Research Paper

Exploring the Impact of Unfocused Indirect and Direct Written Feedback on Iranian EFL Students' Implicit and Explicit Knowledge of Grammar

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Abstract

Although a great deal of research has been conducted on various aspects of implicit and explicit knowledge, very few research have examined how written corrective feedback (WCF) works on implicit and explicit grammatical knowledge. Inspired by this gap, the aim of the present study was to investigate whether the direct and indirect unfocused kinds of WCF can lead to an increase in the learning gains in terms of implicit and explicit grammatical knowledge. To that end, 90 participants selected from a statistical pool of 380 EFL learners in seven private English language institutes were assigned into two treatment groups and one control group via

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random matching technique to receive the intended treatment. Using MANCOVA and one-way ANCOVA statistical techniques, data related to two treatment groups and one control group were collected. The results showed that both types of direct and indirect unfocused WCF could increase the students' implicit and explicit grammatical knowledge. The results also suggested that although both written feedbacks improved the learners' performance almost equally, the direct type of WCF was slightly more effective. The study concludes with implications for teachers regarding their use of appropriate types of written error correction.

1. Introduction

Written corrective feedback (WCF) is regarded as a kind of feedback that is provided by the instructor on learners' writing tasks to develop subsequent compositions. Bitchener and Knoch (2010) assert that feedback refers to the information provided by teachers that raise their students' perception and performance, thus assisting them in recognizing their linguistic errors and correcting them appropriately. It has been shown that instructors provide a variety of feedback on their learners' writing compositions (Ellis, 2009). Some of the feedback strategies that have been adopted from previous studies include focused, unfocused (comprehensive), direct and indirect WCFs, among others (e.g., Frear & Chiu, 2015; Shintani, 2015).

Although there are inconclusive results on the effectiveness of WCF, the type of WCF is regarded as essential to the ultimate achievement of the process. In turn, different typologies of WCF exist in the literature. Ellis (2008) states that the point about the direct WCF is that the teacher both indicates the learner's written error and provides the correct answer. On the

other hand, indirect WCF indicates that a mistake has happened without giving the correct item. Therefore, language learners themselves are responsible for finding the correct answers to their own written mistakes. It is worth noting that in the focused WCF, teachers provide written feedback on type of linguistic feature or a very limited number of linguistic items, while considering unfocused WCF they provide written correction for a relatively large number of linguistic errors (Frear & Chiu, 2015; Lee, 2017).

Meanwhile, the provision of WCF is one of the most widespread educational activities in L2 language classrooms; several ESL/EFL teachers find it important to provide written feedback in the classroom to improve students' performance (e.g., Lee, 2019; Bitchener, & Knoch, 2010; Jalilifar, Khazaie, & Ahmadpour, 2014; Manchón & Cerezo, 2018; Moradian & Hossein-Nasab, 2019; Nourinezhad, Hadipourfard, & Bavali, 2021). Nevertheless, written corrective feedback (WCF) remains a controversial tool for aiding second language acquisition (SLA). According to Sheen (2007), given that most studies of corrective feedback in SLA research have focused more on oral corrective feedback as well as its focused type, there are contradictory opinions about how effectively written feedback can improve the implicit and explicit knowledge of the students to be employed for the development of their writing performance.

In the meantime, there exist two opposing standpoints concerning L2 linguistic knowledge representations in SLA (Ellis, 2005). According to Ellis (2005), the first standpoint drawing on the research by Chomsky (1976) suggests that linguistic knowledge consists of specific components and items that are extracted from input data through Universal Grammar as well as different learning principles when the learner is exposed to the language (Wexler & Mancini, 1987). On the other hand, Ellis (2005) indicates that the second standpoint draws on the connectionist models of language learning

(Rumelhart & McClelland, 1986). This model considers the gradually emerging nature of the linguistic knowledge as language learners gain new patterns and sequences through a general cognitive capacity. Despite their differences, both nativist and connectionist approaches to language learning agree that the linguistic knowledge of students includes both types of implicit and explicit knowledge (Mashhadi & Khazaie, 2018). According to Ellis (2005), this essential agreement is of importance because it eliminates the need to address theoretical disagreements in SLA.

In turn, considering an SLA viewpoint, the implicit/explicit issue is of paramount importance in the debate about the efficacy of error correction (Ellis, 2010). The implicit linguistic knowledge is the tacit, intuitive, and easily accessed type of knowledge which is procedural in terms of the grammaticality of sentences (DeKeyser, 2015). In contrast, the explicit knowledge is regarded to be conscious and declarative which learners can verbalize (DeKeyser, 2015). Several empirical investigations (e.g., Ellis & Shintani, 2013; Kamiya, 2015; Lyster & Satio, 2010; Lyster, Saito & Sato, 2013; Shintani, 2015) have shown that oral corrective feedback can lead to improved accuracy in oral free-production tasks, providing confirming evidence that corrective feedback contributes helpfully to classroom communicative interaction. Due to the inherent differences between oral and written feedback, it cannot be conclusively stated that written feedback has an equal effect. There exist academic arguments that support this kind of error correction. In effect, although there is empirical evidence that WCF can assist students to compose a piece of writing task more correctly in certain respects, to date, there are inconclusive results related to the effectiveness of different types of written feedback on students' implicit and explicit knowledge (e.g., Jiang & Xiao; 2014).

Many researchers have focused on the effectiveness of different types of written feedback on writing accuracy, but not much has been done to investigate whether it helps develop grammatical knowledge implicitly or explicitly, as suggested by Polio (2012). Thus, the present study seeks to fill an important gap by exploring how WCF can affect these two types of knowledge. In effect, the present study aimed to contribute to research on WCF in L2 writing by examining the effects of various types of WCF on explicit and implicit grammatical knowledge. Therefore, the following research questions were formed to achieve this goal:

1. What is the impact of direct and indirect unfocused WCFs on the implicit and explicit grammatical knowledge of Iranian EFL students?
2. Does direct unfocused WCF have a different effect on the implicit and explicit grammatical knowledge of Iranian students compared to indirect unfocused WCF?

2. Methodology
2.1 Participants

In an announcement sent to seven foreign language schools in Behbahan, we invited students who have studied English for five to seven semesters to voluntarily participate in the research. Their ages ranged from 19 to 27. Those (380 English learners) who volunteered were assured that the course would be free. As a means of homogenizing the students, the Michigan test of ECPE (Examination for the Certificate of Proficiency in English) was given to them (Corrigan, Dobson, Kellman, Spaan & Tyma, 2010). Based on their performance on this test, 90 volunteers who scored between -1 and 0 standard deviations were identified as those needing special treatment.

A random matching method was used to assign participants to one control group and two treatment groups - each with 30 students to receive the intended treatment over 12 sessions. The first treatment group received unfocused direct WCF (i.e., UDWCF) on their writing tasks, while the

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second kind of treatment provided unfocused indirect WCF (UIWCF) to the writing tasks of the students of the second treatment group. Participants in the control group did not receive any written error correction regarding the 17 types of grammatical structures (i.e., verb complements, regular past tense, question tags, yes/no questions, modal verbs, unreal conditionals, since and for, indefinite articles, ergative verbs, possessive –s, plural –s, third person – s, relative clauses, embedded questions, dative alternation, comparatives, and adverb placement) studied on their written texts. However, to account for the ethical issues they were given general feedback on the quality and organization of their compositions.

2.2 Instruments

The study utilized the following instruments to answer specific research questions:

The Michigan test of ECPE (Examination for the Certificate of Proficiency in English)
To determine whether the participants in this study were homogenized, ECPE (Corrigan et al., 2010) was applied. Each of the test items, which included questions on reading, listening, cloze, grammar, and vocabulary, was worth 1 point. Practicality concerns and research priorities led to the decision to remove the listening section with 50 items. In order to ensure the reliability of the 120-item test battery for use in the present study, 30 students from the same statistical pool but not from the study's main subjects took part in the pilot test. The reliability coefficient was found to be 0.84. The time limit for this test was 120 minutes and a total of 120 items were scored. Our research subjects were selected from learners whose ECPE scores were one SD lower than the average. In fact, the scores in the proficiency test of the selected students showed that they were in need of more treatment on different language components including grammar as it was targeted in the study.

Oral Test of Imitation (OTI)

This measure, taken from Ellis' (2006) research, assesses students' knowledge in terms of implicitness. The items of this test included 34 grammatical and non-grammatical sentences related to 17 grammatical points considered in this research. The relevant items were administered orally to students via an LCD set. Students were demanded to repeat the items on this test correctly while their answers were recorded using an audio recorder. Sentences that were repeated correctly were awarded a score of one while sentences that were incorrectly repeated were given a score of zero. According to Ellis (2006), it is hypothesized that the grammatical sentences tap into the explicit knowledge, whereas the ungrammatical ones draw on the implicit knowledge.

Test of Timed Grammaticality Judgment (TTGJ)

The items in this measure, taken from Ellis (2006), contained 68 sentences evenly divided between correct grammatical sentences and incorrect grammatical sentences. The test offered four sentences for the judgment of each of the 17 grammatical structures. The indication of the grammaticality or ungrammaticality of each sentence was required from the participants. The purpose of this test was to measure their implicit knowledge. Each sentence was given a time limit of 6.24 seconds on average. Ellis (2006) established this time limit based on the amount of time taken by native students identified in a pilot study. Because the processing speed of L2 students is slower than that of the native students, Ellis (2006) increased the timing by 20 percent. As far as the scoring mechanism was concerned, the GJT items were scored dichotomously as either correct (1 point) or incorrect (0 point), with items left unanswered scored as incorrect. The maximum score for this test was 68.

Test of Untimed Grammaticality Judgment (TUGJ)

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In this test, which contained similar items to TTGJ, students could spend as much time as they needed to answer the questions in written form. The students were demanded to indicate whether the sentences were grammatical or ungrammatical. The scoring procedure of this test was the same as the TTGJ, with a maximum score of 68 for students.

Test of Metalinguistic Knowledge Test (TMK)

Regarding this test which was also from Ellis (2006), students were required to choose the alternatives that represented the best explanations for the 17 grammatical points. This test including 17 ungrammatical sentences was given on paper and the test takers were required to only mark the rule that best explained each error out of the four choices as the correct answer was scored 1.

Furthermore, it is worth noting that Ellis (2006) had already designed these reliable and valid tests to evaluate students' knowledge of grammar in terms of explicitness and implicitness. To make sure that these tests have reliability with respect to the studies' context, they were piloted on 30 students from the same statistical community who, of course, were not participants in the main study.

2.3 Teaching Procedures and Data Collection

The instruction and WCF provision for the three groups was conducted by one of the authors for 12 sessions. learners were expected to write 12 descriptive compositions based on some suggested interesting and real-life topics (e.g., describing a peaceful place that you have visited; describing a famous person that you would like to meet; describing an object that has been in your family for a long time) in about 100-150 words throughout the 12-session treatment. UDWCF was applied to the first treatment group's compositions by the instructor who addressed the 17 grammatical items

under investigation while identifying errors in the writing tasks and providing the corrected errors to learners. Because the instructor provided written feedback related to 17 kinds of grammatical features and structures, this kind of WCF is considered to be unfocused. For instance, "He want to travel abroad" has been corrected as "He wants to travel abroad" in which the third person –s has been added. After that, the compositions were returned to the students for reflection on the corrective feedback provided on their errors. UIWCF was subsequently issued to participants in the second treatment group, as the instructor indicated that a mistake had been made by underlining the incorrect structure without providing the correct form. For example, the erroneous statement "If she ate fewer sweets, she will lose weight" was corrected as "If she ate fewer sweets, she <u>will</u> lose weight" with the mistake underlined only. Similarly, all of the compositions were then given back to the learners in the second treatment group to reflect upon the corrective feedback provided. In contrast, during the 12 sessions, no specific WCF was given to the control group regarding the grammatical accuracy of their writing tasks. Although, for ethical reasons, general feedback regarding their writing tasks was given to learners in the control group, for example, 'Your composition is interesting', 'Please review your grammar', 'Please check your spelling', 'Improve your punctuation', and 'Your work is excellent'.

2.3.3 Test administration

Four tests were utilized to measure the effectiveness of these two specific types of written feedback on learning knowledge of grammar in terms of explicitness and implicitness. These tests were the TUGJ, TMK, TTGJ, and OTI. In essence, students' explicit knowledge of the relevant grammatical structures was measured by the TUGJ and TMK, while their implicit understanding of the intended structures was measured by the TTGJ and OTI. These tests were employed as pre-testing three days before the teaching

classes for treatment began, whereas the same tests were utilized for the post-testing session one day after the last treatment session. To ensure the continuity of the learning gains, two weeks after the post-tests, the delayed post-tests were given to the students to assess the durability of the probable learning gains. On day one, students were administered implicit grammatical knowledge tests (i.e., OTI and TTGJ). Tests (TMK and TUGJ) that measure explicit grammatical knowledge were administered on the second day.

2.3.4 Target structures

The researchers examined the related literature to determine the grammatical errors made by Iranian EFL learners in L2 writing (e.g., Mustafa, Mulya & Bahri, 2017; Nezami & Sadraie Najafi, 2012). There were several common errors that EFL instructors identified in classrooms. To make sure if these errors were also generalizable to our target participants, 20 Iranian EFL instructors already teaching in those selected institutes in Behbahan city were asked to rate the items and see if these were also salient in their EFL classes. Among those items identified in previous studies, 30 items were commonly reported by those instructors surveyed to be as the most identified problems. Among these items, 17 grammatical structures were selected on the grounds that they were already reported by Ellis (2006) as the most universal grammatical errors made by English learners. Moreover, there were also some instruments professionally developed by Ellis (2006) to measure the implicit and explicit grammatical knowledge of these 17 structures for non-native learners of English. This, in turn, paved the way to measure the implicit and explicit grammatical knowledge of the same items for those learners taking part in the present study using reliable instruments already established.

2.3.5 Data analysis

Regarding TMK, OTI, TTGJ, and TUGJ, descriptive statistics were compiled for participants in each group during the pre-, post-, and delayed post-test periods. The researchers employed the Cronbach Alpha tool to measure the reliability of these tests. They used the test of Kolmogorov–Smirnov to make sure the scores had a normal distribution. MANCOVA and one-way ANCOVA tools, which show the differences in the adjusted means (i.e., adjusting for the covariate, which is equivalent to deleting the pre-test effects), were used to answer the first question of this study. By comparison with a one-way ANOVA, MANCOVA is beneficial to statistically control for a 3rd variable (sometimes recognized as a confounding variable), which may affect the results. This kind of variable that can confound the findings is regarded as the **covariate** and is included in MANCOVA analysis. We used a one-way MANOVA analysis to answer the second research question since we had several dependent variables without considering pre-test scores.

3. Results

In this section, the findings of the current study, which investigated how unfocused direct and indirect WCF affects Iranian EFL learners' grammatical knowledge in terms of implicitness and explicitness, are shown.

3.1 Reliability Results of The Tests

Pilot tests were conducted on 30 students who were not the major participants in the study to ensure their reliability. Then, the Cronbach Alpha tool was employed to measure the reliability of these tests. For each measurement instrument, a reliability coefficient is displayed in Table 1.

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Table 1
Reliability Analyses of The Employed Tests

Tests	OTI	TTGJ	TUGJ	TMK	ECPE
Reliabilities	.69	.71	.73	.75	.84

3.2 ECPE Descriptive Statistics

The researchers administered the ECPE test to 380 students in the study to homogenize the learners. This study included participants whose ECPE test scores were 1 SD below the average score of all language learners. The descriptive statistics of the participants in the ECPE are shown in Table 2.

Table 2. *Descriptive statistics Shown for 380 Subjects in the ECPE*

Test	N	Mean	SD	Min	Max
ECPE	380	60.80	10.20	27.00	98.00

According to these descriptive statistics obtained from the participants' responses to the ECPE, the cut-off points were determined to assign the participants into three groupings. To make the data generalizable, each class was composed of 30 people. Accordingly, 90 students who scored between 50.60 and 60.80 on the ECPE test were randomly assigned to two treatment groups and one control group using the random matching technique. The descriptive statistics of the ECPE test for the 90 learners chosen to participate in the current study are presented in Table 3.

Table 3.
ECPE descriptive statistics for the groups

Test	Group	Number	Mean	SD	Minimum	Maximum
ECPE	UDWCF	30	54.60	3.30	51.00	59.00
	UIWCF	30	53.10	2.80	51.00	57.00
	Control	30	53.80	2.90	51.00	58.00

3.3 Descriptive statistics results
3.3.1 The TUGJ

As can be seen in Table 4, both treatment groups scored better than the control group in TUGJ; however, the results of comparing the mean scores of the first treatment group with the other two groups showed that UDWCF outperformed the other two groups in the post-test as well as the delayed post-test (M = 53.0, SD = 3.40; M=52.4, SD=3.28). The mean scores of the UIWCF group were also greater than those of the control group in this test (M=52.5, SD=3.60; M=51.7, SD=2.90). Although the mean pre-test scores of all three groups on this test were almost the same, the mean scores of the three groups were different in the post-test as well as the delayed post-test.

Table 4
Descriptive Statistics for the TUGJ

	Pre-T			Post-T		Delayed Post-T	
Group	Number	Mean	SD	Mean	SD	Mean	SD
UDWCF	30	29.4	1.80	53.0	3.40	52.4	3.28
UIWCF	30	29.5	2.30	52.5	3.60	51.7	2.90
Control	30	29.3	2.10	35.8	2.70	33.0	3.10

3.3.2 The MKT

According to Table 5, considering TMK the mean scores of both treatment groups were higher than those of the control group in the post-test as well as the delayed post-test. It was also shown that the mean scores of the first treatment group were slightly more than those of the second treatment group in this test (M =15.3, SD=1.10; M= 14.9, SD=1.30). Furthermore, the performance of the second treatment group was better than that of the control group in both the post-test and the delayed post-test (M=15.0, SD=0.98; M=14.6, SD=1.40).

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Table 5
Descriptive Statistics for the TMK

	Pre-T			Post-T		Delayed Post-T	
Group	Number	Mean	SD	Mean	SD	Mean	SD
UDWCF	30	10.0	.51	15.3	1.10	14.9	1.30
UIWCF	30	9.8	.53	15.0	0.98	14.6	1.40
Control	30	9.5	.54	11.0	1.30	10.8	0.95

3.3.3 The TOI

Results in Table 6 show that the treatment groups performed better than the control group in terms of the OTI. Also, the UDWCF group got a better mean score than the other groups in both post-test and the delayed post-test (M=30.3, SD=1.90; M=29.8, SD=2.10). Additionally, the results showed that the second treatment group had a higher mean score than the control group (M= 29.9, SD= 2.30; M=29.4, SD=2.50).

Table 6
Descriptive Statistics for the TOI

	Pre-T			Post-T		Delayed post-T	
Group	Number	Mean	SD	Mean	SD	Mean	SD
UDWCF	30	17.7	1.20	30.3	1.90	29.8	2.10
UIWCF	30	17.6	1.25	29.9	2.30	29.4	2.50
Control	30	17.8	1.10	22.0	2.20	20.7	2.60

3.3.4 The TTGJ

As can be seen from Table 7, the mean score of TTGJ for the first treatment group was more than those of the second treatment group and the control group in the post-test as well as the delayed post-test (M= 54.5, SD= 3.40; M=53.8, SD=3.40). Meanwhile, participants of the second treatment group outperformed those of the control group in the post-test and delayed post-test as well (M= 54.0, SD= 3.20; M=52.3, SD=3.00).

Table 7
Descriptive Statistics for the TTGJ

	Pre-T			Post-T		Delayed Post-T	
Group	Number	Mean	SD	Mean	SD	Mean	SD
UDWCF	30	33.4	2.30	54.5	3.40	53.8	3.40
UIWCF	30	33.2	3.10	54.0	3.20	52.3	3.00
Control	30	33.3	2.28	38.3	2.90	34.2	3.60

3.4 Data Normality

We used the Kolmogorov test (Smirnov) to ensure that the data were normally distributed. A low-test index indicates a normal distribution of variables. The distribution of scores for the research variables can be seen in Table 8.

Table 8
Normality Test Descriptive Statistics

Tests	Z test	P-value
TMK	.858	.453
TUGJ	.957	.246
TTGJ	.920	.223
OTI	.870	0.41

Based on the z test no variables under investigation are statistically significant. Accordingly, the variables are regarded to be normally distributed.

At this point, MANCOVA statistical technique was used for the analysis of whether different types of WCF result in different gains in implicit and explicit grammatical knowledge. In addition, MANCOVA was used to examine whether the three groups differed significantly from each other. Essentially, the researchers employed the MANCOVA statistical technique for comparing the three groups of this study in order to find the answer to the first question. Table 9 presents the results of MANCOVA.

Table 9.
Multivariate results of tests of the independent variables for the three groups

Test	Value	F	Hypothesis df	Error df	Sig.
Pillai's Trace	0.998	15.737	10.000	158.000	0.0001
Wilks' Lambda	0.009	1.142	10.000	156.000	0.0001
Hotelling's Trace	108.526	835.651	10.000	154.000	0.0001
Roy's Largest Root	108.519	1.715	5.000	79.000	0.0001

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As the above Table shows, the MANCOVA data according to the results of Pillai's Trace, Wilks' Lambda, Hoteling's Trace, and Roy's Largest Root (F= 15.737, P< 0.0001) indicate that there was a noticeable difference in at least one of the dependent variables. We performed an ANCOVA on the investigated variables to find this difference. The details of the findings are shown in Table 10.

Table 10
Analyses of the tests using one-way ANCOVA

Source	Tests	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
		Tests of Between-Subjects Effects					
Groups	TUGJ	11148.66	2	5574.33	310.05	0.0001	0.88
	TUGJ Delayed	10258.1	2	4921.1	290.66	0.0001	0.76
	TMK	584.08	2	292.04	271.52	0.0001	0.86
	TMK Delayed	512.0	2	270.0	213.30	0.0001	0.82
	OTI	3090.78	2	1545.39	422.42	0.0001	0.91
	OTI Delayed	2892.6	2	1480.30	396.11	0.0001	0.87
	TTGJ	8638.26	2	4319.13	544.36	0.0001	0.93
	TTGJ Delayed	8214.2	2	4010.7	496.80	0.0001	0.86

According to Table 10, there is an obvious difference between the performance of the two treatment groups and the control group in terms of TUGJ in the post-test and delayed post-test (F=310.05, P< 0.0001; F=290.66, P< 0.0001). Furthermore, compared to the control group, both treatment groups had a significantly better performance with respect to TMK in the post-test and delayed post-test (F=271.52, P< 0.0001; F=213.30, P< 0.0001). A significant difference between the two treatment groups and the control group was also identified in terms of OTI (F=422.42, P< 0.0001; F=396.11, P< 0.0001). In turn, regarding TTGJ, the difference between both groups of treatment and the control group was shown to be significant in the post-test

and delayed post-test (F=544.36, P< 0.0001; F=496.80, P< 0.0001). Details of the adjusted means for these tests are displayed in Table 11.

Table 11
Means Adjusted for the Relevant Tests

Dependent Variable	Groups	Delayed post-test Means	Delayed post-test Standard Deviation	Post-test Means	Std. Error	95% Confidence Interval Lower Bound	Upper Bound
TUGJ	Control	33.80	2.10	35.00	.77	30.43	35.53
	UDWCF	53.10	3.00	53.08	.77	51.54	54.63
	UIWCF	51.80	2.56	52.49	.77	50.95	54.03
TMK	Control	10.00	0.80	10.90	.19	10.30	11.09
	UDWCF	14.20	1.10	15.25	.19	14.87	15.63
	UIWCF	14.00	1.00	14.99	.18	14.62	15.34
OTI	Control	20.00	2.10	21.63	.35	18.93	22.33
	UDWCF	28.80	1.80	30.34	.35	29.64	31.04
	UIWCF	28.50	2.10	29.98	.34	29.29	30.68
TTGJ	Control	32.80	2.90	37.90	.51	34.30	39.35
	UDWCF	51.20	3.00	54.39	.51	53.37	55.42
	UIWCF	50.30	2.10	54.17	.51	53.14	55.19

a. In the model, the following covariates are evaluated: TUGJ = 29.4, TMK = 9.7, OTI = 17.7, TTGJ = 33.3.

As displayed in Table 11, considering the adjusted means of these tests, the performance of both treatment groups was significantly better than that of the control group. Thus, as these adjusted mean scores indicate, both UDWCF and UIWCF treatments increased the grammatical knowledge in terms of implicitness and explicitness.

The researchers of this study employed the MANOVA statistical technique to answer the second question which explored the differential effectiveness of the specific written feedbacks used in this research on the implicit and explicit knowledge of grammar. The details of the MANOVA results have been displayed in Table 12.

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Table 12
Multivariate Analysis of Variance (MANOVA)

				Multivariate Tests			
	Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	0.997	4.947	4	55	0.000	0.997
	Wilks' Lambda	0.003	4.947	4	55	0.000	0.997
	Hoteling's Trace	359.800	4.947	4.00	55	0.000	0.997
	Roy's Largest Root	359.800	4.947	4.00	55	0.000	0.997
GA1	Pillai's Trace	0.041	0.587	4.00	55	0.673	0.041
	Wilks' Lambda	0.959	0.587	4.00	55	0.673	0.041
	Hoteling's Trace	0.043	0.587	4.00	55	0.673	0.041
	Roy's Largest Root	0.043	0.587	4.00	55	0.673	0.041

According to Table 12, MANCOVA data according to the results of Pillai's Trace, Wilks' Lambda, Hoteling's Trace, and Roy's Largest Root (P> 0.05, F = 0.587) indicate that there was no noticeable difference in the dependent variables. Thus, the effects of both treatments (UDWCF and UIWCF) on improving implicit and explicit knowledge of grammar were almost equal in the different testing sessions.

4. Discussion

Two main questions were addressed in this study. The first question was intended to examine the effectiveness of two specific kinds of written feedback on students' implicit and explicit knowledge of grammar in terms of 17 grammatical points. The second question sought to examine the possible differences among the three groups of the study. Hence, one of the researchers conducted a non-compulsory writing module with 90 EFL language learners. Consequently, inferential analysis was conducted using the data collected from the different tests used in this study.

Regarding the first research question, the tests mentioned above were used to assess whether the provision of UDWCF and UIWCF could have an impact on the grammar knowledge in terms of implicitness and explicitness. According to the findings, these two types of treatment promoted both

implicit and explicit grammatical knowledge. These findings are not consistent with those of Truscott (2004, 2007) who points out that written correction is unlikely to have any impact on improving students' ability to speak or write effectively for communication due to the impossibility of predicting which grammatical forms and structures students are developmentally ready to learn. However, it was acknowledged that writing error correction could be effective for the improvement of explicit knowledge needed to monitor grammatical tests or to revise a corrected text. Despite these arguments, our findings in the present study showed that these two types of grammatical knowledge are most likely to be developed almost equally by the provision of UDWCF and UIWCF. Essentially, the consciousness-raising effects that were induced by the presence of written error correction can be seen as contributing to improving implicit and explicit knowledge bases, as argued by Ellis, Loewen, and Erlam (2006) (2006). Similarly, students can acquire the linguistic structures more easily because providing WCF has been shown to make them more noticeable (N. Ellis, 2005).

To support WCF in L2 writing, Williams (2012) suggested two essential characteristics of writing (its durability and its production which is not needed to be online) allow learners to control their attention better and to pay more attention to language during, and after production. Moreover, the Theory of Skill Acquisition is particularly relevant to the current research because, as DeKeyser (2015) argues, declarative knowledge of L2 is needed to improve implicit knowledge in writing composition because students can first learn a rule as a declarative knowledge. Then, they can turn that explicit knowledge into an implicit one through practice. In line with this argument, in the current study, it was shown that these two types of knowledge can be improved through the provision of WCF.

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Some scholars claim that WCF contributes not to implicit, but to explicit grammatical knowledge. For example, Polio (2012) argued that written feedback can have a positive effect on grammatical knowledge in terms of explicitness. According to Williams (2012), the provision of written feedback can lead to the internalization and automatization of the explicit knowledge by students. In contrast, this study differs significantly from those (e.g., Bitchener, 2012; Ferris, 2006) emphasizing the exclusive effectiveness of different kinds of written feedback on the explicit knowledge. In fact, our findings reveal that providing written feedback by instructors can induce leaning gains in terms of not only explicit knowledge but also the implicit knowledge of grammar.

One probable justification for these contradictory standpoints is rooted in SLA since several scholars might be of the opinion that one of the issues related to second language acquisition (SLA) is the provision of written feedback. Some researchers may point out that written error correction simply improves the writing progress, and it is believed that it does not result in learning gains in implicit knowledge. In turn, others may contend that SLA only focuses on the development of implicit knowledge, whereas the subject of written feedback is only related to explicit knowledge. However, EFL writers may use explicit knowledge when writing. Essentially, this is an interactive process of applying implicit and explicit knowledge that aids students in the production of their essays (Ellis & Shintani, 2013).

According to a number of SLA researchers, implicit and explicit knowledge are interconnected in some way (e.g., Ellis, 2008). Based on Skill Acquisition Theory, they suggest that output practice makes explicit knowledge have a positive effect on the development of implicit knowledge (DeKeyser, 2003). Students are considered to reinforce and automate their linguistic repertoire by producing language (Manchón, 2011, 2020).

Furthermore, corrective feedback helps proceduralize L2 explicit knowledge because the linguistic features are made more noticeable to students and learners can consciously reflect on those linguistic items (Ellis, 2010). This study also supports the interface position (DeKeyser, 1998; McLaughlin, 1990; Schmidt, 1990), according to which students can utilize not only explicit knowledge but also implicit knowledge when writing.

Contrarily, such as according to Krashen (1982), teaching and providing error feedback, which is a kind of explicit knowledge, has little bearing on L2 performance. Krashen (1982) claims that explicit knowledge can only be used for editing and monitoring provided that students have sufficient time. Therefore, his position, which is regarded to be accounted for by the non-interface perspective, is that authentic language use is entirely based on implicit knowledge, not explicit knowledge. According to Truscott (1996), error correction can merely result in a temporary, and hypothetical kind of information that cannot become implicit, rendering the understanding that interlanguage is not affected by CF in learners. Our study results, however, contradict the predictions of the non-interface position indicating that knowledge can be acquired implicitly and explicitly in different ways (Huljstin, 2005; Krashen, 1985) since it is possible to help develop not only explicit knowledge but also implicit knowledge by using various types of written feedback by instructors.

The researchers employed the MANOVA statistical tool to answer the second question. The results showed that both treatments (UDWCF and UIWCF) developed the dependent variables of this study almost equally, and no difference was identified between these two treatments. The results of this study are not consistent with those of Shintani and Ellis (2013). Their findings showed that the direct CF did not improve the accuracy of the intended linguistic feature, which means that this kind of written feedback

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was ineffective with regard to both explicit and implicit grammatical awareness. Although metalinguistic explanation, which is a kind of indirect WCF, resulted in greater accuracy when applied to the relevant tests and a novel writing composition after the treatment was over, this effect was not found to be durable. According to their results, the metalinguistic kind of written feedback resulted in a more learning gains with respect to the explicit knowledge, but didn't have a long-term impact and was not effective for the implicit kind of knowledge.

According to Stefanou and Révész (2015), the direct kind of WCF may lead to explicit and implicit grammatical gains in the short-term, whereas the learning gains may not be durable in the long-term. As for the metalinguistic WCF, both the immediate and delayed post-test findings showed that it contributed to grammatical knowledge in terms of explicitness and implicitness. The results of our study, which show the positive effect of both specific types of written feedback on increasing knowledge related to implicitness and explicitness, both in terms of short-term and long-term, are not consistent with those of Stefanou and Révész (2015). Our findings advocate this position that when the procedural (implicit) grammatical knowledge is picked up, it does not simply deteriorate as it has become a type of genuine knowledge that is durable (Shintani & Ellis, 2013).

One alternative perspective held by some scholars (e.g., Ellis, 1997) is the intermediate position. According to this perspective, there is a significant difference between implicit and explicit knowledge and these two types of knowledge are considered to be distinct. However, it is assumed that students may notice and internalize the formal features of input through the utilization of explicit knowledge. Accordingly, CF may increase interlanguage development by improving the noticing process. Therefore, our results could be considered as supporting the intermediate perspective (Long & Robinson,

1998), since both explicit and implicit grammatical knowledge was almost equally developed by the two types of WCF used in this study. In addition, these two types of knowledge were also used by the participants in writing compositions.

5. Conclusion

Generally, this study found that both direct and indirect kinds of written feedback are beneficial to the implicit and explicit knowledge of students in the context of Iran. Additionally, it was shown that the students of the first treatment group who received the direct form of written feedback performed somewhat better than those of the second treatment group who received the indirect form. A closer examination of the results showed, however, that there was no obvious difference in the impact of direct and indirect types on learners' performance. Therefore, students may aptly pay attention to the divergence between the incorrect form and the corrected item through WCF by using the direct unfocused WCF. In addition, our findings showed that students are likely to acquire the implicit and explicit knowledge through the provision of direct and indirect unfocused WCF. Accordingly, this finding contradicts the notion that acquiring explicit and implicit grammatical knowledge involves two distinct mechanisms.

Pedagogically, our findings are regarded to have some implications for teachers and instructors. First, this study has value for instructors who wish to adopt a more comprehensive approach to correcting grammatical errors in written text. They should recognize that the provision of WCF on a range of linguistic features and structures is more effective for language learners to improve the general writing accuracy than offering WCF on a specific kind of grammatical error. Second, a balance must be struck between the unfocused kind of feedback and the unnecessary mental pressure that may be placed on learners. Third, it is important to note that this type of feedback can

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have more ecological relevance, because a large number of grammatical features and structures are taken into account when the teacher provides the students with feedback on their pieces of writing. Furthermore, the study provided empirical evidence in support of the hypothesis that various kinds of WCF can develop language learning, which contributed to the field of SLA, since the promotion of the implicit and explicit knowledge was established through the provision of WCF.

Although more studies would be required to provide further confirmation, it can also be suggested that other grammatical features can be smoothly treated in the same way. Until further research examines the effects of WCF in treating other linguistic features, it is not appropriate to generalize the results of the present study to other linguistic features. Similarly, further empirical verification is required before concluding that written correction promotes grammatical knowledge in terms of implicitness and explicitness. Several avenues can be explored in follow-up studies to provide better insight. Comparing the students' perceptions following different kinds of WCF can also help illuminate the underlying cognitive mechanisms, leading to a greater understanding of how written error correction works. Another potentially confusing point that merits further scrutiny is reevaluating measures which are considered to assess the two types of implicit and explicit knowledge. Even though this research used several assessment tools that are well-known for assessing these two types of knowledge, their effectiveness needs to be investigated further, especially concerning the various instructional settings and subjects considered.

Additionally, the variations observed in the individual learner response to WCF can be investigated as well. Written error correction might be beneficial for one learner but not for another. These observed variations can be attributed to individual differences between learners and thus could have

major educational implications, particularly in case learners have different expectations from their instructors. In spite of the learners' assumed appreciation of their instructors' written feedback, they are also supposed to expect their instructors to recognize their needs based on their proficiency levels. It is also recommended that further research looks into why teachers' assumptions and beliefs with respect to the WCF in general are different from their actual practice in the classroom. For instance, the findings of the questionnaires and survey interviews with teachers can inform our understanding about the effectiveness of written error correction.

Finally, it may be prudent to follow Bruton (2009) and call on more research to be conducted in classroom settings, not only for the purpose of adding ecological validity to our studies, but also because WCF is ultimately pedagogically oriented. Therefore, this kind of research should be conducted in a contextualized manner with vibrant decision-making bases and take place in the classroom. Additionally, further research should be conducted to incorporate the perspectives of different students if written error correction is viewed as an act of social responsibility (Lee, 2008) in which the various types need to interact with external and internal aspects.

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