

The Effect of Wiki and E-portfolio on Writing Skill of Iranian Intermediate EFL Learners

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ABSTRACT

Alternative assessment has made remarkable changes in SLA instruction. Along with the assessment, Computer Assisted Language Learning (CALL) and technological developments have penetrated into instruction as well. This study was an attempt to compare the effect of wiki and e-portfolio on writing skill of Iranian intermediate EFL learners. To do so, 81 out of 107 participants of 9 intact classes were homogenized by the Preliminary Test of English. They attended a 14 session term in two experimental and one control groups. Following the pretest, the writing points were taught in each group. Meanwhile, the students in both experimental groups were instructed to use technology (wiki and e-portfolio) to write their assignments on specific topics, and also they were requested to assess, to give feedback and comments on their classmates' assignments online and working collaboratively on their feedback in the classes accompanied with the feedback provided by the teacher. Besides, the students in control group were required to do their assignments paper-based and bring them back to the class in order to correct problems. At the end, the posttest of writing was administrated. The results of statistical analysis revealed that applying CALL in both forms of wiki and e-portfolio were significantly more effective in learners' writing than the conventional way. However, wiki could encourage higher levels of progress in writing skill in comparison with using e-portfolio.

Key words: Alternative Assessment, CALL, E-portfolio, Feedback, Wiki, Writing Skill

INTRODUCTION

Writing skill is of great importance in communication. Good writing skill allows us to communicate messages with clarity and ease to a far larger audience. It seems that the use of CALL makes language teaching more progressive and can meet individual learning needs. Educators recognize that utilizing computer technology can be convenient to create both independent and collaborative learning environments and provide students with language experiences as they move through the various stages of second language acquisition (Kung, 2002).

A wiki is a collaborative website that many people can work on or edit. Wikis are defined as interlinked web pages applied to store and modify information. Each page possesses the capacity to store information and to be easily viewed, edited, and commented on by other users of a web browser. Neumann and Hood (2009) described "course evaluations by students and the assessment of learning outcomes through wiki demonstrated this as an area in need of improvement for both student learning and engagement" (p.383). That wiki requires the creation of knowledge by editing web pages is consistent with the constructivist approach (Ebner, Kickmeier-Rust, & Holzinger, 2008).

On the other hand, the development of technologies has stepped shoulder by shoulder with the new methods of

assessment as portfolio and e-portfolio, which are becoming more and more commonplace in educational circles. The former refers to those methods of assessment that instructs students to report their records of writing tests and to monitor their progress in time. Students, however, have labeled such a paper-based method boring (Berimani & Mohammadi, 2013). Consequently, the area of assessment in writing witnessed a turning point towards the new version of portfolio called electronic portfolio which has been reported to be more satisfactory (Gary, 2009). E-portfolio is akin to portfolio, the mere difference has roots in being electronic in nature. In other words, all activities such as writing, reading, categorizing issues, and even aids of writing such as grammar check, and spelling are computer-based.

This study aimed at comparing the effect of wiki and e-portfolio on the writing ability of Iranian intermediate EFL learners. The role of feedback was crucial to assess the writing assignments in both wiki and e-portfolio. It is worth probing the effect of such CALL programs on the learner's performance to see how effective these technological advancements might be in writing and how teachers can benefit from them to be successful in reaching their goals while teaching writing skill.

Purpose and Significance of the Study

The purpose of this study was to compare the effect of wiki and e-portfolio on development of writing skill of Iranian intermediate EFL learner. Relying on CALL and assessment principles, it was expected that both wiki and e-portfolio would be more effective in improving the writing than the conventional method; the difference in the effect of each on writing was subject to investigation and comparison though. The purpose of the study was also directed towards using cooperative and collaborative learning which refers to involving two or more individuals who are attempting to have a shared educational experience. In these environments, students are able to learn from each other, utilize each other's skill sets and resources, and share experiences that may benefit the entire group. Learners in a group setting achieve a set of common goals. Thus, students learn how to work together and support each other (Johnson, Johnson, & Smith, 2007). The study also looked at typical classroom assessment purposes such as providing feedback to students, making instructional decisions, and advising students on their mistakes by providing them with feedback on their writing assignments in wiki and e-portfolio.

This study could be significant in promoting writing skill and beneficial to the students and instructors in teaching and collaborative learning. Moreover, this research might provide recommendations on how to teach the writing skill by wiki and e-portfolio assessments through engaging students with CALL tools for learning writing in English. The study signified the role of feedback provision on wiki pages and e-portfolio website as the core of assessment to enhance writing ability followed by the work of teachers and the students on them in the classes. The study may also be important since it tended to add more credit to the practicality of using technology-based assessment within the borders of Iranian review of literature that is still in need of more research-based evidence to accept the educational importance of such fresh concepts put forth by alternative assessment.

Research Questions

Based on the aim of the study the following research questions were formulated.

1. Does wiki have any significant effect on writing skill of Iranian intermediate EFL learners?
2. Does e-portfolio have any significant effect on writing skill of Iranian intermediate EFL learners?
3. Is there any significant difference between the effect of wiki and e-portfolio on writing skill in Iranian intermediate EFL learners?

LITERATURE REVIEW

While the early years of writing assessment witnessed the dominance of the objective tests, such trends have been subject to a substantial change and have taken the form of portfolio assessment (Yancey, 1999). The advent of the new approaches in assessment has been synonymous with learning-centered strategies that call upon the learners the respon-

sibility of assessing their and their peers work through more collaborative work. With alternative assessments, students are enabled to provide their own responses rather than simply selecting from a given list of options. According to the definition provided by Huba and Freed (2006), alternative assessment could be put forth as "the process of gathering and discussing information from multiple and diverse sources in order to develop a deep understanding of what students know, understand, and can do with their knowledge as a result of their educational experiences" (p. 8).

Feedback is an essential part of education and training programs. It helps learners maximize their potential at different stages of training, raise their awareness of strengths and areas for improvement, and identify actions to be taken to improve performance. However, there is no sharp dividing line between assessment and teaching in the area of giving feedback on learning (Ramsden, 1992).

Wikis enhance collaborative writing, make open-editing possible, and provide a simple editing environment that assists acquiring collaborative writing skill (Engstrom & Jewett, 2005; Lamb & Johnson, 2007). Wikis promote student-centered teaching in that students themselves have the control over what they write and present on the wiki pages. Wikis look for the process of learning rather than its outcome. It is also a source of peer feedback enabling the learners to learn through teamwork (Lamb, 2004; Zou, 2006).

The main purpose of portfolio assessment is encouraging the learners to become more autonomous, take the control of their learning, make decisions, participate in the evaluation of their own work, and solve the problem they may individually face (Tabatabaei & Assefi, 2012). In portfolio assessment, the emphasis is on continuous assessment of students during the term and their progress. E-portfolio is considered as a digital container capable of storing visual and auditory content including texts, images, videos, and sounds. E-portfolios are also parts of a personal online space where learners can restore their works, achievements to have access to them again. Computers can promote writing skill on the part for students and can help them change the product of texts (Loveless, 2003; Zou, 2006). Also, computer-based writing changes our writing habits (Hyland, 2002), and using computer and e-portfolio tools allows students to check their spelling and grammar, cut and paste, delete and copy, import images, and change every aspect of formatting, which makes the texts longer, look much better, and more subject to revision (Meshkat & Goli, 2012).

Cooperative and collaborative learning is a learning situation that involves two or more individuals who are attempting to have a shared educational experience. In these environments, students are able to learn from each other, utilize each other's skill sets and resources, and share experiences that may benefit the entire group.

Working students together in pairs and groups enables them to exchange ideas and information and help each other to accomplish tasks. Brown (2000) states that "in a cooperative classroom the students and teachers work together to pursue goals and objectives" (p. 47). For Oxford (1997) "cooperative learning is more structured, more prescriptive

to teachers about classroom techniques, more directive to students about how to work together in groups (than collaborative learning)" (p. 443). The benefits of cooperative and collaborative learning are not only the academic but also the learner's communicability since it emphasizes on teamwork and team spirit (Johnson, et al. 2007).

METHOD

Participants

Eighty-one students out of 107 who took the proficiency test were selected as participants of this study. The participants were 18-30 years old (19 in average). They studied English as a foreign language at intermediate level in two language institutes in Tehran, Iran. They were native speakers of Persian. The educational background also differed in that they ranged from high school to graduate levels. At first, nine intact classes were randomly assigned for two experimental groups and one control groups as shown in Table 1.

Then, the homogenous students based on the results of PET were detected in the classes as the participants in the main study as follows (Table 2).

Instruments

In order to collect the required data, some instruments were used. They included language proficiency test (PET) (Quintana, 2013), pretest and posttest of writing, teaching materials, wiki pages, e-portfolio website, the rating scale to score pre and posttests of writing, and the scales to score the PET.

Procedure

At the outset of the study, the intact classes were randomly assigned into three groups including two experimental and one control groups. Then, the students attended the classes took the proficiency test. However, the speaking section of the test was not administered as a limitation of the study. The purpose of proficiency test was to manifest the learner's homogeneity in language proficiency prior to the treatments. The writing task of the third part in the writing section of the same administered PET was also used as the pretest. A third part in the writing section of another PET was selected as the post-test of the study with the focus on letter writing and storytelling with aiming at the continuous writing of about

100 words to be written in 20 minutes. While the topic for pretest was 'a thank you letter to a friend for hospitality', the post test was 'describing a special national day in your country'. The writing tests were to measure the subcomponents of writing as organization, grammatical, vocabulary, punctuation, and spelling as instructed in treatment sessions through wiki and e-portfolio assessment.

Based on the general mark scheme for writing part three of PET, the writing skill in this study was operationalized by pre and posttest of writing and measured on first, organization criterion through 'Indentation', 'Topic Sentence', 'Introductory/Supporting/Concluding sentences', and 'Ascending/Descending' organization all taught in the treatment sessions of the study. The second criterion was structure. Grammar rules and the mechanics of writing are critical components of learning to write which was measured through accurate and wide range of structure particularly the ones taught in the course such as the 'Tenses', 'Comparative/Superlative Adj', 'Adverbs of Frequency', 'Articles', and 'Modals'. The third criterion was vocabulary. It is central to English language teaching because without sufficient vocabulary students cannot understand others, express, or write their own ideas.

The vocabulary was measured through the use of accurate and range of choice of words and collocations. The fourth criteria was punctuation and spelling. Good punctuation makes a sentence clear and easy to read and understand because it shows the grammatical structure of the text, its meaning, and often the relationship between words or clauses. Punctuation was measured by the ability to use 'Commas', 'Colons', 'Semi colons', 'Periods', 'Question marks', and 'Exclamation marks' correctly. Spelling refers to the practice of forming words from letters. It was measured through checking the correct spelling words. The last criterion was coherence. Coherence refers to logical bridge between words and sentences. It was measured through uses of cohesive devices and transitional words to connect ideas within and between sentences and paragraphs. The pre and posttests of writing were scored out of 20.

Treatment was the same in all groups, but they used different devices for doing the writing assignments. The experimental group one put their writing assignments on wiki and experimental group two put them on e-portfolio. The participants in both groups were required to provide feedback on their classmates' writing assignments online. The students of the control group were briefed to do the same on a paper-based procedure. Each group experienced a term of 11 treatment sessions (ex-

Table 1. Intact classes before being homogenized

Exp. I (Wiki)	Class A: 12 students	Class B: 12 students	Class C: 14 students
Exp. II (E-portfolio)	Class D: 13 students	Class E: 11 students	Class F: 13 students
Control Group	Class G: 12 students	Class H: 10 students	Class I: 10 students

Table 2. Participants in groups after being homogenized

Exp. I (Wiki)	ClassA: 10participants	Class B: 8 participants	Class C: 9 participants
Exp. II (E-portfolio)	Class D: 9 participants	Class E: 9 participants	Class F: 11participants
Control Group	Class G: 8 participants	Class H: 9 participants	Class I: 8participants

cluding the first two or pre-sessions dedicated to PET, and the last or post-session devoted for the final and posttest administration). Each session was about 2 hours in which a 45 minute period was dedicated to writing skill with the permission of the institutes. One of the experimental groups used the wiki to leave their writing assignments on, whereas the other experimental group shared the writing assignments on e-portfolio both for the purpose of further assessment. The participants in control group went through the paper-based writing procedure through the conventional teaching method. All of the students in classes were taught by the same teacher and they took pretest and posttest of writing skill without considering to their homogeneity level, but at the end, those students who were homogenous in classes based on PET and the result of this study pointed to them. Table 3 provides a brief report of what was taught in the classes.

Treatments in wiki and e-portfolio experimental groups

The teacher in each experimental group dedicated the first treatment session to explain what the participants were supposed to do during the term. At first, they were guided on what wiki in wiki classes and what e-portfolio in e-portfolio classes were and what they had to precisely do in their assignments through wiki or e-portfolio. To do so, they were instructed how to use it for their writing assignments and how to give feedback on their classmates' assignments. They were also informed about the topics they had to become familiar with, and how they had to write their assignments.

In each session, the students were supposed to follow the instructions on some vocabularies and collocations surrounding the topic of the session and some questions and answers about the topic. After teaching the grammar point, students were asked to make sentences with the patterns presented. As shown in table 1, every session also had a writing point to be taught. At the end of the class, students were requested to write a text on the topic using the taught grammar, vocabulary, and the writing points as an assignment at home. The students in wiki classes wrote their homework on the wiki. The teacher created an account for each of students and gave them username and password to log in the page. Each session had a related reading part on wiki page called 'Tehranteacher'. However, the students of e-portfolio classes shared their writing assignments on website of e-portfolio and they were also asked to give feedback and comments on their classmates' writing. The teacher created an account for each learner and gave them the username and password to log in the website (www.tehranteacher.ir).

On wiki pages, each session had a related reading part called "Tehranteacher. The students could enjoy add/delete/substitute option to make their comments happen in practice on the areas they found problematic in their classmates' writing assignments according to their opinion. In fact, the students read the paragraph and made some changes in the form of the peer feedback. The use of technology was an assistant to provide the feedback on their classmates' assignments. The teachers reviewed the wiki page to guarantee learners

Table 3. A brief report of what was taught in the classes

Pre-session	Topic	Grammar part	Writing point
Welcome/PET test (including pretest of writing) administration			
Treatment session 1&2	Food related vocabularies & collocations	Simple present/present continuous-action/non-action verbs	Indentation organization
Treatment session 3	Family related vocabularies & collocations	3 kinds of future form	Topic sentence (organization)
Treatments Session 4	Saving & spending money related vocabularies	Present perfect/simple past	Introductory/supporting concluding sentences (organization)
Treatment session 5	Changing living style related vocabularies	Present perfect+for/since Present perfect continuous	Ascending/descending (organization)
Treatment session 6	Describe a person related vocabularies & collocations	An informal email	Punctuation/correct spelling
Treatment session 7	Transportation related vocabularies	Comparative & superlative ADJ/ADV Adv. of frequency	Cohesive devices and transitional words
Treatment session 8	Women talk more than men related vocabularies & collocations	Articles: a/an/the/no article	Review of choice of words
Session 9		Review session	
Treatment session 10	Recent success & failure related vocabularies & collocations	Modals: can/could/be able to	Formal & informal writing
Treatment session 11	Using cell phone in public places related vocabularies	Modals of obligation: have to/must/should	Review all of the writing points of the term
Post- session	Final exam (including posttest of writing) administration		

engagement in collaborative learning. Participants were encouraged to capitalize on one another's resources and skills to ask for information, evaluate one another's ideas, monitor one another's writing, etc. (See appendix A for the samples of students' assignments and appendix B for the samples of feedback on one of the assignments on wiki page for session seven).

On the other hand, on website of e-portfolio, each session had a lesson. The learners wrote their assignments beneath the section allocated to the new lesson on e-portfolio website and after that, they gave feedback and wrote comments on each other's work. They were given the chance to make online comments on the assignments. Students also could give 'like' or 'dislike' to the assignments. The comments were made on the assignments in the form of the feedback. Sometimes the students were invited to a challenge to write at least one reason for any single comment they had made on the assignment (See appendix C for the samples of students' writing assignments and feedback and appendix D for more comments on one of the assignments on the website of e-portfolio for session seven).

In both groups, before stepping to the class, the teacher reviewed the work online and prepared a report of the corrections. In the class, the teacher reported on the assignments and appreciated their collaborative work already conducted online. There was some time allocated to the questions put forth by the students about the feedback they had received on the errors. The teacher tried to write the sentences (as they appeared on wiki or e-portfolio) on board and work on the deleted, added, and substituted items on wiki pages or comments on e-portfolio website respectively to show if they were correctly applied. Sometimes, even the prints of the online work were distributed among the students who made comments. Each student was required to share the feedback and the comments with a classmate and provide the justifications for the comments. The learners were also required to ask each other questions on the word and grammar choice and other writing points. Peer feedback encouraged students to hold one another accord of the work and to see each other as collaborators in the classroom experience. Each pair of students was then asked to make a group and explain the changes to be made to the assignment to its original writer. Obviously, the teacher in all sessions in both groups explained the wrong feedback and comments provided by the peers. She also explained those mistakes which were ignored by all the peers. The interesting point was how the learners shared ideas with rather fun and interest.

Control group

In control group, the teaching points were the same as two experimental groups. The materials were totally the same as well as the process of instruction. The sheer difference was in that the learners in experimental groups wrote their homework online through CALL technology but in control group, learners had to write their assignments in a paper-based way and they could not give any feedback on their classmates' assignments. They also had to bring their assignments back to the class to be corrected by the teacher and then they were

informed about their errors in the class through the conventional method. This was in the shade of the fact that the traditional methods of assessment consider the teacher as the only competent character of the class to correct writing tasks and provide the learners with the feedback. The efforts were made to allow the least possible changes in the process of the instruction to evaluate the effect of the online assessment and the tools (wiki and e-portfolio) on the writing ability of the learners.

The post-session of the treatments was the final session in all groups devoted to the final exam of the term and the posttest of writing skill. The writing ability of the students prior and after the treatments was measured through the pre and posttests of writing by two raters using the same general mark scheme.

Design

The present study enjoyed a quasi-experimental design. Since randomization was not possible convenient sampling method using intact classes with pretest-treatment-posttest design was employed.

RESULTS

The Selection of Homogenous Participant

As displays in Table 4, the PET test was administered to 107 learners. Based on the mean of 48.45 plus and minus one standard deviation of 12.10, 81 learners were selected to participate in the main study. They attended into three groups of wiki ($n = 27$), e-portfolio ($n = 29$) and control ($n = 25$). The KR-21 reliability index for the PET was .84. The distribution of scores on the PET test also enjoyed a normal distribution.

The present data were analyzed through one-way analysis of variances (one-way ANOVA) which has two main assumptions; normality of the data and homogeneity of the variances of the groups. The latter will be discussed later, although there is no need to worry about the violation of this assumption because none of the sample sizes were four times larger than the other (Pallant 2011, Tabachnick & Fidell, 2007).

The normality of the data was measured by calculating the ratios of skewness and kurtosis over their respective standard errors. Based on the results displayed in Table 5, it can be claimed that the data enjoyed normal distribution. The ratios were all within the ranges of ± 1.96 .

Pretest of Writing

A one-way ANOVA was run to compare the wiki, e-portfolio and control groups' means on the pretest of writing in order to prove that they were homogenous in terms of their writing ability prior to the study. Before discussing the results it should be mentioned that the assumption of homogeneity of variances of the groups was met (Levene's $F(2, 78) = .83, p = .438$) (Table 6).

Based on the results displayed in Table 7, it can be claimed that the wiki ($M = 12.44, SD = 2.51, 95\% CI [11.45,$

Table 4. Descriptive statistics of participants who took PET

	N	Minimum	Maximum	Mean	Standard deviation	Variance statistic	Skewness		Kurtosis	
							Statistic	Standard error	Statistic	Standard error
PET	107	22	73	48.45	12.100	146.401	0.132	0.234	-0.376	0.463
KR-21	0.84						Ratio	0.564	Ratio	-0.812

Table 5. Testing normality assumption of homogenous participants

Groups Statistic	N	Skewness			Kurtosis		
		Statistic	Standard error	Ratio	Statistic	Standard error	Ratio
WIKI							
Pre-WR	27	-0.797	0.448	-1.78	-0.261	0.872	-0.30
PET	27	-0.538	0.448	-1.20	-0.301	0.872	-0.35
e-portfolio							
Pre-WR	29	-0.342	0.434	-0.79	-1.052	0.845	-1.24
PET	29	-0.257	0.434	-0.59	-1.236	0.845	1.46
Control							
Pre-WR	25	-0.131	0.464	-0.28	0.110	0.902	-0.12
PET	25	-0.454	0.464	-0.98	-0.604	0.902	-0.67

Table 6. Test of homogeneity of variances for pretest of writing

Levene Statistic	df1	df2	Sig.
0.835	2	78	0.438

13.44]), e-portfolio (M = 11.90, SD = 2.94, 95 % CI [10.78, 13.02]) and the control (M = 11.32, SD = 2.76, 95 % CI [10.18, 12.46]) groups had close means on the pretest of writing.

The results of the one-way ANOVA ($F(2, 78) = 1.08, p = .343, \omega^2 = .002$ representing a weak effect size) (Table 8) indicated that there were not any significant differences between the three groups' means on the pretest of writing. Thus it can be claimed that they were homogenous in terms of their writing ability prior to the administration of the treatments.

Inter-rater Reliability Indices

The results of the Pearson correlations (Table 9) indicated that;

- A: The two raters enjoyed a significant inter-rater reliability on the pretest of writing ($r(79) = .77, p = .000$ representing a large effect size).
 B: The two raters enjoyed a significant inter-rater reliability on the posttest of writing ($r(79) = .90, p = .000$ representing a large effect size).

Testing Null-hypotheses

To test the hypotheses of the study, a one-way ANOVA followed by post-hoc Scheffe's tests was run to compare the wiki, e-portfolio and control groups' means on the posttest of writing.

Based on the results displayed in Table 10, it can be claimed that the wiki group (M = 16.04, SD = 2.37, 95 % CI [15.10, 16.98]) had the highest mean on the posttest of writing. This was followed by the e-portfolio (M = 14.31, SD = 3.01, 95 % CI [13.16, 15.46]) and the control (M = 12.40, SD = 2.17, 95 % CI [11.50, 13.30]) groups.

The results of the one-way ANOVA ($F(2, 78) = 13, p = .000, \omega^2 = .229$ representing a large effect size) (Table 11) indicated that there were significant differences between the three groups' means on the posttest of writing.

The results of the post-hoc Scheffe's tests (Table 12) indicated that;

- A: The wiki group (M = 16.04) significantly outperformed the control group (M = 12.40) on the posttest of writing (MD = 3.63, $p = .000$). Thus the first null-hypothesis as wiki does not have any significant effect on writing skill of Iranian intermediate EFL learners was rejected.
 B: The e-portfolio group (M = 14.31) significantly outperformed the control group (M = 12.40) on the posttest of writing (MD = 1.91, $p = .029$). Thus the second null-hypothesis as e-portfolio does not have any significant effect on writing skill of Iranian intermediate EFL learners was rejected, although the results should be interpreted cautiously due to the fact that the 95 % lower bound confidence interval of .16 was close to zero.
 C: The wiki group (M = 16.04) significantly outperformed the e-portfolio group (M = 14.31) on the posttest of writing (MD = 1.72, $p = .048$). Thus the third null-hypothesis as there is no significant difference between the effect of wiki and e-portfolio on writing skill of the learners was rejected, although the results should be interpreted cautiously due to the fact that the 95 % lower bound confidence interval of .01 was close to zero.

Table 7. Descriptive statistics for pretest of writing by groups

	N	Mean	Standard deviation	Standard error	95% Confidence interval for mean		Min	Max
					Lower bound	Upper bound		
WIKI	27	12.44	2.517	0.484	11.45	13.44	7	16
e-portfolio	29	11.90	2.944	0.547	10.78	13.02	6	16
Control	25	11.32	2.765	0.553	10.18	12.46	5	17
Total	81	11.90	2.755	0.306	11.29	12.51	5	17

Table 8. One-way ANOVA for pretest of writing by groups

	Sum of squares	Df	Mean square	F	Sig.
Between groups	16.414	2	8.207	1.084	0.343
Within groups	590.796	78	7.574		
Total	607.210	80			

Table 9. Inter-rater reliability indices pretest and posttest of writing

	PreWRR2	PostWRR2
PreWRR1		
Pearson correlation	0.779**	
Sig. (2-tailed)	0.000	
N	81	
PostWRR1		
Pearson correlation		0.907**
Sig. (2-tailed)		0.000
N		81

** . Correlation is significant at the 0.01 level (2-tailed).

Table 10. Descriptive statistics for posttest of writing by groups

	N	Mean	Standard deviation	Standard error	95% Confidence interval for mean		Min	Max
					Lower bound	Upper bound		
WIKI	27	16.04	2.377	0.458	15.10	16.98	11	20
e-portfolio	29	14.31	3.013	0.560	13.16	15.46	8	20
Control	25	12.40	2.179	0.436	11.50	13.30	8	17
Total	81	14.30	2.930	0.326	13.65	14.94	8	20

Table 11. One-way ANOVA for posttest of writing by groups

	Sum of squares	Df	Mean square	F	Sig.
Between groups	171.719	2	85.860	13.000	0.000
Within groups	515.170	78	6.605		
Total	686.889	80			

Table 12. Multiple comparisons for posttest of writing by groups

(I) Groups	(J) Groups	Mean difference (I-J)	Standard error	Sig.	95% Confidence interval	
					Lower bound	Upper bound
WIKI	e-portfolio	1.727*	0.687	0.048	0.01	3.44
	Control	3.637*	0.713	0.000	1.86	5.42
E-portfolio	Control	1.910*	0.701	0.029	0.16	3.66

*. The mean difference is significant at the 0.05 level.

DISCUSSION

The study found that both wiki and e-portfolio could positively affect writing skill of Iranian intermediate EFL Learners. In other words, applying two CALL based technologies was effective in improving the writing skill despite the differences of the wiki and e-portfolio in nature. However, wiki was more effective than e-portfolio in improving the writing skills of the learners.

The reason for wiki to take over e-portfolio might be sought in some factors: One reason might be the cooperative ode presented in wikis pages. This could help the learners get involved in editing one another's writings and present peer feedback which could help the learners find out their mistakes and be more careful while writing as Zou (2006) believes too. Another reason might be the existence of an atmosphere of cooperation in which the learners shared their learning experiences and exchanged ideas. This negotiation-oriented context based on using wiki in the classroom helped the learners get more satisfied in the process of developing their writings.

The findings are both in line and in disagreement with the results of previous research reported in the literature of technology-oriented writing in both EFL and ESL settings. The effect of wiki on the EFL learners' writing development over conventional writing group in this study was in contrast with the previous research done by Neumann and Hood (2009) who found that although wiki could promote the writing of the ESL/EFL learners (users) as it provides them with a collaborative situation (website) in which many people can work on or edit something written, the level of effectiveness was exactly the same as it was for the non-web based classes of writing.

The same controversy did exist with another study conducted by Wichadee (2013) who showed that although the writing performance was improved following the application of wiki, the level of difference with the non-web based writing class was not significantly important. This was true about another study (Colye, 2007) that did not find any significant difference in the effect of web-based (wiki) and non-web based writing courses.

In line with the result of Achterman's (2006) study on the negotiation involved in the collaboration on a wiki project, the findings of the present study proved that wikis help students develop writing through collaboration. This was also supported by the results of the study conducted by Chao and Lo (2009) and Miyazoe and Anderson (2010) who advocated the use of wiki in writing classes as a key element to improve the skill.

The result of the study on the effect of e-portfolio in improving the writing skill was in accordance with those of Baturay and Daloglu (2010) who indicated that applying e-portfolio in writing classes could enhance learning with respect to all aspects of writing as the learners benefited from keeping an e-portfolio as an enjoyable learning facilitator.

Compatible with the result of this study related to the effect of e-portfolio was the findings of Meshkat and Goli (2012), that e-portfolio could help the EFL learners develop their writing proficiency in English. The same result could

be found in Saeedi and Meihami's (2015) research that reported the effective role of e-portfolio in developing the writing skill. This was also suggested in the work by Mei Sui, (2015) who asserted that e-portfolio is of great value for teaching purposes, writing in particular as not only does it improve the writing ability, but is it capable of improving the motivation towards learning as well.

However, unlike the results of the present study, comparing e-portfolio, portfolio and conventional writing classes, Pezeshki (2010) found that both e-portfolio and portfolio were not effective in helping students develop their second language writing skill.

CONCLUSION

The purpose of the present study was to compare the effect of wiki and e-portfolios assessment on writing skill of Iranian intermediate EFL learners. The study therefore, aimed at finding if the technology-based assessment in the forms of wikis pages and e-portfolios in comparison with the conventional method had any significant effect on EFL learners' writing skill.

The conclusion of the study revealed that both types of assessment (wiki and e-portfolio) were more successful in improving the writing skill compared with the conventional assessment. This is along with the ideas put forward by Wolcott and Legg (1998) asserting that there must be attention paid to new types of assessment and their effects on writing improvement. The conclusion is also reflected in Gipps (1994) and Shepard (2000) who join the importance of assessment with the both teaching and learning, and suggest that alternative methods of assessment relying on feedback are able to facilitate the process of SLA.

The conclusion is also in line with the theories of using technology-oriented methods in the second language writing classroom. The idea is shared with Zou (2006) who believes in computers as the tools to promote writing skill and is suggested by Hyland (2002) who relies on computer-based writing as a source of the change for writing habits.

The study concluded that after the students were inspired to assess the assignments through wikis pages, their writing improved in contrast with their counterparts who were trained by conventional non-electronic based instruction. This is consistent with Richardson (2006) emphasizing that without the direct supervision of the teachers on students' writing process, they are able to improve the quality of their work based on wiki practices and they could also enhance the effect of wiki itself.

The use of wiki as the host of feedback and collaboration was concluded to be of influence in improving the quality of writing. This is along with Achterman (2006) who spotlights the effect of wiki in respect to encourage the nature of collaboration among the learners. In the same direction, this conclusion is akin to Lamb (2004) who introduces wiki as a source working on the process rather than the product of the learning. As concluded by the study, e-portfolio played a critical role in improving the writing ability through the enhancement of the opportunities to provide on-line feedback.

The conclusion arrived concerning the effect of the e-portfolio on the writing ability is supported by Abrami and Barrett (2005) who emphasize the role of e-portfolio in developing the students' ability in meeting the task requirements as well as possible.

CALL framework proposed in the study, in the forms of wiki and e-portfolio, attaches ultimate importance to the whole process of learning writing. In this study, the learners who received peer correction, cooperation, and collaboration as a result of implications of CALL proved to be successful in writing. The current study was undertaken to find out the facilitative effect of wikis and e-portfolios by means of intervention on writing skill of Iranian EFL learners. The study revealed that activating learners via wiki or e-portfolio had a significant and meaningful effect on the ease and feasibility of teaching and learning writing. English teachers could employ wiki and e-portfolio to help the learners develop their second language writing skill with respect to providing EFL learners with an atmosphere of cooperation and collaboration for the purpose of growth in their writing.

The findings could be of paramount importance for institutions and academic settings to provide facilities for using wiki and e-portfolio. CALL could be at the service of the formal tuition at large scales as Iranian state organizations are the center able to allocate the required budget and space for online work.

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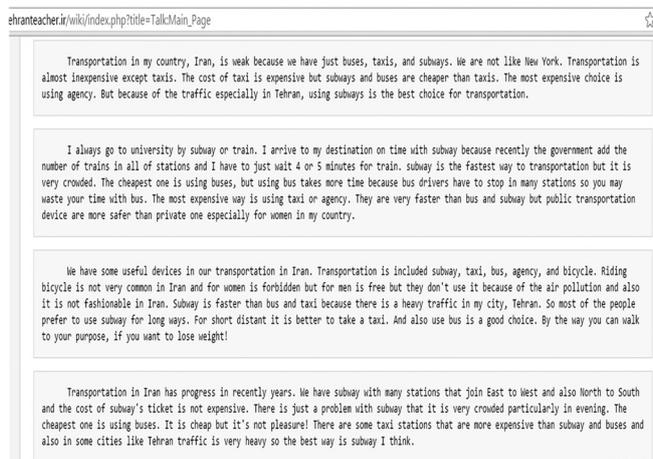
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APPENDIX

APPENDIX A

Samples of Students' Assignments on Wiki Page for Session Seven



APPENDIX B

An example of the feedback provided on one of the assignments on wiki appears in appendix A. The deleted items are underlined, the added items are in italics, and also substituted items are in bold.

We have some useful **vehicles** in our transportation in Iran. Transportation **includes** subway, taxi, bus, agency, and bicycle. Riding bicycle is not very common in Iran and for women it is forbidden, but for men it is free but they don't use it because of the air pollution and also it is not **common** in Iran. Subway is faster than bus and taxi because there is a heavy traffic in my city, Tehran. So, **Most** of the people prefer to use subway for long ways. For short distant, it is better to take a taxi, **and** also use bus is a good choice. By the way you can walk to your **destination**, if you want to lose weight!

APPENDIX C

Samples of Students' Assignments and Feedback on the Website of E-portfolio for Session Seven

www.tehranteacher.ir/index.php/2015-10-01-08-16-42/52-session-7

session 7 – zahra nassajian #21
shahrazad akbari

I think bicycle is the better way of transportation. We can use bicycle to prevent increasing air pollution but the culture of my city doesn't accept this, especially for women. There are 3 ways of transportation in my city: taxi, bus, and metro. All of them are good but in my opinion metro is the fastest way of transportation and taxi is more quickly than the bus.

feedback → .first line: BEST not better. it must be superlative

طاولون گون

session 7 – nlusha madadi #20
fateme eskandari

In my city transportation is very expensive. If you want to go to a near place you should pay much money. Some taxi drivers take more money and it is not fair. In the other hand there are subway stations. The price of ticket of subway is fixed fee but this is not cheap for everyone too. And the other way of transportation is bus stations that are cheap but this is more slowly than those two ways. I think in my city the best way is using our own car although gas is expensive as much as carfare.

feedback → .before and you need comma in third line

طاولون گون

APPENDIX D

Some other comments provided by some classmates on the writing assignment on e-portfolio appears in Appendix C

In my city transportation is very expensive. If you want to go to a near place you should pay much money. Some taxi drivers take more money and it is not fair. In the other hand there are subway stations. The price of ticket of subway is fixed fee but this is not cheap for everyone too. And the other way of transportation is bus stations that are cheap but this is more slowly than those two ways. I think in my city the best way is using our own car although gas is expensive as much as carfare.

- 1) *You didn't indent the first line.*
- 2) *In the second line, before subway, use 'some'.*
- 3) *On the other hand not in the other hand*
- 4) *After in the other hand, you need a comma.*
- 5) *In the third line, 'another' way is better than 'the other' way.*
- 6) *In third line, after period, you wrote And!. This is not true.*
- 7) *In the fourth line, I think 'kind' is better than way.*