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MEDIA & COMMUNICATION STUDIES | RESEARCH ARTICLE

The potential impact of the application of electronic portfolio on Iranian EFL learners' writing performance seeking their gender role

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Abstract: Electronic portfolios are one of the potentially influential e-learning developments that could successfully find its way into language learning classes all around the world, although in Iranian EFL context students are not entirely familiar with them yet. The primary objective of this paper was to answer questions regarding the effect of e-portfolio on the students' writing proficiency. Also, the potential effect of gender on their use of electronic portfolio was investigated as well. 157 male and female Iranian English-major students were involved in the study during one academic semester. The data obtained from a quasi-experimental design, comparing electronic portfolio assessment and conventional method of teaching writing, was quantitatively analyzed. The findings revealed that the application of e-portfolio has a significant effect on students' writing proficiency. However, gender had no impact on their use of e-portfolio.

Subjects: Internet & Multimedia - Computing & IT; Higher Education; Bilingualism / ESL

Keywords: e-portfolio; writing proficiency; gender; EFL context

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PUBLIC INTEREST STATEMENT

Nowadays most educational scholars are looking for methods to combine technology into classroom learning practices. Electronic portfolios can be considered as one of these methods that could be integrated into learning approaches, resulting in considerable developments in learning outcomes. Furthermore, gender difference, as a controversial factor, could also be considered as one of the variables in research settings. As a result, the purpose of conducting this research is two-pronged. Firstly, this study aims at exploring the effect of implementing e-portfolios as an alternative method of assessment as opposed to the conventional method of teaching writing in writing classrooms at a university in Iran on learners' writing proficiency. Secondly, it is intended to provide insights into the potential effect of gender on learners' use of e-portfolios.

1. Introduction

English is not an official language in Iran, and consequently, Iranians do not use it frequently in their everyday life. However, as the result of globalization and integration of technology in Iranians' daily lives, various English language skills including writing are becoming more and more essential not only in academic but also in business and professional sectors as well.

Unfortunately, the current conventional methods of teaching writing have failed to provide students with the required writing skills and competencies in the EFL context (EFL is the teaching of English to people whose first language is not English. EFL is an abbreviation for "English as a Foreign Language"). Researchers have been long familiar with the Iranian classrooms in the context of L2 learning, and they know that these classes are mostly teacher-dominated. In the majority of classes, only a few signs of collaboration and responsibility can be observed on the part of the learners.

Despite the popularity of electronic portfolios, the use of them has not been widespread in EFL contexts in general and our Iranian educational setting in particular. (E-portfolios according to Lorenzo and Ittelson (2005) are "personalized, Web-based collections of work, responses to work, and reflections that are used to demonstrate key skills and accomplishment for a variety of contexts and time periods).

Most of the students in Iran only receive a numerical grade at the end of the semester for their writing assignment which is based on a product-oriented approach. Thus, applying alternative methods of assessment such as electronic portfolios may be one of the solutions to help teachers make more accurate judgments about their students' writing ability. Therefore, it is important to investigate the effect of such assessments on L2 learners' writing proficiency and to consider the potential role of gender in its application.

Alternative assessments in general and portfolio assessments, in particular, have been used as an evaluation tool in the educational context of Iran. Hence, a number of studies have been conducted in Iranian EFL context about the effectiveness of alternative methods of assessment. Specific to the purpose of the current research, gender is believed to affect EFL writing performance (e.g. Cheng, 2002; Hedges & Newell, 1999; Jafari & Ansari, 2012). A growing body of research suggests that boys' dwindling literacy achievement (e.g. Alloway, 2007; Disenhaus, 2015; Klein, 2006; Martino & Kehler, 2007; Wallace, 2010; Watson, Kehler, & Martino, 2010) is partly attributed to the focus on print-based literacies rather than information and communication technology (ICT) and multi-media communication at which boys are known to excel (e.g. Alloway, 2007; Weaver-Hightower, 2008; Whitmire, 2010).

The advantages that are provided through the use of e-portfolios are still not well-defined in the Iranian context, especially about the relationship of e-portfolios with other factors such as gender. As a result, it could quickly be noticed that most Iranian teachers do not make use of these technologies in their writing classes, because they are not familiar with the use of computers, or because they do not have enough time or facilities to teach their students how to use e-portfolios.

To overcome the mentioned challenges, the purpose of conducting this research is two-pronged. Firstly, this study aims at exploring the effect of implementing e-portfolios as an alternative method of assessment as opposed to the conventional method of teaching writing in EFL writing classrooms at two universities in Iran on learners' writing proficiency. Secondly, it is intended to provide insights into the potential effect of gender on learners' use of e-portfolios in the EFL context.

2. Review of related literature

2.1. Foreign language writing research

Writing ability refers to one's feelings of capability to accomplish a given writing task (Pajares, 2003). Writing e-portfolio is considered to be an alternative approach to compensate for the weakness of previous product and process methods in writing (Barrett, 2005; Lorenzo & Ittelson, 2005) and it is in line with learner-centered approaches and electronic learning techniques.

In the late 1970s, conversant with advances in linguistics research, tensions raised among second language writing researchers who tried to strike an optimum balance between process and product (Matsuda & Silva, 2001). While the product approach to writing "stressed expository writing, made style the most important element in writing, and maintained that the writing process is linear, determined by writers before they start to write," (Hairston, 1982 as cited in Connor, 1988) the process approach emphasized the creative process of writing, considered different modes of writing (such as expository, description, narration) and also different contexts and audiences" (Connor, 1988, p. 112). As the result of the shift from traditional methods of teaching and assessment (which were mostly based on behaviorist approach) to social constructivist approaches that support student-centered activities in the classroom, new ways of assessment have been devised to measure the students' learning based on their performance. An electronic portfolio (e-portfolio) is one of these new techniques that aims to evaluate learners' performance during an extended period of time and encourages self and peer-assessment as well.

An inseparable part of constructivist approach is peer feedback, which is beneficial to both writers and readers, who may get the feel of a well-developed writing (Bostock, 2000). The idea of peers providing feedback first came from L1 process classes, assigning the students into groups and asking them to exchange their writings and comment on that of their peers, either on paper or through chat rooms or emails (Hyland, 2003). Peer feedback can take both a formative type, with the students providing comments on their peers' writings, and a summative type, when the students assign their peers with grades (Bostock, 2000). It can help learners gain autonomy and independence in their learning (Patri, 2002), reflect on their learning and also bring about a sense of responsibility among the students (Saito, 2008).

It has been observed that writing classes in most universities in Iran are run through conventional methods of assessment with the teacher assigning a topic for the students and then grading their papers and giving them back to the students who may not even take a look at the documents, let alone correct their mistakes (Pezeshki, 2010).

Applying traditional methods of teaching and assessment in writing classes in Iran could not satisfy the needs of learners in a modern world. The underlying reason for students' dissatisfaction can be traced back to the unique nature of the traditional method of assessment. On the other hand, the extensive use of the alternatives in assessment (such as portfolios, writing journals or diaries) made it inevitable for teachers and researchers to try to take some advantage of such options in Iran. The result could be observed in the growing number of research which has been conducted in the field (for example, Firoozzare, 2006; Heidari, 2009; Nezakatgoo, 2005).

2.2. Electronic portfolio

As the result of the shift from traditional methods of teaching and assessment (which were mostly based on behaviorist approach) to social constructivist approaches that support student-centered activities in the classroom, new ways of assessment have been devised to measure the students' learning based on their performance. An electronic portfolio (e-portfolio) is one of these new techniques that aims to evaluate learners' performance during an extended period and encourages self and peer-assessment as well.

In studies of L2 writing assessment, using portfolios to promote student learning of writing is not a new concept, since portfolios as tools for teaching/learning are congruent with the constructivist perspective, which emphasizes that writing is conceptualized as a process rather than a product (Murphy & Grant, 1996). The fundamental concepts of portfolios including process pedagogy, self-evaluation, peer review, reflection, and conferencing are all productive learning strategies that support student's writing development in the course of learning (Paulson, Paulson, & Meyer, 1991)

Portfolios as instruments for assessment can be used to measure the student's writing ability and performance over time, and become a viable alternative to impromptu essay tests as assessment of writing in individual classes and program-wide writing courses at a tertiary level (Black, Daiker, Sommers, & Stygall, 1994; Calfee & Perfumo, 1996). The one-shot examinations provided the teachers with only a limited account of what the students have learned, however; portfolios can reveal the students' progress over time, and they can include so many drafts of the students' writings which they have worked on for an extended period. Also, they give the teacher enough information based on which trustful decisions could be made (Zhang, 2009). Portfolios can include a broad range of materials like essays, reports, audio or video recordings of presentations, diaries, tests, homework, self- and peer-assessment (Brown, 2004).

Portfolios can be divided into different types. Mandell and Michelson (1990, in Zhang, 2009) divided them into four categories:

- Showcase—student only puts the best example or best product in for each objective
- Cumulative—Student place all work relevant to each goal into the portfolio
- Process—Student sets pre/post-samples of work for each target into the portfolio
- Each type of portfolio should include all the essential components of a portfolio listed above.

Although portfolios could be considered “innovations” on the use of these spaces, the types of such spaces are still the same (Anson, 2000). The trend in writing is going to be away from “hard copy versions” of portfolios to electronic portfolios (e-portfolios) to make portfolios more shareable (Harrington & Levy, 2001). With the development of technology, changes that were introduced challenged the “existing ideologies of writing instruction.” Hyland (2003) proposed some modifications to the “new technologies” brought to our writing classrooms, individually they

- Influence drafting, editing, proofreading, formatting, and publication processes
- Facilitate the combination of written texts with visual and audio media
- Encourage nonlinear writing and reading processes
- Alter the relationships between writers and readers
- Blur traditional oral and written channel distinctions (e.g. email, ICQ)
- Facilitate entry into new online discourse communities
- Increase the marginalization of authors and texts isolated from new writing technologies (p. 144).

An e-portfolio is defined as “the product, created by the student, a collection of digital artifacts articulating experiences, achievements, and learning. Behind any product or presentation, lie rich and complex processes of planning, synthesizing, sharing, discussing, reflecting, giving, receiving and responding to feedback” (JISC, 2008, p. 6).

Although the number of studies related to the effects of portfolio on students' writing is limited, research on portfolios in L2 learning has indicated that portfolio assessment is likely to improve learner motivation for writing since constraints such as “test anxiety” and “time pressure” that often occur in timed essay tests, have been removed (Hamp-Lyons & Kroll, 1996). Writing scholars

claim that portfolio assessment is likely “to enable instructors to function more as a coach than as a judge, thus decreasing antagonism between student and classroom instructor” (Clark, 1993, p. 517). As a result of collaboration between students and their instructor, a learning community would be created where students are more motivated to compose, revise, and proofread the texts they produced.

Burch (2000) compared two classes, one of which was run through portfolios and the other a non-portfolio class and found out that portfolio students had more positive attitudes toward their writing classes than non-portfolio students. Corwin (2003) explains an e-portfolio project that obtained results which indicated growth in the use of technology for teaching and learning over the five-year period, with the students becoming progressively self-directed, self-assessing learners. Hirvela and Sweetland (2005) stated that the students liked the idea of portfolios, but the assigned portfolios functioned as a burden for them. Marefat (2004) ran a qualitative study of student portfolios through e-mail. The results revealed that “when students reviewed their works, they were mainly obsessed with their grammar and spelling; that is, surface-level corrections. Nezakatgoo (2005) made a comparison between a portfolio-based and a non-portfolio-based writing classroom. The results of his study revealed a significant difference between the two groups, with the experimental group outperforming the comparison group. Hajiabdolrasouli (2006) quantitative analysis revealed students’ progress in writing. However, the students could improve only in the “rule-governed errors” of writing and not in “prepositions and word choice.” Monjezie (2007) examined the effects of two different media (email vs. pen and paper) and different audiences (teacher vs. teacher and peer) on students’ writing performance. The results of the study revealed differences between the two features of different media and audiences.

2.3. The effect of gender on writing skill

As stated by Grey (1998, cited in Nemati & Bayer, 2007), it was in the 1970s that comparison between female and male competitiveness in linguistic behavior began. Two of the most significant theories on social differences between males and females are “*difference theory*” and “*dominance theory*.” Nemati and Bayer (2007) argue that according to “*difference theory*” men and women, even those within the same group, live in different or separate cultural worlds and, as a result, they promote different ways of speaking. In “*dominance theory*,” men and women are believed to inhabit a cultural and linguistic world, where power and status are unequally distributed. In this theory, also called *the power-based theory*, the focus is on male dominance and gender division. (Nemati & Bayer, 2007)

The last decades have observed the significant number of research concentrating on the differences between male and female learners. One particularly popular question has been the extent to which men and women use language differently (Saffarian & Gorjian, 2012). It is evident that gender might influence L2 communication. Gardner (1985 cited in Macintyre et al. 2002, p. 542) mentions few studies that show that girls have more positive attitudes toward language learning and according to him attitudinal differences might be responsible for obtained sex differences in achievement. Besides, (Clark & Trafford, 1995, cited in MacIntyre, Baker, Clement, & Donovan, 2002, p. 542) modern languages seem to be perceived as a “traditionally ‘female’ subject.”

The differences between girls and boys concerning writing support the ideas of Graddol and Swann (1989), who argue that the difference between girls and boys lies in the perceptions and preferences of girls and boys about writing. The women’s texts were strongly self-reflexive and evaluative, while the men’s were more egocentric (Graddol & Swann, 1989).

Several studies have been conducted on the effect of gender on language learning in general and writing in particular (Bacon & Finnemann, 1992; Cheng, 2002; Sajadi & Maghsoudi, 2016; Shang, 2013). For example, Bacon and Finnemann (1992), who examined gender differences in foreign language learning and authentic oral and written input among 938 Spanish university students, reported that females had a higher level of motivation, strategy use in language

learning, and social interaction in the target language than their male counterparts. However, while Cheng (2002) reported that female students experience significantly higher levels of writing anxiety than male students, Shang (2013) reported that both male and female students experience writing anxiety, but more so for male than female students. However, Sajadi and Maghsoudi (2016) reported no gender effect on 112 Iranian EFL learners' success in English, as both male and female learners performed similarly on the test.

Research (e.g. Jackson et al., 2008; Kuppaswamy & Narayan, 2010; Odell, Korgen, Schumacher, & Delucchi, 2000) seems to attribute distinct purposes of technology use across gender. Scholars (e.g. Smith & Wilhelm, 2002, 2004, 2009) have put forth strategies for promoting boys' literacy engagement and motivation through authentic writing tasks, hands-on learning, problem-solving, and explicit discovery and analysis of texts. Furthermore, boys' rather well-documented greater engagement with technology (e.g. Jenson & Brushwood Rose, 2003; Littleton & Hoyle, 2002; Schofield, 1995) may be used as a catalyst for their literacy development.

Moreover, the literature seems to suggest that boys have better access to technology than girls (e.g. Jenson & Brushwood Rose, 2003; Littleton & Hoyle, 2002; Schofield, 1995) attributing technology to a traditionally male paradigm and that girls also feel less technologically-inclined than boys (Charles & Bradley, 2006). In this study, technology (viz. E-portfolio) is used to engage learners from both genders, boys, and girls alike, in the language learning activity.

3. Research objectives

The purpose of conducting this research is two-pronged. Firstly, this study aims at exploring the effect of implementing e-portfolios as an alternative method of assessment as opposed to the conventional method of teaching writing in EFL writing classrooms at a university in Iran on learners' writing proficiency. Secondly, it is intended to provide insight into the potential effect of gender on students' use of e-portfolios.

The following two research questions were guiding the aims of this study to check the probable effectiveness of an e-portfolio:

- (1) Does e-portfolio assessment enhance students' writing performance significantly compared to conventional method assessment in the EFL context?
- (2) Does gender make any significant difference regarding the impact of electronic portfolio assessment on EFL learners' writing performance?

4. Methodology

4.1. Design of the study

The research design of this study was quantitative in that a quasi-experimental design was adopted. As a result, the students' performances in writing were described in terms of task response, coherence and cohesion, lexical resource, grammatical range and accuracy. Their performances were compared with the control group to see the amount of the students' improvement over the period of one academic semester. The role of gender was investigated as well.

4.2. Participants

This study was carried out at both State and Azad Universities in Rasht, Guilan province, Iran. 157 male and female students were involved who were studying the English language, with different cultural backgrounds but the same native language. The students' ages ranged from 19 to 38, with the average of 21 and they were Iranian sophomore. They were studying either English literature or English translation, and all were full-time students and had to take the *Advanced Writing Course* for two hours per week. Participants were all members of the *Advanced Writing class*, which was worth two units and offered in the second semester of the BA program, 2016–2017 academic year.

As far as the writing instruction is concerned, some of the learners already had some informal courses on writing in private institutes, while others did not. Due to practical limitations, the researcher could not choose a random selection procedure. As a result, the convenience sampling method was obtained which is probably the most common of all sampling techniques. With convenience sampling, which basically relies on a data collection process from population members who are conveniently available to the researcher in order to participate in the study, the samples are selected because they are accessible to the researcher. Subjects were chosen simply because they were easy to recruit. Table 1. shows the number and percentages of the participants based on their gender.

4.3. Instruments and materials

4.3.1. Placement test

First of all, in order to ensure the homogeneity of the subjects regarding language proficiency, an Oxford Placement Test (Allan, 2004) was administered to them at the beginning of the first session of the class. The test consisted of two parts; part 1: grammar (50 items) and part two: writing, in which one topic has to be chosen among four different topics, and test-takers had to write a short composition of 150 words in 15 minutes. The test was given to 157 students, and after evaluating the responses, all the extreme scores were excluded from the study. The researcher then was sure that all the participants who were included in the study were at the same level of English language proficiency at the beginning of the study.

4.3.2. Pre-test and post-test writing

In order to measure the participants' level of writing proficiency, an IELTS topic was chosen, and the students were asked to write an essay of maximum 250 words based on the topic. The same topic was given to them 16 weeks later, in the last session of the class. The samples were rated based on the IELTS 9-band scoring system which is used to measure and report scores in a consistent manner. To ensure the reliability of the scores the students received based on the scale, two raters scored the students' papers on the pre-test. One of the raters was the researcher, and the other one was an English lecturer from the same department with experience of teaching the same course. The scores were checked for inter-rater reliability. The correlation coefficient between the raters, using the Spearman-Brown formula, was .82; that was high enough (Hyland, 2003, p. 217). So, because of the practicality issue (lack of time), the rest of the papers during the treatment were assessed by the researcher alone.

4.3.3. Rating scale

In order to rate the students' writing samples, the Academic IELTS writing assessment rubric was used. Based on the rubric, examiners used detailed performance descriptors when assessing the writing samples. These band descriptors describe performance in four categories:

- task response
- coherence and cohesion
- lexical resource
- grammatical range and accuracy

Table 1. Number of participants based on their gender

Male	70	46%
Female	81	54%
Total	151	100%

4.3.4. Edmodo

Edmodo is a web page which can be used for educational purposes with the advantage it provides the members in letting every member of the group make changes on it. An account on Edmodo was made by the lecturer/researcher and then the link was shared with the students in the e-portfolio group (experimental group), so they could join the website. Edmodo is a free and secure educational learning network used to provide a simple way for teachers to create and manage an online classroom community as well as enabling students to connect and work with their classmates and teachers anywhere and anytime. Using Edmodo, students and teachers could reach out to one another and connect by sharing ideas, problems, and helpful tips. The lecturer could assign and grade work on Edmodo and students could get help from the entire class on Edmodo. Furthermore, it is a safe environment.

In this study, the lecturer produced an Edmodo online writing class and then invited the students to become members of the lecturer's class by sharing the link. Afterward, she uploaded the writing assignments and their descriptions on her webpage and asked the group members to turn in their assignments before the due date. From time to time, the lecturer uploaded the students' writings on this webpage and asked the group members to go online and read their peers' writings and post a comment to their group members, giving feedback to them on their writings. The students' writings together with the feedback they received can be seen in <https://www.edmodo.com>.

4.3.5. Validity and reliability of instruments

To ensure the reliability of the scores the students received based on the scale, two raters scored the students' papers on the pre-test. One of the raters was the researcher, and the other one was an English lecturer from the same department with experience of teaching the same course. The scores were checked for inter-rater reliability. The correlation coefficient between the raters, using the Spearman-Brown formula, was .82; that was high enough (Hyland, 2003, p. 217). So, because of the practicality issue (lack of time), the rest of the papers during the treatment were assessed by the researcher alone.

4.4. Procedure

In order to conduct this study, the researcher focused on two groups of students (one as experimental and the other as a control group) of English majors in Guilan, both State and Azad universities. The students had enrolled in the Advanced Writing class being a two-unit credit course presented at the 3rd semester of the Bachelor of Arts (BA) program. During the semester, the participants' writing performances, as well as the effect of gender were examined through quantitative methods. Table 2 provides information regarding different activities and instruments used during this study.

4.4.1. E-portfolio and conventional group

At the beginning of the class, all the students were asked to sit for the Oxford Placement Test (OPT) (Allan, 2004), which is designed to assess learners' grammar and writing skill. Based on the results of this placement test, the homogeneity of the sample was guaranteed, and the data obtained from the extreme scores were excluded from the study. It was also explained to the participants that they would need to sign a consent form if they agreed to take part in the study.

Table 2. Timeline showing activities and instruments used

Timeline	Beginning of the semester	2nd session of the class	During the semester	Last session
Control Group	Oxford Placement Test	Writing Pre-test	Conventional method of teaching writing	Writing Post-test
Experimental Group	Oxford Placement Test	Writing Pre-test	E-portfolio method of teaching writing	Writing Post-test

To support students in e-portfolio activities, a web-based e-portfolio platform was developed. Since all the participants had little or no prior experience of using the e-portfolio system, they attended a training session on core technical skills involved in the e-portfolio construction at the outset of the study. An expert in the field provided the students with both the necessary information and a contact address for the future reference and further questions. In the second week, the participants delivered one sample of their writing based on an IELTS topic, which was an example of their actual writing performance and was compared to another writing sample, written at the end of the semester.

Also, learners' actual writing performance was evaluated through the semester in general by the teacher, peer, and self-assessment techniques. In addition to this holistic view, two examples of learners' writings, obtained at the beginning and end of the semester were also evaluated based on the IELTS Writing Scoring Rubric. The researcher also tried to take weekly field notes of her observations of the class, students' comments and suggestions, as well as the problems they faced gathering their e-portfolios taking into account that it was a new concept to all of them and they, did not have any previous experiences of this alternative method of assessment.

The participants in the experimental group wrote about different topics in their textbooks (just the pretest and post-test were chosen among IELTS writing topics, Task 2). Having received the participants' first drafts, the instructor (i.e. the researcher) read them carefully and wrote her comments based on the IELTS writing scoring rubrics in the website which had been developed. Each student could individually log into his/her account, see the comments of the instructor and revise his/her first draft accordingly (providing a second draft), the final grade he/she received, and also ask any questions they had regarding the assignment. Students were not able to see each other's assignments or grades, but in order to provide them with peer correction and feedback, some of their writing samples were posted on the website occasionally. Other students could not see the name of the writer of the text, but they could add their comments related to different aspects of the text, such as general structure, the range of vocabulary, topic sentence and supporting ideas, and even the use of punctuation marks. It is worth mentioning that after a couple of sessions, students' comments were mostly in line with the comments they had received on their writing by the instructor. In other words, they were unconsciously using the same method of analyzing their writing as it was used for their assignments.

Moreover, the students were able to consult with their teacher to have her comments in one-to-one conferencing during the class. They were also asked to have peer assessment, self-assessment or reflect on their writing in the classroom and evaluate their strengths and weaknesses in the website. Then, at home, the students revised, edited and rewrote their texts in response to peer and teacher feedback which were posted on the website.

Participants were required to create a showcase every month to display digital evidence of their writing performance and progress outside class. A showcase was expected to contain at least a self-determined goal towards independent language learning (in this case with a focus on writing skill), several digital files as evidence of the fulfillment of the goal and a reflective entry

The teacher/researcher assessed their writing samples and gave each a score after the due date of each assignment. Through applying Lam and Lee's (2010) paradigm, the portfolio score was the average of the scores on those three final drafts. The writings of the participants were rated on a 9-band scale, in line with the IELTS writing scoring method.

The control group followed a traditional assessment. The teacher explained the writing structure of every lesson explicitly. In this group, students were asked to write their first and last text for getting a mark. In contrast to the experimental group, the students had no chance to edit or rewrite their texts into better ones.

4.5. Data analysis

The responses of the participants to the questionnaire were analyzed descriptively using the Statistical Package for Social Sciences (SPSS) version 17.0. After the administration of the post-test in the two groups, appropriate tests were used to answer the research questions. In order to answer the research questions posed at the beginning of the study (i.e. if there is any effect due to teaching modes—e-portfolios or conventional—on students’ writing proficiency), a One-Way ANOVA procedure was used to compare the means of the two groups before the implementation of the treatment. After the experiment, another One-Way ANOVA was used to examine the possible effect of the two modes of teaching writing (through e-portfolios and conventional mode). Also to examine whether the students’ writing improved as a result of any of the two methods (e-portfolios or conventional classes), two paired t-tests were used, using each group’s pre-test and post-test scores. To compare the mean scores of the control and the experimental groups, independent and paired samples t-tests were applied to the results of the post-test to examine the possible differences between the two groups. The post-test was a standard essay-writing test based on an IELTS topic for writing.

Also, in order to find out the potential effect of gender on learners’ writing proficiency through implementing e-portfolio in the writing class, descriptive statistics and independent sample t-test were used and means and standard deviations of the post-test scores were calculated.

5. Results and discussion

In this section, the descriptive analyses of pre- and post-tests given to both control and experimental groups are presented.

The pre-test was given to both intact classes prior to the implementation of the treatment. The post-test was also given to all learners at the end of the semester. The results of the descriptive analysis for the pre-test and post-test of the control group are given in Table 3

As can be seen in this table, the means of control group before and after the treatment (conventional method) are shown, which are 6.65 and 6.77 respectively.

Table 4 represents the means of the experimental group before and after the treatment (e-portfolio assessment). As shown below, means of pre-test and post-test are 7.15 and 8.32 respectively.

Table 3. Descriptive statistics of writing pre- & post-test scores of control group

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Pre.test	67	5.00	8.00	6.6567	.73748	.539
Post.test	67	5.00	8.25	6.7787	.74151	.550
Valid N (listwise)	67					

Table 4. Descriptive statistics of writing pre-test & post-test scores of experimental group

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Pre.test	84	5.00	8.00	7.1577	.52178	.272
Post.test	84	6.75	8.75	8.3274	.35984	.129
Valid N (listwise)	84					

a. VAR00001 = E.G

5.1. Analysis of the difference between pre and post-tests among the control group

In order to see whether the students' writings in the control group improved in the class which followed the conventional method of teaching writing, the students' pre-test scores were compared with their post-test scores using paired t-test procedures. The assumption of normality of the distribution was met for both groups. The results of the analyses are given below in Table 5.

The results indicate that the mean score of the control group was 6.65 in the pre-test and 6.76 when the post-test was taken. It is clear that the learners had received a higher score in their post-test. Also, the results of paired t test revealed that there was not a significant difference between the means of two scores obtained in the pre and post-tests ($P = 0.267$)

5.2. Analysis of the difference between the experimental and control group

In order to compare the changes in students' writings in the experimental group and the control group based on the results of their post-test, independent t-test procedure was used. The results of the analyses are reported below in Table 6.

The results indicate that the mean score of the control group was 6.76 and the mean score of the experimental group was 8.32 in the post-test. It is clear that the learners had received higher scores in the experimental group. Also, the results of the independent t-test between the control and experimental groups reveal that there is a significant difference between the means of the two groups in general ($P = 0.000$).

5.3. Analysis of the potential effect of gender

To determine the potential effect of gender on the use of e-portfolio, means and standard deviations of the post-test scores were calculated, as shown in Table 7.

Table 8. does not show any statistically significant difference in the male and female participants writing, even though both male and female participants did not score significantly different in their post-test, their writing seems to have developed significantly compared to their pre-test.

Table 5. Paired t-test for pre and post-test of the control group

Variables	Level of significance	T	Df. Mean	Mean Post-test	Mean Pre-test
Total	.267	-1/120	-0/111	6.76	6.65

Table 6. Independent t-test between post-tests of the control and experimental groups

Variables	Level of significance	Df. Mean	Mean Post-test	Mean Pre-test
Total	.000	-1/55	8.32	6.76

Table 7. Descriptive statistics of effect of gender on writing pre- & post-test scores

Group Statistics					
	Gender	N	Mean	Std. Deviation	Std. Error Mean
Post.test	Male	38	8.3355	.30908	.05014
	Female	46	8.3207	.40022	.05901

Table 8. Independent t-test between post-tests of the male and female members

		Independent Samples Test									
		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
									Lower	Upper	
Post.test	Equal variances assumed	.780	.380	.187	82	.852	.01487	.07934	-.14297	.17271	
	Equal variances not assumed			.192	81.663	.848	.01487	.07743	-.13918	.16892	

Furthermore, the result of independent samples t-test on the differences between males and females regarding the use of e-portfolio, as is shown in Table 8, indicated that there is no significant difference between female and male students' use of e-portfolio. ($p = .000$)

5.4. Discussion

This study was conducted to answer two questions regarding the effect of e-portfolio on students' writing proficiency and the potential role of gender towards the impact of electronic portfolio assessment on EFL learners' writing. The evidence from the one-semester long study indicated that the e-portfolio method had significant effects on the students' writing proficiency, while the conventional method did not have such effects on learners' writing. It was obvious that the learners in both control and experimental groups had received higher scores in post-test compared to their pre-test. However, the results indicated that the mean score of the control group was 6.76 and the mean score of the experimental group was 8.32 in post-test. Consequently, it was clear that the learners had received higher scores in the experimental group.

The results of this study did not confirm those by Song and August (2002) who reported no difference in the results of their study between the portfolio and non-portfolio groups, though the latter program could predict the students' success in their future performance. The results, however, corroborated those of Nezakatgoo (2005), who found a significant difference between the portfolio and non-portfolio groups. In his study, the students in the experimental group worked better in their final exams and also mastered the mechanics of writing.

Also, the results of Burch's (2000) study was endorsed since the differences between the two groups in his study were to the benefit of the portfolio group, in line with the results of the present study. Both Hajiabdolrasouli (2006) and Monjezie's (2007) studies on the effectiveness of CALL can be corroborated by the findings of this study. In line with the results of this study, Mustafa (2011) proved that there was a significant relationship between the use of electronic portfolio as a technique of assessing writing and learners' performance in their writing homework. Likewise, Corwin (2003) found the use of e-portfolios beneficial in their program, because of helping the students to become self-directed and self-assessing individuals, which is also verified by the results of the present study. Furthermore, Masaeli and Chalak (2016), found out that employing electronic portfolios could be a good technique for language teachers to make language learners more motivated and to make writing more interesting to them, which was in line with the opinion of the learners expressed in the open-ended questionnaire.

It was very vital for this study to provide an interactive environment to learners, one in which they can actively receive feedbacks and comments from both their instructor and classmates. Students claimed that peer assessment provides better scope to share their ideas and build social skills (Brown, Irving, and Keegan (2008). Exchanging information was one of our many goals which was reached through the features provided by Edmodo; students were able to add their comments and evaluations to the posted materials, which included samples of their classmates' writing, articles related to different styles of academic writing, or open-ended questions which posed topics to be discussed in the follow-up sessions of their class.

At the beginning of the study, all learners were unfamiliar with the website, and they were all new to the pedagogy, and to online learning; so they needed "more learning support and scaffolding" (Kaider, Henschke, Richardson, & Kelly, 2009, p. 497). They asserted that they had no previous experience of working with Edmodo, neither had they experienced e-learning or e-teaching methods before. As a result, we found that all our students who were receiving the treatment required guidance in how to access the website, how to register on it using the "class code" given to them, and how to engage in the learning process by turning in their assignments and reflecting on the posts and taking part in online activities. During the first

session of the class, the learners attended a training session on core technical skills involved in e-portfolio construction at the outset of the study. We asked an expert to provide the students with both the necessary information and a contact address for the future reference and further questions. Moreover, whenever they encountered an obstacle, they could contact the instructor either through Edmodo itself or her email address. One thing that needs to be mentioned is that students in the control group also had some improvements as a result of the writing lessons they received in through the conventional method, but such improvements were not significant while the improvements in the e-portfolio group were strongly significant, while the improvements in the e-portfolio group are strongly significant. These findings are in line with what Cohen and Macaro (2007) stated: “instruction and training influences the quality of essays”(p.247)

Researchers (Halpern (2000); Lakoff, 1975; Mulac, Bardac, & Gibbons, 2001) have proposed the idea that there are some differences between male and female language. However, the findings from the current study did not support what they proposed regarding the existence of these differences in EFL writing class. Based on the results of the analysis, there was no significant difference between male and female learners’ use of e-portfolios. Hashemian and Fadaei (2013) also found out that gender had no impact on portfolio assessment. On the other hand, the results of this study contradict those found by many scholars: Larsen-Freeman and Long (1991) claimed that females are better than males in first and second language acquisition. Also, Oxford, Young, Ito, and Sumrall (1993) reported higher mean scores for females than males in a Japanese language class. After an empirical study in a university, Yan (2009) concluded that obvious gender differences exist among male and female students in second language learning and that female students have language advantages. Hamdi Asl and Dabaghi (2012) found gender differences in Iranian EFL learners’ letter writing.

6. Conclusions and implications

In conducting this study, the researcher seeks a better understanding of the potential effect of e-portfolio on Iranian EFL learners’ writing performance across gender. Based on the results obtained from this study, using e-portfolio as a method of teaching and evaluation is effective in enhancing EFL learners’ writing proficiency; however, gender does not play a role in learners’ use of e-portfolio. The results on the effect of gender corroborated some previous findings and discredited some others. However, because of the limitations involved in the study (such as time limitation and the number of the participants), the results of this study should be used with caution. The research was conducted for approximately four months (one semester) involving 157 male and female students of English language at two universities in Iran. As a result, the research has its limitations, especially regarding scope, sampling, and duration. As a result, interested researchers may try to conduct their studies for a longer period since the use of portfolios in writing classes needs enough time to reveal its effect because of its process-oriented nature. One line of research can be the consideration of other websites for teaching writing. To contextualize the findings mentioned above and implications, teachers and stakeholders in Iran need to bear in mind that e-portfolios can be considered as one of the tools which can easily be used in both schools and universities, increasing learners’ language learning outcomes. By taking advantage of the privileges offered by technology, we can take our students one step further so they can experience a learning situation above what has been presented to them in on the curriculum in the current educational system. Moreover, since gender did not play a role, we realize that many learning opportunities can be provided through e-portfolio for both male and female learners alike.

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