Critical Thinking, Writing Strategy Use, L2 Writing Anxiety and L2 Writing Performance: What are the relations?*

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Abstract

The present study examined relationships among critical thinking, writing strategy use, second/foreign language (L2) writing anxiety, and L2 writing performance of Iranian English as a foreign language (EFL) learners. To this end, 100 homogenized EFL learners (57 female learners and 43 male learners) filled out Facione and Facione's (1993) California Critical Thinking Skills Test-form B (CCRST), Petric and Czarl's (2003) Writing Strategy Questionnaire (WSQ), Cheng's (2004) Second Language Writing Anxiety Inventory (SLWAI), and the second task of the academic version of IELTS exam. Multiple correlation analyses revealed a significant positive relationship between L2 writing performance and writing strategy use; and L2 writing performance and critical thinking. Results also revealed a significant negative relationship between L2 writing performance and L2 writing anxiety. Furthermore, it was found that L2 writing anxiety was a stronger predictor of L2 writing performance. Additionally, the results of one-way MANOVA showed a significant difference between Iranian male and female EFL learners regarding both their L2 writing performance and L2 writing anxiety. These results emphasize the inclusion of pre-planned writing sessions for Iranian EFL learners which can help foster critical thinking skills and writing strategy use, reduce L2 writing anxiety and hopefully, improve their L2 writing ability.

Keywords: Critical thinking, EFL learners, L2 writing anxiety, L2 writing performance, writing strategy use.

Introduction

Writing is an important language skill, especially for students in academic contexts (Shokrpour & Fallahzadeh, 2007). In fact, insufficient writing proficiency will cause students difficulties during their academic lives (Graham & Perin, 2007). Research has demonstrated that, academic writing is a "transformational activity" (Murray & Moore, 2006, p. x) for L2 learners to become skilled writers prior to their graduation (Currier, 2008). These difficulties become more serious when they complete their education and engage in professional advancement. Therefore, poor writing performance influences individuals' job-seeking opportunities as well as their application for higher education. According to Flower and Hayes (1980), writing-related problems often happen in 'while-writing' phase in second language (L2) writing. Lal Bahadur (2018) also notes that, L2 writing is quite different from L1 writing. Therefore, it is understandable why L2 writing has become a growing interest among L2 scholars (e.g. Kurniasih, 2017; Nejmaoui, 2019; Yanning, 2017).

One of the ways in which L2 learners' writing abilities may be promoted is the development of students' critical thinking skills (Dabaghi, Zabihi, & Rezazadeh, 2012). Critical thinking is defined as "a disciplined, self-directed thinking which exemplifies the perfections of thinking appropriate to a particular mode or domain of thought" (Paul, 1990, p. 9). Writing is indeed a thinking process requiring writers to use various strategies in order to establish a well-defined organization for writing real-life purposes such as writing formal letters, complaining about a particular situation, and summarizing lessons (Brockbank & McGill, 1998).

Another important factor influencing L2 learners' writing abilities is the role of writing strategies (Petric & Czarl, 2003). Writing strategies refer to "actions or behaviors consciously carried out by writers in order to make their writing more efficient" (Petric & Czarl, 2003, p. 189).

On the other hand, there are some affective factors such as writing anxiety which can affect one's writing performance. Hassan (2001) defines writing anxiety as "a general avoidance of writing and of

situations perceived by the individuals to potentially require some amount of writing accompanied by the potential for evaluation of that writing" (p. 4).

Considering the fact that different researchers have found contradictory results about relationship between L2 learners sex and the L2 writing ability, critical thinking or other variables (e.g. Bijami, Kashef, & Khaksari, 2013; Facione et al., 1995; Sahin, Sahin, & Heppner, 1993; Zerey, 2013), studying the role of gender on other variables of this study seem necessary.

Recent research conducted in the Iranian setting shows that Iranian EFL learners face major problems in understanding and utilizing English language writing skills (Rezaei & Jafari, 2014). Accordingly, since little research has been done on the interrelationship among critical thinking, writing strategy use, and writing anxiety with regard to writing ability of Iranian EFL learners, the present study aims to investigate these possible relations considering the role of gender.

Review of literature
Writing performance and critical thinking skills
Writing ability is a multifaceted skill, which operates on the various macro and micro levels as regards purpose, complexity, etc. Various approaches to writing (product-based, process-based, genre-based, etc.) have been proposed in L2 writing research. Thus, the term *'writing ability'* is not an easy and straightforward construct to be defined and measured, and different scholars have offered different definitions for such a fuzzy concept. Hyland (2002), for example, defines writing ability as "the capacity to produce a 'contextually' correct form of language, following prescribed patterns at either sentence or discourse level" (p. 6).

Different factors are thought to contribute to EFL learners' writing skills and performance. Barnawi (2011) maintains that successful academic EFL writers need to foster their critical thinking skills. In fact, critical thinking is considered as a socio-cognitive process through which L2 writers interact with their *interpersonal* and *intrapersonal*

skills. In the *interpersonal* level, the writer interacts with the readers in a particular context. During the *intrapersonal* level, the writer interacts with his/her prior observations, experiences, and knowledge (Barnawi, 2011).

The close relationship between writing performance and critical thinking has been extensively studied in the EFL contexts. For example, Stapleton (2002) investigated the relationship between academic writing and critical thinking among 70 Japanese undergraduates. The results of this study showed that critical thinking skills are essential to academic writing in English at higher education level. It was also found that Japanese students were able to develop more coherent critical arguments on argumentative topics and respond to counterarguments.

In another study, Tsui (2002) also reported that higher-order cognitive skills and certain types of writing assignments were closely related to students' achievements in critical thinking skills.

Finally, Alagozlu (2007) examined critical thinking and voice in writing among Turkish EFL learners. The learners' argumentative essays were analyzed to seek the elements of critical thinking and individual voice. He concluded that Turkish EFL learners had a high level of critical thinking and individual voice in expressing themselves clearly and putting their own viewpoint into writing activities, rather than sharing somebody else's viewpoints.

Writing anxiety

Second Language Writing Anxiety (SLWA) is defined as "a general avoidance of writing and of situations perceived by the individuals to potentially require some amount of writing accompanied by the potential for evaluation of that writing" (Hassan, 2001, p. 4).

Ucgun (2011) studied primary school learners' writing anxiety. The results revealed that the participants' writing anxiety in their L1 was significantly lower than their writing anxiety in L2. Moreover, Al-Ahmad (2003) also studied the writing anxiety of L1 and L2 language learners. The findings revealed that ESL/EFL learners suffered from

higher levels of anxiety in writing than native learners and this had a negative impact on their learning performance.

Salem (2007) studied the impact of journal writing on writing anxiety. In this study, 50 EFL learners took the Writing Apprehension Test developed by Daly and Miller (1975), and a researcher-developed questionnaire. The participants were also interviewed about their feelings while writing in a foreign language. The results showed that the learners had a high level of writing anxiety which influenced their writing performance negatively.

In a similar study, Sarkhoush (2013) conducted a study on the relationship between writing apprehension and writing performance of 50 Iranian EFL learners using IELTS writing tasks. Using a 26-item questionnaire which measured writing apprehension and an argumentative essay writing task, the researcher showed that there was a negative correlation between writing apprehension and writing performance.

Having found out the importance of L2 writing anxiety and its negative effect, some researchers conducted studies to examine the level and type of L2 writing anxiety in EFL learners in different contexts (e g. Ekmekçi, 2018) or find some ways to reduce it (e g. Haji Jalili, & Shahrokhi, 2017).

Writing strategy use
A number of researchers have studied writing strategy use among EFL learners. Mohseniasl (2001), for example, investigated the effect of explicit strategy instruction on writing apprehension and writing achievement of 42 intermediate EFL learners. The researcher found that prewriting strategies played a key role in allaying the learners' level of writing apprehension. In addition, explicit instruction of prewriting strategies was found to help improve learners' writing performance.

In another study, Abdollahzadeh (2010) examined EFL learners' writing strategy use with regard to their years of study and gender. In doing so, the learners completed a writing strategy use questionnaire. Furthermore, the researcher conducted semi-structured interviews with

the participants to gain more insights into writing strategies. The results showed that there existed no significant difference in writing strategy use of EFL learners for either year of study or gender. Moreover, it was found that metacognitive and cognitive strategies were the most common strategies used by EFL writers.

In a similar vein, Saadat and FayazDastgerdi (2014) examined the relationship among writing strategy use and writing apprehension as well as some other variables with writing performance among 62 junior EFL students. The results showed that there was a positive and significant relationship between learners' writing strategy use and their writing scores. However, the correlation between writing apprehension and writing ability was negative and insignificant. The results also showed that while learners' writing strategy use positively related to their writing ability, writing strategy use was not a significant predictor of writing ability.

The investigation of writing strategies, writing apprehension, and writing achievement of Saudi EFL-Major students was conducted by Al Asmari (2013). Al Asmari found that there was a negative correlation between writing achievement and writing apprehension. Also, there existed a positive significant relationship between writing achievement and writing strategy use. Regarding the role of gender, the results revealed that male learners outperformed female learners in the total writing strategy use scores. However, no significant differences were observed between males and females concerning their writing anxiety as well as writing performance.

Writing performance and gender
Regarding the relationship between gender differences and L2 writing, majority of studies have shown that females are better writers in comparison to their male counterparts (e.g., Gibb, Fergusson, & Horwood, 2008; Marks, 2008; Pajares & Valiante, 2001).

Chiu (2008) examined the effect of learners' gender on their writing performance in terms of both writing quantity and writing quality. The participants were 70 Taiwanese undergraduates (35 males and 35

females). Learners were asked to write four writing tasks in different genres. The results indicated the superiority of women in terms of writing quantity in all four writing tasks. Regarding writing quality, females outperformed the male participants in both the total scores and the analytic scores as well.

In the Iranian context, Kamari, Gorjian, and Pazhakh (2012) also investigated gender differences and L2 writing. The participants were 60 EFL learners and their performance were compared, asking them to write several one-paragraph essays about given topics in the form of descriptive and opinion paragraphs. Kamari et al. (2012) found that female writers outperformed their male counterparts on descriptive essays. However, in opinion essays, the superiority of males over females was found.

Purpose of the study and research questions

As discussed earlier, the facilitative role of critical thinking in writing performance (Alagozlu, 2007; Stapleton, 2002) and the contribution of writing strategy use to successful writing performance (e.g., Abdollahzadeh, 2010; Al Asmari, 2013) have been documented in the literature. In addition, the relationship between gender differences and writing achievement has been acknowledged in previous research (e.g., Chiu, 2008; Fidelia, 2015). On the other hand, writing anxiety has been reported to negatively influence writing performance (e.g., Al-Ahmad, 2003; Sarkhoush, 2013). However, to the best of the researchers' knowledge, little research has been done on the relationship among Iranian EFL learners' critical thinking, writing strategy use, L2 writing anxiety, and L2 writing performance moderated by the role of gender. Therefore, the present study aims to delve more deeply into this issue and to answer the following questions:

1. Is there any statistically significant relationship among Iranian EFL learners'.critical thinking, writing strategy use, L2 writing anxiety, and L2 writing performance?

2. Among critical thinking, writing strategy use, and L2 writing anxiety, which one is a potential predictor of Iranian EFL learners' L2 writing performance?

3. Is there any statistically significant difference between male and female EFL learners regarding their critical thinking, writing strategy use, L2 writing anxiety, and L2 writing performance?

Methodology

Participants

The participants of this study included 100 intermediate EFL learners (43 males and 57 females) from several universities and higher education institutes in Iran. In order to select a homogenized sample, *Oxford Placement Test (OPT)* (Edwards, 2007) was administered to a total of 120 EFL learners. After interpreting the scores, 100 intermediate EFL learners were chosen to participate in the study. According to Edwards (2007), test takers who score "above 31" on this test are at the *Intermediate level*.

Instruments

Oxford Placement Test (OPT)

The OPT is a standardized test developed for placing learners into a particular level class for a particular language course. It contains 50 multiple-choice questions evaluating the language components of grammar and vocabulary. It also has two optional parts assessing the two skills of reading and writing.

The California Critical Thinking Skills Test; form B (CCRST)

CCRST was developed and validated by Facione and Facione (1993) and contained 34 multiple choice questions. The test includes areas of '*evaluation*', '*inference*', '*analysis*', '*inductive reasoning*', and '*deductive reasoning*'. Its completion lasts around 40 minutes. Since this test requires reflective decision making on the part of the test-takers, care was taken to ensure the participants' complete understanding. The Persian version of this test, validated by Khalili and HosseinZadeh (2003), was administered to the participants of the present study. Using KR-20 formula, internal consistency reliability of

the test was estimated to be 0.71 (as reported by Khalili & HosseinZadeh, 2003).

Writing Strategy Questionnaire (WSQ)

WSQ was developed and validated b*y* Petric and Czarl (2003). It includes 38 Likert-scale items divided into three sections of *'before writing'*, *'when writing'* and *'when revising'*. It takes almost 25 minutes to complete the questionnaire. This instrument was piloted with 70 Iranian EFL learners. Factorial analysis and Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) were run to ensure the validity of the questionnaire and to determine its appropriateness for the Iranian context. After running factor analysis, those items with low factor loadings (i.e. <0.4) were removed (Items 4, 5, 10, 13, 15, 18, 23, 25, 30, 31, 33, 36, and 38). The final questionnaire contained 25 items (before writing: items 1-6, when writing: items 7-16, and when revising: items 17-25).

The results of KMO Measure of Sampling Adequacy and Bartlett's Test of Sphericity are presented in Table 1.

Table1
The Results of the KMO and Bartlett's Test for WSQ

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.709
Bartlett's Test of Sphericity	Approx. Chi-Square	1211.94
	Df	300
	Sig.	.000

Additionally, Cronbach's alpha consistency was run to calculate the reliability of the instrument. The reliability of the questionnaire in this study, as shown in Table 2 was estimated to be .85.

Table2

The Results of the Reliability Statistics of the WSQ

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.83	.85	25

The Second Language Writing Anxiety Inventory (SLWAI)

SLWAI was developed and validated by Cheng (2004). It consists of 22 Likert-scale items divided into three sub-scales including Cognitive Anxiety (items 1, 3, 7, 9, 14, 17, 20, and 21), Somatic Anxiety (items 2, 6, 8, 11, 13, 15, and19), and Avoidance Behavior (items 4, 5, 10, 12, 16, 18, and 22). Its completion takes almost 20 minutes. This questionnaire was also piloted with 70 Iranian EFL learners. The KMO measure of sampling adequacy and factor analysis was computed to estimate its validity.

The results of KMO measure of sampling adequacy and Bartlett's Test of Sphericity are presented in Table 3.

Table 3

The Results of the KMO and Bartlett's Test for SLWAI

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.819
Bartlett's Test of Sphericity	Approx. Chi-Square	952.69
	Df	231
	Sig.	.000

Additionally, Cronbach's alpha consistency was run to calculate the reliability of this instrument. The reliability of the questionnaire in this study, as shown in Table 4 was estimated to be .86.

Table 4

The Results of the Reliability Statistics of the SLWAI

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.85	.86	22

Writing Task

To determine the learners' level of writing proficiency, the second task of the academic version of IELTS exam was used. In IELTS, which is an international and highly reputable proficiency test of English, writing is assessed through two tasks. In task 1, the testees are supposed to write (about 150 words) describing a chart, graph, table, etc. in 20 minutes. In task 2, they are required to write a discursive composition (about 250 words) in response to an open-ended prompt in 40 minutes. A test taker's writing is scored by trained examiners using four equally-weighted criteria, i e. task response, cohesion and coherence, grammatical range and accuracy, and lexical resource (Pearson, 2018).

The participants of this study were asked to complete only task 2. The participants' writing papers were scored by.two.experienced raters based on the IELTS band descriptors. Then, the inter-rater reliability between the two raters calculated which was .87.

Procedure

The study spanned a five-week period. The first step was to homogenize the learners with regard to their language proficiency. In doing so, OPT was administered to 120 students, from among whom 100 participants were selected to take part in this study. Then, the instruments were given to the participants in four different sessions.

In three consecutive sessions, CCRST, WSQ, and SLWAI were given to the participants. Before distributing the data collection instruments, the researchers explained the purpose of the study and provided brief explanations about the concept of the variables.

Finally, in the fifth session, in order to evaluate the participants' writing ability, the second task of IELTS exam was administered to the subjects.

Results and Discussion

To answer the first research question as whether there was any statistically significant relationship among critical thinking, writing strategy use, L2 writing anxiety, and L2 writing performance of Iranian

EFL learners, Pearson correlation analysis was run, the results of which are presented in Tables 5 and 6.

Table 5
Descriptive Statistics for The Main Variables of the Study

	Critical Thinking	Writing Anxiety	Writing Strategy Use	Writing Performance
N	100	100	100	100
Mean	14.67	61.98	82.14	4.85
Std. deviation	3.33	19.73	15.59	.97
Variance	11.09	389.51	243.15	.94
Minimum	7.00	34.00	48.00	3.00
Maximum	23.00	111.00	121.00	6.00

Table 5 summarizes descriptive statistics for critical thinking, L2 writing anxiety, writing strategy use, and L2 writing performance of EFL learners.

Table 6
Relationship Among Critical Thinking, Writing Strategy Use, Writing Anxiety, and L2 Writing Performance

		Writing Strategy Use	Writing Anxiety	Critical Thinking
L2 Writing Performance	Pearson Correlation	.52[**]	-.71[**]	.69[**]
	Sig. (2-tailed)	.00	.00	.00
	N	100	100	100

As Table 6 shows, a significant positive relationship was observed between L2 writing performance and writing strategy use (N= 100, r = 0.52, p = 0.00). The findings of the study in this regard are in line with those of some previous studies (e.g. Al-Asmari, 2013; Cumming, 1989; Erkan, & Saban, 2011; Graham & Perin, 2007; Hayes & Flower, 1983).

Larsen-Freeman and Anderson (2011) stated that training learning strategies can lead to academic success. Therefore, it seems logical to

claim that as one kind of language strategies, learning writing strategies might contribute to L2 writing ability.

Other researchers (e g. Fitzgerald & Markham, 1987; Schnee, 2010) also found that expert L2 writers, in contrast to novice writers, use more and varied types of writing strategies. In other words, successful writers employ a wider array of strategies for effective writing purposes (Al-Asmari, 2013). In fact, writing strategies are considered as the variable that separates successful writers from less successful ones (Mu, 2005).

According to Graham and Perin (2007), writing strategy use has been proved to be an effective technique for adolescent L2 learners in general. Since the participants of the present study were adult EFL learners who were familiar with academic writing and had some writing experience before, it might be inferred that they were able to apply writing strategies effectively.

The results of the first research question also revealed that there was a significant reverse relationship between L2 writing performance and L2 writing anxiety (N= 100, $r = -0.71$, $p = 0.00$). This finding was consistent with the results of several studies (e.g., Abu Shawish & Atea, 2010; Daley & Miller, 1975; Daly & Wilson, 1983; Erkan & Saban, 2011; Faigley, Daly & Witt, 1981; Magno, 2008).

A reasonable justification for this negative relationship between writing performance and writing anxiety might be due to the educational system of the country (i.e., Iran). Most of EFL teachers in Iran do not explicitly work on the process of writing and do not give feedback on the quality of the learners' writings. L2 writing is mostly regarded as an often-neglected skill (Rezaei & Jafari, 2014). As a result, Iranian EFL learners are usually left on themselves to master writing ability and, therefore, might suffer from writing anxiety for gaining an acceptable grades and this anxiety can negatively affect their writing performance (Rezaei & Jafari, 2014).

Another factor which causes writing anxiety might be time limitation. According to Kirmizi and Kirmizi (2015), time pressure was rated by EFL learners as one of the most important factors related to

writing anxiety. Moreover, as reported by Rezaei and Jafari (2014), majority of the L2 writers (about 61%) mentioned that time pressure was the reason for their writing anxiety. In the second task of IELTS, which was used in this study to evaluate the participants L2 writing ability, time is a very sensitive issue. The participants are required to write an essay of about 250 words in 40 minutes which is a short period of time for most EFL learners, hence a source of stress and anxiety.

Another finding of the first research question indicated a significant positive relationship between L2 writing performance and critical thinking (N= 100, $r = 0.69$, $p = 0.00$) which is in line with previous research studies (e.g., Gorjian, Pazhakh & Parang 2012; Nikou, Bonyadi, & Amirikar 2015). In order to justify the results of the study in this regard, it can be argued that critical thinking is an indispensable part of academic writing which allows EFL learners to express their thoughts clearly and reflect on those thoughts using reflective journals (Barnawi, 2011). In the writing task given to the participants, which was from the academic version of IELTS exam, the test takers should present their arguments and counter arguments about a controversial issue. In academic writing of this type, critically evaluating the topic is essential. In general, critical thinking, according to Rashid and Hashim (2008) is a crucial component in language skills especially writing and reading.

Another possible reason for the positive relationship between L2 writing performance and critical thinking might stem from the fact that writing is a key skill through which learners are capable of restructuring knowledge and improving their higher-order thinking, hence their critical thinking (Marzano, 1991; Nejmaoui, 2019). Since the participants of the present study were supposed to discuss critical issues in their writing tasks, they developed their mind in a critical way. Nejmaoui (2019) approved the close relationship between EFL learners' critical thinking and L2 wring via his study in which he showed the positive effect of using argumentative writing in improving EFL learners' critical thinking skills.

For the second research question which sought to determine the best predictor of L2 writing performance, multiple regression was used (see Tables 7-9).

Table 7

Model Summary of Multiple Regressions Between All Variables

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.80[a]	.65	.63	.58

a. Predictors: (Constant), Critical Thinking, Writing Strategy Use, Writing Anxiety

b. Criterion Variable: Writing Ability

As Table 7 shows, the multiple correlation coefficient (R) is .80 and the adjusted R^2 is .63, meaning that 63% of the variance in L2 writing performance can be predicted from variables of critical thinking, L2 writing anxiety, and writing strategy use.

Table 8

ANOVA for Multiple Regressions between All Variables

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	60.94	3	20.31	59.44	.00[b]
	Residual	32.80	96	.34		
	Total	93.75	99			

a. Criterion Variable: Writing Ability

b. Predictors: (Constant), Critical Thinking, Writing Strategy Use, Writing Anxiety

The *F*-ratio in the ANOVA (Table 8) tests whether the overall regression model is a good fit for the data. Table 8 shows that the independent variables significantly predicted the dependent variable, $F(3, 96) = 59.44$, $p<.05$. Thus, the regression model is a good fit for the data.

Table 9
Coefficients in the Multiple Regressions between All Variables

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	3.86	.56		6.88	.00
Writing Strategy Use	.01	.00	.19	2.74	.01
Writing Anxiety	-.02	.00	-.45	-5.94	.00
Critical Thinking	.09	.02	.32	3.91	.00

a. Criterion Variable: Writing performance

As Table 9 shows, EFL learners' writing anxiety beta value is -.45 indicating that a change of one standard deviation in learners' writing anxiety results in change of -.45 standard deviations in learners' L2 writing performance. Thus, the higher the beta value, the greater the impact of predictor variables on learners' L2 writing ability. Table 9 indicates that critical thinking, writing strategy use, and L2 writing anxiety are all significant predictors of L2 writing performance (sig= .00). However, according to Table 9, L2 writing anxiety with Beta and t of -0.45 and -5.94 respectively is a stronger predictor of Iranian EFL learners' L2 writing performance.

The major reason that writing anxiety was the stronger predictor of writing performance might be attributed to the fact that most Iranian EFL learners do not receive sufficient instruction when writing in an L2 and this can create anxiety (Dastjerdi & Samian, 2011; Jafari & Ansari, 2012; Zaree & Farvardin, 2009). Such an inadequate L2 writing knowledge might stem from different sources including lack of supportive feedback among Iranian EFL learners about their writing progress (Jebreil, Azizifar, & Gowhary, 2014). In fact, the helpful role of an EFL teacher in writing classes is to provide the learners with appropriate feedback and to guide them how they can improve the

quality of their writing (Salem & Al Dyiar, 2014; Wiltse, 2002). This finding was in line with some previous studies which reported anxiety as a major predictor of language learners' academic performance (Horwitz, Horwitz & Cope, 1986; Sioson, 2011). Therefore, as one type of *foreign language anxiety*, L2 writing anxiety can influence EFL learners' writing performance.

The last research question investigated whether male and female EFL learners significantly differed regarding their critical thinking, writing strategy use, L2 writing anxiety, and L2 writing ability. To this end, the descriptive statistics were computed and a one-way MANOVA was run, the results of which are summarized in Tables 10 and 11.

Table 10
Descriptive Statistics for Male and Female EFL Learners

	Gender	N	Minimum	Maximum	Mean	Std. deviation	Variance
Critical Thinking	Female	57	7	23	14.59	3.82	14.63
	Male	43	8	20	14.76	2.57	6.61
	Total	100	7	23	14.67	3.33	11.09
Writing Anxiety	Female	57	34	111	67.07	21.65	468.74
	Male	43	36	105	55.23	14.53	211.37
	Total	100	34	111	61.98	19.73	389.51
Writing Strategy Use	Female	57	54	121	83.26	14.82	219.69
	Male	43	48	115	80.65	16.62	276.23
	Total	100	48	121	82.14	15.59	243.15
Writing Ability	Female	57	3	6	4.66	.97	.95
	Male	43	3	6	5.09	.92	.84
	Total	100	3	6	4.85	.97	.94

Table 10 shows the descriptive statistics for male and female EFL Learners' scores on critical thinking, L2 writing anxiety, writing strategy use, and L2 writing performance.

Table 11 summarizes the results of MANOVA for Iranian male and female EFL learners' critical thinking, L2 writing anxiety, writing strategy use, and L2 writing performance.

Table 11

One-way MANOVA for Male and Female EFL Learners' Critical Thinking, Writing Anxiety, Writing Strategy Use, and Writing Performance

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Gender	Critical Thinking	.71	1	.71	.06	.801
	Writing Anxiety	3434.56	1	3434.56	9.58	.003
	Writing Strategy Use	167.22	1	167.22	.68	.410
	Writing performance	4.45	1	4.45	4.89	.029
Error	Critical Thinking	1097.39	98	11.19		
	Writing Anxiety	35127.39	98	358.44		
	Writing Strategy Use	23904.82	98	243.92		
	Writing Ability	89.29	98	.91		
Total	Critical Thinking	22619.00	100			
	Writing Anxiety	422714.00	100			
	writing strategy use	698770.00	100			
	Writing	2446.00	100			

As Table 11 shows, male and female EFL learners significantly differed with regard to their L2 writing anxiety and L2 writing performance. That is, male EFL learners (Mean = 55.23 and SD = 14.53) suffered from lower levels of L2 writing anxiety as opposed to their female counterparts (Mean = 67.07 and SD = 21.65). Further, male EFL learners (Mean = 5.09 and SD = 0.92) outperformed females

(Mean = 4.66 and SD = 0.97) in their L2 writing performance. On the other hand, gender had no significant effect on critical thinking and writing strategy use.

As shown in Table 10, male EFL learners outperformed their female counterparts in their writing tasks. This finding was contrary to the results of some studies which concluded that females were better L2 writers (e.g., Camarata & Woodcock, 2006; Gibb, Fergusson, & Horwood, 2008; Marks, 2008; Pajares & Valiante, 2001; Peterson, 2000). This finding implies that gender is a significant issue in writing performance and it seems quite necessary to investigate the issue further to settle this disagreement.

The results of the last research question also highlighted that female learners suffered from higher levels of L2 writing anxiety in contrast to their male counterparts. This finding was in accordance with some previous studies which concluded that female students were more anxious than male students while writing in an L2 (e.g. Cheng, 2002; Thompson, 1981). Therefore, it seems that female EFL learners might need more intervention-based writing programs in order to allay their L2 writing anxiety. This can also be a possible justification for the female participants' poor performance on the writing test in this study. Since, as mentioned above, there is a significant and negative relationship between writing performance and L2 writing anxiety. Therefore, higher level of anxiety in female learners in contrast to male learners naturally means lower level of writing performance.

Based on the results of the last research question, it was also revealed that gender had no significant effect on writing strategy use and critical thinking skills which was in line with the results of several studies conducted in the field (e.g. Azar, 2010; Kawashima & Shiomi, 2007; Ozdemir, 2005). This finding can be attributed to the fact that both genders have been exposed to the same educational system in Iran, so that their learning opportunities to foster critical thinking skills or to use writing strategies might be equal.

Conclusion and implications

The results of the study showed that writing strategy use had a significant positive relationship with L2 writing performance, suggesting that in order to improve EFL learners' L2 writing performance they should become familiar with effective writing strategies and different ways of applying these strategies. In this regard, EFL teachers should identify those writing strategies worth teaching. This can be done by teaching appropriate language learning strategies in an explicit/implicit manner in different classes.

Additionally, materials developers and syllabus designers should attempt to provide EFL learners with writing-related strategies. In doing so, materials developers can identify effective writing strategies and integrate them into course books. However, conducting a comprehensive needs analysis is indeed required at first in order to identify essential writing strategies.

Moreover, the observed negative relationship between L2 writing performance and L2 writing anxiety suggests that EFL teachers and other stakeholders should introduce effective programs to alleviate EFL learners' writing anxiety and, as a result, to improve their writing performance. One way, for instance, is to ask EFL teachers to replace summative testing with formative assessment in their writing classes. That is, because "testing" mainly deals with comparing learners' performance and ranking them based on their gained scores, makes learners more anxious about their writing performance. However, formative assessment primarily focuses on maximizing learners' knowledge development (Stiggins, 2002).

The results also revealed that a significant positive relationship exists between L2 writing performance and critical thinking, implying that students are required to learn how to think critically to enhance their writing ability. EFL teachers can integrate explicit teaching of critical thinking skills in their writing classes. This may also encourage EFL teachers to implement the procedures of critical thinking and critical pedagogy (CP) in their classrooms by linking students' knowledge to their real-life situations (Nation & Macalister, 2010).

This can be done by engaging EFL learners in writing about topics related to social issues. Since the aim of CP-based materials is to prepare learners to critically think about real-life problems, they can go beyond simple reflection and instead move towards criticality and reflective thinking.

It was observed that from among critical thinking, writing strategy use, and L2 writing anxiety, L2 writing anxiety was a stronger predictor of the participants' writing performance. Therefore, EFL teachers should give priority to solving anxiety related problems in contrast to issues related to critical thinking or language learning strategies. The findings also suggested that female EFL learners might need more intervention-focused programs in order to alleviate their L2 writing anxiety.

In summary, L2 writing instruction demands EFL learners to apply cognitive strategies in their writing tasks. EFL learners should be trained that critical thinking is not a sudden activity. However, it is indeed a continuing skill that necessitates a solid foundation, moving from traditional, product-focused writing classes to progressive, process-based, and critically-motivated pedagogies.
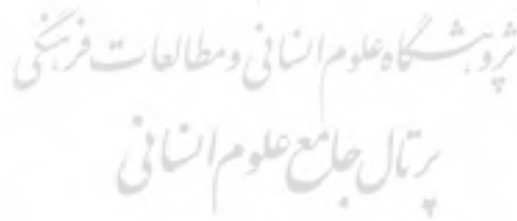
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