

The effect of critical thinking on enhancing writing among Iranian EFL learners

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Abstract-The present study was designed to find out the effect of critical thinking on enhancing writing among Iranian EFL learners. 60 students participated. They wrote a pretest writing, then divided into two Groups (control and experimental), experimental group received treatment about successful critical thinking strategies and Bloom's taxonomy of thinking skills. both groups were given posttest of writing Results revealed that critical thinking instruction had effect on writing performance of participants.

Index Terms- critical thinking, writing skill, Bloom's taxonomy of thinking skills, successful critical thinking strategies

1 Introduction

Writing, which was once considered the domain of the well-educated, has become an essential tool for people of all walks of life in today's global community (Weigle, 2002). The importance of writing is highlighted in Robinson's (1995) argument that without writing there would be no history. It is one of the least understood language production tasks, which both professional and nonprofessional writers often lament that the process of writing is arduous and complex. (Kelleher, 1999)

Finding an agreed upon definition of critical thinking is daunting. Critical Thinking has become a "mystified concept" due to its abstract nature and lack of common understanding. "Ask twelve psychology faculty members to define the term critical thinking, and you may receive twelve overlapping but distinct definitions" (Halonen, 1995, p.75).

the probability of a desirable outcome. It is used to describe thinking that is purposeful, reasoned and

goal directed (p.4). She cites several other definitions from the cognitive perspective: "critical thinking is the formation of logical inferences"; it is the development of whether to accept, reject or suspend judgment; it is a mental activity useful for a particular cognitive task (1997, p.4).

In 1956 Benjamin S. Bloom and his colleagues outlined six levels of critical thinking into which any cognitive learning experience may be categorized. Beginning with basic knowledge of the subject, this taxonomy progresses toward more complex or higher levels of critical thought, culminating with sophisticated thinking processes using concepts under study.

2 Literature review

Critical thinking is based on reflective thinking that is focused on interpreting, analyzing, critiquing, synthesizing, and evaluating information, arguments and experiences with a set of reflective attitudes, skills, and abilities to guide thoughts, beliefs, and actions (Ruggiero).

According to Corttrell (2005), critical thinking is a cognitive activity which means thinking in the best way and using mental processes like attention, selection, judgment, etc. It makes people more precise in the way they work and think, more accurate in relevant issues, better decision maker

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about whether something is true and effective or not.

According to Halpern (2003, p 20) the critical part of critical thinking denotes an evaluation component. Sometimes the word critical is used to convey something negative, as when we say "she is a critical person". However, evaluation can and should be a constructive reflection of positive and negative attributes. When we think critically, we are evaluating the outcomes of our thought processes-how good a decision is or how well a problem has been solved. Critical thinking also involves evaluating the thinking process-the reasoning that went into the conclusion we've arrived at or the kinds of factors considered in making a decision. Critical thinking is sometimes called directed thinking because it focuses on obtaining a desired outcome. Day dreams, night dreams, and other sorts of thinking that are not engaged in for a specific purpose are not subsumed under the critical thinking category. Neither is the type of thinking that underlies our routine habits, which, although goal directed, involve very little conscious evaluation, such as getting up in the morning, brushing our teeth, or taking a usual route to school and work. These are examples of nondirected or automatic thinking. Other examples of noncritical thinking include the rote call of information (e.g., listing the capitals) or the failure to consider evidence that might support a conclusion that you do not like.

"We should be teaching students how to think. Instead, we are teaching them what to think." Clement and Lochhead, 1980, Cognitive Process Instruction. As cited in Schaferman (1991)

Richard Paul (1990) (as cited in Fahim, M., & Ahmadian, M. 2012) also gave a definition for critical thinking: critical thinking is disciplined, self-directed thinking which exemplifies the perfections of thinking appropriate to a particular mode or domain of thought. It comes in two forms. If disciplined to serve the interests of a particular individual or group, to the exclusion of other relevant persons and groups, it is sophistic or weak sense critical thinking. If disciplined to take into account the interests of diverse persons or groups, it is fair-minded or string sense critical thinking.

according to Lee, gleaned information from 46 critical thinking experts, a holistic critical thinking scoring rubric (Facione & Facione, 1994) was

developed-the tool used in this study to measure critical thinking. According to Facione, the ideal thinker:

Is habitually inquisitive, well-informed, trustful of reason, open-minded, flexible, fair-minded in evaluation, honest in facing personal biases, prudent in making judgments, willing to consider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in the selection of criteria, focused in inquiry, and persistent in seeking results which are as precise as the subject and circumstances of inquiry permit (education development center, Inc., 1990)

According to Hamp-Lyons & Heasley, 2006, Writing is one of the most difficult skills for second language (L2) learners to master. Out of the four skills in the language learning process, it is competent writing which is often approved of as being the last language skill that native speakers of any language including L2 learners acquire. As Richards & Renandya 2002 argued, writing involves a number of different abilities, some of which are never fully achieved by many students even in their native language. L2 writers have to pay attention to the higher level skills of planning and organizing, as well as to the lower level skills of spelling, punctuation, word choice, and so on. The difficulty becomes even more profound if their language proficiency is weak

The six levels of Bloom's taxonomy are as follows
Thinking skills in Bloom's taxonomy

level	description	Related skills
memorize	Learn course concepts and facts; produce a solid knowledge base	Recognize, recall, recite, name, define, describe
comprehension	Show understanding of course concepts and facts	Restate, explain, interpret, discuss, summarize, defend
application	Extended course concepts and facts in new	Classify, apply, produce, discover,

	directions	modify, prepare
analysis	Break ideas apart and relate to other ideas	Compare, contrast, connect, relate, categorize, analyze
synthesis	Create new organizations of ideas	Design, organize, construct, compose, revise, develop
evaluation	Make well-reasoned judgments and decisions	Recommend, judge, critique, decide, evaluate, support

Previous research by M. Fahim & S. Erfan Rad (2012) indicates that all the nine Shor's problem-posing pedagogy was applicable in that study. At the end of practice, most of participants developed a better sense of analysis and argumentation in discussions. Length of essays improved too. Generally this kind of practice is effective in developing critical and a positive attitude toward writing in students.

According to H. Marashi and R. Jafari there was no significant difference among performance of students in critical thinking and constructivist learning group.

Studies of M. Rashtchi (2007) showed that cooperative group work affected learners' critical thinking+ their writing ability, cooperative group work can be effective for gaining knowledge and skills on critical thinking, a team work, peer learning, negotiation of ideas among learners must be encourage.

M. Fahim, H. Ahmadi. (2012) conducted a study to examine effect of critical thinking ability on foreign language learners' reading comprehension and recall of content-familiar and content-unfamiliar texts participating 63 female intermediate EFL

learners. Then participants were divided in two groups of high and low critical thinkers based on their answers to a questionnaire. Results indicated that all participants scored high in content-familiar text, but high critical thinkers were better in both content familiar and unfamiliar text. No relationship was found between effect of content and critical thinking ability on participants' performance.

L.S.Lee (2005) conducted study about: enhancing critical thinking in online thinking. He compared critical thinking in 80 undergraduate students via case study learning under two methods: 1.individual student analysis and 2. Computer supported collaborative analysis. As a result, it was revealed that, students in both treatment groups improved as a critical thinker and that critical thinking skill can be taught and improved within course of time by participating in online collaborative case study learning.

On another study,J. Nikoopour,M. Amini Farsani, and M. Nasiri, (2011) concluded that, according to data, Iranian EFL learners use all kinds of learning strategies mostly cognitive & metacognitive ones. Direct language learning strategies use was considered as predictor variable and critical thinking as dependent variable. There is a relationship between Iranian EFL learners' use of language learning strategies and their way of thinking.

A study held by M. Fahim, and R.S. Behdani, (2011) including 249 participants, revealed that EFL learners' autonomy is significantly related to critical thinking ability. Results indicated that university students studying for degree are in need of course books and materials that invoke critical thinking ability and autonomy. In order to function effectively in society, confront urgent problems and promote independent learning, individuals must be able to think critically and reason effectively.

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 on writing of Iranian EFL learners in intermediate level.

4 Methodology

4.1 Participants

Participants of this study were 60 students. They were chosen from a private language institute in Tabriz, Iran. Their proficiency level was intermediate and their age 23-29.

4.2 Instruments

Materials for this study were: a pretest for writing, its topic was chosen from Longman COMPLETE COURSE for the TOEFL TEST 2001, the topic was: what is the strongest advantage that technology can bring us? Support your response with reasons and examples. Successful Critical thinking strategies by R.A Kendy and Bloom's thinking skills were instructed as treatment. A post test of writing was conducted at end of study to find out the differences between results. Its topic was also chosen from Longman COMPLETE COURSE for TOEFL TEST 2001, and was: when something unexpected happens, how do you react? Use examples to support your response. Four levels holistic critical thinking scoring rubrics by Facione and Facione (1994) was used to rate the writings of students.

4.3 Rating scheme

Pretest and post tests of writing were used as ways of gathering raw data and their scoring

standard was a score among 1-4 according to the rubric. To prevent subjectivity and bias in rating, two raters attended to score the writings in a session discussing and agreeing on ratings. When two scorers had disagreement over scores attributed to each writing, there was three ways to overcome conflict: a) mutual conversation b) using a third scorer, and c) taking the average of the two initial rating. Since in this rubric, half point scoring was inconsistent with its intent, the second way was applied if necessary. First rater was a University Professor in Tabriz University and the other two were MA students majoring in TEFL in Ahar University. Besides, a double-blind scoring procedure was used, i.e. the first readers' score was removed from the writing before the second reader scored the student's work.

4.4 Procedures of data collection and analysis

Participants in this study were chosen from intermediate level of a private English language institute in Tabriz, Iran. At beginning of study, participants wrote essay about the topic chosen from TOEFL, they were given 30 minutes to write about topic. Then they were randomly divided into 2 groups of 30 participants (30 in control and 30 in experimental group). Their classes were held twice a week for 90 minutes for six sessions. Control group received no treatment but experience group received 3 weeks of instruction about successful critical thinking strategies based on a presentation from R.A Kendy, and thinking skills of Bloom's taxonomy within their learning syllabus. After 3 weeks, on last session, 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, and thinking skills of Bloom's taxonomy before writing post test. Participants in control group did not receive any information about critical thinking strategies, and thinking skills of Bloom's taxonomy. Learners then, were given 30 minutes to write about the following topic chosen from Longman COMPLETE COURSE for TOEFL TEST 2001: when something unexpected happens, how do you react? Use examples to support your response. 120 writings of pretest and posttest were collected in December 2012. Results of both groups for writing post-test were compared to find the

differences between control and experimental groups.

Scoring was based on rubrics by Facione and Facione (1994).

5 Results

Control group did not receive any instruction about critical thinking and as a result, their scores were lower according to Facione and Facione scoring rubrics.

TABLE 1
Scores of Control Group

Pre-test of CG	Score				Total
	Zero level (1)	Below the medium (2)	Above the medium (3)	Perfect (4)	
Frequency	3	10	9	8	30
Percent	10%	33.33%	30%	26.66%	100%
Post-test of CG	Score				Total
	Zero level (1)	Below the medium (2)	Above the medium (3)	Perfect (4)	
Frequency	5	10	7	8	30
Percent	16.66%	33.33%	23.33%	26.66%	100%

Experimental group's scores were high according to Facione and Facione (1994) scoring rubrics, since they received treatment, their scores improved in post test.

TABLE 2
Scores of Experimental Group

Pre-test of EG	Score				Total
	Zero level (1)	Below the medium (2)	Above the medium (3)	Perfect (4)	
Frequency	2	9	10	9	30
Percent	6.66%	30%	33.33%	30%	100%
Post-test of EG	Score				Total
	Zero level (1)	Below the medium (2)	Above the medium (3)	Perfect (4)	
Frequency	0	0	7	23	30
Percent	0%	0%	23.33%	76.66%	100%

As shown in table I and II, participants in experimental group, outperformed control group. Experimental group had higher scores .76.66% of them received perfect score but in control group, only 26.66% received perfect score. This shows significant effect of critical thinking instruction on writing among experimental group.

T-test: paired two samples for means was run and as shown in table 3 and 4, p value for control group is 0.021 and for experimental group is 1.90, which shows significant difference between control and experimental group.

t Critical one-tail	1.699127027
P(T<=t) two-tail	3.81063E-08
t Critical two-tail	2.045229642

TABLE 3
T-Test For Control Group Scores
t-Test: Paired Two Sample for Means

	Variable 1	Variable 2
Mean	2.733333333	2.6
Variance	0.96091954	1.14482759
Observations	30	30
Pearson Correlation Hypothesized Mean Difference	0.946849457	0
df	29	
t Stat	2.112235418	
P(T<=t) one-tail	0.021698709	
t Critical one-tail	1.699127027	
P(T<=t) two-tail	0.043397418	
t Critical two-tail	2.045229642	

TABLE 4
T-Test For Experimental Group
t-Test: Paired Two Sample for Means

	Variable 1	Variable 2
Mean	2.833333333	3.76666667
Variance	0.833333333	0.18505747
Observations	30	30
Pearson Correlation Hypothesized Mean Difference	0.687837614	0
df	29	
t Stat	7.392823963	
P(T<=t) one-tail	1.90532E-08	

6 Discussion and Conclusion

A priority for this study was to examine effect of critical thinking in writing of Iranian EFL learners. To accomplish this purpose, 60 learners participated and by use of Facione and Facione's (1994) rubric their writings were assigned a score from 1 to 4.

The aim of study was to examine whether critical thinking has effect on learners' writings? Based on application of Facione and Facione's (1994) rubric for critical thinking, It became clear that, critical thinking instruction has effect on writing of students, since scores of EG students were higher than those of CG students' scores on posttest. 76.66% of participants in experimental group received perfect score. There was a significant difference between scores of participants in pre-test and post-test. Nobody gained 1 and 2 in experimental group in post test. 23.33% of participants scored above the medium. But in control group, 16.66% are in zero level, 33.33% below the medium, 23.33% above the medium, and 26.66% scored perfect.

In order to answer research question, t-test paired two samples for means was used. The findings of t-test revealed a significant difference between two groups of control and experimental. Hence, it can be claimed that critical thinking had positive effect on participants' writings in experimental group.

Generally speaking, Results indicated that thinking affected their writing.

Results of this study can be applied in teaching centers, institutes, universities and syllabus designing materials, since it pays detailed attention to the most important factor affecting learning, i.e., thinking critically.

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