Impact of Neuro-linguistic Programming (NLP) on EFL Learners' Writing Achievement and Critical Thinking

Hadi Salehi* and Sara Karimi
English Department, Najafabad Branch, Islamic Azad University, Najafabad, Iran
*Corresponding Author (hadisalehi1358@yahoo.com)

Abstract

This study was an attempt to find out the impact of Neuro-linguistic programming (NLP) on EFL learners' writing achievement and critical thinking. To fulfill the purpose of this study, 60 EFL learners of institute in Shahinshahr were selected from among a total number of 100 learners based on their performance on the Preliminary English Test (PET). After homogenizing, they filled out the critical questionnaire developed by Honey (2000) and then they were non-randomly divided into two groups, experimental and control, each consisting of thirty EFL learners. Experimental group members were instructed based on NLP and their instruction was based on five senses (sight, hearing, touch, smell, and taste). The control group members had a routine teaching process in which no NLP methods was imposed in this group. Both groups were female and their age range was between 15-20 years old. After 16 sessions, writing posttest and critical thinking questionnaire were given to two groups to evaluate whether there is any significant difference between these two groups or not. The design of the current study was quasi-experimental posttest only design. The obtained data were analyzed both descriptively and inferentially. For descriptive statistics, mean and standard deviation were obtained and the type of the test applied for this study was independent sample t-test. The statistical analyses revealed that there was significant statistical difference between the two groups' mean scores on the writing posttest, while there was no significant statistical difference between the two groups' mean scores on the critical thinking posttest. As a result, it can be argued that NLP had significant impact on learners' writing skill, but NLP had no significant impact on learners' critical thinking level.

Key words: Neuro-linguistic programming (NLP), Writing achievement, Critical thinking

1. Introduction

Writing is considered as one of the most difficult skills in second/foreign language learning, and the important point is that it is not considered as something usual, but as an essential part of nowadays life due to the expansion of different forms of communication through writing such as messages, e-mails, letters, etc. "The difficulty lies not only on generating and organizing ideas, but also in translating these ideas into readable texts" (Marashi &Jafari, 2012, p. 20).

Writing as an important component in EFL is not given enough attention by both learners and teachers in some institutions in Iran. The researcher of the present study intended to have a kind of preparation in the writing classes to involve the

students to progress in this skill. Students do not enjoy writing classes and classes are boring for them, so motivating them is not an easy job. Stariba, Walburg and Wallace (2004) also point to the difficulty of writing skill and claim that, composing is the last result of a few separate acts that are enormously testing to learn at the same time.

The second important problem which affects the learning process is how learners experience the world. Human beings experience the world through their five senses, which are called representational systems in NLP. Representational systems include: Visual (we look and see), Auditory (we hear and listen), Kinesthetic (we feel externally, we feel internally and we feel movement), Olfactory (we smell things) and Gustatory (we taste) (Revell and Norman, 1997, p. 31). These concepts that are mentioned above reveal that students have different types of learning; hence, teachers should know and recognize that in order to be effective in teaching a foreign language, there are various types of learners, and they should also apply different strategies and techniques to provide learners with effective ways of learning.

Considering the importance and difficulty of obtaining writing skill, choosing NLP as area of research, theory and practice in education and also recognizing the psychologies need of learners may be two ways by which the writing ability of language learners could be enhanced, since according to Dornyei (2005), students can learn better if contents are presented to them through a way that matches their cognitive styles.

Strong writing skills may enhance students' chances for success (Alexander, 2008). In discussing the importance of writing to learning, Suleiman (2000) asserted that "writing is a central element of language, any reading and language arts program must consider the multidimensional nature of writing in instructional practices, assessment procedures, and language development." (p. 155). Khansir (2012) added that:

"Learning of writing is one of the most important skills that second language learners need to develop their ability to communicate ideas and information effectively in target language. Writing can be recognized as an integral part of language learning process in ELT classroom"(p.282).

Critical thinking is also another important issue in education and the development of critical thinking skills should be one of the primary goals for educators at all levels (Al-Fadhli & Khalfan, 2009; Gelder, 2005: Guiller, Durndell, & Ross, 2008). Gelder (2005) asserts that improving students' critical thinking skills can be considered a universal goal of all educational endeavors. Chiu (2009) described critical thinking as "a skill of potential value for those who should objectively evaluate what they can and do dredge up from the ocean of online information currently available on the Internet"(p. 43).

Writing is a time when students produce their own texts which are based on their previously acquired skills and knowledge (Davidson, 2007). The study of L2 writing in TESOL has its origin in the studies of first language (L1) writing (Hyland, 2003); however, the complexity of L2 writing goes far beyond the L1 territory. Kroll (2003)

described the domain of L2 writing as follows: "Second language writing is uniquely characterizable specialty area that has ties to but does not completely overlap with the fields of first language writing instruction, second language acquisition, or second language pedagogy" (p. 11).

According to Brown (2000) and Mitchell and Myles (2004), different theories in language learning have been studied through a variety of perspectives, many of which have shown that understanding significant elements in multiple and diverse perspectives, not in a single factor, is very critical. One of the approaches to communication, learning and personal development that has received much popularity has been NLP; it appears to be utilized to a large extent in education today whereas academic world is still silent regarding this subject (Tosey & Mathinson, 2010).

Richards and Rodgers (2003, p.125) defined NLP as "a training philosophy and a set of training techniques" while Antic (2006) introduced NLP as a kind of teaching method that is made up of a set of techniques for better language teaching and persuading people that they have enough power to control their minds and lives and also others' lives for better result.

O' Connor (2001) doubts if one may find a single, clear-cut definition for NLP; "You cannot pin NLP down to a single definition. There are many explanations of NLP, each like a beam of light shining from a different angle, picking out the whole shape and shadow of the subject" (p. 5). He further mentioned that "NLP is about your experience − how you know the world and everyone in it, how you do what you do, how you create your own reality, with its heights and depths" (p.3).

Likewise, Carroll (2010) considers defining NLP as a challenge believing that "NLP is a broad field that has been developed from many disciplines including hypnotherapy, linguistics, psychology, systems theory, and systems for understanding the body" (p. 1).

According to Falk (1978), " in order to understand foreign language learning, it is necessary to examine not only the linguistic properties of the language, but also the physical, psychological and sociological characteristics of the learner" (p. 353). Raimes (1983) stated that, "the close relationship between writing and thinking, makes writing a valuable part of any language course" (p. 6).

Williams (2005) believes that "critical thinking is important in all academic disciplines within democratic education, but it is indispensable in the field of teacher education" (p.164). According to Paul and Elder (2008) critical thinking is " that mode of thinking about any subject, content or problem in which the thinker improves the quality of his or her thinking by skillfully taking charge of the structures inherent in thinking and imposing intellectual standards upon them" (p.1).

Taking into account the role of all mentioned factors, each of these attributes makes a piece of this research. The value and importance of NLP techniques in the classrooms on the one hand and their impact on variables on the other hand can equip us with a more comprehensive approach toward teaching language in the classrooms.

As the result of the existing researches explained above, in this study, the researcher decided to explore the impact of NLP on EFL learners' writing achievement and critical thinking. Conclusively, the main purpose of this study was to investigate the impact of NLP on EFL learners writing achievement and critical thinking.

The researcher of this study hopes that the findings of this research would be beneficial mainly for teachers to understand the necessity of students' different psychologies need, awareness for choosing the appropriate way of teaching and also to take into consideration that not all learners benefit from the same modality of teaching.

2. Literature Review

Since NLP addresses the learning styles of learners, instructors must be fully aware of certain students' physical, cognitive, linguistic, and behavioral elements students displayed while processing and learning information through the five senses. Regarding the requirements of this research study, the review of literature was allotted to the study of the following general topics.

2.1 Critical Thinking

Dewey coined the term critical thinking in the 1930s, defining it as" active, persistent, and careful consideration of any belief or supposed from of knowledge in the light of the grounds that support it and the further conclusions to which it tends" (Dewey, 1933, p. 9). Also, according to Paul and Elder (2008), critical thinking is "the intellectually disciplined process of actively and skillfully, conceptualizing, applying, analyzing, synthesizing, and evaluating information gathered from, or generated by, observation, experience, reflection, reasoning or communication, as a guide to belief and action"(p.52).

According to Mok (2010, p.262), critical thinking consists of two important aspects; one aspect is about space of learning and the other is about classroom teaching, in terms of space of learning, it is important to organize learning in such a way that makes students actively engaged in learning. To this end, the critical thinking process should be provided for students to distinguish the critical features of different critical attitudes, in terms of classroom teaching, the effective use of teacher questions, and participation of students in authentic discussions can engage students in meaningful critical thinking processes. Moreover, Hale (2008) stated that critical thinking can penetrate every aspect of human life if it is substantively conceived and engaged. He emphasized the importance of critical thinking in education and claimed that critical thinking and education are inter-related and inseparable.

2.2 Neuro-Linguistic Programming

Bandler invented the term "Neuro-Linguistic Programming" in the 1970s. He says: "Neuro-Linguistic Programming: "a model of interpersonal communication chiefly concerned with the relationship between successful patterns of behavior and the subjective experiences (esp. patterns of thought) underlying them" and "a system of alternative therapy based on this which seeks to educate people in self-awareness and effective communication, and to change their patterns of mental and emotional behavior"(Bandler, 1970, p.86).

Satrajit (2010) presents a simple view of NLP, he contends that Neuro is about the neurological system and also, NLP is based on the idea that humans experience the world through their senses and translate sensory information into thought processes, both conscious and unconscious, thought processes activate the neurological system, which affects the physiology, emotions, and behavior of the person, while; according to Satrajit (2010), Linguistics refers to the way human beings use language to make

sense of the world, capture and conceptualize experience, and communicate that experience to others, another words, in NLP, linguistics is the study of how the words humans utter influence their experience and finally Satrajit (2010) stated that, Programming draws heavily from the learning theory and addresses how humans code or mentally represent experience. Satrajit (2010) also pointed that the personal programming consists of the internal processes and strategies (thinking patterns) that a person uses to make decisions, solve problems, learn, evaluate, and get results.

NLP which "refers to a training philosophy and a set of training techniques" (Revell & Norman, 1999, p.125), is comprised of three major components: neurology, language and programming. The neurological system regulates how our bodies function, language determines how we interface and communicate with other people, and our programming determines the kinds of models we create of our world by training ourselves to think, speak, and act in positive ways so as to enhance our potential to achieve success (Dilts, 1999).

2.3 Writing Achievement

The development of writing is relatively a recent phenomenon. It is primarily the progression of explaining and expressing languages by using symbols, letters, or other marks. Accordingly, Harmer (2007) stated that: "human activity of writing is a fairly recent development in the evolution of man and women… some of the earliest writing found so far dates from about 5,5000 years ago" (p.1).

In relation to Harmer's point of view, Yule (2010) asserted that "human beings started to write some 20,000 to 25,000 years ago" (p.212). According to Al-Hazmi (2006), research into EFL writing methodology since the 1980's has overpoweringly supported the process approach to writing. As Asiri (2003, cited in Al-Hazmi, 2006) states:

> "Modern methodologies of teaching writing in the English as a second language (ESL) classroom emphasize co-operative learning between teachers and learners, and emphasize that learners should be given more opportunities to think critically, to initiate learning, and to express themselves" (p.37).

Kroll describes the domain of L2 writing as follows: "Second language writing is uniquely characterizable speciality area that has ties to but does not completely overlap with the fields of first language writing instruction, second language acquisition, or second language pedagogy" (Kroll, 2003, p. 11).

2.4 Previous Studies

The issue of NLP has been the interest of the researchers in the field of language teaching. Many different studies have been carried out to test the impact of NLP on different aspects of teaching.

The research by Carey, Churches, Hutchinson, Jones and Tosey (2010) is on NLP and learning: teacher case studies on the impact of NLP in education. The research reported on evidence from 24 teacher-led action research case studies and the result showed that all of the case studies had significant impact on teachers' development. It implied that NLP had many positive impacts on pupil learning outcomes and its strategies can be used in schools.

Another study conducted by Churches and West-Burnham (2010) is about the implications of NLP for personalization and the children's agenda in England with

the conclusion that within this theory the students and teachers both had more confidence in the classroom; learners could express their feeling more easily and were more motivated. Learners were able to receive a higher quality of learning.

West-Burnham et.al (2010, as cited in Allan, 2013) examined the effect of NLP on learning of teachers and pupils and showed the positive effect of NLP on their confidence to use NLP in the school environment, thereby continuing the 'multiplier effect'.

Another research in Lebanon Jose Hejase (2015) worked about the NLP: awareness and practice in UAE. The aim of this paper is twofold: to assess NLP patterns and behaviors as practiced by a sample of UAE employees and managers in order to shed light on current practices in the UAE workplace; and, to assess the impact of NLP on respondents' behavior and its consequences on the organization's objectives. Accordingly, a quantitative analysis is applied using a survey questionnaire. Employees and managers from different areas and work environments constitute the sample population. Outcomes of the research are expected to define the workplace environment by defining the dynamics of UAE employees and managers that are believed to play a significant role in contributing to the assessment of the organization's health.

In Iran, Mousavi (2010) worked on the impact of NLP on orthographic memorization (spelling) and concluded that NLP has a significant impact on spelling. A research done by Pishghadam, Shayesteh, and Shapoori (2011) on validation of a NLP scale and its relation with teacher success in high schools showed that NLP had significant impact on teacher's success.

Another research in Iran done by Pishghadam, Shapoori and Shayesteh (2011) examined the role of NLP in teacher success and to investigate its relationship with teaching experience, gender, and degree in formal (public high schools) and informal (private language institutes) settings. To this end, 166 teachers and 1200 students were selected. The results of the correlational analysis and t-tests exhibited that except for gender, there was association between teacher success, teaching experience, degree, and NLP. Finally, the results were discussed in the context of language learning and some suggestions were made.

Another research by Pishghadam and Shayesteh (2011) worked on NLP for language teachers: revalidation of an NLP Scale. In their research they revalidated the NLP scale through rash-rating scale model (RSM) to underscore its importance in language teaching. The 5-category rating scale did not function satisfactorily.

Another research done by Khabiri and Farahani (2014) was on the comparative effect of NLP, critical thinking and a combination of both on EFL learner's reading comprehension and vocabulary retention. The result of their study showed that NLP and critical thinking had no significant impact on vocabulary retention but critical thinking skills made a change in the way they think and NLP strategies provided the learners with a different point of view about their experience from the world, and an individual way to achieve their aims.

Another research done by Hosseinzadeh and Bradaran (2015) worked about the relationship between English Language Teachers' autonomy and their NLP. In this effort, assumptions of linearity of the relationship between the variables and normality of the data were verified and, as a result, Spearman's rho was employed. The findings of an in-depth data analysis revealed that the null hypothesis of the study was to a large

extent supported. That is to say, exclusive of general autonomy which was positively and significantly related to NLP, other sub-categories of autonomy- Curriculum and Total, were not correlated significantly with NLP.

Another research done by Alamdar and Karbalaei (2015) worked about the relationship between NLP and anxiety and self-esteem among Iranian intermediate EFL learners. The results of this study indicated that the NLP treatment did not have any significant effect on language anxiety for the experimental group, but NLP can help experimental group to increase their self-esteem. The perceptions of experimental group were completely positive. These findings explain that NLP can have some effects on learning EFL.

Another research worked by Pourbahreini (2015) was about the effect of NLP technique on enhancing grammatical knowledge of Iranian EFL learners at intermediate level. A paired-sample t-test for the experimental group showed that they have significantly improved their knowledge of the English passive sentences. Also the independent-samples test between the experimental and the control group showed significant gain for the experimental group. One can conclude that NLP technique might enable the EFL teacher to teach structure or grammar more efficiently to Iranian EFL learners. As a result we can say that NLP can play a significant role on enhancing the grammatical knowledge of EFL learners at intermediate level.

Another research worked by Moharamkhani, Karimi and Ahmadi (2016) was about the impact of NLP on EFL learners' vocabulary achievement. To analyze the data, ANCOVA was run and the results showed that the experimental group outperformed the control group in vocabulary posttest. In other words, NLP had significant impact on EFL learners' vocabulary achievement.

This study was based on the following objectives:

i. To find the impact of NLP on EFL learners' writing achievement.

ii. To find the impact of NLP on EFL learners' critical thinking.

Taking into account the issues mentioned above, the current study was an attempt to answer the following questions:

Q1: Does NLP have statistically any significant impact on EFL learners' writing achievement?

Q2: Does NLP have statistically any significant impact on EFL learners' critical thinking?

3. Methodology

As discussed earlier, the purpose of this study was to investigate the impact of NLP on EFL learners writing achievement and critical thinking.

The participant section details the population from which the sample was selected and also those who participated in the pilot and the main study. Next, the instruments and materials section details all the tests and materials used in this study.

Subsequently, the procedure section discusses the steps taken in this research followed by design section which depicts the general plan of this study, ending with the section which explains the statistical procedures the researcher went through to answer the research questions and hypotheses.

3.1 Participants

To accomplish the purpose of the study, 100 female intermediate EFL learners with the age range of 15-20 studying at institute located in Shahinshahr participated in this research. In order to select learners who were homogenous in terms of language proficiency, Preliminary English Test was administrated. It is worth to mention that the sample PET first was run to 30 students in the same institute with similar characteristics to the participants of this study, and after doing item analyses and also calculating the reliability of the test, PET was administered to the main candidates. After administrating the PET, 60 learners whose scores were between one standard deviation above and below the mean were chosen as the target sample of the study. In the next step, they filled out the critical thinking questionnaire and then they were divided in to two groups; one as experimental and the other as control group. The experimental group members accessed to the Neuro-linguistic techniques and the control group used of routine teaching process.

3.2 Instruments and Materials

To fulfill the purpose of this study, the present researchers used the instructional materials and tests as described below:

3.2.1 A Preliminary English Test

PET is part of a group of examinations developed by Cambridge ESOL called Cambridge Main Suite. The Main Suite consists of five examinations which have similar characteristics but are designed for different levels of English language ability. Within the five levels, PET is at level B1 (Threshold) in the Council of Europe's Common European Framework of Reference for Languages: Learning, teaching, and assessment. It has also been accredited by the Qualifications and Curriculum Authority in the UK as an Entry Level 3 ESOL certificate in the National Qualifications Framework.

The Preliminary English Test (PET) adopted from *PET Practice Tests* by Jenny Quintana (2004), Oxford University Press, was administered to homogenize the participants of this study at the outset of the study. The original package consisted of two papers Reading, Writing and Listening and one speaking section at the end but it is worth mentioning that the speaking part had not been administered due to time restriction.

The first paper consisted of reading and writing questions with 90 minutes as the total time, it was administered one week after the administration of critical thinking questionnaire. The reading section focused on five parts with 35 questions and the writing section focused on two parts with 6 questions. The second paper consisted of listening questions, and students were supposed to answer these questions in 30 minutes plus six minutes transfer time. This section focused on four parts with 25 questions.

Intermediate participants were selected based on their scores which fell one standard deviation above and below the mean of their PET scores. It must also be mentioned that this test had been piloted before among a sample group of 30 learners

same as the target group with the reliability turning out to be 0.87. Item analyses also led to the deletion of no items.

3.2.2 Writing Posttest

To fulfill the purpose of the study, the researcher chooses the title from "Interchange 3" by Richards, Hull and Proctor (2007) which was used as the material for treatment. This part contains two questions in which the learners were supposed to write about 100 words. The needed time for answering the two questions of this part was approximately 60 minutes. The tests were also piloted on 30 participants who had the same characteristics of the main participants of the study.

3.2.3 Critical Thinking Questionnaire

The Critical Thinking Questionnaire intends to explore what a person might or might not do when thinking critically about a subject. Developed by Honey (2000), the questionnaire aims at evaluating the three main skills of comprehension, analysis and evaluation of the participants. The translated version of the test by Naeini (2005) was used in order to make sure of the participants' full comprehension.

It is a Likert-type questionnaire with 30 items that allows researchers to investigate the learners' ability in note-taking, summarizing, questioning, paraphrasing, researching, discussing, classifying, outlining, comparing and contrasting, distinguishing, synthesizing, inductive and deductive reasoning.

The participants were asked to rate the frequency of each category they use on a 5- point Liker-scale, ranging from never (1 point), seldom (2 points), sometimes (3 points), often (4 points), to always (5 points). Therefore, the participants' scores will range within 30 to 150. This questionnaire was piloted at the outset of the study with a sample group of 30 learners and the reliability was found to be 0.725.

3.2.4 The Course Book

The main textbook that was used at this level was "Interchange 3" third edition by Richards, Hull and Proctor (2007) that was used as their course book. The mentioned textbook consists of different parts with emphasis on all four skills (listening, speaking, reading, and writing), and also sub-skills (pronunciation, grammar, and vocabulary). During this study, unites 5-8 were taught according to the course objectives. It has a workbook too that was practiced by the learners and checked by the researcher every session, and a CD that was played for parts such as conversation, listening parts, pronunciation, and grammar.

3.2.5 Story Book

Oxford Bookworms Story books are the story-telling series used in institute located in ShahinShahr. These books include original and adapted texts in seven carefully graded language stages, which take learners from beginner to advanced level. Each book of the Oxford Bookworms Library contains an introduction to the story, notes about the author, a glossary and activities and vocabulary, syntax, structure, and information load are carefully controlled in this series.

In this study, "Robinson Crusoe" story book by Defoe (1993) was used. This story book contains nine sub-titles, which the teacher and the learners usually worked on each section every session.

3.3 Procedure

In order to achieve the purpose of the research, the following procedure was carried out:

The researcher first administered the sample PET among a group of 30 EFL learners with similar characteristics of the representative sample in order to make sure that the test had appropriate items and test characteristics. Moreover, Cronbach's Alpha was also run prior to the main administration to ensure the reliability of the test. The researcher scored writing rater according to PET rating scales. The inter-rater reliability was computed and the average score given by the raters was considered as the participants' final score on writing part of PET.

After piloting PET, it was administered to 100 intermediate level students in institute located in Shahinshahr who were selected randomly and 60 students whose score fell between one standard deviation above and below the mean were chosen as the final participants of the study. In order to investigate the null hypotheses of the research study, the next step was that the researcher distributed the critical thinking questionnaire among these 60 participants and let them fill it out. Participants were non- randomly assigned into control and experimental groups. The duration of the treatment was 16 sessions in which one session was for making students familiar with NLP techniques and the last section devoted to administering the posttest and questionnaire. Each session lasted for 90 minutes.

The process in each group is discussed as follows:

The control group receives the traditional writing instruction. The teacher provided them with some information about the sentence structure and explicit instructions on the outline and general format of writing texts. They were taught to specify and develop the thesis statement, body paragraphs, conclusion, or different parts of writing texts. They were also, asked to study one section of their story book at home for every session, and write a brief summary of those parts. Next section they one by one explain their summary and the instructor examined each revised draft and gave some more feedback, when necessary and finally assigned a score to each summary.

In the experimental group, however, the same set of topics in writing lessons in control group were instructed based on NLP. Participants in the experimental group were provided with some information about the nature and goal of NLP techniques. In another words, in the first step, a test of VAK (sensory styles (Visual/Auditory/Kinesthetic)) was administered among participants and the results were explained. In the next step, an explanation of how the human beings experience the world, presenting Visual, Auditory, Kinesthetic, Olfactory, and Gustatory senses was given to the class, besides interpreting each participant's learning style according to the results of her VAK test. Participants showed a great enthusiasm when they recognized the channel from which they would be better learners.

Then participants received the writing instruction by Neuro- linguistic techniques. The teacher provided them with some explicit instructions on the outline and general format of writing texts by visual and auditory ways. They were taught to specify and develop the body paragraphs, conclusion, or different parts of writing texts.

Now that the participants knew their sensory style according their VAK test results, they were asked to study one section of their story book at home for every session, and write a brief summary of those parts by using their own style. For example, one who was Visual tried to use visual aids in writing the summary, such as visualizing the material she was reading, covering any visual clue, boldness of words, Italic forms, headings, etc and then writing the summary of text. Or one, who was Auditory, could

read the text aloud to herself, or listen to the audio material of it and then write a summary of it. Bodily Kinesthetic ones were asked to do activities of moving their hands, writing down information. They were also allowed to stand up and walk for some seconds if they would feel better, or even role-play the text for themselves.

Next session, learners one by one explain their summary and the instructor examined each revised draft and gave some more feedback, when necessary. At the end of the course, the participants in both control and experimental groups were given the writing posttest questions and critical thinking questionnaire by Honey (2000), to measure the impact of NLP techniques on EFL learners' writing achievement and critical thinking.

4. Results and Findings
This study attempted to investigate the impact of NLP on EFL learners' writing achievement and critical thinking. In doing so, a series of statistical analysis were conducted.

4.1 The Homogeneity Test
After piloting the PET test and the two posttests and estimating their reliability, the PET test was administered to 100 students of the study and those who scored one standard deviation above and below the mean were selected as the main participants of the study. They were randomly put into experimental and control groups. The following table shows the descriptive statistics.

Table 1.
Descriptive Statistics of PET Main Administration

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewwness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std.Error
PET	100	41.50	33.50	75.00	57.0667	9.94231	98.849	-.250	.254
Valid N (listwise)	100								

As can be seen from the Table 1, the mean turned out to be 57.06 and the standard deviation was 9.94. Consequently, among the 100 original students, 60 students whose PET scores fell within the range of 47 and 75 were chosen as the homogenized sample of the study.

4.2 Analysis of the First Research Question
Research question one was an attempt to investigate the impact of NLP on improving EFL learners' writing achievement. In doing so, the two groups' mean scores on pretest and posttest were submitted to independent samples-t-test. Results are presented in the following table.

4.2.1 Results of the Writing Pretest
In the following section, results of writing pretest including descriptive statistics and inferential statistics are presented to check whether the groups were homogenous on the onset of the study.

Table 2.

Descriptive Statistics of Control and Experimental Groups' Mean Scores on Writing Pretest

	Groups	N	Mean	SD	SEM
writing1 (pretest)	Control	30	17.5 3	3.36	.613
	experimental	30	18.6 0	2.72	.497

As it is shown in the above table, the mean scores on control and experimental groups are 17.53 and 18.60, respectively. The standard deviations of the two groups are 3.36 and 2.7. To see whether the means were statistically different, the means were submitted to an independent samples-t-test. Results are presented in Table 3.

Table 3.

T-test for Comparing the Participants' Writing Score before the Treatment

		Levene's Test		t-test		
		F	Sig.	t	df	p
writing1	Equal variances assumed	.002	.96 0	- 1.35	58	. 182
	Equal variances not assumed			- 1.35	55	. 182

As it is shown in the above table, the variances of the two groups were equal (F=0.002, p= 0.96 > 0.5); therefore, the data in the first row in the above table are reported. The results, as shown in the above table (equal variances assumed) indicate that there was no statistical difference between the two groups' mean scores on the writing pretest (t= -1.35, df= 58, p= 0.18> 0.05). As a result, it can be argued that there was no initial difference between control and experimental scores on writing pretest and they were homogeneous.

4.2.2 Results of the Writing Posttest

In order to investigate whether the treatment affected the participants' writing performance, the two groups' means on the writing posttest were submitted to an independent samples t-test. Results are presented in the following tables.

Table 4.

Descriptive Statistics of the Groups' Scores on Writing Posttest

	Groups	N	Mean	SD	SEM
writing 2	Control	30	19.3	2.17	.34
	Experimental	30	22.9	2.15	.38

As it is shown in Table 4, the mean scores of control and experimental groups are 19.3 and 22.9, respectively. The standard deviations of the two groups are 2.17 and 2. 15. To see whether the means were statistically different, the means were submitted to an independent samples-t-test. Results are presented in Table 5.

Table 5.

T-test for Comparing the Groups' Means on Writing Posttest

		Levene's Test		t-test for Equality of Means		
		F	Sig.	t	df	P
writi ng2	Equal variances assumed	.05 2	.821	- 6.434	58	.001
	Equal variances not assumed			- 6.434 1	57.97	.001

As it is shown in the above table, the variances of the two groups were equal (F=0.052, p= 0.82 > 0.5); therefore, the data in the first row in the above table are reported. The results, as shown in the above table (equal variances assumed) indicate that there was significant statistical difference between the two groups' mean scores on the writing posttest (t= -6.43, df= 58, p=0.001> 0.05). As a result, it can be argued that there the null hypothesis was rejected, favoring the experimental group. That is, NLP had significant impact on learners' writing achievement.

4.3 Analysis of the Second Research Question

Research question two addressed investigating the impact of NLP on improving EFL learners' critical thinking. In doing so, the two groups' mean scores on pretest and posttest were submitted to independent samples-t-test. Results are presented in the following sections.

4.3.1 Results of the Critical Thinking Pretest

Results of critical thinking pretest including descriptive statistics and t-test are presented in the following tables.

Table 6.

Descriptive Statistics of the Two Groups' Mean Scores on Critical Test Pretest

	Groups	N	Mean	SD	SEM
Critic al Pretes t	Control	30 0	89.5	8.6 3	1.57
	Experime ntal	30 6	88.2 6	9.4	1.72

As it is shown in the above table, the mean scores of control and experimental groups are 89.5 and 88.26, respectively. The standard deviations of the two groups are 8.63 and 9.46. To see whether the means were statistically different, the means were submitted to an independent samples-t-test. Results are presented in Table 7.

Table 7.

T-test for Comparing the Groups' Scores on Critical Thinking Pretest

	Levene's Test	t-test

		F	Sig.	t	df	P
Critical	Equal variances assumed	.149	.701	. 527	5 8	.600
Thinking 1	Equal variances not assumed			. 527	5 7.5	.600

As it is shown in the above table, the variances of the two groups were equal (F=0.14, p= 0.70 > 0.5); therefore, the data in the first row in the above table are reported. The results, as shown in the above table (equal variances assumed) indicate that there was no statistical difference between the two groups' mean scores on the critical thinking pretest (t= 0.52, df = 58, p=0.60> 0.05). As a result, it can be argued that there was no initial difference between control and experimental scores on critical thinking pretest and they were homogeneous.

4.3.2 Results of the Critical Thinking Posttest

In order to see whether NLP had significant impact on improving EFL learners' critical thinking, the two groups' means on the critical thinking posttest were submitted to an independent samples-t-test. Results are presented in the following tables.

Table 8.

Descriptive Statistics of the Groups' Scores on Critical Thinking Posttest

	Groups	N	Mean	SD	SEM
Critical	Control	30	89.83	8.24	1.50
Posttest	Experimental	30	92.93	8.56	1.56

As it is shown in the above table, the mean scores of control and experimental groups are 89.83 and 92.93, respectively. The standard deviations of the two groups are 8.24 and 8.56. To see whether the means were statistically different, the means were submitted to an independent samples-t-test. Results are presented in Table 9.

Table 9.

T-test for Comparing the Groups' Scores on Critical Thinking Posttest

		Levene's Test		t-test		
		F	Sig.	t	df	p
Critical	Equal variances assumed	. 363	.549	- 1.429	58	.158
Posttest	Equal variances not assumed			- 1.429	57 .9	.158

As it is shown in the above table, the variances of the two groups were equal (F=0.362, p= 0.549 > 0.5); therefore, the data in the first row in the above table are reported. The results, as shown in the above table (equal variances assumed) indicate that there was no significant statistical difference between the two groups' mean scores on the critical thinking posttest (t= -1.42, df=58, p=0.15> 0.05). As a result, it can be argued that the null hypothesis was accepted. That is, NLP had no significant impact on learners' critical thinking.

5. Discussion and Conclusion

Writing ability, an indispensable L2 language skill, has always been considered as a challenge for many L2 students to overcome. In order to be a proficient writer in English, or any other languages, a learner should demonstrate a good command of the lexicon and many grammatical rules. Besides, as L2 students' progress academically, writing as a fundamental social interaction skill, becomes increasingly important. Therefore, it is important to find ways to increase their ability to perform effectively in writing skill.

The present study attempted to investigate the impact of NLP on EFL learners' writing achievement and critical thinking. Based on the results, the researcher found that there was significant statistical difference between the two groups' mean scores on the writing posttest. So, it can be argued that the first null hypothesis was rejected, favoring the experimental group. That is, NLP had significant impact on learners' writing skill.

One explanation may be that NLP helped the learners to program their mind and learn by installation and help learners to improve their interpersonal communication. NLP may be useful for auditory, visual, and kinesthetic learners with the use of images, sounds, and feelings. Raising awareness of the learners with the help of NLP helps the students to improve their achievement especially in writing ability. The result of this study is consistent with that of Langer's (1989) study about the impact of anchoring as an NLP technique on two groups of elderly men for writing an autobiography and the result was that the second group who used anchoring dramatically improved on physical health measures such as joint flexibility, vision, and muscle breadth, as well as on IQ tests.

Churches and West-Burnham (2010) also worked about the implications of NLP for personalization and the children's agenda in England with the conclusion that within this theory the students and teachers both had more confidence in the classroom; learners could express their feeling more easily and were more motivated. Learners were able to receive a higher quality of learning. In another study, West-Burnham et.al (2010, as cited in Allan, 2013) examined the effect of NLP on learning of teachers and pupils and showed the positive effect of NLP on their confidence to use NLP in the school environment, thereby continuing the 'multiplier effect'.

In Iran, Pourbahreini (2015) worked on the effect of NLP technique on enhancing grammatical knowledge of Iranian EFL learners at intermediate level and found that NLP can play a significant role in enhancing the grammatical knowledge of EFL learners. Likewise, a study by Moharamkhani, Karimi and Ahmadi (2016) examined the impact of NLP on EFL learners' vocabulary achievement. The results showed that the experimental group outperformed the control group in vocabulary post-test. In other words, NLP had significant impact on EFL learners' vocabulary achievement.

Also, about the second null hypothesis the results indicated that there was no significant statistical difference between the two groups' mean scores on the critical thinking posttest. So, it can be argued that the null hypothesis was accepted. That is, NLP had no significant impact on learners' critical thinking. However, some studies showed significant impact of NLP on EFL learners' critical thinking. For example, Khabiri and Farahani (2014) worked on the comparative effect of NLP, critical thinking

and a combination of both on EFL learners' reading comprehension and vocabulary retention. The result of their study showed that NLP and critical thinking had no significant impact on vocabulary retention but critical thinking skills made a change in the way they think and NLP strategies provided the learners with a different point of view about their experience from the world, and an individual way to achieve their aims.

Another research by Alamdar and Karbalaei (2015) worked on the relationship between NLP and anxiety and self-esteem among Iranian intermediate EFL learners. The results of this study indicated that the NLP treatment did not have any significant effect on language anxiety for the experimental group, but NLP can help experimental group to increase their self-esteem. The perceptions of experimental group were completely positive. These findings explain that NLP can have some effects on learning EFL.

6. Implications of the Study

The findings of this study, along with those of previous studies, can help a diversity of professions concerned with language teaching and learning. Among all, teachers, syllabus designers, material developers, and learners can be named. One of the major challenges that many teachers face is how to teach and deal with writing skill. Their focus is mostly on new vocabularies or the grammatical structures of the text which are important factors in writing achievement but not sufficient ones. As writing skill is one of the most important language skills in second language acquisition, teachers must be aware of different techniques and strategies for teaching this skill effectively. Therefore, the results of this investigation can be valuable for language teachers.

A sizable fraction of teachers' focus goes mostly toward the writing instruction or exercises that the teaching approach dictates them, while the instruction based learning styles are neglected in the classrooms. Therefore, by employing NLP techniques in the classrooms, teachers can mostly overcome the challenge of how to teach and deal with the writing skill. To this end, the instruction based on NLP technique should be emphasized in teacher training workshops as an effective feature facilitating writing achievement among EFL learners.

Teachers are not the only characters who play the major role in the learning process; syllabus designers and materials developers have probably the same importance in this regard, too. They have to provide the content of teaching materials with the proper exercises to language learners with NLP techniques and lead them toward their goal which is writing achievement. Moreover, they should provide some handbooks for teachers in order to make them familiar with NLP instruction. This will allow teachers to teach effectively and students to be more active in the language learning process.

Due to the fact that language learning is a multidimensional phenomenon, not only language teachers, but also language learners are required to play their role properly in order to facilitate and optimize this complicated process. Therefore, results of the current study have implications for language learners, encouraging them to become more conscious, active, and evaluative about their best learning styles; particularly NLP technique as a beneficial learning tool.

References

Alamdar, F.S., & Karbalaei, A. (2015). The relationship between Neuro-linguistic Programming and anxiety and self-esteem among Iranian Intermediate EFL Learners. *International Journal of Educational Investigations.*Vol.2, No.8: 108-130.

Alexander M. (2008). *Good writing leads to good testing.* Retrieved from Http://www.stickyminds.com/sitewide.asp?ObjectId=3391&Function=edetail&ObjectType=ART on March 26 2012.

Al-Fadhli, S., & Khalfan, A. (2009). Developing critical thinking in e-learning environment: Kuwait University as a case study. *Assessment & evaluation in higher education, 34* (5), 529-536.

Al-Hazmi, S. (2006). Writing and reflection: Perceptions of Arab EFL learners. *System, 40,* 170-193.

Antic, Z. (2006). Neuro-linguistic programming: The link between medicine (neurology) and language teaching. *Medicine and biology, 13*(2), 123-126

Bandler, R., &Grinder, J. (1970). *Frogs into princes: Neuro-linguistic programming.* Moab, UT: Real People Press.

Brown, H. D. (2000). *Principles of language learning and teaching* (4th Ed.). New York: Addison Wesley Longman.

Carey, J. & Churches, R. &Huchinson, G. & Jones, J. &Tosey, P. (2010). Neuro-linguistic programming and learning: Teacher case studies on the impact of NLP in education. Retrieved June 7, 2014 from the World Wide Web: http://cdn.cfbt.com/~/media/cfbtcorporate/files/research/2010/r-neuro-linguistic programming-and-learning-full-2010.pdf

Carroll, M. (2010). *What is NLP? An insight into the background of NLP.* Retrieved April, 12, 2014, from http://www.nlpacademy.co.uk/articles/view/what_is_nlp/

Chiu, Y. (2009). Facilitating Asian Students' Critical Thinking in Online Discussions. *British Journal of Educational Technology, 40*(1), 42-57.

Davidson, C. (2007). Independent writing in current approaches to writing instruction: What have we overlooked?' *English Teaching: Practice and Critique,* [e-journal] 6 (1), pp. 11-24. Available through: London Metropolitan University Library website http://catalogue.londonmet.ac.uk [Accessed 4 March 2014].

Dewey, J. (1933). *How we think: a restatement of the relation of reflective thinking and the educational process.* New York: D.C Heath.

Dornyei, Z. (2005). *The psychology of language learner: Individual differences in second language acquisition.* NJ: Lawrence Erlbaum Associates.

Falk, J. S. (1978). *Linguistics and language: A survey of basic concepts and implications.* Virginia: John Willey & sons.

Gelder, T. (2005). Teaching Critical Thinking: Some Lessons from Cognitive Science. *College Teaching, 53* (1), 41-48.

Hale, S. (2008). *A critical analysis of Richard Paul's Substantive Tran-disciplinary conception of critical thinking.* Unpublished doctoral dissertation, Union University of Cincinnati, Ohio.

Harmer, J. (2007). *How to teach for exam.* (3rd ed) Pearson Education Limited.

Honey, P. (2000). Critical thinking questionnaire. Retrieved October 8, 2009, from Peter Honey Learning Website: http:// www.Peter Honey Publications.com

Hosseinzadeh, E., & Baradaran, A. (2015). The relationship between English Language Teachers' autonomy and their Neuro-linguistic Programmin. *English Language Teaching; Canadian Center of Science and Education,8*(7),24-38.

Hyland, K. (2003). *Second language writing.* Cambridge: Cambridge University Press.

Khabiri, M. &Farahani, F. (2014). The comparative effect of Neuro-linguistic programming (NLP), critical thinking, and a combination of both on EFL learners' reading comprehension and vocabulary retention. *International Journal of Language Learning and Applied Linguistics World (IJLLALW), 7* (4), 90-111.

Khansir, A.A. (2012). The Role of Process and Product Approaches to the Teaching of Writing. *Language in India, 12 (7),* 280-295.

Kroll, B., (2003*). Exploring the Dynamics of Second Language Writing, ed.* Cambridge: Cambridge University Press.

Marashi, H., & Jafari, R. (2012). The Comparative Effect of Using Critical Thinking, Constructivist Learning, and a Combination of the Two Techniques on EFL Learners' Writing. *Iranian EFL Journal, 8(4),* 206-225.

Moharamkhani, A., Karimi, L., & Ahmadi, D. (2016). The impact of Neuro-linguistic Programming on EFL learners' vocabulary achievement. *IOSR Journal of Humanities and Social Science (IOSR-JHSS)* Volume   21, PP 27-37.

Mok, J. (2010). The new role of English language teachers: developing students' critical thinking in Hong Kong secondary school classrooms. *The Asian EFL Journal Quarterly, 12*(2), 262-287.

Mousavi, R. (2010). *The impact of Neuro-linguistic programming (NLP) on orthographic memorization (spelling).* Islamic Azad University, science and research branch. Iran: Tehran.

O'Connor, J. (2001). NLP workbook: a practical guide to achieving the results you want. Retrieved on February 23, 2014, from http://redwheelweiser.com/downloads/nlpworkbook.pdf

Paul, R., & Elder, L. (2008). *Defining critical thinking*. Retrieved September 22, 2009, from http://www.criticalthinking.org/Definig Critical Thinking.html

Pishghadam,R., Shapoori,M., & Shayesteh,Sh. (2011). NLP and its Relationship with Teacher Success,Gender, Teaching Experience, and Degree: A Comparative Study. *World Journal of English* Language.Vol. 1, No. 2.

Pourbahreini, F. (2015). The effect of Neuro-linguistic programming technique on enhancing grammatical knowledge of Iranian EFL learners at intermediate level. *English for Specific Purposes World,* Issue44, Vol.16.

Raimes, A. (1983). *Techniques in teaching writing.* Oxford: Oxford University Press. Richard, Jack C, Theodore S. Rodgers. (2001). Approaches *and methods in Language Teaching.* Second edition; Cambridge: Cambridge University Press.

Revell, J., & Norman S. (1997). *In your Hands: NLP for ELT.* London: Saffire Press.

Satrajit, S. (2010). *The Art, Science & History of NLP (Neuro-Linguistic Programming).* Retrieved August, 12, 2014, from http://www.teachingenglish.org.uk/blogs/sanyalsatrajit/art-sciencehistory-nlpneuro-linguistic-programming

Suleiman M. F. (2000). *The process and product of writing: Implications for elementary school teachers.* ERIC Digest, ERIC Identifier ED 442299.

Tosey, P., & Mathison, J. (2010). Neuro-linguistic Programming as an innovation in education and teaching. *Innovations in Education and Teaching International, 47*(3), 317-326.

Williams, R. L. (2005). Targeting critical thinking within teacher education: The potential impact on society. *The Teacher Educator, 40*(3), 163-187.

Yule, G. (2010). *The study of language*. (4th Ed.). Cambridge: Cambridge University Press.