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Conceptual Metaphor as a Cognitive Solution to English Writing Problems: The effect of instruction on Writing Attitude and Self-efficacy of EFL Learners



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ABSTRACT

Drawing on the conceptual metaphor theory (Lakoff & Johnson, 1980) and using the theoretical framework of the cognitive writing model (Flower & Hayes, 1980), the researchers attempted to improve EFL learners' writing dispositions through establishing an interaction between their conceptual system and the natural experiences that form the framework of a text. To that end, 120 male and female EFL Bachelor-of-Arts (BA) students from Foreign Language Center at Islamic Azad Karaj University in Iran participated voluntarily in the study and were randomly divided into two groups, with the experimental group receiving the cognitive approach training and the control group the traditional approach instruction. Using a two-way analysis of co-variance (ANCOVA) procedure, the researchers evaluated the posttest results of both groups. The analysis revealed that the cognitive group experienced a remarkable growth in the posttest scores of writing self-efficacy and writing attitudes. Findings of the present study can be of practical and theoretical importance to the EFL writing teachers, because they provide EFL teachers with feedback to incorporate conceptual metaphor as a cognitive strategy in their writing courses to improve their students' affective factors which overshadow their success in writing.

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1..... INTRODUCTION

Writing as a communication tool and language skill is of particular importance for EFL learners and teachers. However, as one of the most complex and difficult English language skills, it is always criticized by language learners. Learners' emotional tendencies, including self-efficacy and writing attitudes, are significantly affected by this complexity. Accordingly, many students find writing skills difficult and stressful and have a negative attitude towards it. Evidence shows that despite the different approaches and strategies of English teachers in institutions and universities to solve students' writing and emotional problems, writing still threatens their academic achievement.

Helping EFL learners to learn how to write effectively, [Flower and Hayes \(1980\)](#) came up with a model developed by extensive research during a five-year ceaseless effort. Dominating the recursive nature of writing, they depicted a major departure from the traditional paradigm to the contemporary model and brought a new insight into writing. Their model was based on the analysis of thinking aloud protocol collected from professional writers during the writing process. They noted that the protocol provides a detailed record of what goes on in the minds of professional writers when performing writing. Flower and Hayes found that professional writers focus on three basic processes, including planning, translation, and revision, that function based on two different sources of information, including the task environment and the writer's long-term memory.

The present study follows the model of [Flower and Hayes \(1980\)](#), especially in the planning stage, where the memory probe discovers subject-related ideas. However, ideation in the present study deals with the dynamic interaction between the learners' conceptual system and the world outside their minds. This study uses the conceptual metaphors proposed by [Lakoff and Johnson \(2003\)](#) as a system of thought with the aim of providing a source of idea generation in the task environment of Flower and Hayes's cognitive model.

The task environment in Flower and Hayes model is based on instantaneous social and physical factors such as concurrent input of peers, criticism, teachers or just pre-written text, while the task environment in the present study is concerned with conceptual metaphors generated through the interaction of writers' conceptual system with the physical world around him or her. Applying conceptual mapping and defamiliarization as the task environment, the study attempted to improve EFL learners' writing self-efficacy and attitude.

1. LITERATURE REVIEW

a. Conceptual Metaphor Theory

In the late 1970s, [Lakoff and Johnson \(2003\)](#) began to realize that “metaphor is pervasive in everyday life, not just in language but in thought and action” (p. 3). The findings of Lakoff and Johnson's study changed the conceptual view of metaphors and transformed the traditional thoughts from viewing metaphor as a literary device for ornamenting language into metaphor as a thought process (Jensen, 2006 as cited in [Hashemian & Fadaei, 2012](#)). Their challenge

with Aristotelian notion of metaphor led to the emergence of conceptual metaphor theory (CMT), which became widely known with the publication of *Metaphors We Live by* by [\(Lakoff & Johnson, 1980\)](#). CMT questioned and challenged the traditional practice, which viewed metaphor as an ornamental linguistic feature. The new insight into metaphor led [Lakoff and Johnson \(1980\)](#) to distinguish three types of conceptual metaphors, including *structural, ontological, and orientational metaphors*, as explained in the following paragraphs.

[Lakoff and Johnson \(1980\)](#) defined structural metaphors as “cases where one concept is metaphorically structured in terms of another” (p.14). The cognitive function of this subgroup of conceptual metaphor helps people understand the target domain through the structure of the source domain. This understanding takes place through conceptual mappings between the elements of source and target domains. As [Kovecses \(2010\)](#) noted, the conceptual domain from which we draw metaphorical expressions to understand another conceptual domain is called source domain, while the conceptual domain that can be understood using the source structures is the target domain. In [Lakoff and Johnson’s \(1980\)](#) well-known conceptual metaphor, *love is a journey*, “the source domain is mapped onto the target domain whereby the structural components of the base schema are transferred to the target base” ([Schaffner, 2004, p. 1259](#)). *Love is a journey* allows us to create novel expressions which are neither poetic nor necessarily used by specialists.

[Lakoff and Johnson \(2003\)](#) suggested that ontological metaphors are generated when a language user conceives an abstract concept

such as an activity, an emotion, or an idea as a concrete object or an entity. Attributing physical features to the abstract concepts, language users can easily realize and understand immaterial concepts such as events, phenomena, affairs, and so on. The conceptual ontological metaphor *inflation is an entity* gives language users a series of ideas and allows them to define physical properties to concepts, experiences, and processes ([Lakoff & Johnson, 2003](#)).

Oriental metaphors are one of the three conceptual metaphors that give a spatial orientation to abstract concepts based on human spatial experiences ([Kovecses, 2002](#)). In orientational conceptual metaphor, ideas are organized in interaction with space like up-down, inside-out, front-behind, shallow-deep, center-periphery, and so on ([Lakoff & Jonson, 1980](#)). The orientational conceptual metaphors *happy is up, sad is down* are derived from the human body posture when he or she is happy or sad.

b. Conceptual Mapping

In [Lakoff and Johnson’s \(1980\)](#) conceptual metaphor theory, conceptual mapping goes beyond knowing how to discover the links between the various elements of a language. Conceptual mapping is an active learning strategy, which teaches learners critical thinking and ways to come up with idea generation ([Kovecses, 2010](#)). Concept mapping is an invaluable combination of different ideas, thought processes, mental activities, and strategies that allow learners to disclose unknown patterns of information by constructing new structures.

Using concept mapping in the planning stage, learners can interact between their conceptual system and the world around

them, and bring about new ideas originating from their real-life experiences. In this study, applying the concept mapping strategy, the volunteers managed to create a regular and meaningful relationship between the nature of technology and a set of different concepts to come up with novel and native-like expressions. For example, the conceptual metaphor of "technology is evil" derived from the interaction between the author's thought process and the world around him in response to the question of "whether technology is useful or harmful" has allowed him to create novel prose in English that can be found mostly in the texts of professional language writers. The following excerpt derived from a learner's article in this study confirms this.

When technology came into existence, the concept of love lost its true meaning. In the past, for example, both the lover and the beloved poured their emotions onto paper. They wrote and erased to excavate and flame the pure love buried in their hearts. Today, technology has snatched the spirit of pure love from humans and turned that burning flame into ashes.

As can be seen, generalizing his worldview and interacting between his conceptual system with the everyday experiences of human beings, the learner has achieved a semantic deconstruction and managed to give new and fluid concepts to the old and stable concepts. The process of de-familiarization that has taken place in the shade of conceptual mapping has given him the ability to create ideas that may not have been expressed or heard by anyone else. In the above phrase, the learner perceives the

concept of technology as a living entity that breaks the norm, and conceives the concept of love as an object that loses something, flares up, and turns to ashes. Discovering the hidden conceptual metaphors "TECHNOLOGY IS A DEVIL", "TECHNOLOGY IS A THIEF", "HEART IS A CEMETERY", and "LOVE IS AN OBJECT", the learner has succeeded in depicting the concepts of one domain of experience in terms of another one and can create original expressions that are perceptible to all readers.

In a study conducted by [Mansoor and Rahimi \(2011\)](#) to investigate the effect of concept mapping strategy on the writing skills of Iranian EFL learners, the results showed that the experimental group performed much better than the control group in the posttest. In a similar study, investigating the impact of concept mapping strategy on EFL learners' writing achievement, [Shakoori, Kadivar, and Sarami \(2017\)](#) suggested that concept mapping significantly improved learners' writing performance. In an investigation of the conceptual mapping strategy on the writing performance of sixty Iranian intermediate EFL learners, [Negari \(2011\)](#) found that teaching concept mapping strategy positively and significantly increased learners' writing proficiency.

c. Writing Dispositions (Writing Attitude and Self-efficacy)

[Piazza and Sibert \(2008\)](#) pointed out that dispositions are the manifestation of the interaction between cognitive factors (ability, knowledge, and strategy), affective factors (feelings, beliefs and values about writing),

and social factors (task conditions, achievement goals, and learning environment). Writing dispositions refer to an individual's tendencies to do an activity in a particular way and predict performance patterns ([Borko, Liston, & Whitcomb, 2007](#)). Agreeing with [Piazza and Sibert, Hayes \(2006\)](#) defined disposition as the writer's affective factors such as beliefs, attitude, propensities, self-efficacy, perception of required effort, and anxiety.

Writing attitude as the most important predictor of success in foreign language learning ([Getie, 2020](#)) is defined by [Graham, Berninger, & Fan \(2007\)](#) as "an affective disposition involving how the act of writing makes the author feel, ranging from happy to unhappy" (p. 518). Writing attitude is proved to exert a strong influence on improving, or hindering, writing achievement ([Paker & Erarslan, 2015; Sarkhoush, 2013](#)).

In an investigation into the effects of integrative and instrumental motivations on the EFL learners' success in writing, [Hashmian and Heidari \(2013\)](#) found a positive relationship between writing attitude and writing achievement. The results also showed that students with integrated motivation were more successful in the second language writing than students with instrumental motivation. Outcomes of a similar study conducted by [Graham, et al. \(2007\)](#) revealed that students who had a positive attitude toward writing were more successful in writing than other students with a relatively lower writing attitude.

Self-efficacy, according to [Bandura \(1997\)](#), is defined as an individual's judgment on his or her ability to perform a particular task using the skill he or she possesses. Self-efficacy plays an essential

role in learners' cognition ([Usher & Pajares, 2008](#)), and it is a powerful tool in predicting EFL learners' writing achievement ([Chea & Shumow, 2014; Niemivirta & Tapola, 2007](#)).

A study done by [Liem, Lau, and Nie \(2008\)](#) revealed positive effects of self-efficacy on the students' performance. Findings of another study conducted by [Bong \(2006\)](#) showed that a high self-efficacy level leads to a number of positive outcomes such as setting goals, using effective strategies, and reducing apprehension. In a study on a group of Iranian EFL learners about the relationship between writing self-efficacy and writing achievement, [Fatemi and Vahidnia \(2013\)](#) found a significant relationship between writing performance and writing self-efficacy levels. In another study on the relationship between self-efficacy and writing performance across genders, [Hashemnejad et al. \(2014\)](#), however, found that there was no significant relationship between self-efficacy of male and female learners and their writing performance.

Many researchers believe that the problems stem from the students' cognitive and emotional factors ([Haider, 2012; Hyland, 2003; Lee, 2005](#)). Cognitive factors refer to variables such as strategy, knowledge, ability and memory that are used in the writing process ([Hayes, 2006; Kellogg, 2008](#)). Emotional factors refer to tendencies such as self-efficacy, attitude, apprehension, self-esteem, motivation, self-confidence that play an important role in learners' performance ([Dornyei, 2005; Pajares, 2003](#)). Therefore, considering the interrelationship between cognitive and emotional factors ([Graham & Harris, 2009; Piazza & Sibert, 2008](#)), it can

be inferred that emotional tendencies are influenced by learners' cognitive factors.

Many English language learners, regardless of their level, are either unable to complete their writing task successfully ([Harmer, 2006](#); [Hisken, 2011](#); [Hyland, 2003](#)) or are reluctant to perform it ([Al Asmari, 2013](#); [Erkan & Saban, 2011](#)). Studies have shown that students with higher writing self-efficacy are more consistent in solving their writing problems than students with lower self-efficacy beliefs ([Lavelle, 2006](#); [Zimmerman & Kitsantas, 2005](#)).

The results of a study indicate that most language learners are apprehensive about writing in English and have a negative attitude towards it ([Ismail et al., 2010](#)). Many researches argue that the source of anxiety and frustration stems from EFL learners' lack of knowledge about a practical writing strategy ([Sadi & Othman 2012](#); [Yang 2013](#)). Therefore, teaching methods and teaching techniques can have a significant impact on students' attitudes toward writing.

Aiming to help language learners overcome writing problems, many researchers have found that the biggest challenge for language learners is likely to be idea generation ([Al Morshidi, 2014](#); [Crossley et al., 2016](#)). Accordingly, unlike [Flower and Hayes' \(1980\)](#) model in which ideas are generated by retrieving knowledge from long-term memory, external resources, and social environments, in the present study, ideas are generated through conceptual mapping and de-familiarization strategies.

In this model, in the planning stage, the author tries to conceptualize one area of experience into another area of experience in

order to discover hidden conceptual metaphors for generating novel ideas. It is expected that the conceptual mapping strategy will have a significant effect on the writing dispositions of language learners (written approach and self-efficacy).

As the review of literature shows, writing performance is affected by writing self-efficacy and writing attitude. Accordingly, this study attempted to improve EFL learners' writing dispositions through establishing an interaction between their conceptual system and the natural experiences that form the framework of a text.

2. Purpose of the Study

The present study was an empirical research of [Flower and Hayes' \(1981\)](#) cognitive writing model in which a special idea generation strategy was implemented in the planning stage. The main objective of the study was focused on examining the effectiveness of conceptual metaphor theory as a cognitive feature in developing EFL learners' writing dispositions. In addition, we were interested in identifying any significant changes in the posttest scores of EFL learners' writing attitude and writing self-efficacy.

This research stems from the cognitive linguistic approach in which the researchers tried to establish a connection between CMT and the practice of teaching idea generation in Iranian EFL learners. The outcome is a better understanding of the nature of conceptual metaphor and the mental processes that take place when there is an abstract understanding of an objective perspective. Conceptualizing one domain of

experience in terms of another domain may help EFL learners to realize how to plan, organize, and generate original ideas. The researchers, therefore, used the following two research questions to achieve the goals set in the study:

1. Is there a significant difference in the writing attitude post-test scores for the Iranian male and female advanced EFL learners who received the traditional instruction and those who benefited from the cognitive instruction?

2. Is there a significant difference in the writing self-efficacy post-test scores for the Iranian male and female upper-intermediate EFL learners who received the traditional instruction and those who benefited from the cognitive instruction?

4. METHOD

4.1. Participants

One hundred and twenty EFL Bachelor-of-Arts (BA) students who ranged in age from 22 to 35 volunteered to participate in the study. The students, all of them majoring in the English language, were chosen from different classes of Foreign Language Center of Islamic Karaj Azad University in Karaj, Iran. The participants were selected according to their performance on a sample Preliminary English Test (PET). They were all Persian native speakers and had already experienced writing in high schools.

4.2. Instrumentation

The present study is a quasi-experimental pre-test and post-test study based on the effect of conceptual metaphors as a cognitive solution to the writing attitude and self-efficacy of language learners. In the present study, variables include an independent variable composed of two levels including cognitive and traditional approaches. Gender

is also the second independent variable consisting of two levels, namely, male and female learners. The dependent variables in this study are writing attitude and self-efficacy tests. The study is conducted in five main stages as follows.

In the first phase of the study, to measure the participants' English knowledge and select a homogenized sample group, an English proficiency test (EPT) developed by [Macmillan \(2012\)](#) was administered. In this test, candidates answered 50 questions including 40 grammar and 10 vocabulary questions in approximately 25 minutes and scored one point for each correct answer. After performing the skill test, participants were divided into two equal groups of men and women by a randomization software ([Urbanbeck & Plus, 2013](#)). Having administered the language proficiency test, the researchers divided the participants into two equal groups of male and female using a research randomizer software ([Urbaniak & Plous, 2013](#)).

In the second stage, two homogeneous groups participated in writing attitude and self-efficacy pretests. To assess the candidates' attitude towards writing, the researchers used a highly reliable questionnaire developed by [Podsen \(1997\)](#). The scale has a high internal consistency with a Cronbach's Alpha value of 0.737 ([Setyowati & Sukmawan, 2016](#)). The scale has 20 statements in a 5-point Likert ranging from point 1 to point 5. Point 1 means you strongly disagree with the statement, point 2 indicates your disagreement, point 3 signifies that you are uncertain about the statement, point 4 describes that you are in agreement with the statement, and point 5 indicates that you strongly agree with the statement. The

instrument used to assess the candidates' writing self-efficacy belief was a questionnaire validated by [Prickel \(1994\)](#). Its high reliability reported by [Setyowati \(2016\)](#) indicated a high level of consistency of the instrument ($r = .758$), though it is lower than the reliability claimed by the developer ($r = .9249$). The scale consists of 25 statements in a 5-point Likert type ranging from A to E. According to [Setyowati \(2016\)](#), the item (A) means strongly agree meaning you always feel that way, the item (B) means agree, meaning you feel this way most of the time, the items (C) means unsure, meaning you are mostly undecided, the item (D) means disagree meaning you do not feel this way very often, and the item (E) means strongly disagree, meaning you never feel this way.

In the third stage, both groups benefited from special training programs. The first group benefited from the traditional approach training and the second group received the cognitive approach training. Finally, both groups sat two posttests, namely, writing attitude and writing self-efficacy.

4.2.1. Traditional Group Training

Preparing candidates to achieve mastery of academic writing proficiency, the researchers used IELTS Preparation and Practice ([Denise et al., 2013](#)) and Academic Writing from Paragraph to Essay ([Dorothy et al., 2005](#)) as sources of teaching. The traditional group consisting of 60 male and female EFL learners got the mastery of academic writing including *pre-writing*, *drafting*, *revising*, and *rewriting* in the instructional classes. The whole training course lasted for eight weeks. Participants attended a total of 32 hours of training

sessions. Classes were held twice a week and each session lasted for about two hours. Due to the COVID-19 epidemic, participants tended to hold online classes, so the entire training program was run virtually. Below some of the most important activities are presented briefly.

a) Analysis of the question: learning how to analyze the question through breaking the question down into comprehensible elements, candidates learnt how to find out the gray areas of a question and the significant connection between the elements.

b) Paragraphing: In the second step of pre-writing, candidates were taught to divide a text into meaningful paragraphs so that they could understand the concept of cohesiveness and apply a rich diversity of reference links.

c) Brainstorming and organizing the ideas: In the third step of pre-writing, the participants learnt the way of gathering ideas concerning the topic and the key points they had already detected in the questions. They were then asked to list their ideas and write phrases, clauses, or sentences about them.

d) Mind map: The fourth step in pre-writing is making a mind map. In this section, the candidates learnt to put their ideas next to the topic and generate new ideas.

4.2.3. Cognitive Group Training

To improve the EFL learners' writing proficiency equivalent to that of native language writers, the researchers benefitted from three essential books namely *Metaphors We Live by* by ([Lakoff & Johnson, 2003](#)), *Meanings and Metaphors* ([Lazar, 2003](#)), and *Idioms Organizer* ([Wright, 2002](#)). Having briefly reviewed the structure of an academic essay, which was explained earlier, the

researchers detailed [Flower and Hayes' s Cognitive Theory in Writing \(1980\)](#) mentioned in the literature review of this study. In the next step, the candidates were taught the conceptual metaphor theory ([Lakoff & Johnson, 2003](#)) discussed thoroughly in the literature review of the present study. As with the traditional group, the cognitive group also benefited from a total of 32 hours of training programs. Due to compliance with health protocols for COVID-19, all training classes were held online.

Teaching conceptual metaphor theory and introducing a wide range of well-known conceptual metaphors, the researchers showed how it is possible to conceptualize one domain of experience in terms of another ([Kovecses, 2010](#)) and then generate a large number of idiomatic expressions out of conceptual metaphors. In [Lakoff and Johnson's \(2003\)](#) well-known conceptual metaphor, ARGUMENT IS WAR the concept of *argument* is structuralized by the information which belongs to the concept of *war* and generate metaphorical expressions as follows:

Your claims are *indefensible*.

He *attacked every weak point* in my argument.

His criticisms were *right on target*.

I *demolished* his argument.

I have never *won* an argument with him.

You disagree. Okay, *shoot!*

If you use that *strategy*, he will *wipe you out*.

He *shot down* all of my arguments. (p. 5)

The hermeneutic relationship between metaphors and understanding suggested that “metaphors and models do not have static, one-off meanings, but are potentially capable

of revealing multiple meanings, which can be progressively disclosed by the to-and-fro movement of the hermeneutic circle” ([Snodgrass & Coyne, 1991, p. 15](#)). The hermeneutic circle proposed by Gadamer (1975) accounts for how understanding emerges and how metaphors revise our understandings ([McClintock & Ison, 2004](#)). This phenomenon which provides the writer with a unique lens for focusing on the unusual setting, or unexpected angle of vision is defamiliarization strategy ([Ovshieva, 2019](#)). The strategy is consistent with the mapping techniques proposed by Lakoff and Johnson (2003), in which one domain of experience is conceptualized in terms of another domain to foreground it. The most important activities practiced by the cognitive group consisting of 60 males and females EFL learners are as follows:

a) Matching: In the first step, the candidates were given a plenty of sentences and asked to match the literal meaning to the metaphorical sentences. This activity helped the learners to get familiar with the concept of source and target domains proposed by [Kovecses \(2010\)](#).

b) Fill in the blanks: This activity was aimed at enriching the learners' ability in conceptualizing the structure of one domain in terms of another.

c) Completion activities: This activity enabled the learners to recognize the constituent elements of both target and source domains.

d) Telling stories based on pictures: This activity strengthened the learners' visualization feature.

e) Association of idioms with mental images: This activity raised the learners' awareness about the relationship existing

between their experiences and the conceptual metaphors.

f) Translating the metaphorical expressions into their own language: This activity helped the learners to find the similarities and differences between English and Persian languages.

g) Picturizing their experience with regard to entities in terms of something else. This activity helped the learners to develop defamiliarization strategy, see behind the text, visualize the intertextuality and connections among the elements, and discover different meanings which had been once unfamiliar to them. For example, in response to the question ‘what technology is’, researchers came up with answers such as bad friend, helper, devil, shackles, savings, secretary, criminal, teacher, library, traitor, prison, etc., which were based on the independent experiences of the volunteers.

h) Developing learners’ metaphorical competence (MC) via defamiliarization and visualization processes. To improve the ability of volunteers to understand and produce metaphorical expressions, they were asked to write conceptual metaphors related to their culture and experiences and discuss the created expressions with each other.

In the fourth stage, receiving training programs, the participants took part in the writing attitude and self-efficacy posttest. At this stage, in order to achieve any possible changes in the performance of the candidates and the effectiveness of cognitive and traditional training on the participants’ writing attitude and self-efficacy questionnaires, which were used in the pre-test, were administered in posttest as well.

Given that the same questionnaires were used in both stages (pretest and posttest), a gap of two months was considered between pretest and posttest to control the effect of pretest on posttest.

In the final step, post-test data were analyzed using a two-way analysis of covariance (ANCOVA) procedure.

4.3. Data Collection Procedure

Data for the study were collected through the instruments administrated twice as pre and posttests. After assigning the participants randomly and equally into two experimental groups using test of normality, the researchers asked the groups to take the writing disposition tests including writing attitude and writing self-efficacy.

To collect data on the candidates’ writing attitude, the researchers asked the participants to answer a questionnaire developed by [Podsen \(1997\)](#) within 5 minutes. Considering the design, ease of questions, short options, and reverse coding of a number of questions, the researchers followed [Berry Sandra's formula \(2009\)](#) for easy and theoretical questions and allocated approximately one minute for four questions so that they could obtain valid data for analysis. The scale rated the lowest attitude with a score of 20 and the highest attitude with a score of 100. [Podsen \(1997\)](#) classified students’ writing attitude into three levels including low (20 – 39), moderate (40-68), and high (69-100). In analyzing the data, because of negative direction of some of the statements (1,4,5,6,11,14,15, and 19) in the questionnaire, the researchers did reverse coding to measure the negative items.

To collect data on the participants writing self-efficacy, the researchers asked the candidates to answer a questionnaire developed by [Prickel \(1994\)](#) within six minutes. Based on the scoring instruction, the highest score was 125 and the lowest one was 25. Since certain items expressed negative directions in the questionnaire, reverse coding was done before tallying the results of each item so that the researchers could indicate low and high values in the Likert scale.

4.4. Data Analysis

The statistical package for social Sciences (SPSS) was employed to analyze the data. To calculate the scores obtained in the pre and posttests and answer the questions proposed earlier, the researchers systematically applied statistical and logical techniques as follows:

Applying Kolmogorov-Smirnov (K-S) and Shapiro-Wilk, in the first step, we confirmed normality of data. In the next step, to interpret the data collected from the posttest scores of 120 candidates on the questionnaires including writing self-efficacy and attitude, and to find out meaningful differences between the scores, a two-way analysis of covariance procedure (ANCOVA) was run. Since each of the questions had two independent categorical variables, namely, method and gender, one

dependent continuous variable (posttest), and one dependent continuous covariate (pretest), the researchers decided to use a two-way ANCOVA. As [Pallant \(2016\)](#) put it, “two-way ANCOVA involves two independent categorical variables, one dependent continuous variable, and one or more continuous covariates” (p. 250). In addition, ANCOVA can increase the sensitivity of the *F* test and control the effect of other factors that may influence the variable of interest ([Tabachnick & Fidell, 2013](#)).

5. RESULTS

5.1. Investigation of the First Research Question

The first research question of the study was proposed to investigate the effects of treatment on the posttest scores of the male and female EFL learners writing attitude. Examining cognitive and traditional approach towards writing, the researchers attempted to explore the main effects (method and gender) on the EFL learners’ writing attitude.

There is a clear indication that the assumption of equality of variance has not been violated. As can be seen in Table 1, Levene’s test of equality is not significant, $F(3, 116) = 1.363, p = .478$, indicating that the assumption of homogeneity of variance for the test of writing attitude was not violated.

Table 1			
<i>Levene’s Test of Equality of Error Variances (Writing Attitude)</i>			
F	df1	df2	Sig.
1.363	3	116	.478
a. Design: Intercept + Pretest + Method + Sex + Method * Sex			

Scatterplots and the regression line slopes in Figure 1 display a positive relationship between the covariate and the posttest writing

attitude for each of the two experimental groups. As shown in Figure 1, the slopes of the lines for these two group are very similar,

showing that the relationship between covariate and posttest is very similar in these two groups. Thus, the assumption of linear relationship was not violated.

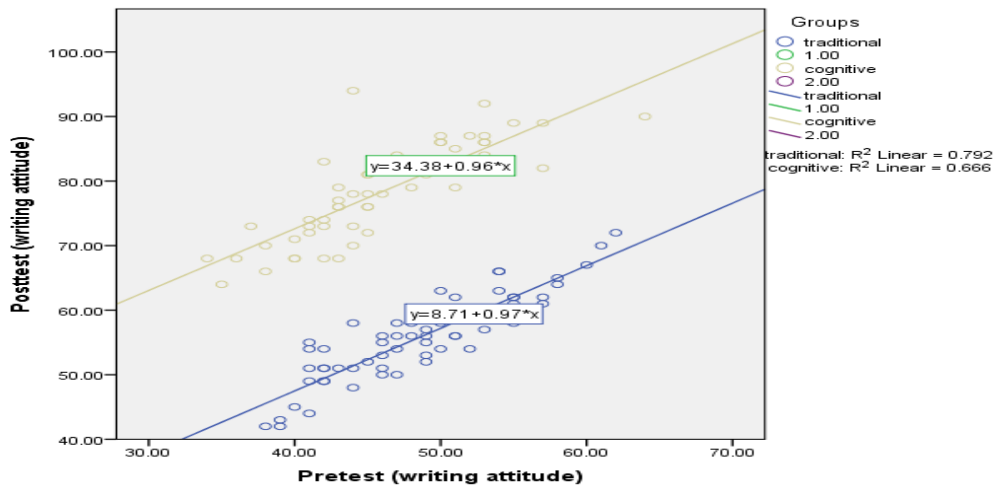


Figure 1. *Linearity Assumption for Writing Attitude*

As shown in Table 2, the two-way ANCOVA procedure revealed no main effects of sex, $F(1, 115) = 3.378, p = .069, \eta^2_p = .029$, and no interaction between sex and method, $F(1, 115) = .085, p = .771, \eta^2_p < .001$. Accordingly, there was not any interaction effect in our case and only one of

the interventions was statistically significant. Table 2, however, indicates that the Sig. value for the independent variable (IV) corresponding to method, $F(1, 115) = 1394.08, p < .001, \eta^2 = .924$ was

significant. Checking values of the effect size, we will find that the value of partial eta squared for method is .924, while it is only .029 for sex. According to Cohen's (1988) guidelines, the effect size for the former is very large, whereas for the latter is very small.

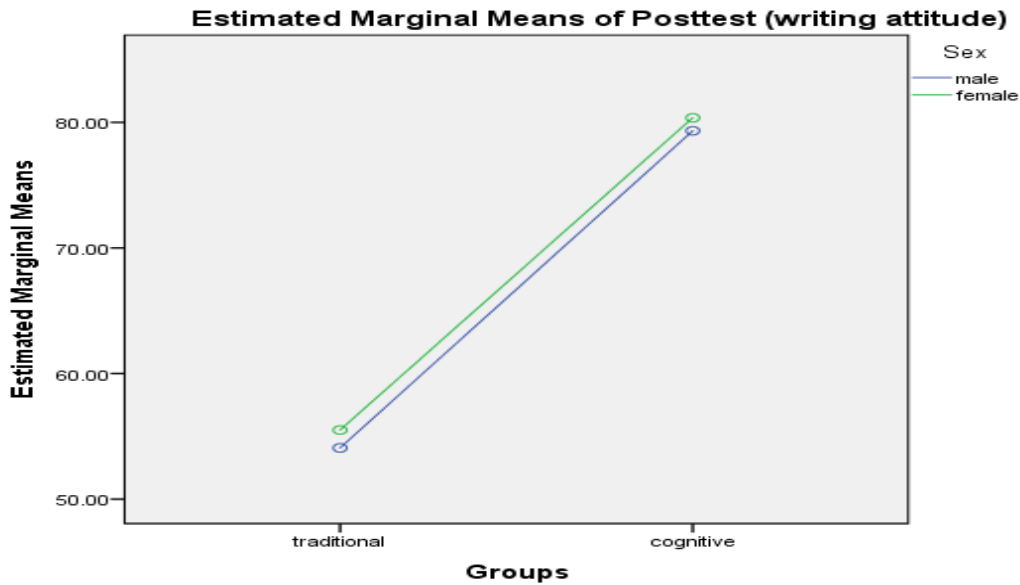
Table 2
Tests of Between-subjects Effects
Dependent Variable: (Writing Attitude)

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	20047.372a	4	5011.843	382.052	.000	.930
Intercept	816.438	1	816.438	62.237	.000	.351
Pretest	4124.272	1	4124.272	314.393	.000	.732
Method	18287.910	1	18287.910	1394.086	.000	.924
Sex	44.319	1	44.319	3.378	.069	.029
Method * Sex	1.112	1	1.112	.085	.771	.001
Error	1508.594	115	13.118			
Total	565340.000	120				

Corrected Total	21555.967	119				
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As shown in Table 3 the posttest mean scores for the traditional and cognitive groups are 54.79 and 79.84 respectively,

the posttest scores of the participants' writing attitude increased, compared to their pretest results. However, the cognitive group experienced a significant growth in their



Covariates appearing in the model are evaluated at the following values: Pretest (writing attitude) = 47.5333

while the mean score of writing attitude in pretest was 47.53. The results indicate that,

posttest scores after the treatment.

Table 3

Dependent Variable: Posttest Writing Attitude

Groups	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Traditional	54.790a	.471	53.857	55.723
Cognitive	79.844a	.471	78.911	80.777

a. Covariates appearing in the model are evaluated at the following values: pretest (writing attitude) = 47.5333.

Figure 2 displays the changes which occurred for both cognitive and traditional groups due to the treatments. As shown in Figure 2, compared to the pretest scores, the traditional group managed to increase their mean score of writing attitude test from about 47 to approximately 54 after the treatment. However, the cognitive group experienced a

significant growth in the posttest scores compared to those of the pretest. The participants in the cognitive group succeeded in improving the mean score from about 47 to approximately 80 after the treatment. This significant growth indicates that the treatment was markedly effective. The graph also shows that there was a slight difference between the scores obtained by male and

female participants in both groups. Therefore, it should be noted that male and female participants in both groups appeared almost the same.

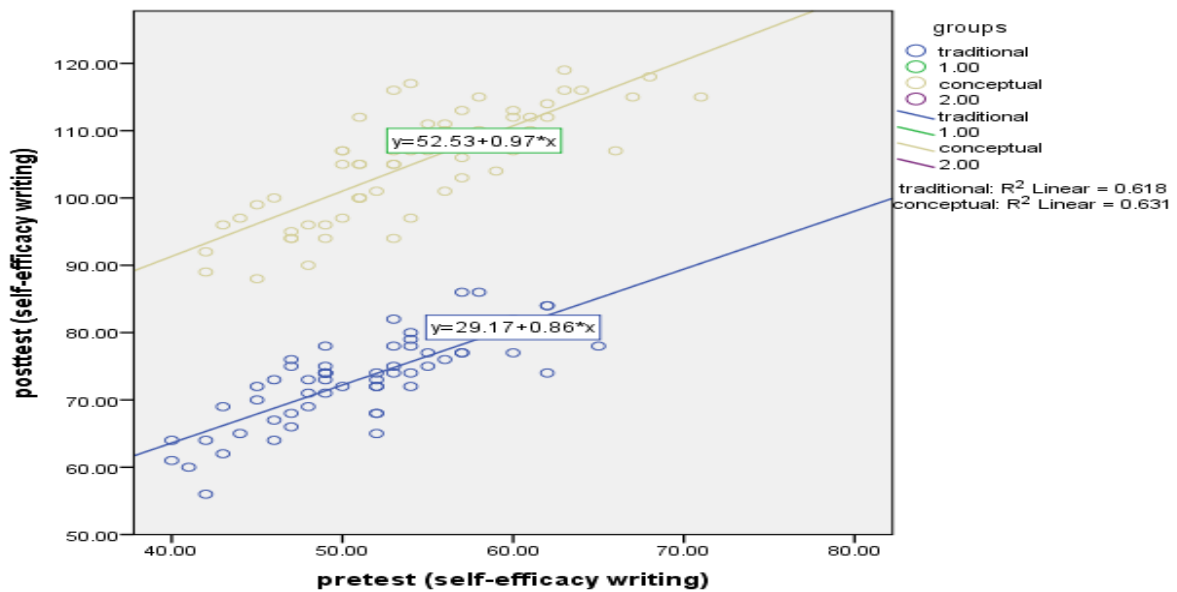
Figure 2. Relationship Between Pretest and Posttest Writing Attitude

5.2. Investigation of the Second Research Question

The second question examined the effects of two different interventions on the EFL

managing the other affective factors that influence writing. Analyzing the results obtained from the pre and posttests of writing self-efficacy, the researchers intended to explore the changes which occurred on the posttest writing self-efficacy scores for both traditional and cognitive groups.

As shown in Table 4, Leven’s test of equality, $F(3, 116) = 1.189, p = .138$, was not significant, indicating that variances were equal and the assumption of homogeneity of



learners’ writing self-efficacy. According to [Bruning, Dempsey, Kauffman, McKim, and Zumbrunn \(2013\)](#), high writing self-efficacy is necessary for generating ideas and

variance for writing self-efficacy was not violated.

F	df1	df2	Sig.
1.189	3	116	.138

a. Design: Intercept + Pretest + Method + Sex + Method * Sex

represents a positive relationship between the covariate and the results for both groups. The slopes of the lines for these two groups are very similar, showing that the relationship between covariate and posttest is very similar

As can be seen in Figure 3, the scatterplot diagram and the slope of the regression

in the groups. Thus, the assumption of linear relationship was not violated in writing self-efficacy test.

Figure 3. *Linearity Assumption for Writing Self-efficacy*

Table 5 displayed no main effects of sex, $F(1, 115) = 3.58, p = .61, \eta^2 = .030$, and no interaction between sex and method, $F(1, 115) = .419, p = .519, \eta^2 = .004$. As shown, Table 5 indicates that the predicted main

effect of method was significant with large effect size $F(1, 115) = 1182.96, p < .001, \eta^2 = .911$. Based on Cohen's (1988) guidelines, the main effect for method explains 91% of the variance, whereas the main effect for sex explains only 3% of the variance.

Table 5
Tests of Between-subjects Effects
Dependent Variable: (Writing Self-efficacy)

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	34580.868a	4	8645.217	428.849	.000	.937
Intercept	2645.326	1	2645.326	131.222	.000	.533
Pretest	4021.635	1	4021.635	199.495	.000	.634
Method	23847.516	1	23847.516	1182.964	.000	.911
Sex	72.317	1	72.317	3.587	.061	.030
Method * Sex	8.444	1	8.444	.419	.519	.004
Error	2318.298	115	20.159			
Total	989200.000	120				
Corrected Total	36899.167	119				

As shown in Table 6, the posttest mean scores for the traditional and cognitive groups are 74.56 and 103.60 respectively. The results indicate that posttest scores of both traditional and cognitive groups

increased, compared to the pretest. The posttest scores of the traditional group increased by approximately 22 points from 52 to 74, while the cognitive group managed to double its mean score in the posttest.

Table 6
Dependent Variable: Posttest Writing self-efficacy

Groups	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Traditional	74.563a	.588	73.397	75.728
Conceptual	103.604a	.588	102.438	104.769

a. Covariates appearing in the model are evaluated at the following values: pretest (writing self-efficacy) = 52.6000.

Figure 4 clearly shows that male and female participants in both groups managed to significantly increase their posttest scores, compared to their pretest results. The changes which occurred in the posttest results of the cognitive group indicate that the treatment was significantly effective for both male and

female participants of this group. However, it should be noted that male and female participants in both cognitive and traditional groups appeared almost the same.

Figure 4. *Relationship between Pretest and Posttest Writing Self-efficacy*

52.6000

6. DISCUSSION

Detailed analysis of the findings using SPSS statistics demonstrated the effect of interventions on the participants' writing dispositions. The analyses clearly revealed the significant impact of conceptual metaphor as a powerful tool on enhancing EFL learners' writing attitude and writing self-efficacy. Comparing the posttest results of both cognitive and traditional groups, the researchers came up with a significant difference between the performances of the two groups. The scores obtained in the posttests showed that the cognitive group outperformed the traditional group.

The results suggested that prior to the interventions, the participants' attitude towards writing was moderate, while after the treatments, compared to the results obtained in the pretest, both groups managed to improve their posttest scores. However, the changes were not significant for the participants in the traditional group. The mean score of the traditional group in the posttest was 54.79 which did not change significantly compared to the mean score of 47.53 in the pretest. However, the cognitive group experienced a significant growth in their posttest scores after the treatment and changed their level of attitude from moderate

to high. The results showed that the mean score of the cognitive group in the posttest almost doubled and reached about 80 compared to the mean of 47 in the pretest.

Overall, the participants with lower, or moderate, attitude towards writing were distinguished to find writing a stressful task. This result is in line with that of [Setyowati and Sukmawan \(2016\)](#), who concluded that despite the fact that none of the students were below the moderate level in writing, they found writing difficult and stressful. Analyzing the questionnaires, we found that the cognitive group were more interested in writing and looked forward to seeing their thoughts onto papers. This finding is consistent with that of [Lestari and Sony \(2016\)](#), who found that students with a negative attitude find writing difficult and stressful, while students with positive attitude perceived writing an interesting and challenging task for generating ideas.

Analysis of the results using two-way ANCOVA statistics showed that the cognitive training was more effective than the traditional instruction on improving the EFL learners' writing self-efficacy and writing attitude. Manipulating their experiences into flexible and sophisticated metaphorical expressions, the cognitive group students managed to establish an

interaction between their conceptual system and the world out of their mind. Using defamiliarization strategy, the cognitive group came up with idea generation, meaning construction, aestheticism, and meaningful learning (see [Authors, 2021](#)). Defamiliarization, although indicative of a semantic deconstruction, enhanced the cognitive students' pragmatic inference and allowed them to explore the internal meanings of different metaphorical expressions. Conceptualizing one domain of experience in terms of another domain helped the cognitive group to think critically and respond reflectively to the writing problem. Such a hermeneutic learning enabled the cognitive group to produce the expressions that they had never produced. Viewing technology in terms of a physical, concert, and tangible entity, the cognitive group managed to map their thoughts, emotions, and feelings onto language and make their texts more explicit. It can be concluded that their ability in producing novel ideas had direct effect on their writing dispositions. This finding sheds light on the notion that writing is a cognitive process ([Flower & Hayes, 1981](#); [Graham & Perin, 2007](#)).

The results of ANCOVA analysis also revealed no interaction between male and female participants. Although female students performed better than males in both groups, the difference proved negligible. Analysis of the results showed that male cognitive functions were comparable to female cognitive functions. This might be due to the similar experiences that male and female students acquired about the world around them. If, according to [Lakoff and Johnson \(1980\)](#), our conceptual system governs how we think and act, then the conceptual

metaphors produced by the participants can stem from their experiences about our real-life situations. Since our experience and interaction with the world around us is the main basis for the formation of conceptual metaphor, understanding conceptual metaphors can be equal for male and female participants. In addition, experiences are essentially understandable as well as communicable for the members of a community who inherit the same culture. Thus, the participants' conceptual mapping and schema structure could be almost identical for male and female students conceptualizing one domain of experience in terms of another domain. Thus, our study supports the fact that conceptual mapping emphasizes cognitive functions for members of a community in a similar way. This finding supports the results obtained by other researchers (e.g., [Cunningham, 2009](#); [Paker & Erarslan, 2015](#)), who concluded that gender had no influence on the attitude of students towards writing. This finding is also in accordance with the outcome of [Hashemnejad et al. \(2014\)](#) and [Khojasteh et al. \(2016\)](#), who found no significant correlation between writing self-efficacy beliefs and writing performance across gender.

7. CONCLUSION AND IMPLICATIONS

The results of the present study provide evidence for implementing conceptual metaphors as a cognitive solution to the challenges of writing in English.

Findings indicated that better writing dispositions (writing self-efficacy and writing attitude) occurs when learners are less apprehensive of writing in English and have a higher attitude and self-efficacy

towards writing. The results indicate that if in cognitive education, conceptual mapping and de-familiarization strategies are applied with the aim of access to ideation techniques, it can significantly affect EFL learners' writing dispositions.

Given that students' self-efficacy beliefs are strong predictors of performance ([Bandura, 1997](#); [Pajares, Johnson, & Usher., 2007](#)), EFL learners with higher self-efficacy are more likely to perform well and have high writing ability. Accordingly, it can be concluded that providing an acceptable text requires appropriate writing strategies with the aim of increasing learners' self-efficacy and attitudes toward writing.

Considering the multiplicity of conceptual metaphors in the first language and its application in discourse by native speakers ([Afrashi & Vadipoor, 2011](#); [Sanei et al., 2020](#)), findings of the present study can be of practical and theoretical importance to the EFL writing teachers. Accordingly, acquiring metaphorical competence and conceptual mapping as two components of L1 skill are suggested to be included in L2 writing courses. Using conceptual metaphors as task environment, the study presents a powerful writing technique which is closely related to successful writing performance. The results of the study underline the importance of learners' dispositions, which strongly influence all stages of the writing process. Therefore, the role of teachers in presenting practical educational methods for solving misconceptions and improving motivation ([Rahimi, 2020](#)) is of high importance. Lack of proper writing strategies, prescribing modeled texts, and restricting learners from

expressing their own ideas are some of the deterrents that make EFL learners have low level of writing self-efficacy and develop negative attitude towards writing. Accordingly, teaching the conceptual mapping, which is absolutely based on the experiences and the world around us, teachers can familiarize EFL learners with one of the strongest sources of ideation namely conceptual metaphors, and reinforce their writing dispositions and skills.

Although the study presented a strong design and came up with statistical results, there were some limitations in this study that need to be taken into consideration when interpreting the findings. First, the sample size was relatively small and was limited to Iranian EFL BA students at a particular language center, so generalizability of the results could be affected. Second, in the case of writing dispositions, the data were limited to questionnaires. Although participants were first scheduled to sit the interview test, this section was ignored due to COVID-19 epidemic. Interview data could provide in-depth insights into English writing challenges. Third, participants did not have any background information about semantic deconstruction, so it was a hard task to change their approach from traditional to the contemporary one and convince them meanings given to objects or entities are not fixed and inherent. Writers can give different meanings to objects using context and generate many novel expressions They did not intend to abandon their old-fashioned writing habits because they were used to imitating from the text "written so far".

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