

The effect of direct and indirect written corrective feedback on grammatical collocations in L2 writing

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Abstract

Recent studies have demonstrated the effective role of direct and indirect written corrective feedback (WCF) in the use of grammar, but little research has investigated the role of WCF in the use of collocations. This study is an attempt to investigate the effect of both direct and indirect WCF on the use of grammatical collocations in L2 writing. The participants of this study included 90 EFL learners in Shahrekord University, randomly assigned into three groups: two experimental groups (i.e., direct and indirect groups) and one control group. To collect data, they were asked to write three distinct essays as pretests, posttests, and delayed posttests, in which they were given key words to make collocations with. Sheen's (2007) techniques were employed to correct the grammatical collocation errors in the direct and indirect groups. The results of ANOVA showed that, first, both experimental groups performed better than the control group. Second, the indirect group outperformed the direct group on the posttests. Third, the effect of indirect WCF was retained in both immediate and delayed posttests.

Keywords: direct feedback, indirect feedback, written corrective feedback, grammatical collocations

1. Introduction

In educational settings, corrective feedback (CF) refers to “comments or information learners receive regarding their actions with the intent to assist them to either reinforce correct responses or to search for replacement for the incorrect ones” (Brooks, Crippen, & Schraw, 2002, p. 32). Brooks et al. (2002, p. 33) state, “successful instruction nearly always includes performance related to CF”, which can be provided in a variety of ways such as verbal expressions, facial signals or written comments. In other words, CF that is provided should include information about actions for the learner to take in order to determine the correct performance. In support of CF, Hattie, Biggs, and Purdue (1996) argue that it is one of the most powerful variables that impacts achievement and that it needs to be used extensively in education.

To move further, written comments or written corrective feedback (WCF) is, in Kepner's (1991, p. 308) terms, “an error feedback given by teachers as response to students’ errors in writing.” WCF, as Kern and Warschauer (2000) state, is the most important part of writing process and without individual attention and appropriate feedback on writing errors, improvement will not take place. However, not much attempt has been made for systematic classification of feedback, including the written one. As Black and Williams (1998) stated, in spite of the high value that researchers and instructors place on WCF and the role that good-quality feedback may play in helping students, it is surprising that little attempt has been made to classify systematically different types of teachers' comments that constitute feedback, hence little systematic analysis of feedback.

Probably, the most important dichotomy on WCF is between direct and indirect feedback (Ferris & Hedgcock, 2005). Although these terms are not always used consistently in the literature, it is generally believed that when an instructor provides the students with the correct linguistic forms such as word, morpheme, phrase, rewritten sentence, deleted words or morphemes, he deals with direct feedback. This kind of feedback "constitutes a traditional error correction strategy that consists of indicating the location of an

error on the student's text and the provision of the correct form by deleting and/or replacing the error or by adding a linguistic element" (Sheen, 2007, p. 262). As Ferris and Roberts (2001) and Hyland and Hyland (2006) state, drawing a line through unnecessary parts (e.g., phrases, words or morphemes), inserting missing parts (e.g., phrases, words or morphemes) or writing the correct forms near the wrong forms (e.g., below them or in the margins) are different forms of direct feedback. Indirect feedback, on the other hand, takes place when a teacher uses some marks such as an underline, circle, coding symbol to indicate the location of an error or to show that an error has been made, but s/he does not write the correct form. His or her learner should solve the problem that has been brought to his or her attention.

Researchers do not agree which one (i.e., direct or indirect feedback) is more effective in language learning contexts. There is no strong consensus over the best approach to correct students' errors in writing, which is the focus of this study. While some researchers (e.g., Ferris, 2003; Ferris & Roberts, 2001) prefer the direct WCF, since it can reduce the confusion, others (e.g., Chandler, 2003) prefer the indirect WCF, since it can help learners to become as independent self-editors. In contrast to these two camps, other researchers (e.g., Ferris, 2005; Ferris & Helt, 2000) state that different linguistic errors in writing should not be treated the same because they represent separate domains of knowledge that acquire different processes. Therefore, both direct and indirect WCF can be effective when given in an appropriate context.

Apart from the direct and indirect feedback, another area of interest is collocations, which play a significant role in productive skills such as L2 writing. According to Lewis (1997), collocation is "the readily observable phenomenon whereby certain words co-occur in natural text with greater than random frequency" (p. 8). As Laufer (1991, as cited in Faghih & Sharifi, 2006) states, knowledge of a word implies the knowledge of possible combinations into which a given item can enter. Such combinations are called collocations, which are "essential, indispensable elements with which our utterances are very largely made" (Gabrielatos, 1994, p. 2). According to DeCarrico (2001), collocations can be of two

types: lexical and grammatical ones. In his words, lexical collocations do not contain grammatical words, but consist of combinations of full lexical items (i.e., noun, verb, adjectives and adverbs). In contrast, grammatical collocations are those in which a noun, verb, adjective or verb frequently co-occurs with a grammatical item, usually a preposition.

The violations of word combinations or selections that constitute grammatical collocations are among frequent writing errors made by many EFL learners in Iran. As Zarei (2002) states, many Iranian EFL learners seem to have serious problems with the use of collocations in L2 writing. It is assumed that instruction such as providing WCF can help EFL learners with writing experience even though research on WCF is still imperfect and sometimes contradictory. Thus, there are good reasons to explore the effect of WCF on collocation use in L2 writing. This study is aimed at investigating the effect of direct and indirect WCF on the use of grammatical collocations in an EFL context in Iran.

2. Literature Review

Feedback in language learning has relatively a long history. Several names are labeled for the concept of feedback. Feedback is known as repair for discourse analysts like Kasper (2000), treatment or corrective feedback (CF) for L2 teachers like Fanselow, (1977), negative evidence for linguists like White (1989), correction and negative feedback for psycholinguists like Annett (1969) and focus-on form for SLA researchers like Lightbown (1998) and Long (2006). According to Schachter (1991), the most common terms for the term feedback in SLA are corrective feedback, negative evidence, and negative feedback. He believes that corrective feedback is the term most often used instead of feedback in the field of L2 teaching/learning. He broadly defines it as “information following an error produced by the learner and is part of learnability problem for language acquisition” (p. 207). As Schmidt (1995, p. 20) puts it, “what learners notice in input becomes intake for

learning”. CF could provide such noticing and/or comprehensible output producing opportunities for learning.

According to Mackey (2007), there are two main types of CF which are oral corrective feedback (OCF) and written corrective feedback (WCF). Research into CF has been primarily concerned with OCF in relation to theoretical claims about the role of input and interaction, specific grammatical features and measures acquisition in terms of grammatical features. However, WCF studies have compared outcomes in terms of overall improvement across a number of different grammatical structures. There are also other differences between OCF and WCF. While WCF is delayed, OCF occurs immediately after an error has been committed. Besides, WCF imposes less cognitive load on memory than OCF. Attaching significance of CF to writing, several researchers (e.g., Ferris, 2003; Goldstein, 2001; Guenette, 2007; Hyland & Hyland, 2006; Kern & Warschauer, 2000; Wiegler, 2002) claim that WCF is an important part of writing process that impacts improvement in writing skill.

Several studies have investigated the effect of direct and indirect WCF on syntactical features of language. For instance, Ferris and Helt (2000) conducted a study with 92 university ESL (English as a second language) learners in USA. They investigated the effect of direct and indirect WCF on errors in terms of grammatical features. The results of their study showed that university students made substantial progress over the course of a semester in reducing errors in verb tense and form, made slight progress in reducing lexical and noun ending errors, and regressed in the sentence structure and article errors categories. They claimed that direct WCF by the teacher led to more correct revision than indirect WCF.

Also, Lizotte (2001) explored the effect of indirect WCF on the use of prepositions in writing among Hispanic bilingual and ESL students of low-intermediate English proficiency. He introduced the students to errors through the use of a code system and marked the location of errors for the students to do self-correction. The results indicated that the errors in writing were

reduced over one semester and significant gains in fluency (i.e., number of words written in a specified amount of time) were made.

In another study, Bitchener, Cameron, and Young (2005) examined the effect of different types of WCF, that is; direct and indirect, and no feedback on three types of errors which involved past tense, definite article 'the', and prepositions in writing in the English language department of a university in Auckland with three existing low-intermediate classes consisted of 52 students. Their study revealed that the direct WCF resulted in greater accuracy when treatable errors such as past tense, article 'the' and preposition were used.

Furthermore, Sheen (2007) examined the effects of direct WCF on the development of 91 adult ESL learners' accuracy in the use of two types of articles ('the' and 'a'). The study included a direct-only group, a direct-metalinguistic group, and a control group. In the direct-only group, the researcher indicated errors and provided correct forms. In the direct-metalinguistic group, the researcher indicated errors, provided correct forms, and supplied metalinguistic explanations. And, in the control group, the researcher administered tests but provided no WCF. The effectiveness of the WCF was measured on pretests, posttests, and delayed posttests which included a narrative task, a speeded dictation, a writing test, and an error correction test. The results showed that both direct CF groups outperformed the control group.

As to the collocation, Zhang (1993) investigated the use of collocations in the writings of native and non-native college freshmen. Samples of written essays were analyzed in order to examine any associations between collocational knowledge and writing quality, on the one hand, and the use of collocations in the students' essays and writing quality, on the other. The results showed that collocational knowledge was a source of fluency in written communication and the quality of collocations in terms of variety and accuracy was indicative of the quality of writing.

In addition, Chen (2002) conducted a study to investigate the collocational errors in high school students' writing. The unacceptable grammatical and lexical collocational errors were classified according to types of errors they contained, using a

modified classification originally established by Benson, Benson and Ilson (1997). Findings revealed a total of 272 collocational errors consisting of 147 grammatical errors and 125 lexical collocational errors in the subjects' writing. Finally, Liu (2009) investigated the effect of collocational noticing upon learners' ability to produce collocations in writing. Findings showed that the EFL learners produced a greater number and variety of acceptable collocations in their writing after they received collocational feedback.

The above studies mostly investigated the role of direct and indirect WCF on syntactical features of language in writing, but there has been very little empirical research about the role of WCF in L2 collocations even though there are some theoretical supports on the positive role of WCF feedback in collocation use (e.g., Ellis, 1997; Fen, 2005; Hill & Laufer, 2000; Kennedy, 2003; Lewis, 1997; Liu, 2009; Nesselhauf, 2005; Schmidt, 1995). This was enough to encourage us to investigate the effect of direct and indirect WCF on the use of grammatical collocations in L2 writing in an EFL context such as Iran. To this end, the following research questions have been developed:

1. Does WCF make a significant difference on the use of grammatical collocations in L2 writing?
2. Is there a significant difference between the effect of direct and indirect WCF on the use of grammatical collocations in L2 Writing?
3. Is the effect of the direct or indirect WCF on the use of grammatical collocations in L2 writing retained over time?

3. Method

3.1 Participants

For the purposes of this study, 90 junior undergraduate EFL students, majoring in English Translation at Shahrekord University were selected from a larger sample of 120 EFL students through Oxford Placement Test (OPT, Allen, 1992). They included both male and female students whose age ranged from 20 to 24, with

Farsi as their native language. Meanwhile, all the participants passed the *Essay Writing* and *Application of Metaphors and Idiomatic Expressions in Translation* courses in which they had developed a sense of familiarity with writing essays, different types of essays, collocations and different types of collocations.

3.2 Instrumentation

To collect data, this study made use of two instruments: OPT (Allen, 1992) and essay writings. The OPT consisted of 100 multiple-choice listening as well as 100 multiple-choice grammar items. This study used the grammar test part of the OPT to select a homogenous group of EFL learners. The listening part of the OPT was excluded since oral proficiency was not the concern of this study, which focused on the written mode of language (i.e., written corrective feedback). Also, nine expository and argumentative essays were used. The topics of essays were selected from the participants' *Academic Writing Course* by Jordan (1990), which they had already studied. For example, three selected topics were: "Why do you select English as your major at the university?", "Discuss the advantages and disadvantages of watching TV", and "Explain some problems you face at the university." They were expected to write either argumentative or expository essays on the assigned topics respectively.

3.3 Data collection procedures

To collect the data, first, the OPT was given to 120 EFL students. The OPT mean scores and standard deviations were used to select a homogenous sample of EFL students consisting of 90 junior undergraduate students. Second, the selected participants were randomly assigned to three groups: one direct group (henceforth DG), one indirect group (henceforth IG) and one control group (henceforth CG). Third, a pilot study was done to assess the appropriacy of topics of essays and select the key words for the next stage. Here, 18 EFL students majoring in English Translation at Shahrekord University were selected. They were divided into three

groups, each with six EFL students. Three different topics were given to each group in three distinct sessions during three weeks. Altogether, nine essays were written by the participants in the pilot study. The ten most frequent content words in each essay test which grammatically collocated with other words were selected as key words to be used later in the main trial. Fourth, the main trial was carried out. In order to assess the participants' use of grammatical collocations in L2 writing, they were asked to write three 40-minute essays as the pretests in three distinct sessions. They were instructed to use the ten key words in their essays so that they could make grammatical collocations. Fifth, the classroom practice was employed based on short compositions so tasks and feedback could be manageable, meaningful, and constant. In the experimental groups (i.e., DG and IG), all their errors related to grammatical collocations were corrected according to techniques suggested by Sheen (2007). Following Sheen, in the DG, errors were corrected directly by using such techniques as deleting, inserting, or writing the correct form near the errors. In the IG, all grammatical collocation errors were corrected indirectly through underlining, circling, and coding (e.g., *GC* for grammatical collocation, *PN* for preposition + noun, *VP* for verb + preposition, *AP* for adjective + preposition). In the above groups, correction was done and feedback on the collocations was given to the participants before the next writing was assigned to them whereas in the CG, scoring was done with no WCF. The participants in the groups were asked to give the edited versions of essays back to the researcher to make sure that they had taken care of the grammatical collocations.

We concluded that any improvement in the accuracy of use of grammatical collocations in writing would need to be demonstrated by new pieces of writings in a pretest-posttest design (e.g., Bitchener, 2008). Thus, three other essays (with similar topics and 10 key words) were given to the same participants in three distinct sessions as the posttests. It was hypothesized that the WCF provided in the classroom would transfer to the posttests. Finally, to assess the long-term effect of both direct and indirect WCF on the use of grammatical collocations in L2 writing, four weeks later, three other topics similar to those of pretests and posttests in terms

of type and difficulty, along with 10 key words for each, were given to the same participants. They were asked to write three essays as delayed posttests in three separate sessions.

Discrete point scoring procedures were used by the researcher in this study. That is, one point was given to the correct use of grammatical collocation, and zero point to the incorrect use of grammatical collocations. Meanwhile, the essays were photocopied and given to a native speaker of English to check the scoring and WCF. If there was any discrepancy, it was discussed so that a consensus could be reached.

4. Results

In order to address the research questions of the study, it was important to make sure that all the groups had normal distribution. Thus, the Levene's test of equality of error variance was used in order to demonstrate the normality of the groups in the pretests. The results are reported in Table 1. As this table displays, the significance values of pretests in the DG, IG and CG were 0.90, 0.12, and 0.15 respectively, indicating that none of them were significant at 0.05. Therefore, the assumption of the equality of variance is not rejected. That is, all the three groups had normal distribution.

Table 1: Test of equality of variance in pretests

Groups	<i>F</i>	<i>df1</i>	<i>df2</i>	Sig.
DG	.097	2	87	.907
IG	2.171	2	87	.120
CG	1.942	2	87	.150

Table 2 displays the descriptive statistics of the two experimental groups (DG, IG) and one control group (CG) across the pretests, posttests, and delayed posttests.

Table 2: Descriptive statistics of DG, IG, and CG across test time

Test Time	Pretest			Posttest		Delayed Posttest	
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Groups							
DG	30	4.67	1.39	5.90	1.62	6.83	2.36
IG	30	4.43	1.79	6.57	1.94	8.07	2.14
CG	30	4.50	2.03	5.00	2.22	5.17	2.24

As Table 2 shows, the pretest mean scores in all three groups were not different from each other very much, but the mean scores of all three groups showed a greater difference in the posttests, compared with those in the pretests. The highest mean score in the posttest and delayed posttest belonged to the IG ($M = 6.57$ and 8.07 , respectively). The greatest difference between the mean score in the pretest and posttest belonged to the IG (i.e., 2.14), and the greatest mean score difference between the posttest and delayed posttest belonged to the IG (i.e., 1.50). Also, as Table 2 demonstrates, the mean scores of the DG in the pretest, posttest and delayed posttest were 4.67 , 5.90 and 6.83 respectively. That is, the mean scores increased from the pretest (i.e., 4.67) to the posttest (i.e. 5.90) and from the posttest to the delayed posttests (i.e., 6.83). Also, the mean scores of another experimental group (i.e., IG) increased from the pretest (i.e., 4.43) to the posttest (i.e. 6.57) and from the posttest to the delayed posttests (i.e., 8.07). In addition, the mean scores in the control group (i.e., CG) showed an increase from the pretest (i.e., 4.50) to the posttest (i.e. 5.00) and from the posttest to the delayed posttests (i.e., 5.17). In the same manner, standard deviations of both experimental and control groups increased from the pretests to the posttests and from the posttests to the delayed posttests. Thus, as the mean scores of grammatical collocations in the writing tests increased, the standard deviations had an increase too, indicating more variations in the delayed posttest scores.

A mixed between-within ANOVA was run to find out whether there was a significant difference among the groups in terms of grammatical collocation scores in the essay writings. The collocation scores in the essays were considered as dependent variables and all three groups (i.e., DG, IG and CG) and time (i.e., pretests, posttests and delayed posttests) were considered as independent variables in the ANOVA. The results are reported in Tables 3, 4, and 5.

Table 3: Tests of between-subjects

Source	M Square	<i>df</i>	<i>F</i>	Sig.
Intercept	8377.837	1	1006.853	.000
Groups	32.459	2	3.901	.024
Error	8.321	87		

As Table 3 illustrates, the *F* value for the intercept was significant, $F(1, 87) = 1006.86, *p < 0.05$, indicating a strong linear relationship among all three groups. Also, the effect of group as a between-subject variable was significant, $F(2, 87) = 3.90, *p < 0.05$, showing that there was a significant difference among the three groups of study. Table 4 shows the results of the time as a within-subject variable across all three groups of study.

Table 4: Tests of within-subjects

Source		M Square	<i>df</i>	<i>F</i>	Sig	Partial Eta Square
Test Time	Sphericity Assumed	78.99	2	43.2	.000	.332
	Greenhouse-Geisser	117.21	1.38	43.23	.000	.332
Test Time* Groups	Sphericity Assumed	9.36	4	5.13	.001	.105
	Greenhouse-Geisser	13.89	2.70	5.13	.003	.105
Error	Sphericity Assumed	1.83	174			
	Greenhouse-Geisser	2.71	117.27			

As Table 4 shows, pretests, posttests, and delayed posttests were significantly different in terms of collocation scores obtained from the essays, $F(2, 174) = 43.24$, ($*p < 0.05$). When the post hoc tests were conducted. The results indicated that the mean difference between the pretests and posttests were 1.29 at 0.05, which was significant ($*p < 0.05$); the mean difference between the pretests and delayed posttests were 1.82 at 0.05, which was significant ($*p < 0.05$); the mean difference between the posttests and delayed posttests were 0.53 at 0.05, which was significant ($*p < 0.05$). The above results mean that the participants' mean scores significantly changed (i.e., increased) from the pretests to the posttests and from the posttests to the delayed posttests. Meanwhile, the eta square was found to be 0.33, indicating a very large effect size according to the guidelines proposed by Cohen (1988). Besides, the interaction of time and group variables were found to be significant, $F(4, 174) = 5.13$ ($*p < 0.05$). That is, there was a significant difference among groups across time. Meanwhile, the eta square was found to be 0.105, indicating a large effect size according to the guidelines proposed by Cohen (1988). Table 5 reports the results of Bonferroni post hoc tests of comparisons between the groups of the study.

Table 5: Post hoc tests

Groups		Mean Differences	Std. Error	Sig
DG	IG	-.22	.430	.047
DG	CG	.91	.430	.037
IG	DG	.22	.430	*.047
IG	CG	1.13	.430	*.010
CG	DG	-.91	.430	*.037
CG	IG	-1.13	.430	*.010

As Table 5 shows, there was a significant difference between the collocation scores among all the three groups: the DG was significantly different from the IG ($*p < 0.05$); the DG was significantly different from the CG ($*p < 0.05$); the IG was significantly different from the CG ($*p < 0.05$). Thus, both experimental groups were significantly different from each other

and from the CG in terms of collocation scores in the writings. Also, Figure 1 displays the mean score differences among the three groups of study across pretests, posttests and delayed posttests more clearly. As the figure demonstrates, the mean score differences were less for the CG and the mean score differences were greater for the IG. In addition, the mean scores in the IG were always higher than mean scores of the DG in the posttests and delayed posttests, which are always higher than mean scores of the CG.

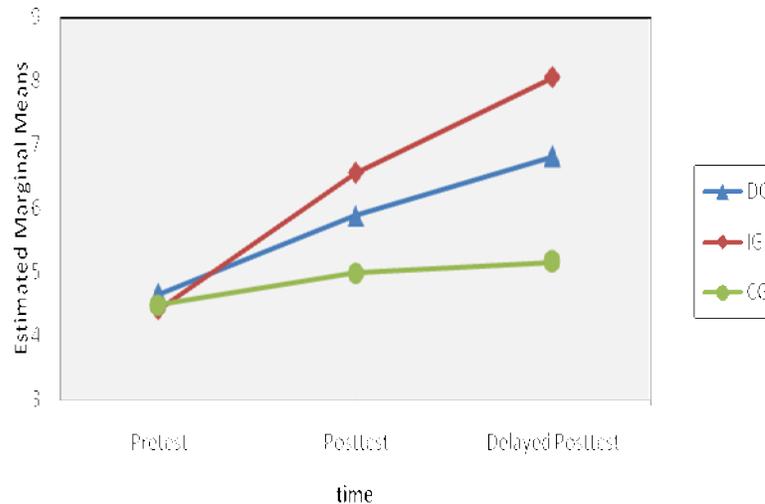


Figure 1: Estimated marginal means of pretests, posttests, and delayed posttests for DG, IG, and CG.

5. Discussion

The first research question of the study intended to investigate the effect of WCF on the use of collocations in L2 writing. Both descriptive statistics and tests of significance indicated a significant difference in the collocation use in the essays between the control and experimental groups. The WCF significantly improved the accuracy of the collocation use in the essays in the experimental groups. The above finding does not support the results reported by Ashwell (2000), who compared the methods of providing feedback

with 'no feedback'. He found no significant differences between the effects of direct, indirect and 'no feedback' methods in written compositions. Although several studies have claimed that WCF is ineffective (Kepner, 1991; Truscott, 1996, 2004; Truscott & Hsu, 2008), the above finding of this study supports the results reported by Sheen (2007) about the effectiveness of WCF in improved accuracy as well as claims made by Ellis (1997), Schwartz (1993), and Chandler (2003) about the positive impact of WCF on features of writing and lexicon. For instance, Ellis (1997) states that the grammatical collocations are better learned in writing in the form of WCF. Besides, Schwartz (1993) claims that learning the lexicon involves item-by-item learning as well as the inventory of morphological forms for which WCF might be effective; Chandler (2003) also claims that WCF is helpful in solving complicated errors such as errors in word choice. Despite the fact that we cannot rule out the effect of individual differences (e.g. language aptitude and motivation) and different research methods employed by researchers in the area of feedback, which can result in inconsistency of findings, skill acquisition theory in L2 gives us confidence to support the above finding of the present study. According to this theory, declarative knowledge (i.e., what one knows) is required for the development of procedural knowledge (i.e., what one can do). In other words, procedural knowledge should be based on rules, feedback, numerous examples and deliberate practice, which can lead L2 learners towards automatic production. It is assumed that the WCF in the experimental groups of this study helped the L2 participants to better proceduralize knowledge of grammatical collocation use; it might have helped them to focus their attention on the area of collocation that required improvement. To use Schmidt's (1995) terms, the WCF might have promoted the participants' awareness with noticing and understanding. Thus, the corrective feedback that reflected what the participants needed most, as demonstrated by what they produced, would be considered to have a meaningful role in facilitating the development of L2 writing.

In addition, the results of this study indicate that the effect of WCF varied according to type of written feedback as the

performance of two experimental groups (i.e., DG and IG) were significantly different in terms of type of WCF on the collocation use; the IG performed better than the DG on the collocation use in the posttests. The above finding does not support the results reported by Frantzen (1995), Ashwell (2000) and Ellis, Loewen, and Erlam (2006). Frantzen (1995) and Ashwell (2000) failed to find significant differences on the effect of direct and indirect WCF. Also, Ellis et al. (2006) reported that both direct and indirect types of WCF were equally effective in improving accuracy in writing. The results obtained in the current study also run counter to the claim made by Truscott (2004) and Sheen (2007). They state that indirect WCF runs the risk of overburdening learners; students ignore teachers' indirect WCF or do not utilize it effectively. Unlike the claim made by Truscott (2004) and Sheen (2007), it is assumed that the indirect WCF lowered the negative affective factors such as anxiety in the participants of this study. From psychological perspectives, as Kennedy (2003) argues, indirect WCF imposes less psychological force on the language learners. When learners encounter with a lot of direct WCF such as crossing out, deletion, or addition, they may lose their self-confidence in subsequent writing, but when teachers correct the learners' grammatical mistakes, including violations of collocations in L2 writing, through indirect techniques such as underlining, circling, and coding, they may feel that they are given more opportunities to think and revise their writing. It is assumed that providing the L2 participants of this study with the indirect WCF on collocation helped them to focus more on the inaccuracy marked by their teacher. Consequently, they made their best to learn how to self-edit and finally overcome inaccuracy in the subsequent writings.

The inconsistency of results might be due to nature of language features under investigation. As Schmidt (1995) states, feedback and attention in all aspects of language are likely to result in learning. However, the type of feedback and degree of attention given to different language features depend on the nature of the features. While direct feedback may be effective for some language features such as prepositions and articles, indirect feedback might be more suitable for other language features. Therefore, in spite of

the significant role of direct feedback in the use of some language features, the indirect form of feedback might be more effective in the use of collocations. As Ferris and Roberts (2001) and Bitchener et al. (2005) argue, indirect WCF can be useful in correcting untreatable errors like collocations and result in greater accuracy in writing. To move further, studies are different in how they measured the effectiveness of WCF. Some studies assessed improvement in terms of whether subjects incorporated the corrections in a revision of their first draft (e.g., Ferris & Roberts, 2001); other studies assessed improvement in homework essay assignments or journal entries over a long period of time (e.g., Chandler, 2003; Kepner, 1991); a few studies assessed improvement in terms of gains in both linguistic accuracy and fluency (e.g. Ashwell, 2000). In Guenette's (2007, p. 51) terms, differences in research design and methodology "are indeed at the root of the different results obtained". Thus, the variation makes us cautious about the generalization of the above findings. As Sheen (2007, p. 257) states, "the variation in how the effectiveness of CF was measured makes reaching any definite conclusion very difficult."

Furthermore, the examination of results shows that both the time of the test (i.e., pretest, posttest and delayed posttest) and the interaction between the time of the test and group variables were found to be significant. The above results indicate that, first, any improvement in the posttests among the groups, particularly experimental groups, was maintained in the delayed posttests too. That is, the short-term improvement was secured in the long run. Second, the effect of indirect WCF was more than that of direct WCF in the long run. Thus, as Lizotte (2001) argues, gains of indirect WCF in reduction of errors in writing retain over time. It should be noted that the control group improved over time, suggesting that there might be a test practice effect. However, both experimental groups (particularly indirect group) outperformed the control group, which indicates that the WCF had an effect over and above the test practice effect. In line with the results of this study, Lalande (1982) has also reported that students who received indirect WCF would reduce their errors over time. As Ferris (2002) argues,

indirect WCF can induce deeper internal processing. It is assumed that the WCF, particularly the indirect WCF, pushed the L2 participants of the study to engage in hypothesis testing, leading to deeper internal processing. Thereby, the effect was enhanced over time. In addition, the indirect WCF might have had a positive impact on the self-efficacy of the L2 participants. Therefore, they were more likely to perform better when they believed they were capable of improvement and establishing criteria for evaluating their own writing skill. This seems to underscore the claim that how one makes use of WCF make a difference in the outcome.

6. Conclusion

Although some have posed some questions about the effectiveness of approaches to WCF, this study has demonstrated that WCF has helped EFL learners to improve the accuracy of collocation use in essay writings. The findings of this study challenge the claim that "L2 writing researchers have not been able to convincingly demonstrate that written CF leads to improvement in grammatical accuracy in new pieces of writing" (Sheen, 2007, p. 257). Indeed, additional research is required to investigate the role of WCF in collocation use and grammatical structures in other contexts before reaching any definite conclusion. However, the findings of this study can be valuable to curriculum developers and practitioners who would like to help L2 learners to write more accurately. Perhaps the time has come to shift the focus from whether WCF is effective onto how it can be more effective with respect to various aspects of L2 learning. Though the path towards this goal can be so challenging, the findings of this study suggest that the progress will be possible. This study, assumed to be a step in the right direction, has shown how indirect WCF on the use of grammatical collocations can practically result in more accurate L2 writing. Perhaps promoting hypothesis testing and consciousness-raising through attracting L2 learners' attention to the importance of self-editing in error correction and creating positive attitude through the reduction of the barriers to self-confidence and self-efficacy as a

result of the indirect way of correction might be the reason for a greater positive effect of indirect WCF over time. However, the generalization of the findings should await other related research including longitudinal studies.

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