



The Relationship between Iranian EFL Learners' Critical Thinking Disposition and their Writing Strategy Use

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Abstract

As the learning of foreign languages has increasingly become learner-centered, instructors are advised to take learners' characteristics into consideration to which they can tailor their teaching practices. There are several factors that influence language learning including critical thinking dispositions and learning strategies. This study examined the relationship between critical thinking dispositions and writing strategies, as well as the extent to which Iranian English learners utilize certain writing strategies. This study adopted a correlational design. The statistical population included students majoring in English in Shahid Rajaei Teacher Training University, of whom 150 students were selected through convenience sampling. Data were collected using Ricketts' (2003) Critical Thinking Disposition Scale (2003) and Abdollahzadeh's (2010) Writing Strategy Questionnaire. The questionnaires were completed by 101 students from which eleven students whose responses were distorted excluded and the remaining 90 responses were analyzed using a bivariate correlation analysis. According to the results, learners' critical thinking disposition was positively correlated with their writing strategy. Additionally, the results demonstrated that Iranian EFL learners occasionally used a variety of writing strategies. It is also noteworthy that metacognitive and cognitive strategies were applied at a higher frequency than others. Thus, it can be concluded that critical thinking plays a vital role in employing different writing strategies.

Keywords: Critical thinking disposition, Individual differences, Iranian EFL students, Language learning strategy, Writing strategies

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Introduction

In the recent decades, a large number of contributory language and non-language factors have been examined to explain individual differences in the realm of foreign language learning (Zheng, 2008) and among them, affective and social variables such as motivation, emotional intelligence, critical thinking and learning

strategies have gained remarkable attention. It is widely believed that success and proficiency of language learners entail activeness and critical thinking as they frequently encounter complex interactions in target language texts, environments dealing with syntactic and lexical elements and cultural differences (Hood & Joyce, 1995; Kanpol, 1990; Kress, 1990). According to Renner (1996), EFL learners' capabilities, such as higher-order

thinking skills positively influence higher-order learning skills that may in turn lead to higher levels of language proficiency. A crucial concept in education is critical thinking, which serves as an indicator of learners' higher-order abilities. Critical thinking is the ability to think logically and to make sensible decisions as to do or believe in something. Also, there are certain skills required to identify a problem, analyze it, and make inferences (Ennis, 2011). To develop cognitive skills more effectively, learners must be provided with sufficient motivation and dispositions towards it (Profetto, 2003). This disposition is defined as "consistent internal motivation to act towards or respond to persons, events, or circumstances in habitual, yet potentially malleable ways" (Facione, 2000, p. 64).

With regard to developing more efficient and skilled language learners, the humanistic perspective claims that the process of learning a foreign language will be more effective and accelerated by intervening a group of factors as facilitators (Rogers, 2001). Language learning strategies are actions and techniques adopted by learners to facilitate acquiring, retaining and retrieving learned information (Oxford, 1990). Employing these strategies can be considered a reasonable criterion for revealing students' motivation, attitudes, independence, and self-confidence in the learning process. These strategies may contribute to success in language learning (Arndt, 1987; Oxford, 1990), enabling learners to interact effectively with their peers and overcome barriers in mastering language skills (Oxford, 1990). More specifically, the process and product of English writing is affected mainly by writing strategies that distinguish successful writers from less successful ones (Arndt, 1987).

The above points concerning the effectiveness of language learning strategies and critical thinking disposition suggest that these two constructs serve particularly similar functions. Possessing all or any of these attributes and a tendency to use them could be considered as a sign of a learner success or failure. There is likely that a mutual relationship exists between critical thinking disposition and the frequency of writing strategy use.

According to Shapira and Lazarowitz (2005), writing strategies refer to actions and behaviors that writers use to solve writing problems. These behaviors and actions can be classified into four groups: cognitive, metacognitive, affective, and social strategies. Metacognitive strategies require self-awareness in terms of the levels of understanding and motivation (Cohen & Dornyei, 2002). Cognitive strategies make learners capable of processing and transforming the information. They also deal with the effective use of language itself to engage in the learning process (Christensen & McCrindle, 1995). Social strategies help learners make

effective interactions with their fellows and overcome learning barriers. These strategies include asking questions, cooperating with other learners to accomplish a task, peer reviewing, and interaction between readers and writers that can potentially result in fostering thinking ability to facilitate the writing process (Cohen & Dornyei, 2002; Shapira & Lazarowitz, 2005). Affective strategies enable learners to manage and regulate their motivation, emotions, and attitudes (Cohen & Dornyei, 2002).

Language learning strategies appear to have been underrated in Iran where traditional teaching frameworks and procedures are generally preferred to innovative learner-centered approaches. Consequently, the learner's personal abilities, interests, and feelings are largely ignored, resulting in a tedious and discouraging learning environment where learners lack motivation and therefore less active to strive to achieve their goals (Ghaedi & Shahrokhi, 2016). As for writing skills, Iranian EFL learners are taught to write in English through the more traditional product-oriented rather than the process-oriented approaches to writing. EFL students are commonly taught grammatical and lexical points such as vocabulary, sentence patterns, and a set of transitive words to produce a piece of writing or accomplish a writing task. The students seem to be deprived of opportunities to improve their cognitive strategies like planning and generating or organizing their ideas (Fahandezh & Othman, 2012). According to Abdollahzade (2010), Iranian EFL students lack knowledge of writing strategies. It is also important to note that little is known about the writing process which Iranian EFL students tend to utilize. Therefore, more research is expected to be conducted to shed some light on the writing techniques used by EFL learners and reveal some new dimensions on the role that critical thinking is thought to play in the EFL context of Iran.

In recent years, a substantial body of studies have been conducted to investigate the importance of critical thinking in various domains of language learning. However, there appears to be a lack of studies that examine the relationship between critical thinking and writing strategy use. Further, in most research, the main focus is on the cognitive side of critical thinking and its affective aspect has not been discussed. Admittedly, language writing strategies have received attention in recent years (e.g., Baker & Boonkit, 2004; Fahandezh & Othman, 2012; Mastan et al., 2017; Yaghoubi, 2003).

Fahim and Komeijani (2010) found that Iranian EFL learners' critical thinking skill is significantly related to their lexical knowledge and vocabulary learning strategies. Sangarffam and Mamipour (2011) studied the effect of integrating critical thinking instruction on the

EFL learners' writing skills and found that those groups of learners privileged to be familiarized with critical thinking techniques showed better performance in the writing tasks. Zare and Biria (2018) examined the relationship between critical thinking skills and reading comprehension to explain the efficiency of critical thinking training in the EFL. The results showed a positive correlation between critical thinking of ESP students and their reading comprehension. In the Thai English for Academic Purpose (EAP) context, Baker and Boonkit (2004) examined successful and unsuccessful learners' writing and reading strategies. The results revealed that cognitive, metacognitive, and compensation strategies were more effective. Chien (2010) explored the role of learners' use of writing techniques according to their writing achievements in English in Taiwan and found that those students who performed better in writing tasks used the writing strategies much more frequently and efficiently than the low-achieving group of students. Ananisarab and Farasani (2014) examined EFL students' writing strategies in relation to their personality types at different Iranian universities. They indicated that metacognitive and cognitive strategies were the most prevalent strategies and memory strategies were found to be the least common.

However, in most of these studies, the taxonomy of writing strategies is one of the most frequently explored aspects in this domain. The literature appears to lack research on the probable impact of affective factors that may influence foreign language learning. These theoretical and empirical gaps led our study to investigate the relationship between Iranian EFL students' use of CT and their writing strategies. The current study focuses on the following research questions:

1. Is the level of critical thinking disposition of the participants satisfactory?
2. Is the level of writing strategy use of the participants satisfactory?
3. Is there a significant relationship between critical thinking disposition and the use of writing strategy?

Method

This study adopted a descriptive correlational design. There were two variables involved in this study: critical thinking disposition and writing strategies.

Participants

One hundred and fifty BA students from Shahid Rajaei Teacher Training University participated in this study aged between the ages of 19 and 23. The students had enrolled in 'writing' courses in English. All participants were Persian native speakers who had learned English as a foreign language. They were sent questionnaires virtually as described below. The questionnaires were completed by 101 students. A total of 11 distorted responses were discarded and 90 questionnaires were considered for further analysis.

Instruments

The Writing Strategy Questionnaire (Abdollahzadeh, 2010) This questionnaire with 45 items was developed in Persian with reference to Oxford's (1990) classification of language learning strategy types.

It includes items addressing cognitive strategies (8 items), memory strategies (6 items), compensation strategies (7 items), metacognitive strategies (9 items), affective strategies (8 items), and social strategies (7 items). The items were in statement form on a five-point Likert scale ranging from 1 to 5 (strongly disagree to strongly agree), asking learners to indicate which writing strategy they preferred. The possible scores range from 45 to 225. In this study, the reliability of this scale was found to be .82 which suggests an acceptable and satisfactory level. To evaluate the construct validity of this questionnaire, Bayesian confirmatory factor analysis was used through AMOS. Convergence Statistic (CS) was 1.0019, which was below the critical value of 1.0020, demonstrating the instrument's construct validity.

The Scale of Ricketts' Critical Thinking Disposition (Ricketts, 2003) Critical thinking disposition is a 33-item scale developed by Ricketts (2003). It is a 5-point Likert scale in which a score of 1 indicates 'strongly disagree', and a score of 5 represents 'totally agree'. The possible scores range from 33 to 165. It has three subscales, including maturity (9 items), engagement (13 items), and innovativeness (11 items). Engagement measures students' inclination to seek out opportunities for reasoning, anticipate situations where reasoning is needed, and have confidence in their reasoning skills. The Innovativeness disposition measures students' predisposition to be intellectually curious and desire to know the truth. Cognitive maturity measures students' knowledge of real-world problems, openness to other viewpoints, and awareness of personal biases and predispositions. The original form of this scale had 13 items for engagement with a standardized Cronbach's alpha of .89, 7 items for innovativeness with a standardized Cronbach's alpha of .79, and 6 items for

maturity with a standardized Cronbach's alpha of .7. For the current study, the overall reliability of the scale was .85. To estimate the construct validity of this questionnaire, the data were analyzed through Bayesian confirmatory factor analysis in AMOS. Convergence Statistic (CS) was shown to be 1.0019 which was below the critical value of 1.0020, indicating the instrument's construct validity.

Procedures

In order to achieve the study's objectives, the following steps were taken. After reviewing the previous research on the variables, the Permission was necessary from the head of the English department for the administration of survey questionnaires. The researcher had to obtain verbal consent from all participants in order to ensure that the research was conducted ethically. The

questionnaires were adapted to Google forms and sent to students' pages on the university's learning management system. In the final step, a bivariate correlation analysis was conducted on the collected data.

Findings

The descriptive statistics for total CT disposition are presented in Table 1. Analysis of the first research question assessing if the level of critical thinking disposition of the participants is satisfactory showed that the participants demonstrated a relatively high level of CT disposition based on the mean score for total CT disposition ($M=120.31$). Furthermore, the mean scores for engagement ($M=47.35$) and maturity ($M=33.24$) indicate a fairly high level of these dispositions among the participants.

Table 1.
Descriptive Statistics for Critical Thinking and Components

	N	Mean	Std. Deviation	Skewness	Kurtosis
Engagement	90	47.35	6.02	-.77	1.79
Maturity	90	33.24	4.34	-.81	.73
Innovative	90	39.71	4.61	-.55	.93
Critical thinking	90	120.31	12.86	-.88	2.55
Valid N (listwise)	90				

Among the other dispositions, innovativeness has the highest mean score ($M=39.71$). Since the skewness indices for all components of critical thinking are within -0.5 and -1 and the kurtosis values are less than 3, it can be assumed that the distribution of scores is moderately normal.

To determine the significance of the overall level of critical disposition, a one-sample t-test was used. Using a five-point Likert scale on a questionnaire comprised of 33 items, the cut point was set at .7, which equals 111.5 ($33 \times 5 \times .7 = 111.5$). Table 2 presents the results.

Table 2.
One-Sample Test for Critical Thinking Disposition

	Test Value = 111.5			Mean Difference	95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)		Lower	Upper
Critical thinking	6.49	89	.00	8.81	6.11	11.50

The second research question investigated whether the level of writing strategy use of the participants was satisfactory. The results of the descriptive analysis for all the participants' scores in writing strategy use and its subcategories are shown in Table 4.

Table 2 indicates that the level of critical thinking disposition is statistically significant ($t(89) = 6.49, p = .00$). Therefore, it is safe to hold that the majority of the students have an acceptable level of critical thinking.

Moreover, as it appears in Table 3, the reliability of the questionnaire was estimated to be .85 which is acceptable in social sciences (Pallant, 2021).

Table 3.
Reliability Statistics of Critical Thinking

Cronbach's Alpha	N of Items
.85	33

Table 4.
Descriptive Statistics for Writing Strategy Use and Components

	N	Mean	Std. Deviation	Skewness	Kurtosis
Memory	90	22.84	3.71	-.249	-.029
Cognitive	90	29.73	4.65	-.853	.820
Compensation	90	23.15	4.55	.165	.397
Metacognitive	90	34.17	5.59	-.879	1.387
Social	90	25.71	4.19	-.694	1.157
Affective	90	28.46	4.47	-.506	.864
Writing Strategy	90	164.08	22.85	-.620	1.212
Valid N (listwise)	90				

Table 4 illustrates that Iranian EFL students employ a high level of writing strategies (M=164.08, SD=22.85). A noteworthy finding is that the metacognitive strategy has the highest mean (M=34.17, SD=5.59), while the memory strategy has the lowest mean (M=22.84, SD= 3.71). In light of the fact that all components of writing strategy use show skewness indices within the range of -0.5 and -1, and that kurtosis is below 3, it seems reasonable to conclude that the distribution of scores is moderately normal.

The data were analyzed using a one-sample t-test to determine whether the total level of writing strategy use was significant. The cut point was set at .7, which corresponds to a score of 157.5 on a 5-point Likert scale ($45 * 5 * .7 = 157.5$). The results are presented in Table 5.

As shown in Table 5, the use of writing strategies is statistically significant ($t(89) = 2.73, p = .00$). Thus, most students exhibit an acceptable level of writing strategy use.

Table 5.
One-Sample Test for Writing Strategy Use

Test Value = 157.5					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Writing Strategy	2.73	89	.00	6.58	1.80	11.37

The reliability of the writing strategy use scale is .92, which seems satisfactorily high in social sciences (Pallant, 2021).

Table 6.
Reliability Statistics of Writing Strategy Use

Cronbach's Alpha	N of Items
.92	45

The third research question reads as follows.

Is there a significant relationship between critical thinking disposition and the use of writing strategy?

The Pearson Product-Moment correlation was used to address this research question. Prior to calculating the correlation coefficient, skewness and kurtosis values for the two variables in the study were checked in order to ensure that the normality assumption has not been violated. The indices are presented in Tables 1 and 4.

After verifying normality and linearity, the Pearson correlation analysis was performed. The results are presented in Table 7 below.

Results indicate that Iranian EFL learners' disposition toward thinking critically is significantly correlated with their use of writing strategies ($r=0.345, p < .001$). In other words, it could mean that EFL learners with sufficient motivation and a propensity for critical thinking are more likely to be effective and successful in using different writing strategies.

Table 7.
Correlation between Critical Thinking Disposition and Writing Strategies Use

	Writing Strategy
Critical thinking	.345**
Sig. (2-tailed)	.001
N	90

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

The next step was to estimate the predictive power of the study's variables. In order to do this, the researcher should provide the correlation coefficient index, statistically referred to as r^2 . The correlation coefficient of .345 multiplied by the power of 2 is equal to 0.11. Thus, it can be claimed that critical thinking disposition predicts 11 percent of writing strategy use. EFL learners with a high level of CT disposition are expected to demonstrate a greater tendency to use writing strategies when completing a foreign language writing assignment.

Discussion

The first significant finding of this study points to the fact that CT disposition is positively correlated with all subcategories of writing strategy (memory, metacognitive, cognitive, compensation, affective, & social). This result implies that the Iranian EFL learners who are more inclined to thinking critically are more likely to employ a range of strategies in the foreign language writing process. A positive correlation between frequent use of writing strategies and high levels of critical thinking may further indicate that EFL learners possess a high level of critical thinking. It can be stated that EFL learners with higher critical thinking skills are supposed to be more strategic in writing tasks and use various writing strategies to produce acceptable texts. Additionally, considering the correlation between CT disposition and writing strategy use, it is fair to conclude that those groups of EFL students who use writing strategies more frequently in their EFL classes may also have a higher tendency to think critically when writing.

In the same vein, EFL writing is largely influenced by both the quality and frequency of writing strategies, which function as a cornerstone for determining the success of EFL learners (Zheng, 2008). Existing evidence suggests that language learning strategies and critical thinking function similarly in the process of learning. This shared function may contribute to the overall process of learning a foreign language in general and enhancement of writing performance in particular. The findings of the present study are somewhat in line with the findings of those reporting a significant positive correlation between EFL learners' CT and language learning / writing strategies (e.g., Elekaei et al., 2016; Fahim & Saghaieh 2014; Kamgar & Jadidi, 2016; Zare & Biria, 2018).

The next significant results of the present study showed that the level of CT disposition of Iranian EFL learners can be a predictor of using writing strategy by them. Students with a strong tendency to think critically are more likely to employ this cognitive ability frequently, resulting in more strategic and efficient

writing. The possible explanation for this finding may be the fact that autonomous self-directed EFL learners participate more actively and think critically in the process of language learning in general and writing in particular. More specifically, the ability to think critically helps learners to become better decision makers and make appropriate choices in evaluating the learning environment. They can resort to logical analogies, critical attention to their prior experience and familiar circumstances leading learners to perform more satisfactorily in different areas of language learning such as writing skills. Moreover, EFL learners' equipment with CT capability improves their inferential skills. It enables them to draw more valid conclusions based on the evidence and be more proficient in opting for creative and efficient strategies in their writing tasks.

The last significant finding of this research work demonstrated that Iranian EFL learners generally tend to employ diverse strategies when writing. The highest mean score was gained by metacognitive strategy and the lowest by memory strategy suggesting that the learners prefer to use metacognitive and cognitive strategies more frequently than other sorts. The finding that Iranian EFL learners occasionally employ strategies in their writing can be attributed to the Iranian EFL context. Due to the teaching methods commonly practiced in Iran, students tend to be passive, demotivated, irresponsible, and unsurprisingly, less proficient in English. Ghaedi and Shahrokhi (2016) reported that students are rarely provided with adequate opportunities to express themselves more actively, demonstrate their capabilities more efficiently, and be more creative, self-confident, and autonomous when learning a foreign language. They are not granted enough opportunities to develop the ability to adopt various innovative and even existing strategies to improve their writing, nor are they encouraged to generate or organize their ideas (Fahandezh & Othman, 2012).

According to our previous discussion, Iran's educational system, policies, and uninspiring learning environment result in a group of EFL learners relying heavily on teachers. They are clearly less proficient and unskilled in various language skills, particularly in communicating effectively with others. Furthermore, there is incontrovertible proof that neither educational materials (e.g., designed course books) nor the allocated time and procedure provide Iranian EFL learners with the necessary information about the target culture, which is essential to learning the target language. Similarly, any negative oral or written comment from peers or teachers can prove confusing and demotivating for EFL learners who are not sufficiently competent, self-regulated, and self-confident. It may lead them to

perform subsequent tasks with much more stress and fear in anticipation of another negative feedback. A teacher's written feedback is considered useful for learners only when it generates a feeling of competence, confidence, individuality, and control (Williams & Burden, 1997).

Only a few studies have examined the frequency of different writing strategies used by Iranian EFL students. It is worth noting that the findings of the present study are in line with what Ananisarab and Farasani (2014) contended showing that Iranian graduate students used different types of writing strategies. They reported metacognitive and cognitive strategies as two top preferred strategy types among these learners and memory writing strategy as the least preferred. Our findings are similar to those of Abdollahzade's (2010) who found that Iranian undergraduate EFL students prefer metacognitive and cognitive strategies over other writing strategies while compensation and memory strategies are the least frequently used writing strategies.

Conclusion

This study was conducted to examine the relationship between Iranian EFL learners' critical thinking disposition and the use of writing strategy, as well as the predictive power of CT disposition in the frequency of writing strategy use among these learners. Furthermore, it was intended to determine which types of writing strategies were most widely used by Iranian EFL learners. To this end, the students' level of critical thinking disposition and writing strategy use were assessed through Ricketts' (2003) Critical Thinking Disposition Scale (2003) and Writing Strategy Questionnaire (Abdollahzadeh, 2010). Based on the findings, a higher level of disposition and tendency to think critically in EFL learners can be an effective facilitator encouraging learners to use various strategies during the process of learning languages in general and writing in particular. In other words, possessing a higher level of CT disposition enables them to use more strategies when involved in a writing task. It was also found that Iranian EFL learners generally adopted various techniques in their writing. Furthermore, they tend to use cognitive and metacognitive strategies more than memory strategies.

In general, the findings of this study emphasize a need for creating an encouraging environment that engage learners in higher-order thinking skills more frequently which, in turn, lead to more notable achievements.

The findings of the current study can be beneficial to educational stakeholders, especially language teachers and learners, curriculum designers, and material

developers. Moreover, teachers are recommended to create an educational environment that stimulates and cultivates learners' critical thinking skills. This can be a great way for teachers to modify their methods to introduce optimal learning strategies to their students. The incorporation of critical thinking dispositions and language learning strategies in course syllabuses will result in students' precise, well-reasoned, and helpful analytical abilities.

Like other studies of similar nature, this one has some limitations. First, the questionnaire, which relies on self-report, is subject to measurement errors that include overestimation, underestimation, and social desirability. Second, this study only included learners at one proficiency level at Shahid Rajaei University, so its findings may not be generalizable to other learners and other educational settings.

The findings of this study suggest future studies combining quantitative with qualitative procedures to determine whether the responses of participants are consistent. In addition, more precise evidence can be obtained about the relationship between CT dispositions and language learning strategies. Further research could be carried out to explore how other factors such as age, social status, and ethnicity affect learners' CT disposition and writing performance.

Conflicts of Interest

No conflicts of interest declared.

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