Wiki-based Collaborative Writing in EFL Classrooms: Writing Accuracy in Focus

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Abstract

Wikis, as one of the Web social networking tools, have been increasingly integrated into second language instruction to promote collaborative writing. The purpose of this study was to examine whether the use of wikis as a collaborative tool affected language learners' writing accuracy. To this end, 72 EFL learners were selected from a language institute in Gachsaran, Iran. The selection of participants were based on the results of their OPT test scores (among 80 students). They were randomly assigned into control and experimental groups. The participants of experimental group were asked to upload their writing assignments in the teacher- created wiki site where they edited and corrected their classmates' writings and sometimes discussed their writing topics. On the other hand, the control group delivered their writing assignments to the teacher for corrections and corrective comments. The participants' performances in pre-test and post-test were compared. The obtained results indicated that the participants in the experimental group significantly outperformed their counterparts in the control group in terms of writing accuracy. The results confirmed the positive effect of teaching writing through wiki.

Keywords: Collaborative writing, Second language instruction, Wiki site, Writing accuracy

INTRODUCTION

We live in a world where computer technology is indispensable in every part of our lives. Technology has wonderfully become highly significant in our learners' lives; they are using technology more day by day. Undoubtedly, technology in language learning is not a new aspect. Technology has been used in language teaching for more than decades. Videos, tape recorders, and language laboratories have been in there in language classes from the 60s. Computerized materials or CALL (Computer Assisted Language Learning) have appeared from the early 70s. Among the most beneficial aspects of CALL is its time and labor-saving function, also it can bring new ideas and give new opportunities to people for connecting them to new viewpoints or people they may never have met.

Trucano (2005) maintained, "The integration of information and communication technologies

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empowers teachers and learners, transforming teaching and learning processes from being highly teacher-dominated to student-centered". Dunkel (1987) declared that a lack of employing technologies in pedagogical situations causes a waste of resources. He highlighted some uses of technology such as intelligent CALL, computer-mediated communication, and teleconferencing that can make language classes more beneficial. The use of artificial intelligence that is defined by Chapelle (1989) as the creation of a learning environment similar to a real environment is another use of technology in learning contexts especially language learning situations.

Different subtle issues should be considered while using technologies. Some researchers believe that although technology can provide space for language learning, we should also pay attention to factors such as learning styles and demographic variables (e.g. gender and age). For example, Lee, Yeung, and IP (2016) suggested that teachers help learners to know their learning styles in advance and optimize some learning styles for the use of computer-related resources. Another important feature is different technologies can be used for different skills or subskills of language; in this way, the use of technology can be more useful. Levy (2009) divided the language areas and skills into grammar, vocabulary, reading, writing, pronunciation, listening, speaking, and culture. Thus, teachers should be careful not to mix the techniques in inappropriate ways that may cause unfavorable results. Teachers also should be careful not to use old technologies and try to use new ones that have been confirmed as useful and efficient ones. For example, Drysdale, et al. (2013) believed that although there were some creative implications of technologies in the past, they were more confined to drill exercises. He clarified that the more creative uses of technology can be observed and we can see more integration of media into the computer system. Pop (2015) stated that "application of new technologies within the edu-

cational process involves the adaptation of the content of the training programs, of the teaching and learning strategies and methods of educational resources" (p.325). Not only teaching and learning but also inquiry strategies can be influenced by computer technologies. Chen and Looi (1999) elaborated that the goals and context should be clear and determined, and they should have flexibility in planning and use of plans while integrating computer tools and systems.

One of the most efficient kinds of technology that has become popular in recent years is wikis. Wiki as a rising and promising technology has gain a reputation in education due to its various capabilities to create an engaging social collaborative environment. Ward Cunningham created wiki in 1994 as a social collaborative tool. Leuf and Cunningham (2001, p. 14) defined wiki as "freely expandable collection of interlinked Web pages, a hypertext system for storing and modifying information - a database, where each page is easily edited by any user with a forms-capable Web browser client." Wikis is collaborative tools help pre-determined members of groups edit each other's work (Alshumaimeri, 2011).

Ortiz and Ferreira (2014) cited in (Bartolomé, 2008) "Wiki is a type of website that allows users to work collaboratively by building texts that can be quickly and easily edited by authorized users" (p. 5). Currently, Wikis have been considered as an educational tool which key role in the pedagogical ground is to support writing skills worldwide (Ebersbach, & Heigl, 2005).

Wikis have been used increasingly in language classrooms mostly for writing skills. Wiki is a rich word processing-like website suitable for assigning different instructional tasks. Its simplicity for creation and use make it a powerful educational tool. Wiki enables its user to contribute easily to its content. Besides, multimedia can be uploaded so easily (Arnold et al., 2012). Regrettably, this digital site is not known

nor supported in Iran due to teachers' lack of knowledge (Polifroni, 2016).

Lipponen (2002) maintained that wikis are beneficial when they are structured for collaborative tasks; they improve peer interaction and promote sharing and distribution of knowledge among learners' group.

Mackey (2007) claimed that this kind of learning builds online groups in which learners work together to achieve common targets and aims related to the course work. Each group will produce shared knowledge that benefits the other members.

Collaborative writing is among the issues that has been examined through wikis. Collaborative writing is defined as the joint construction or co-authorship of a text by multiple writers (Storch, 2011). It has attracted the attention of L2 researchers in online contexts (Li, 2013). As an instructional tool, collaborative writing enhances interaction and negotiation of language use opportunities among learners elaborating on language and collaboratively attending to linguistic-related issues (Kim & Li 2016). Drawing on social constructivism, collaborative writing allows different writers to co-author and collectively create a written text to promote scaffolded performance during the writing process (Li, 2013). Effective interaction and joint decision-making are integral to collaborative writing (Storch, 2013). It should be mentioned that the focus of this study is on writing accuracy. Foster and Skehan (1996) define writing accuracy as "freedom from error ". (p.304). It is also defined by Wolfe-quintro, Inagaki, and Kim (1998) as "the ability to be free from errors while using language." (p.33)

Larruson and Alterman (2009) claimed that standard wikis have some features. They are plastic; in other words, students can do different actions on them. Besides, wikis are asynchronous indicating that students co-edit wiki pages, which are accessible to others at different times. The next feature is its malleability that makes

students do more adaptation to the environment to make it suitable for different classes or specific traits of some learners. In addition, wikis are non-hierarchical and there is not a centralized authority that controls the changes of the content of the wiki.

Chunhui and Liqin (2015) also counted the characteristics of wikis (i.e. simplicity, self-organization, self-growth, and openness). Its simplicity means that students can overcome psychological obstacles to be able to use the tools and have energy and confidence for mastery of curriculum knowledge. Openness means that learners can observe, edit, and modify the pages. Self-organization and self-growth is that learners can control the pace of their learning and organize their learning process.

Yates (2008) conducted another study in Japan; in this research, the focus was on the learners' action during completing a wiki project that was designed based on a constructivist framework. The study tried to find whether a wiki project, structured using the principles of constructivism, could increase collaboration both in the wiki and during face-to-face discussions (Yates, 2008). The findings of this study declared that the students enjoyed using the wiki and met classroom objectives. Overall, the findings stated that a wiki designed with a constructivist framework potentially an effective tool for collaborative learning (Yates, 2008).

Zorko (2007) stated that wikis could promote peer-to-peer, teacher-teacher, and student-teacher collaboration. Besides, wikis are able to raise students' motivation since they are aware that a larger audience is able to observe and check the results of their work. Likewise, wikis enable the users to share the knowledge among teachers and students. The members can observe how other members tackle problems and receive ideas from each other. Similarly, wikis allow learners to construct their own knowledge without dependence on teachers and learn to be responsible for their own knowledge. In addition,

wikis allow teachers to evaluate their learners' progress through the historical record of the wiki.

Research exploring the effects of wikis focus on different issues. For example, Liu, Kalk, Kinney, Orr & Reid (2009) tried to review the literature on the use of Web 2.0 tools in higher education. They concluded that wiki was technological tools in the contemporary literature that could affect both learning and teaching. In another study, Sun and Qiu (2014) found that students appreciated wiki since it influences their motivation and promote the performance outcomes. Furthermore, Aydin and Yildiz (2014) discovered that students using wikis pay more attention to accurate grammatical rules, more attention to meaning rather than grammar, and advanced writing performance. In a mixed-method research, Ahmadi and Marandi (2014) examined 50 wiki posts of 20 EFL students both qualitatively and quantitatively. They declared that students prefer to use wiki for posing questions and conveying solutions. Additionally, their findings revealed that learners mostly focus on punctuation, grammatical rules, and spelling. They also found that by using wikis students can write better. As Sleeman (2015), mentioned most of the weaker learners joined online tasks, improved their writing ability, and felt more self-confident by using wikis and forums for writing exercises. Chin, Gong & Tay (2015) also found that the quality of written samples produced by learners was enhanced generally.

Lee (2010) explored wiki-mediated collaborative writing. It tried to find out how learners viewed the effectiveness of using wikis in the support of process writing through social interaction and collaboration, and what roles tasks played in wiki-mediated writing. She also sought to find out to what extent the use of wikis could promote peer feedback and scaffolding in the revision process. Regarding the effectiveness of wikis for collaborative writing, the results showed that students had a very useful experience with wiki assignments. The results also

showed that students were satisfied with wiki topics that were relevant to the course topic. With regard to the peer feedback and scaffolding, the researcher found out that students agreed that the wiki improved collaborative scaffolding, which consequently helped them reorganize the content and correct their errors.

It is declared that wikis support both collaborative writing, social interaction, and overall learners' language competence (Coniam & Mak, 2008; Kuteeva, 2011). In research conducted by Lin (2005), the effectiveness of using wikis to assist collaborative writing was examined. The participants were 20 college EFL learners. The finding of the research indicated that collaborative writing increases English awareness and writing ability, besides it improves the contribution of peers (Lin, 2005). On the other hand, this study (Lin, 2005) suggested that underachievers demonstrate more engagement with the technology of wiki and in turn increase their Zone of Proximal Development (ZPD) in online collaborative learning.

In the context of Iran, Kioumarsi, Babaie Shalmani, and Heydarpour Meymeh (2018) conducted a research on 16 participants who were university graduate students with the age range of 22-32. The study tried to compare collaborative writing through wikis with collaborative writing without using wikis. The findings indicated that the use of the wiki provided better situations for improving the students' writing skill.

In another research, Ahmadi and Mardani (2014) conducted a study on two 16-member groups of EFL students at the Jahad-e-Daneshgahi institute of higher education in Iran. The students in the experimental group wrote an essay and other students edited it and then they wrote the final version by comparing the original edited versions. The students in the paper-based group had a reviewing-editing session before the next class to edit their peers' essays. The results

of their study showed that the collaborative experimental group outperformed the control group.

This study mainly aims at investigating the effect of wikis on EFL learners' writing accuracy in the Iranian context. Moreover, the study is significant in terms of several causes. To begin with, the study globally contributes to the related literature with respect to the efficaciousness of process-based writing instruction and will fill a gap in this context. Second, the study makes a major contribution to the related literature on the importance of a learning environment for writing achievement. Third, this study will serve to discuss the effects of wikis on EFL writing achievement in the Iranian EFL context. The research finally makes suggestions for researchers, teachers along with material and curriculum designers with regard to adjusting wikis properly into progressing EFL writing process. By taking these concerns into account, this study aims to answer the following research question:

>   ***RQ1:*** Does wiki-based collaborative writing significantly enhance EFL learners' writing accuracy?

METHODS
Participants
The participants of the study were 72 EFL learners who were recruited from an English language institute in Gachsaran, Iran. Their language proficiency level was pre-intermediate level based on the Oxford Quick Placement Test administered prior to conducting the study. The participants' age ranged from 12 to 16, and all of them were high school students. Their mother language was Persian and all of them were learning English as a foreign language.

Materials
The first instrument used to collect the data was the Oxford Quick Placement Test (OQPT) utilized to homogenize the language learners. The test consists of 60 multiple-choice items constructed by Oxford University Press and the University of Cambridge.

The second instrument was a wiki site created by the researcher. It was a collaborative site, through which the participants could share their writing assignments to be corrected and edited by other group members.

Design
The present study employed a quasi-experimental research design referred to as two-group pre-test - post-test to elicit data. As it can be understood from the name of the design, the study was conducted with two groups of EFL learners including experimental and control groups based on a model proposed by Chandler (2013). Also, it is worth mentioning that the present research consisted of three major stages of pre-test, treatment, and post-test.

Data Collection Procedure
The participants who were selected based on their scores in the OPT test were randomly assigned into two groups of control and experimental. The control group (n=36) underwent a traditional method of writing, while the experimental group (n=36) was subjected to wiki-based collaborative writing.

Both groups attended 16 sessions over a period of 8 weeks during which they were given writing assignments on specific topics. Their coursebook was Top Notch 3A. The teacher emphasized the parts related to writing and taught them more comprehensively than other parts. These parts included writing booster, grammar booster, summary writing, and vocabulary. Both groups were given pre-test before the study and post-test after the survey. The results of the two tests were then compared to examine whether they changed significantly or not.

The participants of the control group did not use the wiki, and the teacher provided them with a topic which they wrote about both in and out of the class. The students did not provide feed-

back to each other. Here, the teacher corrected their written samples and provided them some correction feedbacks.

On the other hand, the experimental group used Google sites, a wiki page was created first by the teacher, and the students were invited to join the site. The teacher created an account for each member and gave a user name and a pass-word to each of them to log into the wiki site in which they had a writing assignment per session. The students gave feedback to each other through the wiki and corrected each other's mis-takes. Their feedbacks included different correc-tions including the organization of the text, grammatical mistakes, punctuation mistakes, and word order. They also provided each other with different synonyms or antonyms for words that were appropriate to use in the context. Sometimes they were guided to use correct con-junctions such as coordinating conjunctions, subordinating conjunctions, or correlative con-junctions.

The wiki site had various functions such as discussion, edit, and history. By using the edit function, the participants could edit each other written samples and by using the discussion function, they could discuss the topics. Through the history part, the previous written samples were available.

Data Analysis Procedure

The researcher utilized SPSS (version 24) soft-ware in order to analyze the raw data; both de-scriptive and inferential statistics were used to answer the research questions. Two Independent sample t-tests were run to compare the pre-test and post-test of both groups and a paired sam-ples t-test was carried out between the pre-test and post-test of the wiki group (experimental group) to examine if the wiki-based group sig-nificantly changed regarding writing accuracy.

RESULTS

The accuracy of groups in pre- and post-test

The number of errors per one hundred words was considered as the measure of accuracy. The following table shows the accuracy of the two groups in both pre-test and post-test.

Table 1.
The Number of Errors per 100 Words in Pre-test and Post-test for Both Groups

test	group	N	Mean	Std. Deviation	Std. Error Mean
Pre-test	experimntal	36	13.22	2.01	.33
	control	36	13.05	1.78	.29
Post-test	experimntal	36	6.69	1.89	.31
	control	36	9.972	2.09	.34

The above table shows the number of errors per 100 words in pre-test and post-test for both control and experimental groups. In order to re-veal whether this difference is statistically sig-nificant or not some inferential statistics were run which are reported in the following sections.

Comparing the performance of both groups in pre-test and post-test

The pre-test and post-test mean scores of both groups were compared through two independent sample t-test to find if there is any significant differ-ences or not. Table 2 below presents the related results.

Table 2.

Independent Samples t-tests on Pre- and Post-test of Both Groups

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Pre-test	Equal variances assumed	.948	.334	.371	70	.712	.166	.449	-.729	1.062
	Equal variances not assumed			.371	69.01	.712	.166	.449	-.729	1.062
Post-test	Equal variances assumed	.546	.462	-6.97	70	.000	-3.27	.470	-4.215	-2.339
	Equal variances not assumed			-6.9	69.3	.000	-3.27	.470	-4.215	-2.339

According to the above table, the two groups are not significantly different in the pre-test (p-value >05). Therefore, the two groups were almost similar in writing accurately in the pre-test, and the number of errors in their writing assignments were not statistically different. On the other hand, in the post-test, the experimental group outperformed the traditional one in terms of writing accuracy. Consequently, the experimental group wrote more accurately compared to the control group.

Comparing the performance of the experimental groups in pre-test and post-test

In order to make it clear whether the control group has changed significantly in the post-test compared to their pre-test regarding the writing accuracy features a paired sample t-test was run on their pre-and post-test; the related results are presented in the following Table 3 below.

Table 3.

A Paired Sample t-test on Pre- and Post-test Score of Experimental

Group Paired Differences								
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
				Lower	Upper			
pretest-post-test	6.527	.654	.109	6.306	6.749	59.884	35	.000

As it is demonstrated, the p-value was less than .05; therefore, there was a significant difference between the post-test and pre-test results. The less the number of errors the more accurate the writing is. Consequently, the learners in the experimental group wrote more accurately in the post-test compared to their pre-test.

DISCUSSION

Wiki-based writing collaboration and traditional ways of writing were two ways of writing that were compared in the current study. Writing accuracy was measured for both control and experimental groups.

The analysis of the data revealed that the experimental group who had experienced writing correction through wiki sites has improved in their post-tests compared to their pre-tests regarding their writing accuracy. In the case of wiki-based collaboration, most of the students engage in correcting each other's papers. Students have enough time and energy and correct more steadily and more efficiently. The obtained results showed that wiki-based collaboration was more effective in improving the writing accuracy of language learners.

Vahedipour and Rezvani (2017) investigated the effect of providing feedback through a wiki-based environment on the writing accuracy of learners. The results of their study were similar to that of the present study since they concluded that the group that received instruction in the wi-ki environment outperformed the group under-gone instruction in the traditional way of writing.

Elabdali (2016) in a study compared the accuracy, complexity, and creativity of the students in two groups of wiki-based collaboration and traditional one. The results of her study were in contrast with that of the current study concerning the accuracy of writing; in his study, the wiki-group was not significantly higher than the experimentalgroup.

The findings are in agreement with Kuteeva's (2011) research, who found that learning through wikis helped the students improve their writing accuracy. He stated that wiki is a beneficial tool for improving writing skills. He maintained that students pay more attention to grammatical points and structural aspects.

Other research, such as Miyazoe and Anderson (2009) and Alshalan (2010) suggest learning using wikis is effective in improving the subjects' accuracy in their writing.

On the other hand, the results of the present research is not in line with Coniam and Mak's (2008) results. They found that the use of wikis did not always improve writing accuracy.

Besides, the present study results was not consistent with that of Colye (2007), who indicated that wiki was not an influential tool for improving writing accuracy.

This study would reach results that are more generalizable if it was conducted with more participants. Besides, it was hard for some participants to get access to the internet and PCs, which affect the comprehensibility of the results.

CONCLUSION

Wiki-sites are used to learn collaboratively and they help learners to share their knowledge in a more efficient way compared to traditional ways. This type of technology has been used lesser than other kinds of technology and most teachers and learners are less familiar with it. One of the challenges that exist in the Iranian context of English teaching and learning is the lack of knowledge of teachers and students to technology. Coyle (2010) confirms this and indicates that one of the challenges facing the learners and teachers in using wikis that prevents it from being effective is their low knowledge of wikis.

The results of the study can be useful especially for teachers and students of language institutes and high schools and for other educational centers and universities, especially for EFL students. It can cause variations in the teaching and learning and make them more motivated to participate in-class activities. It can also be curriculum developers to integrate it into the instructional programs throughout the country.

More studies are still required to explore the role of wiki-based writing in the context of lan-

guage teaching. It would be fruitful to delve into EFL teachers' perspectives toward the use of wikis as an instructional tool for teaching writing. Another issue that can be considered is prospective teachers are suggested to study potential obstacles to the implementation of wikis in EFL settings. Moreover, this study was conducted for students of one language institute, it can be carried out as an inter-institute or inter-high school to explore whether the perceptions of students will change or not.

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