Written Dialog Journal Effect on EFL Learners Critical Thinking Development



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Abstract

One of the educational trends which has been much discussed and suggested nowadays is Critical Thinking. Therefore, extensive discussion has taken place over the techniques and procedures which can provide an opportunity for promoting critical thinking as an essential part of English language teaching and learning. One of the most effective suggested techniques for flourishing critical thinking in the English classes is journal keeping which has progressively gained popularity in EFL and ESL settings. Accordingly, attempts were made to shed light on written dialog journal's employment effect on EFL learners' critical thinking development. Moreover, the study investigates the influence of written dialog journal implementation on five subsections of critical thinking. Participants in this study were 30 Iranian ale advanced EFL learners. The Watson-Glaser Critical Thinking Appraisal -Form A (Watson &Glaser, 1980) was administered at the beginning of the semester as a pretest. The total number of items included in this questionnaire was 80 divided into 5 subsections. Subsequently, the participants in experimental group were asked to keep written dialogue journals in each class. However, the control group did their ordinary writing tasks. At the end of the semester a post-test was distributed. The study's findings seem to indicate that there is significant difference between the experimental group and the comparison group giving evidence that clearly teaching critical thinking abilities through keeping dialogue journals improves EFL learners' critical thinking skills as opposed to using ordinary English writing tasks. Moreover, the study findings suggest that written dialog journal employment has significant effect on inference, recognition of assumption and evaluation of argument which are 3 subsections of critical thinking. On the other hand, the study shows keeping written dialog journal does not have a significant effect on deduction and interpretation, the next 2 subsections of critical thinking. The findings of this study provide insight into an effective technique, written dialog journal, in enhancing learners' critical thinking and present suggestions for further research.

تأثير دفتر خاطرات گفتگوی نوشتاری بر توسعه تفکر انتقادی زباناموزان زبان انگلیسی به عنوان زبان خارجی

یک از روندهای آموزشی که امروزه بسیار مورد بحث و پیشنهاد قرار گرفته است، نکر انتقادی است. بنابراین، بحنهای گستردهای در مورد تکنیکها و رویههایی که میتوانند فرصتی برای ارتقای نکر انتقادی بر این اساسی، نظر انتقادی و پرشنهاد قرار گرفته است. بل این اساسی، تلاشهایی برای روش شدن تأثیر استفاده از دفتر خاطرات گشگری نوشتاری بر توسعه نکر انتقادی بررسه میکند. شرککنندگان در این مطالعه ۵ زبانامورز این انگلیسی به عنوان زبان خارجی انجام شد. علاوه بر این، این مطالعه تأثیر اجرا شد. تعلی از این انگلیسی به عنوان زبان خارجی انجام شد. علاوه بر این، این مطالعه تأثیر اجرا شد. تعلی از این انگلیسی به عنوان زبان خارجی انجام شد. علاوه بر این، این مطالعه تأثیر اجرا شد. تعلی این انگلیسی به عنوان زبان انگلیسی به عنوان زبان انگلیسی به عنوان زبان خارجی از این انگلیسی به عنوان نبران انگلیسی به خود را نبران انگلیسی به و زبرخش نفر انتقادی وانسون حقیق دارند. با این حال، گروه کنترل نکالیف نوشتاری معمول خود را انجام دادند. در پایان ترم، پسآرمونی توزیع شد. یافتههای این مطالعه نشان میدهد که تفاوت معناداری بین گروه آزمایش و گروه مقابلی نبران انگلیسی بهبود میدخد. علاوه بر این، یافتههای این مطالعه نشان میدهد که نشدان میدهد که نگوداشت دفتر خاطرات گشگری کنبی تأثیر معنادری بر استتاج و تصیر، دو زبرنخش بعدی نظر انتقادی زبانهوان ارائه میدهد و پیشنهادهایی برای نحقیقات بیشتر ارائه میدهد.

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Introduction

During the past decades considerable interest has developed in the use of written dialogue journals, as one of the ways, effective in fostering critical thinking abilities. Written Dialogue Journal (WDJ), as Peyton (2000) defines it, is a written conversation in which "a learner and teacher communicate regularly. Learners write as much as they choose on a wide range of topics and in a variety of genres and styles. The teacher writes back regularly responding to questions and comments, introducing new topics, or asking questions" (p.3). As a kind of interactive writing, it allows learners and teachers to engage in written communication and conversation (Peyton, 2000). A prolific body of research has investigated the use of written dialogue journals by faculties of different disciplines in order to extend classroom learning and to cultivate critical thinking prowess. Stout (1993), for example, states that a variety of studies have shown that when dialogue journal writing is used systematically and judiciously, the expressive mode of the journal can function as an excellent vehicle to promote cognitive growth. These written journals are claimed to equip learners with lifelong learning and thinking skills necessary to acquire and process information in a wavering world. Written dialogue journals provide learners with an opportunity to express them and to develop a personal voice which is lost in traditional education (Kumaravadivelu, 2006).

The study is important from several respects. Firstly, this study has pedagogical significance by increasing experts' realization of probable relation between written dialog journal and critical thinking development. Secondly, the current study has cognitive psychological importance. This study is beneficial to English language institute teacher, university professors as well as EFL learners and is expected to help teachers to understand the role of critical thinking development through activities such as written dialog journal. It details, if the findings show that EFL learners' written dialog journal activity boosts their critical thinking, teachers should be recommended to apply this activity into their classes.

This study aims at researching rare—studied techniques of journal writing in a comparative form which was hoped to contribute some information to the existing literature on critical thinking. Therefore, the specific objectives of this study are to explore the enhancement of critical thinking skills among Iranian EFL learners through keeping written dialogue journals as well as examining a more suitable instructional technique (Written Dialogue Journal) in fostering critical thinking abilities to be used in EFL classrooms.

Review of Literature

A prolific body of research has investigated the use of written dialogue journals by faculties of different disciplines in order to extend classroom learning and to cultivate critical thinking prowess (for more information, see Chanthalangey & Moakalis, 2002; Hillocks, 2010; Holmes and Moulton, 1997; Lee, 2004; McDonald, 1997). They are a type of asynchronous dialogue with the students. These written journals are claimed to equip learners with lifelong learning and thinking skills necessary to acquire and process information in a wavering world. Reinertsen & Wells

(1993) stated that journal writing offers opportunities for exploratory writing and defined dialogue journals as "conversations that provide opportunities for initial exploration as well as for reflection and refinement of thought" (p.182). The teacher's responsibility solely is responding to meaning but not correcting errors. Mongomery (2001) states that dialogue journals are employed to encourage learners to engage in a conversation with their teachers. This researcher has also recited three processes for engaging in a dialogue journal including: a) Students make entries in their individual dialogue journals initially based on what they have read or based on their personal experiences, problems, or life; b) the teacher collects the journals on a regular basis; and c) the teachers read and writes responses in each of the journals and gives them back to students. Minjong (1997), as another advocate of dialogue journals, added students should be required to write in their dialogue journals a minimum of three sentences each time but, beyond that, they have authority over what to write, how to write, and when to write.

Journal writing, among other techniques of writing, has been receiving increased attention in education setting in recent years (Carole, 1994; Hanrahan, 1999; Huang, 2005; Ken, 2005; Montgomery, 2001; Reinertsen & Wells, 1993; Sheila & Trudell, 2010; Wang, 1996; Weigle, 2002). Stout (1993) has noted that "one of the most effective forums for generating critical thinking in the content areas is writing in dialogue journals" (p. 34). Journals motivate students to connect the content to their personal experiences, beliefs, and values. Journals are content—based which derives from the Vygotsky's social constructivist principle that students need to activate their world knowledge and language knowledge in order to reach new understandings and develop cognitively. The focus is on contextualized language use rather than form while keeping journals. The topic selection is of foremost importance in enhancing students' interest and satisfaction and fostering engagement or personal involvement (Dantas—Whitney, 2002).

Reinertsen and Wells (1993) aimed at developing students' critical thinking through two types of dialogue journals, namely individual and team dialogue journals. Students corresponded with the instructor in the first half of the semester. In the second half, they kept journals in groups of 4 or 5 and then they made exchanges with their small groups of peers. At the beginning of the semester, they were instructed to write and evaluate critically a topic chosen by their own. They were asked for reflecting, expressing uncertainties, questioning, sizing up the situation, weighing pros and cons, having a multi–lateral viewpoint, and writing in the first person. The researchers observed that learners gradually participated more in discussions. They concluded that a supportive environment lead learners to evaluate their own thinking and dialogue journals help learners to achieve some awareness of the analytical perspectives and to learn self—evaluation. Regarding dialogue journals, learners received the opportunity and encouragement to reflect, to evaluate, to query, to consider multiple perspectives, and to make connection between their personal experiences and new learning context.

In another attempt to investigate the impact of dialogue journal writing as a critical reflective literacy among EFL learners, Mirhosseini and Ghahremani–Ghajar (2005) qualitatively analyzed informal written interviews and about 600 journal entries written by thirty 16–year–old Iranian EFL learners. They coded the gathered data in 1 year based on the themes relevant to

empowerment and critical writing. They divided up the themes of journals into 4 categories including descriptive, personal, critical, and creative. The results of the comparison of the total themes used in a year indicated that empowerment and critical view enhance gradually among learners because journals provided learners with opportunities to express their voice and let them be heard. Their analysis also revealed that dialogue journal writing led gains in critical self–reflective EFL writing ability.

Methodology

Participants

The participants involved in this study included 30 Iranian male advanced EFL learners at Aieen Institute located in Bam, Iran. The first group (N=15) kept Written Dialogue Journal (WDJ), while the remaining 15 comparison students, were given a placebo. Participants aged 18 to 30 with the average of 24; thus, it can be claimed that they were approximately in the same age range considering Thomas and Litowitz's (1986) recommendation about the influence of maturation and experience on critical thinking. Aieen Institute was chosen because the researcher had been teaching English there for about two years and he was able to conduct the research more easily with the help of his ex–colleagues. A random assignment of students to treatment groups was not possible. The intact classes were already in place before the action research was conducted. The sample was non-native English speaker learners chosen by the researcher. King and Kitchener (1994) have claimed that critical reflection occurs in the most advanced stages, where problems are investigated through "continual evaluation of beliefs, assumptions, and hypotheses against existing data and against other plausible interpretations of the data" (p. 7, cited in Dantas-Whitney, 2002).

Instruments

The California Critical Thinking Skills Tests are generally used for assessment of critical thinking skills as well as dispositions. Moreover, Watson-Glaser Critical Thinking Appraisal has specifically focused on measuring critical thinking skills (Philips, Chesnut, & Rospond, 2004). Therefore, research data were collected through using Watson-Glaser Critical Thinking Appraisal-Form A, WGCTA-FA, (Watson &Glaser, 1980). The total number of items included in this questionnaire equals 80. Here, each aspect of the construct consists of 16 items in favor of which Watson and Glaser (1980) claimed to be subject-related for each subsection of critical thinking. In addition to the face, content, construct, and criterion validity of the appraisal, its test-retest reliability was measured by Watson and Glaser (1980) as r=0.89. The researcher used the Farsi version of the appraisal (Faravani, 2006, see Appendix A), of which the reported reliability is 85% (Cronbach's α =0.85) and scoring was facilitated through the availability of an answer key (see Appendix B), yielding a composite score for five subsections of the appraisal from 0 to 80.

Data Collection Procedures

The purpose of this study was to investigate the impact of keeping journals on the enhancement of critical thinking abilities through The Watson–Glaser Critical Thinking Appraisal. WGCTA-FA including 80 multiple-choice items as a pretest was distributed among 30 EFL learners in two intact classes. The data collected from the WGCTA included the critical thinking dimensions of analysis, deduction, evaluation, induction, and inference. The researcher made every attempt possible to ensure the internal validity of the research results by controlling for extraneous variables and uncontrolled variables. The classes were so similar that the extraneous variables were accounted for and controlled to the best extent possible. After pretest session, EFL learners in experimental groups were asked to keep journals. Follow-up tasks will differ across the groups. WDJG1 and ADJG2 were asked to keep dialogue journals during the term with no limitation on choosing topics. Learners received the required instructions.

The teacher emphasized that journals are not simply a matter of reporting or describing. Moving beyond mere descriptions towards critical writing and creativity were referred to as a major characteristic of them. Accordingly, learners in experimental group were told to choose a topic of their interest and not to worry about the grammar or spelling of their writing but instead to focus on expressing their thoughts and feelings freely on paper. Not knowing the English equivalent of a word, learners were allowed to accompany their journals with Farsi words. The teacher read and responded to the journal entries weekly. The focus of the responses and the score assigned to journals were based on the content of the messages. The teacher commented on the points students made, answered their questions, and asked questions that would guide learners to a more critical view.

WDJG was supposed to write their journal entries in a bound notebook in at least 100 words and the teacher commented on the points students made, answered their questions, and set questions that would guide learners to a more critical view in a written form on the same paper. The second group, CG3, was regarded as a control group and received just instructions on typical task conducted in other groups (viz. listening, role play, speaking, grammar, etc.). They received their ordinary tasks in their English class and they were not to keep journals. Instead of keeping journals, they wrote for topics which the teacher provided them with. The focus of their writing was not on the content as much as that in journals.

A bulk of 72 journal entries amounting to more than 72 pages was the result of 18 sessions (one semester) of instruction and practice of journaling. Finally, participants filled out The Watson–Glaser Critical Thinking Appraisal as posttest. The posttest, just like the pretest, measured the participants' critical thinking abilities. Having collected the data, the researcher set off on data analysis to answer the research question as to whether EFL teachers' critical thinking ability can be enhanced through using dialogue journals in EFL contexts.

Data Analysis

To analyze the collected data and test the hypotheses of this study, a series of one—way ANOVAs and independent and paired samples *t*—tests were employed through the use of the 16th version of

the Statistical Package for Social Sciences (SPSS). The first step was to find out whether the participants in experimental groups differed from the comparison group, so the two groups' mean scores on WGCTA–FA were compared against one another through using one—way ANOVA. The alpha level for all the tests was set at 0.05 (p<0.05).

Examining the main research hypothesis

Written Dialogue Journal's teaching has an impact on critical thinking development.

H0: Critical thinking in the control and experimental groups is the same.

H1: Critical thinking in the experimental group is less than the control group.

Table 1Descriptive statistics of pre-test and post-test critical thinking scores in the control and experimental groups

_					
	Group Statistics				
		Groh	N	Mean	Std. Deviation
	peri.Critical.Thinking	experiment	15	146.0667	16.68390
		Control	15	143.0000	14.41725
	post.Critical.Thinking	experiment	15	166.7333	5.70046
		Control	15	149.6000	11.07636

Table 2 *T-test for comparing the differences between the mean scores of critical thinking post-test and the pre-test in the experimental and control groups*

pro seasons and emperature consists of 8. emps									
Paired Samples Test ^a									
Groh		Paire	d Differenc	ces			t	df	Sig. (2-
		Mean	Std.	Std.	95% Con	fidence			tailed)
			Deviati	Error	Interval of	f the			
			on	Mean	Difference	e			
					Lower				
Pair 1 expe	riment	-20.66667	17.3685	4.48454	11.04828		-4.608	14	.000
			5		30.2850				
					5				
Cont	trol	-6.60000	14.5445	3.75538	-	1.45448	-1.757	14	.101
			1		14.6544				
					8				

In the 15 participants in the control group, the mean scores of critical thinking in the pretest and posttest were 143 and 149.6 respectively. Concerning the 15 participants in the experimental group, the mean scores of critical thinking in the pre-test and post-test were calculated 146 and 166.7 respectively as shown in table 4.1. Furthermore, the median, inter-quartile domain, range of

changes, and the distribution of critical thinking scores in the control and experimental groups are shown in figure 4.1(see appendix). As is shown in this graph in the pre-test there is no significant difference between the mean scores of the two groups. On the other hand, in the posttest, the critical thinking score in the control group is not significantly different from the pre-test, but in the experimental group, there is a significant difference between the pre-test and post-test scores. Accordingly the data shows that in the post-test the scores between the two groups is different, and the critical thinking of the participants in the post-test is at a higher level.

As is shown in Table 4.2 the calculated t for the experimental group is 4.60 and the p value (significance) is equal to 0.000. Since the significance is smaller than the significance level of $\alpha = 0.05$, it can be understood that there is a significant difference between the critical thinking scores in the pretest and posttest in the experimental group. In other words, written Dialogue Journal implementation has a significant effect on the critical thinking development. According to Table 4.2, the differences between critical thinking mean scores in the experimental and control groups are 20.6 and 4.6 respectively. This suggests that the Written Dialogue Journal's teaching had a significant impact on critical thinking enhancement.

Results

Examining the secondary research hypotheses

Written Dialogue Journal's teaching has an impact on inference development.

H0: Inference in the control and experimental groups is the same.

H1: Inference in the experimental group is less than the control group.

Table 3Descriptive statistics of Inference pre-test and post-test in the control and experimental groups

Group Statistics								
	Groh	N	Mean	Std. Deviation				
peri.Inferences	experiment	15	56.7333	13.04644				
	Control	15	53.1333	13.13048				
post.Inferences	experiment	15	67.4667	5.59166				
	Control	15	56.8667	12.07043				

The Inference mean scores in control group were 53.1 and 56.8 in pretest and posttest respectively. Concerning experimental group the inference mean scores in pretest and posttest were 56.7 and 67.4 respectively. Furthermore, the median, inter-quartile domain, range of changes, and the distribution of inference scores in the control and experimental groups are shown in figure 4.2 (see appendix). As is shown in this graph in the pre-test there is no significant difference between the mean scores of the two groups. On the other hand, in the posttest, the inference score in the control group is not significantly different from the pre-test, but in the experimental group, there is a significant difference between the pre-test and post-test scores. Accordingly the data

shows that in the post-test the scores between the two groups is different, and the inference in the post-test is at a higher level.

Table 4 *T-test for comparing the differences between the mean scores of inference post-test and the pre- test in the experimental and control groups*

Paired Samples Test ^a									
Groh	Pair	ed Difference	es			t	df	Sig. (2-	
	Mean	Std.	Std.	95% Confi	dence			tailed)	
		Deviation	Error	Interval of					
			Mean	Difference					
				Lower	Upper				
experiment	-	14.36000	3.70774	-	-2.78103	-2.895	14	.012	
	10.73333			18.68563					
Control	-3.73333	9.65451	2.49278	-9.07982	1.61315	-1.498	14	.156	

As is shown in Table 4.4 the calculated t for the experimental group is 2.89 and the p value (significance) is equal to 0.012.

Since the significance is smaller than the significance level of $\alpha = 0.05$, it can be understood that there is a significant difference between the inference scores in the pretest and posttest in the experimental group. In other words, written Dialogue Journal implementation has a significant effect on inference development.

According to Table 4.4, the differences between inference mean scores in the experimental and control groups are 10.7 and 3.73 respectively.

This suggests that the Written Dialogue Journal's teaching had a significant impact on inference enhancement.

The Written Dialogue Journal's teaching has an impact on increasing the Recognition of assumption.

H0: Recognition of assumption in the control and experimental groups is the same.

H1: Recognition of assumption in the experimental group is less than the control group.

The Recognition of assumption mean scores in control group were 20.2 and 20.5 in pretest and posttest respectively. Concerning experimental group the Recognition of assumption mean scores in pretest and posttest were 20.6 and 24.1 respectively. Furthermore, the median, interquartile domain, range of changes, and the distribution of Recognition of assumption scores in the control and experimental groups are shown in figure 4.3 (see appendix). As is shown in this graph in the pre-test there is no significant difference between the mean scores of the two groups. On the other hand, in the posttest, the Recognition of assumption score in the control group is not significantly different from the pre-test, but in the experimental group, there is a significant difference between the pre-test and post-test scores. Accordingly the data shows that in the post-

test the scores between the two groups is different, and the Recognition of assumption in the posttest is at a higher level.

Table 5Descriptive statistics of Recognition of assumption pre-test and post-test in the control and experimental groups

Group Statistics				
	Groh	N	Mean	Std. Deviation
peri.Assumptions	experiment	15	20.6000	3.69942
	Control	15	20.2000	3.05193
post.Assumptions	experiment	15	24.1333	2.61498
	Control	15	20.5333	3.22638

Table 6 *T-test for comparing the differences between the mean scores of Recognition of assumption post-test and the pre-test in the experimental and control groups*

Paired Samples Test ^a									
	t	df	Sig. (2-						
	Mean	Std.	Std.	95% Conf			tailed)		
		Deviation	Error	Interval of					
			Mean	Difference					
				Lower	Upper				
experiment	-3.53333	4.50185	1.16237	-6.02638	-1.04029	-3.040	14	.009	
Control	33333	2.66369	.68776	-1.80844 1.14177		485	14	.635	
a. $Groh = ex$	periment								

As is shown in Table 4.6 the calculated t for the experimental group is 3.04 and the p value (significance) is equal to 0.009.

Since the significance is smaller than the significance level of $\alpha = 0.05$, it can be understood that there is a significant difference between the Recognition of assumption scores in the pretest and posttest in the experimental group.

In other words, written Dialogue Journal implementation has a significant influence on Recognition of assumption development.

According to Table 4.6, the differences between Recognition of assumption mean scores in the experimental and control groups are 3.53 and 0.33 respectively.

This suggests that the Written Dialogue Journal's teaching had a significant impact on Recognition of assumption improvement.

The Written Dialogue Journal has an impact on the increase of deduction.

H0: Deduction in the control and test groups is the same.

H1: Deduction in the experimental group is less than the control group.

Table 7Descriptive statistics of deduction pre-test and post-test in the control and experimental groups

Group Statistics				
	Groh	N	Mean	Std. Deviation
peri.Deductions	experiment	15	22.1333	3.70071
	Control	15	21.6000	3.13506
post.Deductions	experiment	15	22.8667	2.23180
	Control	15	22.2667	3.34806

The Deduction mean scores in control group were 21.6 and 22.2 in pretest and posttest respectively. Concerning experimental group the deduction mean scores in pretest and posttest were 22.2 and 22.2 respectively.

Furthermore, the median, inter-quartile domain, range of changes, and the distribution of deduction scores in the control and experimental groups are shown in figure 4.4 (see appendix). As is shown in this graph in the pre-test and posttest there is no significant difference between the mean scores of the two groups. Accordingly the data shows that in the post-test the scores between the two groups is not different

Table 8Covariance Analysis of the Written Dialogue Journal on deduction development

Tests of Between-Subjects Effects									
Dependent	Variable:	post.De	ductions						
Source	Type III	df	Mean	F	Sig.	Partial	Noncent.	Observed	
	Sum of		Square			Eta	Parameter	Power ^b	
	Squares					Squared			
peri.Deductions	.359	1	.359	.043	.838	.002	.043	.055	
Groh	2.528	1	2.528	.302	.587	.011	.302	.083	

As is shown in Table 4.8 the calculated P which is 0.587 is larger than the significance level of $\alpha = 0.05$ it can be concluded that this hypothesis is not rejected. Therefore Written Dialogue Journal's teaching does not have a significant impact on deduction improvement.

Written Dialogue Journal has an impact on the interpretation development.

H0: Interpretation in the control and experimental groups is the same.

H1: Interpretation in the experimental group is less than the control group.

Table 9Descriptive statistics of Interpretation pre-test and post-test in the control and experimental groups

Group Statistics				
	Groh	N	Mean	Std. Deviation
peri.Interpreting.Information	experiment	15	22.8667	2.50333
	Control	15	22.8000	3.36367
post.Interpreting.Information	experiment	15	24.6000	1.45406
	Control	15	24.4667	3.37780

The Interpretation mean scores in control group were 22.8 and 24.4 in pretest and posttest respectively. Concerning experimental group the Interpretation mean scores in pretest and posttest were 22.8 and 24.6 respectively.

Furthermore, the median, inter-quartile domain, range of changes, and the distribution of Interpretation scores in the control and experimental groups are shown in figure 4.5 (see appendix).

As is shown in this graph in the pre-test and posttest there is no significant difference between the mean scores of the two groups.

Accordingly the data shows that in the post-test the scores between the two groups are not different.

Table 10Covariance Analysis of the Written Dialogue Journal on Interpretation development

Tests of Between-Subjects Effects								
Dependent Variable: p	Dependent Variable: post.Interpreting.Information							
Source	Type	df	Mean	F	Sig.	Partial	Noncent.	Observed
	III Sum		Square			Eta	Parameter	Power ^b
	of					Squared		
	Squares							
peri.Interpreting.Information	1.120	1	1.120	.161	.692	.006	.161	.067
Groh	.124	1	.124	.018	.895	.001	.018	.052
Error	188.214	27	6.971					

As is shown in Table 4.10 the calculated P which is 0.895 is larger than the significance level of $\alpha = 0.05$ it can be concluded that this hypothesis is not rejected. Therefore Written Dialogue Journal's teaching does not have a significant impact on Interpretation improvement.

Written Dialogue Journal's teaching has an impact on Evaluation of argument.

H0: Evaluation of argument in control and experimental groups is the same.

H1: Evaluation of argument in the experimental group is less than the control group.

Table 11Descriptive statistics of Evaluation of argument pre-test and post-test in the control and experimental groups

Group Statistics				
	Groh	N	Mean	Std. Deviation
peri.Arguments	experiment	15	24.1333	3.58303
	Control	15	24.9333	2.91466
post.Arguments	experiment	15	27.8667	1.92230
	Control	15	25.4667	1.76743

The Evaluation of argument mean scores in control group were 24.9 and 25.4 in pretest and posttest respectively. Concerning experimental group the Evaluation of argument mean scores in pretest and posttest were 24.1 and 27.8 respectively.

Furthermore, the median, inter-quartile domain, range of changes, and the distribution of Evaluation of argument scores in the control and experimental groups are shown in figure 4.6 (see appendix).

As is shown in this graph in the pre-test and posttest there is no significant difference between the mean scores of the two groups.

On the other hand, in the posttest, the Evaluation of argument score in the control group is not significantly different from the pre-test, but in the experimental group, there is a significant difference between the pre-test and post-test scores.

Accordingly the data shows that in the post-test the scores between the two groups is different, and the Evaluation of argument in the post-test is at a higher level.

As is shown in Table 4.12 the calculated t for the experimental group is 3.15 and the p value (significance) is equal to 0.007.

Since the significance is smaller than the significance level of $\alpha = 0.05$, it can be understood that there is a significant difference between the Evaluation of argument scores in the pretest and posttest in the experimental group.

In other words, written Dialogue Journal teaching has a significant influence on Evaluation of argument development.

According to Table 4.12, the differences between Evaluations of argument mean scores in the experimental and control groups are 3.73 and 0.53 respectively.

This suggests that the Written Dialogue Journal's teaching had a significant impact on Evaluation of argument improvement

Table 12

T-test for comparing the differences between the mean scores of Evaluation of argument post-test and the pre-test in the experimental and control groups

Paired Samples Test ^a								
Paired Differences						t	df	Sig.
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower Upper		_		(2- tailed)
experiment	-3.73333	4.58984	1.18509	-6.27510	-1.19156	-3.150	14	.007
Control	53333	3.18179	.82154	-2.29535	1.22869	649	14	.527

Discussion

Written Dialogue Journal's teaching has an impact on critical thinking development

The analyzed data, according to tables 4.1 and 4.3, clearly indicates that there is no significant difference between the mean scores of the control and experimental groups in the pretest. On the other hand, the critical thinking score in the posttest in the control group is not significantly different from the pre-test, while in the experimental group, there is a significant difference between the pre-test and post-test scores. In other words, critical thinking of the participants in the post-test is at a higher level. Thus, it can be claimed that Written Dialogue Journal implementation had a significant effect on the critical thinking development of the learners. Therefore the first hypothesis which states WDJ teaching has an impact on CT development of the EFL learners is supported.

The findings of this study are consistent with the previous studies in the literature which have come up with the positive effects for the use of dialogue journals in fostering critical thinking abilities. This study corroborates the findings of Carole (1994), Huang (2005), Ken (2005), Montgomery (2001), Reinertsen and Wells (1993), Sheila and Trudell (2010) and Weigle (2002). Reinertsen and Wells (1993) and Kumaravadivelu (2006) are among those who have ascertained the fact that learners achieve some awareness of analytical perspectives through using journals.

The findings of the study support what Stout (1993) studies reveal. He notes that one of the most effective forums for generating critical thinking in the content areas is writing in dialogue journals (Stout, 1993). The findings in this part are similar to Reinertsen and Wells (1993) study which aimed at developing students' critical thinking through dialogue journals. They concluded that dialogue journals help learners to achieve some awareness of the analytical perspectives and to learn self—evaluation. In other words, learners received the opportunity and encouragement to reflect, to evaluate, to query, to consider multiple perspectives, and to make connection between their personal experiences and new learning context.

Similar findings have been reported by Khatib and Marefat' (2012) study in which audiotaped and written dialogue journals were used in EFL classrooms in order to investigate their impact on the enhancement of critical thinking. Participants in their study were 33 Iranian EFL learners in 3 intact classes. Analyses exhibited significant difference between the experimental

groups and the comparison group giving evidence that overtly teaching for critical thinking abilities through keeping dialogue journals improves students' critical thinking abilities as opposed to using ordinary English writing tasks.

The results of this study are in accordance with that of Mirhosseini and Ghajar's (2005) study on the effect of dialogue journals. This seems to indicate that dialogue journals, regardless of their medium, develop critical thinking abilities among EFL learners. It seems that due to including so many skills such as discussions, problem solving, decision making, judging, scaffolding, which are claimed to be effective for critical thinking enhancement, the role of medium, oral or written, was overshadowed.

The first hypothesis which evaluated WDJ teaching impact on CT development of the EFL learners is supported. The following five hypotheses evaluate Written Dialogue Journal's teaching effect on five subsections of critical thinking development namely inference, recognition of assumption, deduction, interpretation and evaluation of argument.

Written Dialogue Journal's teaching has an impact on inference development

Following the first research hypothesis, in the second attempt the researcher was to find out Written Dialogue Journal's teaching has an impact on inference development. The study data, tables 4.3 and 4.4, has demonstrated that the Inference mean scores in control group were 53.1 and 56.8 in pretest and posttest respectively. Concerning experimental group the inference mean scores in pretest and posttest were 56.7 and 67.4 respectively. In other words, as is shown the pre-test there is no significant difference between the mean scores of the two groups. According to the data, there is a significant difference between the pre-test and post-test scores in the experimental group. Therefore the data displays that in the post-test the scores between the two groups is different, and the inference in the post-test is at a higher level.

Furthermore, according to Table 4.4, the differences between the inference mean scores in the experimental and control groups are 10.7 and 3.73 respectively. Moreover, as table 4.4 demonstrates, the calculated t and p value for the experimental group is 2.89 and 0.012 respectively. Regarding the significance number, it can be assumed that there is a significant difference between the inference scores in the pretest and posttest in the experimental group. Therefore this suggests that Written Dialogue Journal employment has a significant impact on inference development. In other words, in response to the second research hypothesis, it was found that dialogue journal keeping has a positive effect on critical thinking abilities development of EFL learners. Thus the second hypothesis is supported.

The results concerning this hypothesis indicated that the experimental group enjoyed significant improvement in their ability to think critically. The current findings are supported by many other researchers (Stout, 1993, Chanthalangey and Moakalis, 2002, Lee, 2004, McDonald, 1997, and Walker, 2006) in favor of dialogue journals as a forum for critical reflection.

In favour of written dialogue journals, Stout (1993) elaborates on the effectiveness of writing in promoting critical thinking abilities because writing is inherently slower in pace than speaking.

In our attempts to make sense of things through higher order cognitive functions such as analysis (breaking things apart and examining their interrelatedness) and synthesis (reassembling these parts to make new and personal meaning), writing encourages an on-going back and forth movement among past, present and future. He added that writing places our thoughts before us and can allow us to interact with and modify them, thus providing exercise in metacognition, in thinking about thinking, inventing, editing and inventing again (Stout (1993).

The Written Dialogue Journal's teaching has an impact on the Recognition of assumption growth

According to tables 4.5 and 4.6 which provide descriptive statistics of recognition of assumption pre-test and post-test in the control and experimental groups and T-test for comparing the differences between the mean scores of Recognition of assumption post-test and the pre-test in the experimental and control groups, it is observed that Recognition of assumption mean scores in pretest and posttest were 20.6 and 24.1 in experimental group respectively. Moreover, the study data shows that there is no significant difference between the mean scores of the two groups in the pre-test. On the other hand, in the posttest, the recognition of assumption score in the control group is not significantly different from the pre-test, however in the experimental group, there is a significant difference between the pre-test and post-test scores. Accordingly the data shows that in the post-test the scores between the two groups is different, and recognition of assumption in the post-test is at a higher level.

Concerning the t test, the calculated t for the experimental group is 3.04 and the p value (significance) is equal to 0.009. Since the significance is smaller than the significance level of $\alpha = 0.05$, it can be understood that there is a significant difference between the recognition of assumption scores in the pretest and posttest in the experimental group. In other words, Written Dialogue Journal application has a significant effect on recognition of assumption progress. Moreover, according to Table 4.6, the differences between recognition of assumption mean scores in the experimental and control groups are 3.53 and 0.33 respectively. This suggests that the Written Dialogue Journal's teaching had a significant impact on recognition of assumption improvement. In other words, in response to the second hypothesis, it was concluded that dialogue journal keeping has a positive effect on critical thinking development of learners. Thus the third hypothesis is supported.

The findings of the current study are consistent with the earlier studies which have shown the positive effects for the use of dialogue journals in fostering critical thinking abilities. This study supports the findings of Carole (1994), Huang (2005), Ken (2005), Montgomery (2001), Reinertsen and Wells (1993), Sheila and Trudell (2010) and Weigle (2002). Reinertsen and Wells

(1993) and Kumaravadivelu (2006) who have ascertained the fact that learners develop their critical thinking through using journals.

The Written Dialogue Journal has an impact on the increase of deduction

According to tables 4.7 and 4.8 which deal with the descriptive statistics of deduction pre-test and post-test in the control and experimental groups and covariance analysis of the Written Dialogue Journal on deduction development there is no significant difference between the mean scores of the two groups in the pre-test and post-test. Therefore the data shows that in the post-test the scores between the two groups are not different. Moreover, the calculated P which is 0.587 is larger than the significance level of $\alpha = 0.05$. It can be concluded that this hypothesis is rejected. Thus Written Dialogue Journal's teaching does not have a significant impact on deduction improvement of EFL learners.

Written Dialogue Journal has an impact on the interpretation development.

The data in Table 4.9 and 4.10 shows that the Interpretation mean scores in control group were 22.8 and 24.4 in pretest and posttest respectively. As far as experimental group is concerned the Interpretation mean scores in pretest and posttest were 22.8 and 24.6 respectively. As is clear there is no significant difference between the mean scores of the two groups in the pre-test and posttest. Accordingly the data shows that in the post-test the scores between the two groups are not different. Moreover the calculated P, 0.895, is larger than the significance level of $\alpha = 0.05$. Therefore it can be determined that this hypothesis is rejected. In other words, Written Dialogue Journal's implementation does not have a significant impact on Interpretation improvement.

Written Dialogue Journal's teaching has an impact on Evaluation of argument.

The last critical thinking subsection which is dealt in this chapter is Evaluation of argument. Tables 11 and 12 show that the Evaluation of argument mean scores in control group were 24.9 and 25.4 in pretest and posttest respectively. Concerning experimental group the Evaluation of argument mean scores in pretest and posttest were 24.1 and 27.8 respectively. It can be understood that in there is no significant difference between the mean scores of the two groups in the pre-test and posttest. On the other hand, in the posttest, the Evaluation of argument score in the control group is not significantly different from the pre-test, but in the experimental group, there is a significant difference between the pre-test and post-test scores. Therefore the data shows that in the post-test the scores between the two groups is different, and the Evaluation of argument in the post-test is at a higher level.

According to the T-test for comparing the differences between the mean scores, the calculated t for the experimental group is 3.15 and the p value (significance) is 0.007. Since the significance is smaller than the significance level of $\alpha = 0.05$, it can be claimed that there is a significant difference between the Evaluation of argument scores in the pretest and posttest in the experimental group. In other words, written Dialogue Journal teaching has a significant influence

on Evaluation of argument development. Moreover the differences between Evaluations of argument mean scores in the experimental and control groups are 3.73 and 0.53 respectively. The data suggests that Written Dialogue Journal's employment had a significant impact on Evaluation of argument improvement.

Conclusion

For a number of years the educational system has acknowledged the importance of teaching critical thinking. The significance of critical thinking has been recognized by educators, which has led to the search for ways to develop critical thinking skills of the learners. Although the focus of these explorations is not limited to in-class variables, recent studies focused on classroom as a venue in which critical thinking abilities can be nurtured (Ghafar Samar and Ahmadi, 2012, Enabulele, 201, Maleki and Habibipour, 2007). The findings of this study also contribute to this part of the literature.

In recent years, dialog journals has occupied the mind of so many researchers to be worked on as an important tool for reflection as well as CT development in EFL/ESL contexts. The present research opened a window of opportunity for critical thinking skill to be cultivated through written dialogue journals.

The main question of the study refers to whether there is a relationship between written dialog journal implementation and critical thinking development of EFL learners. There is one main hypothesis which deals with written dialog journal implementation effect on critical thinking development of EFL learners as well as 5 more hypotheses concerning written dialog journal implementation influence on 5 subsections of critical thinking development. The studies subsections are inference, recognition of assumption, deduction, interpretation and evaluation of argument.

The study's findings in relation to the main hypothesis seem to indicate that Written Dialogue Journal implementation has a significant effect on the critical thinking development of EFL learners. As far as the study five secondary hypotheses are concerned, evidence in the analyzed data concerning WDJ effect on CT growth demonstrates that dialogue journal keeping has a positive effect on critical thinking abilities development of EFL learners. As it appears, similarly dialogue journal keeping has a positive influence on critical thinking development. Moreover, the data suggests that Written Dialogue Journal's employment had a significant impact on Evaluation of argument improvement. On the other hand as it appears WDJ teaching does not have a significant impact on deduction, 5th hypothesis, and interpretation, 6th hypothesis, improvement of EFL learners.

Implementing critical thinking in EFL classrooms is the most straightforward implication of this study. EFL learners are dealing with complex cultural and contextual issues in term of learning a language which is thought as an international one. In order to tackle with the challenges and uncertainties they face on the way of learning this foreign language, they need to have an ability to make the right judgments. Toward this goal, EFL teachers should equip their students with the ability to reflect critically, because this ability, as Soeherman, (2010) proposed, engages students in deepening their understanding of the truth, making right decisions and finding the right answers

to the world. Consequently, it will be worthy for EFL teachers to invest on written dialogue journal keeping as an efficient and practical technique which helps learners improve their critical thinking abilities. Additionally, enhancing learners' critical thinking abilities comes with many empirically supported benefits that make its application in any language and educational context a must. These advantages include learners' involvement, increasing learning motivation (Savich, 2008), fostering engagement (Dantas-Whitney, 2002), achievement (Birjandi, and. Bagherkazemi, 2010) and effective communication (Brown and Keeley, 2007) and so on.

To sum it up it can be argued that it is hoped that EFL teachers are able to use this study findings as a starting point for the development of critical thinking in their own classes. The present findings are hoped to have significant implications for language learning/teaching setting in general and that in Iran in particular. It is believed that, although not readily generalizable, the present findings would at least be indicative of the constructive role of written dialogue journals in cultivating critical thinking abilities of EFL learners.

Suggestions for Further Studies

While this study recognized the possibility of other skills and dispositions embedded in critical thinking, the study was designed to examine only those critical thinking skills measured by the instrument used. Therefore the possibility of other skills, dispositions embedded and other instruments in critical thinking can be investigated. As mentioned before, a significant limitation is seeking the subjects' critical thinking using a questionnaire. Hence, collecting data using other tools especially observation is of importance.

This study is restricted in terms of generalizing the results since it was not an all–encompassing research and was conducted in an English institute in Bam, which may not be typical of all EFL learning settings in general. Therefore different Iranian contexts can and should be the focus of future research in Iran. This study used advanced language learners. Therefore the learners' levels can vary to investigate the idea regarding all aspects of the language class.

Moreover, this study utilized participants who fell between 18 to 30 years old. The present study covered very limited number of participants, and the findings can be more reliable if the population is larger. Besides, the area of the study has to be extended to larger areas with different cultural and social characteristics. For this reason, if the area is expanded, more reliable results can be achieved.

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