTrends*, 47 (5), 42-45.
- Al-Masri, A.A. (2011). The Impact of Using Web- Based Curricula on Jordanian Schools Students' Achievement in English Language. Paper presented in the 2011 Barcelona European Academic Conference, Barcelona, Spain 2011.
- Al-Qomoul, M. (2005). The Effect of Using an Instructional Software Program of English Language Functions on the Basic Stage Students' Achievements. *PhD Thesis*, Amman Arab University for Graduate Studies.
- Al-Seghayer, K. (2001). The effect of multimedia annotation modes on L2 vocabulary acquisition: A comparative study. *Language Learning and Technology*, 5 (1), 201-232.
- Battro, A. M., & Fischer, K. W. (2012). Mind, brain, and education in the digital era. *Mind, Brain, and Education*, 6(1), 49–50.
- Benson, M., Benson, E., & Ilson, R. (1997). *The BBI dictionary of English word combinations*. Amsterdam: John Benjamins Publishing Company.
- Chen, M.H. (2008). A study of the English collocation competence of college students in Taiwan. (Master's thesis). Department of Applied Foreign Languages. National Taiwan University of Science and Technology.
- Faghih, E., & Sharafi, M. (2006). The impact of collocations on Iranian EFL learners' interlanguage. Available online http://www.sid.ir/En/VEWSSID/J_pdf/87220065801.pdf.
- Fitze, M. (2006). Discourse and participation in ESL face-to-face and written electronic conferences. *Language Learning and Technology*, 10(1), 67–86.
- Fotos, S. (2004). Writing as talking: E-mail exchange for promoting proficiency and motivation in the foreign language classroom. In S. Fotos & C. Browne (Eds.), *New Perspectives on CALL for Second Language Classrooms* (pp. 109–129). Mahwah, NJ: Lawrence Erlbaum Associates.
- Gallardo-Echenique, E., Bullen, M., Marqués-Molíás, L. (2016). Student communication and study habits of first-year university students in the digital era. *CJLT*, 42(1), 1-21

- Hassanabadi, S. (2003). A study of the learning of English lexical and grammatical collocations by Iranian EFL learners. Available online at: <http://www.google.com/interstitial>
- Jelfs, A., & Richardson, J. T. E. (2012). The use of digital technologies across the adult life span in distance education. *British Journal of Educational Technology*, 44(2), 338–351.
- Jepson, K. (2005). Conversations - and negotiated interaction - in text and voice chat rooms. *Language Learning and Technology*, 9(3), 79–98.
- Kern, R. (1995). Restructuring classroom interaction with network computers: Effects on quantity and quality of language production. *Modern Language Journal*, 79, 457-476.
- Kim, D., & Gilman, D. A. (2008). Effects of Text, Audio, and Graphic Aids in Multimedia Instruction for Vocabulary Learning. *Educational Technology & Society*, 11 (3), 114-126.
- Kost, R.C. (2004). *An investigation of the effects of synchronous computer-mediated communication (CMC) on interlanguage development in being learners of German: Accuracy, proficiency, and communication strategies*. Unpublished doctoral dissertation, University of Arizona.
- Laborda, J. (2009). Review of tips for teaching with CALL: practical approaches to computer-assisted language learning. *Language Learning and Technology*, 13(2), 15–21.
- Lee, L. (2011). Blogging: promoting learner autonomy and intercultural competence through study abroad. *LLT Journal*, 15(3), 87–109.
- Liou, H., & Penga, Z. (2009). Training effects on computer-mediated peer review. *System*, 37(3), 514–525.
- Liles, B. (2004). Going the distance. *Sound & Video Contractor*, 22 (3), 48
- Lomicka, L. (1998). “To gloss or not to gloss”: An investigation of reading comprehension Electronic. *Language Learning and Technology*, 1 2), 41-50.
- McGlinn, J. & A. Parrish (2002). Accelerating ESL Students' Reading Progress with Accelerated Reader. *Reading Horizons*, 42 (3), pp. 175-189
- Rezai, A., & Zafari, N. (2010). The Impact of synchronous computer-mediated communication (S-CMC) on the oral proficiency of Iranian EFL Learners. *IJAL*, 13(2). 101-120.
- Sadeghi, k. & Ahmadi, N. (2012). The effects of gloss type and mode on Iranian EFL learners' reading comprehension. *English Language Teaching*, 5(12), 100-110.

- Saffarian, R., Gorjian, B. (2012). Effect of computer-based video games for vocabulary acquisition among young children: An experimental study. *Journal of Comparative Literature and Culture*, 1(3), 44-48.
- Schmidt, R. (2010). Attention, awareness, and individual differences in language learning. In: Chan, W.M., Chi, S., Cin, K.N., Istanto, J., Nagami, M., Sew, J.W., Suthiwan, T., Walker, I. (Eds.), *Proceedings of CLaSIC 2010*, December 2-4, National University of Singapore, Centre for Language Studies, Singapore, pp. 721-737.
- Shang, H.F. (2007). An exploratory study of e-mail applicant of FL writing performance. *Computer Assisted Language Learning*, 20(1), 79-96.
- Shehata, A. (2008). L1 influence on reception and production of collocations by advanced EFL/ESL Arabic learners of English. Published thesis. The college of Arts and Humanities of Ohio University, Ohio.
- Shokouhi, H., & Mirsalari, G.A. (2010). Collocational knowledge versus general linguistic knowledge among Iranian EFL learners. *TESL-EJ*, 13 (4), 1-24.
- Son, J.B. (2008). Using Web-based language learning activities. *Computer Assisted Language Learning*, 4(4), 34-43.
- Sun, Y. & Dong, Q. (2004). An experiment on supporting children's English vocabulary learning in multimedia context. *Computer Assisted Language Learning*, 17 (2), 131-147.
- Tabatabae, O. & Heidari Goojani, A. (2012). The Impact of Text-Messaging on Vocabulary Learning of Iranian EFL Learners. *Cross-cultural Communication*, 8(2), 47-55.
- Thornton, P. & Houser, C. (2005). Using Mobile Phones in English Education in Japan. *Journal of Computer Assisted Learning*, 21, 217-228.
- Tozcu, A. & Coady, J. (2004) Successful Learning of Frequent Vocabulary through CALL also Benefits Reading Comprehension and Speed. *Computer Assisted Language Learning*, 17 (5), 473-495.
- Yanguas, I. (2010). Oral computer-mediated interaction between L2 learners: it's about time. *Language Learning and Technology*, 14(3), 72-93.
- Zughoul, M. R., & Abdul-Fattah, H. (2003). Translational collocational strategies of Arab learners of English: A study in lexical semantics. *Babel*, 49(1), 59-81.

