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*The Effect of Critical Thinking Strategies Instruction on Iranian EFL Learners' Writing Performance across genders

Parinaz Jafari, Dr. Nader Assadi, Dr. Massoud Zoghi

[1](M.A.student in ELT) Department of English Language.Islamic Azad University.Ahar Branch,Ahar, Iran.. [2,3](Professors) Department of English Language, Islamic Azad University, Ahar Branch, Ahar, Iran.
Corresponding author: parinaz Jafari

ABSTRACT

The present study has tried to find out whether critical thinking strategies instructions affect Iranian EFL male and female students' writing performance. After administering Oxford Quick Placement Test (2001) to 120 participants in Shokuhe Iran Language Center in Tabriz Iran, 80 participants were chosen, 40 male and 40 female. Then All 80 participants were divided into control and experimental groups. 40 in control group including 20 males and 20 females and 40 in experimental group including 20 males and 20 females. Control group did not receive treatment about critical thinking strategies, only CLT was the main method in control group. But experimental group received eight weeks of instruction about critical thinking strategies within their learning syllabus. T-test was conducted to compare the subjects' means and to determine the effect of gender. The results showed that critical thinking strategies had a significant effect on improving Iranian EFL students' writings across genders, ($p<.05$). Both male and female performance improved after the instruction of critical thinking strategies.

Keywords : Critical thinking, writing, critical thinking strategies.

*** This article is an excerpt from theses.*

1 INTRODUCTION

FOREIGN language teaching and learning, with its four skills, is a complex process especially the writing skill. And when teaching these skills, teachers usually follow a certain order: beginning with listening, speaking, reading, and then writing "adults devote 45% of their energies to listening, 30% to speaking, 16% to reading and 9% to writing" Hedge (2000, p.305). Writing skill is placed at the end because it is thought to be highly complex and difficult to master even for natives.

Critical thinking is the process of "thinking about thinking". Flavell (1979). Critical thinking is reasonable and reflective thinking focused on deciding what to believe or do. (Ennis, R.H. 2011).

Critical thinking skills are important because they enable students "to deal effectively with social, scientific, and practical problems" (Shakirova, 2007, P.42). Simply *put, students who are able to think critically are able to solve problems effectively.* Merely having knowledge or information is not enough. To be effective in the workplace (and in their personal lives), students must be able to solve problems to make effective decisions; they must be able to think critically.

2 LITERATURE REVIEW

Crystal (1999, p.214) stated that "writing is not a merely mechanical task, a simple matter of putting speech down on paper. It is an exploration in the use of the graphic po-

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tential of a language-a creative process-an act of discovery".Writing is defined as "a reflective activity that requires enough time to think about the specific topic and to analyse and classify any background knowledge (Chakraverty, A. & Gautum, K. 2000).

Critical thinking (CT) is considered to be central to higher education or an essential goal of teaching (Kuhn, 1999). The ideal critical thinker is someone who is inquisitive in nature, open-minded, flexible, fair-minded, has a desire to be well-informed, understands diverse viewpoints, and is willing to both suspend judgment and to consider other perspectives (Facione, 1990)

Critical thinking is not an innate ability. Although some students may be naturally inquisitive, they require training to become systematically analytical, fair, and open-minded in their pursuit of knowledge. With these skills, students can become confident in their reasoning and apply their critical thinking ability to any content area or discipline (Lundquist, 1999)

At this study Ennis infusion model is applied and critical thinking strategies used are 3 : 1-encouraging students to ask questions, solve problems and seek for reasons.

Asking questions: Brown & Kelley (1986), Hemming(2000) focused on interesting questioning techniques into class discussions to support an educational environment where students can demonstrate and practice critical thinking skills. Brown and Kelley's book, *Asking the right questions: A guide to critical thinking*, documented the foundation that students' critical thinking is best supported when instructors use critical questioning techniques to engage students actively in the learning process. These questions require students to evaluate the clarity and accuracy of their thinking as well as the depth and breadth of their thinking. have they considered all the alternatives? Do they know why they think the way they do? Students need to determine whether the content they are using is relevant and if their thinking process is logical. Students can begin thinking about their thinking by questioning their thought process

Solving problems- A template for problem-solving

To be an effective problem solver:

1)figure out, and regularly re-articulate, your goals, purposes, and needs. Recognize problems as emergent obstacles to reaching your goals, achieving your purposes, and satisfying your needs.

2)wherever possible take problems one by one. State the problem as clearly and precisely as you can.

3)study the problem to make clear the "kind" of problem you are dealing with. Figure out, for example, what sorts of things you are going to have to do to solve it. Distinguish problems over which you have some control from problems over which you have no control. Set aside the problems over which you have no control. Concentrate your efforts on those problems you can potentially solve.

4)figure out the information you need and actively seek that information.

5)clearly analyze and interpret the information you collect, drawing what reasonable inferences you can.

6)figure out your options for action. What can you do in the short term? In the long term? Recognize explicitly your limitations in terms of money, time, and power.

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7)evaluate you options, taking into account their advantages and disadvantages in the situation.

8)adopt a strategic approach to the problem and follow through on that strategy. This may involve direct action or a carefully thought-through wait-and-see strategy.

9)when you act, monitor the implications of your action as they begin to emerge. Be ready at a moment's notice to revise your strategy if the situation requires it. Be prepared to shift your strategy or your analysis or statement of the problem, or all three, as more information about the problem becomes available to you.

(Paul, R. and Elder,L. 2007, p.19)

Seeking for reasons- The research assumes that by incorporating critical thinking in the classroom instructions promotes reasoning skills among the students. The learners may become proficient in language usage if they are motivated how to display critical thinking. The teachers may facilitate the process by reflecting language learning practices through writing skill. (Rafi, M.S. 2010)

A checklist for reasoning

1)all reasoning has a purpose.

state your purpose clearly, distinguish your purpose from related purposes, check periodically to be sure you are still on the target, choose significant and realistic purposes.

2) all reasoning is an attempt to FIGURE something out, to settle some QUESTION, solve some PROBLEM.

State the question at issue clearly and precisely, express the question in several ways to clarify its meaning and scope, break the question into sub-questions, distinguish questions that have definitive answers from those that are a matter of opinion and from those that require consideration of multiple viewpoints.

3) all reasoning is based on ASSUMPTIONS.

Clearly identify your assumptions and determine whether they a re justifiable, consider how your assumptions are shaping your point of view

4) all reasoning is done from some POINT OF VIEW.

Identify your point of view, seek other points of view and identify their strengths as well as weaknesses, strive to be fair minded in evaluating all points of view.

5) all reasoning is based on DATA, INFORMATION & EVIDENCE.

Restrict your claims to those supported by the data you have, search for information that opposes your position as well as information that supports it, make sure that all information used is clear, accurate, and relevant to the question at issue, make sure you have gathered sufficient information.

6) all reasoning is expressed through, and shaped by, CONCEPTS and IDEAS.

Identify key concepts and explain them clearly, consider alternative concepts for alternative definitions of concepts, make sure you are using concepts with care and precision.

7) all reasoning contains INFERENCES or INTERPRETATIONS by which we draw CONCLUSIONS and give meaning to data.

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Infer only what the evidence implies, check inferences for their consistency with each other, identify assumptions that lead you to your inferences.

8) all reasoning leads somewhere or has IMPLICATIONS and CONSEQUENCES.

Trace the implications and consequences that follow from your reasoning, search for negative as well as positive implications, consider all possible consequences. (Paul, R. & Elder, L. 2007, pp 6-7)

3 STATEMENT OF PROBLEM

As a purposeful activity, critical thinking influences all aspects of human life, education is one of them. And there is a great tendency to train people to become good critical thinkers. For this aim, one of the most important goals of educational systems is developing learners' critical thinking skill. However, as Ozmen (2008) said: the empirical studies conducted on the assessment of critical thinking have clearly shown that most of the higher education institutions may not be effective in teaching critical thinking. Different factors like misconceptions of critical thinking, the traditional teaching, and learning habits like rote learning and the reservations of general educational system may lead to this problem. In line with the above mentioned conflict in the literature and in an attempt to respond the enquiry on the success of the current educational system of Iran in developing C.TH among students, present study aimed at finding out the effect of critical thinking strategies instruction on Iranian EFL learners' writing performance across genders in intermediate level.

Methodology

4 METHODOLOGY

Restatement of research questions and hypotheses

This study tried to find out answers to following questions:

1. Does the instruction of critical thinking strategies have any effect on the writing performance of Iranian EFL male learners?

2. Does the instruction of critical thinking strategies have any effect on the writing performance of Iranian EFL female learners?

Hypotheses of this study are:

H.1.The instruction of critical thinking strategies affects the writing performance of Iranian EFL Male learners

H.2.The instruction of critical thinking strategies affects the writing performance of Iranian EFL Female learners

Null Hypothesis: The instruction of critical thinking strategies does not have any effect on the writing performance of Iranian EFL learners

Alternative Hypothesis: The instruction of critical thinking strategies has an effect on the writing performance of Iranian EFL learners

5 PARTICIPANTS

The target population of this study was 80 students from Shokuhe Iran English Language Institute in Tabriz. This group was chosen from among 120 language learners based on their scores on Oxford Quick Placement Test. Participants who scored + _ 1SD above were chosen. The ages ranged from 15-23, they all were homogenous and in intermediate level based on test of Oxford Placement Test. Based on systematic sampling, the participants were divided to four groups, 20 participants in each class. There were

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two classes of control group and two classes of experimental group.

6 INSTRUMENTS

In this study Ennis 1989 infusion approach was used. Oxford placement test was used to find out participants' homogeneity and TOEFL test was used because it is standard for testing and teaching language skills (pretest and post test of writing). It is also reliable. Genre of writing was descriptive writing. Writing was assessed by using Facione and Facione 1994 holistic critical thinking scoring rubric.

Oxford placement test

An already determined standard placement test of Oxford University and Cambridge University (2001) was used as a proficiency test to establish participants' homogeneity .Wistner, Sakai (2008) found that Oxford University and Cambridge University placement test and Michigan English placement test are reliable and valid as foreign language proficiency tests in EFL settings. It includes 60 multiple-choice questions, close comprehension passages, vocabulary, and grammar sections that researcher has used.

TOEFL test of writing

Test of TOEFL is standard test for measuring language learning skills. Topics used in his study were chosen from TOEFL writing section. As a matter of test reliability and validity, writing topic were selected from Longman complete course for the TOEFL test, by Phillips. D. 2001. Tests were held in institute by institute staff.

Facione and Facione 1994 holistic critical thinking scoring rubric

It is a scoring rubrics which has 4 levels and each level has criteria. According to these 4 levels, scores are given if the test meets criteria of each level. Score 1 is the lowest score and score 4 is the highest.

7 MATERIALS

Materials used in this study are as follows: *Summit 1A book- Ennis 1989 infusion approach*

Summit 1A book- In institute, the book Summit 1A for intermediate level was taught . it was prepared as two separate books. One book was for students work in home and the other book was the main book and students used it in every session as main book during term. Summit books are recently published books and are used in this institute and are very successful for EFL settings.

The infusion approach entails in-depth instruction in the subject matter plus explicit instruction on general critical thinking principles. This critical thinking instruction is provided in the context of specific subject matter. Ennis (1989) indicates that this approach is commonly seen in the "across the curriculum" movements. Infusion of critical thinking strategies in subject-matter instruction is deep, thoughtful, well-understood subject-matter instruction in which students are encouraged to think critically in the subject, and in which general principles of critical thinking dispositions and abilities are *made explicit.* (Ennis, R.H. 1989, p.5)

8 PROCEDURES

At the beginning of study, participants wrote an essay about the topic chosen from TOEFL, as pre-test, its topic was: *what is the strongest advantage that technology can bring us? Support your response with reasons and examples*. Partici-

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pants were given 30 minutes to write about the topic. Then they were divided into 4 groups of 20 participants based on gender (40 in control group including 20 males and 20 females and 40 in experimental group including 20 males and 20 females) their classes were held twice a week for 90 minutes for 16 sessions. Control group received no treatment only CLT was used for teaching in control group but experimental group received 8 weeks of instruction about Ennis critical thinking strategies within their learning syllabus. After 8 weeks, on the last session, the post test of writing was given to both groups. Participants in experimental group were given a brief summary of what has been thought about critical thinking strategies before the post test. Participants in control group did not receive any information about critical thinking strategies. Learners then were given 30 minutes to write about the following topic chosen from Longman COMPLETE COURSE for TOEFL TEST: *when something unexpected happens, how do you react? Use examples to support your response*. 160 writings of pretest and posttest were collected. Results of both groups for writing post-test were compared to find out the difference between control and experimental groups. Also differences between scores of males and females were found out. Scoring was based on rubrics by Facione and Facione (1994).

During the term the control group of the study did not receive any particular treatment. They were taught based on the conventional approaches taught in institute which was to a great extent in line with the CLT. In the writing section after a warm up the students in the control group were asked to write about their favorite topic and narrow it down as much as possible. At the second step, they were asked to write the topic sentence and also they were asked to recognize what the controlling idea is and that their controlling idea is limited and readily defined. At the third step, they were asked to write some supporting sentences. At the fourth step, they were asked to organize the materials. Finally, they were required to do some extra exercises regarding paragraph writing.

The treatment in the experimental group was carried out based on Ennis (1989) infusion approach in which integration of the subject matter and teaching critical thinking is observed. In the infusion approach, the method of teaching the subject matter changes in a way that leads learner to become critical thinkers; however, they are not taught directly to become critical thinkers, they learn it subconsciously without knowing what critical thinking really is. The strategies used in this approach involved encouraging students to ask questions, solve problems, and seek for reasons. There were steps followed, after writing warm-up and during the narrowing, limiting, coherence and cohesion and organizing of the descriptive writing to help the students develop their critical thinking skills.

In this method (infusion method) questions were always welcomed, and were never rejected. In fact, the students were encouraged to ask questions. During the process of treatment the students were required to ask some written questions on the assigned topics and paragraphs and to seek their peers in the class. These questions helped learners to understand descriptive writing skill better. It was explained to the learners that their questions should focus on the main ideas, not on details; and that the questions had to be in their own words. Sometimes the learners were divided into small groups and they were asked to make questions based on the written paragraphs and discuss the

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questions in their groups. The whole class discussed some of the questions from each small group as well.

Following this method, the instructor had to ask questions that obliged the students to think based on the data they possessed, discuss them, and reach new conclusions or a new understanding about the topic. The questions were devised in a way that they promoted critical thinking rather than rote memorization. for example, the questions required the students to elaborate, compare, or give their own idea on the topic. One-minute paper was the last strategy trained to the learners of the experimental group. A good way of teaching critical thinking is to ask students to write. Writing forces the students to organize their thoughts, think critically about the material, evaluate their data, and present their conclusion. So the learners were asked to write a one-minute paper on the most important thing they learned in the class and what they were still confused about, on what they agreed or disagreed about, or what challenged their beliefs more.

9 RESULTS

Table 1- Comparison of control group females' scores obtained in pretest and posttest

Group	N	Mean	Variances
Control group females (pretest)	20	2	1.57
Control group females (posttest)	20	1.95	1.52
Pearson correlation			0.98
Hypothesized mean			
Difference			0
Df			19
T stat			1
P(T<=t) one-tail			0.16
T critical one-tail			1.72
P(T<=t) two-tail			0.32
T critical two-tail			2.09

Table 2- Comparison of experimental group females' scores obtained in pretest and posttest

Group	N	Mean	Variances
Experimental group females (pretest)	20	1.7	1.27
Experimental group females (posttest)	20	3.1	1.35
Pearson correlation			0.50
Hypothesized mean			
Difference			0
Df			19
T stat			-5.48
P(T<=t) one-tail			1.37

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T critical one-tail	1.72
P(T<=t) two-tail	2.75
T critical two-tail	2.09

Table 3- Comparison of control group Males' scores obtained in pretest and posttest

Group	N	Mean	Variances
Control group Males (pretest)	20	1.7	1.37
Control group Males (posttest)	20	1.75	1.35
Pearson correlation Hypothesized mean		0.98	
Difference		0	
Df		19	
T stat		-1	
P(T<=t) one-tail		0.16	
T critical one-tail		1.72	
P(T<=t) two-tail		0.32	
T critical two-tail		2.09	

Table 4- Comparison of experimental Males' scores obtained in pretest and posttest

Group	N	Mean	Variances
Experimental group Males (pretest)	20	1.9	1.56
Experimental group Males (posttest)	20	3.2	1.11
Pearson correlation Hypothesized mean		0.57	
Difference		0	
Df		19	
T stat		-5.37	
P(T<=t) one-tail		1.72	
T critical one-tail		1.72	
P(T<=t) two-tail		3.44	
T critical two-tail		2.09	

Table 5-Comparison of females' and males' scores in pretest and posttest in experimental group using independent t-test

	Group	N	Mean	Std. Deviation	Std. Error Mean
pretest	Female	20	1.7000	1.12858	.25236
	Male	20	1.9000	1.25237	.28004
posttest	Female	20	3.1000	1.16529	.26057
	Male	20	3.2000	1.05631	.23620

Table 6- Independent samples Test

	Levene's Test for Equa	t-test for Equality of Means

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		lity of Vari-ances								
		F	Sig	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95 % confidence Interval of the Difference	
									Lower	Upper
PRE TEST	Equal Variances Assumed	.778	.383	-.531	38	.5999	-.2000	.37697	-.9 6313	.5 6313
	Equal variances not assumed			-.531	37.5996	.5999	-.2000	.37697	-.9 63640	.5 63640
POST TEST	Equal variances assumed	.386	.538	-.248	38	.778	-.1000	.35169	-.81195	.6 11195
	Equal variances not assumed			-.284	37.639	.778	-.1000	.35169	-.81218	.6 12118

10 DISCUSSIONS

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This study tried to show that critical thinking strategies instruction has effect on writing performance of Iranian EFL learners across genders. Results proved that treatment had a positive effect on writing performance of learners. Their writing performance improved during term and instruction of critical thinking strategies.

In table 1 control group females scores had mean of 2 in pretest and 1.95 in posttest. But in table 2 experimental group females had mean of 1.7 in pretest and 3.1 in posttest. This shows the effect of treatment on experimental group's writing performance and their means of scores. Means in experimental group is higher.

In table 3 control group males scores had mean of 1.7 in pretest and 1.75 in posttest. But in table 4 experimental group males had mean of 1.9 in pretest and 3.2 in posttest. This shows the effect of treatment on experimental group's writing performance and their means of scores. Means in experimental group is higher.

In table 5 experimental group females scores has mean of 1.7000 in pretest and experimental group males scores has mean of 1.9000 in pretest. But after treatment, experimental group females scores has mean of 3.1000 in posttest and experimental group males scores has mean of 3.2000. Males have higher mean than females but not significantly too much high.

In table 6 *sig* for experimental group females and males scores in pretest is .383 but *sig* for experimental group females and males scores in posttest is .538. This means that, since t<.05, in posttest *sig* is .538 which is meaningful according to this t-value. Amount of t-critical was .05 .Critical t value is 1.684 for number of 38 students in groups

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