The effect of focused corrective written feedback on medicine students' language acquisition of the present perfect simple

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Abstract

Supportive teachers provide students with feedback to enhance their competences. However, when feedback is manifested in writing, it becomes more valuable as it can be perceived and then revised again by students. This quasi-experimental study aimed to measure the degree of change resulting from feedback intervention when introducing the present perfect simple to medicine students who were divided randomly into five groups encompassing four treatment groups and a control one. One session of written corrective feedback improved students' writing instantly and over time for the experimental groups, but not for the control one. The non-revision groups were more accurate, but the accuracy of the revision groups was maintained over time. Processing input may help students develop their information that must be processed consciously through purposeful learning. Language acquisition can be utilized to explain how students may improve their second language improvement of target structures immediately and over time.

Keywords: Corrective written feedback, Metalinguistic explanation, present perfect simple, revision, second language learning

Introduction

A lot of language teachers spend too much time correcting students' written errors and mistakes when they submit homework and assignments or even in exams. Supportive teachers/instructors should provide their students with any kind of feedback (oral

feedback) when necessary to enhance their competences (Montagna et al., 2010). However, when feedback is manifested in writing, it becomes more valuable as it is provided on paper and can be perceived and then revised again by students (Taylor, 2005; Lyon, 2014). Written feedback is more effective than oral feedback (Haghani et al. 2016).

Feedback entails helping students find the discrepancies and the similarities between their performances and the performances of teachers and instructors in order to develop themselves and improve their results (Boud et al., 2013). "Feedback is information about the gap between the actual level and the reference level of a system parameter which is used to alter the gap in some way" (Ramaprasad, 1983, 4). Sadler (1989) argued that three various requirements make feedback effective: prior knowledge of the conventions/standards that needs to be applied, the need to compare these conventions to learners' work, and the immediate action to bridge the gap between the two.

Bitchener and Storch (2016) postulated that teachers are split into two camps when it comes to the significance of corrective feedback. On the one hand, some believe it is, to some extent, vital and necessary even if it results on little improvement (Eraut, 2006; Ferris, 2006; Sheen, 2007; Bitchener, 2008; Ellis, et al., 2008; Parboteeah and Anwar, 2009; Van Beuningen, et al., 2012; Nesbitt et al., 2014; Shintani et al. 2014). If feedback is constructive, specific, and offers clear suggestions for development, then it is fruitful (Eraut, 2006; Bienstock et al., 2007); however, it should be timely and based on direct observations (Bienstock et al., 2007; Ramani and Krackov, 2012).

On the other hand, some other teachers reckon that feedback is ineffective as students may "fail to respond to the feedback they are given" (Bitchener and Storch, 2016). If it is unspecific and irrelevant, it may hinder language development (Nesbitt et al., 2014) and can cause harm (Veloski et al., 2006; Hattie and Timperley, 2007; Sargent et al., 2007; Litzelman et al., 2008; Ivers et al., 2012;).

From a pure medical perspective, feedback is seen as a key strategy to develop one's knowledge and/or experience (Kilmister et al., 2007; Norcini and Burch, 2007; Ericsson,

2008; Archer, 2010; Molloy and Boud, 2013;).The extent to which written corrective feedback play a role in language development is barely considered, if at all (Bitchener, 2008). Consequently, the current study attempts to address the efficacy of two forms of corrective feedback on new pieces of medicine students' written works and then compare them with works of other peer students who have not been provided with any kind of feedback.

A large number of researchers have studied the effectiveness of corrective feedback. Teachers include explicit type of knowledge when they provide students with feedback. Such knowledge is used when learners are directed to focus on a specific kind of grammatical rule (DeKeyser, 1995) which help prevent errors from becoming procedural because learners can process and reproduce the information provided in oral feedback as modified output (Gass, 1997) or even written feedback (Bitchner and Storch, 2016).

Despite the fact that feedback may be ineffective and even harmful (Truscott, 2010); a number of researchers have proved that written feedback has resulted in improving the students' grammatical accuracy (Bitchener, 2008; Ellis et al., 2008; Bitchener & Knoch, 2010).

The easiest way to provide students with feedback is orally, but it has to be given on time so that students do not forget key elements (Taylor, 2005). Nevertheless, there is written feedback which might be more influential (Haghani et al., 2016) as it gives an everlasting record of notes that can be taken home and then revised for subsequent use (Lyon, 2014). Furthermore, this kind of feedback gives the student the chance to compare it with others (Taylor, 2005).

Written feedback comes in two different manifestations: unfocused and/or focused feedback. Ellis et al. (2008) argued that unfocused feedback provides notes on a range of errors or even all errors committed, while focused feedback is likely to be either highly focused which highlights only one type of error, or it can be less focused as it highlights a restricted number of errors. Metalinguistic explanation that takes the form of

written handouts (Shintani and Ellis, 2013) could be a better alternative to written corrective feedback (Shintani et al., 2014).

Many researchers have investigated if feedback revision can enhance students' writing accuracy in new works. Revision proves to aid accuracy (Frear 2012; Van Beuningen et al., 2012; Shintani et al., 2014); dynamic corrective feedback which entails revising notes again and again has resulted in error free writing (Hartshorn et al., 2010).

Minding complex structures is more demanding than simple, straightforward ones. Linguistic errors are classified into (a) rule-based i.e., those which are governed by a set of rules and can be corrected via referring to English Grammar books such as tenses, and (b) item-based i.e., those which have no rules to refer to or those which differ based on contexts and structural environments such as the passive voice (Yang and Lyster, 2010). Written feedback is more likely to improve students' accuracy with respect to simple rules such as the simple tenses and the articles (e.g., Sheen, 2007; Bitchener, 2008; Frear, 2012; Shintani & Ellis 2013). As far as complex structures as concerned, Shintani et al. (2014) found that feedback is not effective when presented through metalinguistic explanation while Rummel (2014) proved it to be effective in improving the present perfect tense.

The aim of this study is bi-fold. First, it aims at investigating the effects of direct focused written feedback and metalinguistic explanation on medicine students' language development using new pieces of texts over a one-semester period of time. Second, it aims at investigating whether revising the new text without looking at the text on which they had received feedback enhances the effect of feedback or not. The researcher decided to focus on one error category (present perfect simple) which is a complex structure rather than a cluster of simple structures of the English language to longitudinally examine the efficacy of corrective written feedback on students' new writing tasks while incorporating a target group with treatment groups.

The current study is meant to trace highly focused feedback because students tend to attend more and consequently understand the reasons of the errors and eventually how to

correct them (Ellis, 2005). It also provides students with the chance to construct their language system differently when they get repeated evidence to correct the same error (Shintani et al., 2014). Moreover, written feedback may develop grammatical accuracy (Bitchener, 2008; Sheen et al., 2009; Bitchener and Knoch, 2009; Frear, 2012). Feedback will be centered around the present perfect simple in the writing of medicine students at An-Najah Nation University in Palestine. The researcher tries to answer the following questions:

- Will direct focused written feedback improve the use of present perfect simple better than writing without feedback?

- Will direct focused written feedback followed by revision improve the use of present perfect simple?

- Will metalinguistic explanation written feedback improve the use of present perfect simple better than writing without feedback?

- Will metalinguistic explanation written feedback followed by revision improve the use of present perfect simple?

- Are there statistical significant differences in the impact of written corrective feedback and metalinguistic explanation with and without revision on students' accurate use of the present perfect simple?

Materials and methods

The researcher has obtained Ethical approval from An-Najah National University vice president of academic affairs, the dean of the faculty of medicine, the dean of scientific research department, as well as the research ethics committee. The Faculty of Medicine and Health Sciences at An-Najah National University in Palestine has been selected as the research venue for the study. A total of 180 first to fourth-year medicine and health sciences students agreed to participate in the study. The study population (181 students) comprises all the students who were registered in three sections of a course

called University English II and were taught by the researcher himself during the Summer Semester 2019/2020. University English II (11000324) is designed to provide An-Najah National University medicine and health sciences students with intermediate to advanced level skills in reading/vocabulary, listening, speaking, and writing. It also focuses on oral presentation and research skills. Paragraph writing skills are reviewed by means of writing different types of paragraphs on various topics.

However, the final number of participants who finished all the treatments provided and sat for the pre-test and post-tests was (125) students; they were divided randomly into five groups encompassing four treatment groups and a control group. The first treatment group (n=25 students) was provided with direct focused corrective feedback but was not allowed to revise its notes; the second groups (n=25) was given feedback and was allowed to revise its notes. The third group (n=26) was provided with metalinguistic explanation but was prevented from looking at the feedback given; while last treatment group (n=24) was given metalinguistic feedback and was allowed to go through the notes. The control group (n=25) did not get any form of feedback but only sat for the two tests.

Target structure

Arabic and English have two different tense systems in terms of form, meaning, and most importantly, number. Arabic has only three tense manifestations while English has twelve. The perfect tense whether it is present, past or future is really problematic to foreign learners of the English language. Arabic does not have such a tense; Arabic entails using the particle "qad" or the complex particle "laqad) before the main verb to get a perfect tense. Moreover, verbless sentences in English are not acceptable. Arabic, by contrast, allows nominative sentences, i.e. sentences without verbs at all. The researcher has decided to use the present perfect simple as a target structure; it is commonly used in both Arabic (students' mother tongue) and English (the language of instruction at An-Najah National University). Linguistically, English and Arabic belong to two different language families; therefore, there are a lot of differences in their

grammatical structures (Khresheh, 2010). Learners (including Arabs) have difficulties in learning the tenses, in general, and the present perfect simple, in specific.

Writing tasks and treatment

All the participants were asked to conduct three writings (pre-test, immediate post-test, and delayed post-test). To encourage students to employ the present perfect simple, dictogloss and translation tasks were introduced. The participants were required to listen to a medical practitioner describing a medical procedure in Arabic and listen again to a translated English version of the talk which was prepared for each task. All the writing works were centered around process writing in which things are performed within a limited number of sequenced stages. Then, the participants were asked to reconstruct the text in English using as many perfect tenses as possible.

The first treatment group (direct written corrective feedback) was given the first writing task with a sample translation. The sample translation was then collected and the students were asked to rewrite the text again using perfect tenses. In the second stage, the participants were provided with necessary written feedback (only about present perfect simple) on their writing they had completed in the pre-test. The students were given fifteen minutes to look over the corrections on their writing. Then, the texts with feedback were collected and students were asked to perform task two i.e., the immediate post-test. Later, the students performed writing task three (delayed post-test). The second treatment group (direct corrective written feedback with revision) did the same procedure as the first treatment group but it was given twenty minutes to rewrite their first text; the students were allowed to revise their corrected original texts while they were rewriting. Then the original text and the written text were collected before the participants completed their final writing.

The metalinguistic explanation group was given their first writing task with a sample translation just like the whole groups but it was not given any form of feedback on their writing. In the second writing task, the students were provided with a handout with explicit explanation of the present perfect simple in English after completing the

first writing task. Then they were given ten minutes to check their mistakes. The written texts and the handout were collected and the students immediately completed the last writing task. The last treatment group (metalinguistic explanation with revision) was asked to write their first text again after getting the metalinguistic explanation. Students were given the chance to consider their original text and the grammatical explanation while they were revising. Later on, they conducted the final writing task.

The control group was not provided with any feedback on their writing tasks. The students followed the same procedures as the experimental groups: they conducted the immediate post-test and the delayed post-test. They were not allowed to rewrite their original text.

The scoring system

In this study, the target structure is limited to the present perfect simple. The present perfect simple can be scored in two ways. The first can be called an absolute scoring system, where participants receive credit only if they use both of the components (the auxiliary i.e., have or has and the past participle) accurately; if they employ one of the two components accurately, they do not receive credit. The second way is partial scoring where students are scored on the accurate use of each component ("the auxiliary" and the "past participle"). A partial "obligatory occasion analysis" is then conducted to find the total percentage score for each student. Shintani et al., (2014) stated that partial scoring is more accurate than absolute scoring because the present perfect simple consists of two components and some students might use one of them instead of two due to feedback. Therefore, they should be evaluated for each correct component. Partial scoring can also consider the student who tries to apply the present perfect simple but does not use it accurately; it tells that students are at the verge of learning the intended structure. In contrast, absolute scoring does not work especially when learners show improvement in one constituent of the present perfect simple. In other words, the student is given credit only if s/he gives a complete answer.

In order to receive credit, a context for correct tenses is needed to be established, that is, an auxiliary verb (have or has) is needed to be used. Participants receive (2 points) if they use the correct form of the present perfect simple: (1 point) for the correct usage of the auxiliary and (1 point) for the correct usage of the past participle. If learners show they are attempting to use the present perfect simple, they are given some credit as well; that is, if they apply the incorrect form of the verb the auxiliary (e.g., "has" is used instead of "have" or vice versa), they are given (½ point) as they have attempted to employ the auxiliary verb. If they use a wrong form of the past participle, (e.g., "taked" instead of "taken"), they are also given (½ point). They do not receive any points if they use incorrect auxiliary and incorrect past participles or when they use a wrong auxiliary and a wrong past participle.

The scoring system adopted by the researcher can be illustrated better in marking the following sentences.

- The doctor has referred the patient to another hospital.
- The nurses have taken the patient to the ICU.

The first sentence includes a main regular verb; while the second includes a main verb which is irregular (see table 1).

Table 1 Criteria for scoring the present perfect simple

• The doctor has referred the patient to another hospital.		
Type of error	**Possible answers**	**Scores**
No error	The doctor has referred the patient to another hospital.	1 + 1
Lack of auxiliary	The doctor referred the patient to another hospital.	0 + 1
Wrong auxiliary	The doctor have/was/can referred the patient to another hospital.	½ + 1
Lack of past participle	The doctor has the patient to another hospital.	½ + 0
Wrong past participle	The doctor has refer/refers/referring the	1 + ½

	patient to another hospital.	
No auxiliary and no past participle	The doctor the patient to another hospital.	0 + 0

• **The nurses have taken the patient to the ICU.**		
Type of error	**Possible answers**	**Scores**
No error	The nurses have taken the patient to the ICU.	1 + 1
Lack of auxiliary	The nurses taken the patient to the ICU.	0 + 1
Wrong auxiliary	The nurses has/was/could taken the patient to the ICU.	½ + 1
Lack of past participle	The nurses has the patient to the ICU.	½ + 0
Wrong past participle	The nurses have taked/took/taking the patient to the ICU.	1 + ½
No auxiliary and no past participle	The nurses the patient to the ICU.	0 + 0

To find the total mark for each participant, the researcher used the following formula as proposed by Pica (1994):

$$\frac{\text{Number of points scored}}{\text{Number of points possible (i.e., number of correct tense uses x 2)}} \times 100$$

Analysis

A series of statistical analyses were conducted to find the score for the writing tasks. The researcher confirmed normality and homogeneity, and then repeated measures (ANOVA) were used to find out the impacts of the various treatments that were followed in the writing tasks. The sizes of the impacts for the ANOVAs were calculated as (η^2) with "values of .01, .06, and .14 indicating small, moderate, and large effects respectively", (Cohen, 1988).

Results

The researcher aimed to answer four questions concerning the effect of four types of written corrective feedback and another question concerning the effects of the four

types of treatment on students' correct use of the target structure, i.e. present perfect simple in their writing.

Means and Standard Deviations of the four experimental groups and the control group are shown in table 2 below for the various testing stages.

Table 2: Means and Standard Deviations for accuracy scores in the three written tasks

Group	N	Pre-test		Immediate post-test		Delayed post-test	
		M	SD	M	SD	M	SD
Direct corrective Feedback	25	31.10	25.40	79.90	21.65	72.70	27.68
Direct corrective Feedback with revision	25	47.81	29.21	80.82	18.11	81.21	21.70
Metalinguistic explanation	26	53.45	27.79	86.50	13.12	85.04	14.15
Metalinguistic explanation with revision	24	57.20	28.65	86.57	14.07	85.40	13.33
Control group	25	56.40	33.92	60.10	32.13	42.17	35.24

The results in Table 3 below show that students' accuracy in the four experimental groups improved significantly from the pre-test to the immediate post-test; however, their accuracy was slight when they moved from the immediate post-test to the delayed post-test. In other words, the metalinguistic explanation group accurate use of the present perfect simple developed slightly while the accuracy in the other groups decreased marginally. The control group also improved from pre-test to instant post-test, but in the delayed post-test accuracy dropped significantly.

Table 3 Means and Standard Deviations for accuracy scores in the three written tasks

Group	N	Gain 1		Gain 2	
		M	SD	M	SD
Direct corrective Feedback	25	47.66	24.20	43.12	31.65
Direct corrective Feedback with revision	25	36.10	29.85	35.42	25.10
Metalinguistic explanation	26	35.65	26.82	34.12	26.50
Metalinguistic explanation with revision	24	33.10	24.20	31.20	24.28
Control group	25	06.10	32.20	-13.12	34.20

Generally, the results show that the treatment groups worked better on the post-tests than in the pretest; the treatment groups outperformed the control group on the two post-tests, and that the mean scores for the direct corrective feedback in the pre-test (M=31.10, SD=25.40) were low in comparison to the other experimental groups as well as the control group. To ensure that the significant differences could be attributed to differences in the test stage rather than the treatment itself, a One-way Analysis of Variance (ANOVA) between groups was performed to compare groups for the pretest.

The findings of ANOVA in the pre-test show important differences between the five groups' pre-test scores: $F_{(4, 95)} = 3,067$, P=.02. To find out the relative impacts of feedback on the correct use of the target tense, the pre-test results of the learners were subjected to post hoc pairwise comparisons. Post-hoc comparison using Bonferroni adjustments show that the direct corrective feedback group was lower than the metalinguistic with revision groups and the control group as well. The results of the pre-test stage indicate that the possibility that differences among groups in the two post-tests could be attributed partially to differences in the pre-test rather than the instructional treatments.

To overcome this problem raw scores were altered to gain scores. Table 4 below shows the means and standard deviations for the immediate gain and the delayed gain scores for the control group and the experimental groups. The researcher calculated Gain 1 by subtracting the immediate post-test scores from pre-test scores while Gain 2 was measured by subtracting delayed post-test scores from pre-test scores.

To investigate whether there are significant differences between groups on writing task scores, ANOVA and pairwise comparisons were used. The study findings revealed significant differences between groups: $F_{(5,85)} = 6.84$, $p < 001$, $\eta^2 = 0.25$. Table 4 below shows the pairwise comparisons and Cohen's *d* values for all groups. The results show that all the experimental groups outperformed the control group and there were large effect sizes as Cohen *d* are (1.71, 1.22, 0.99, 0.98).

Table 4 Effect sizes as suggested by Cohen for accuracy scores between groups

Group contrast	Gain 1	Gain 2

	d^1	p^2	d	P
Direct corrective Feedback vs. Metalinguistic explanation	0.7	.77	0.35	1.10
Direct corrective Feedback vs. Direct corrective Feedback with revision	0.73	.78	0.41	1.10
Direct corrective Feedback vs. Metalinguistic explanation with revision	0.90	.36	0.55	1.10
Metalinguistic explanation vs. Metalinguistic explanation with revision	0.21	1.12	0.31	1.10
Metalinguistic explanation vs. Direct corrective feedback with revision	0.00	1.14	0.08	1.10
Metalinguistic explanation with revision vs. Direct corrective feedback with revision	0.25	1.12	0.23	1.10
Direct corrective feedback vs. control group	1.71	.000	1.84	.002
Metalinguistic explanation vs. control group	1.22	.006	1.77	.002
Direct corrective feedback with revision vs. control group	0.99	.006	1.68	.002
Metalinguistic explanation with revision vs. control group	0.98	.03	1.63	.002

The results shown in table 4 above indicate that despite the fact that the treatment groups had large effect sizes, the effect of direct corrective feedback was higher than the other groups. However, there are no significant differences among the experimental groups as the values of Cohen's d values for all of them versus each other range small (0.00) to large (0.90).

With respect to gain 2, ANOVA has detected significant differences between groups. The pairwise comparisons and Cohen's d values show that the experimental groups outperformed the control group and Cohen's d values which are 1.84, 1.77, 1.68 and 1.63 respectively were considered large effect sizes. The direct corrective feedback has the largest value. However, no significant differences among the experimental groups are detected; they have small effect size values that ranged between 0.08 to 0.55.

Pallant (2013) suggested that when the same participants are studied under the same circumstances but at various points of time, the One-way Analysis of Variance is normally used as in the current study. Repeated ANOVA measures show that time has been significant as:

$F(2.18) = 65.89$, $p < .0001$, $\eta^2 = 0.58$. The results of repeated ANOVA for the four groups and the control groups showed significant differences as follows:

Direct corrective feedback group $F(2.18) = 46.24$, $p < .0001$, $\eta^2 = 0.85$;

Direct corrective feedback plus revision $F(2.18) = 18.34$, $p < .0001$, $\eta^2 = 0.68$;

Metalinguistic explanation group $F(2.18) = 20.58$, $p < .0001$, $\eta^2 = 0.71$;

Metalinguistic explanation plus revision $F(2.17) = 16.18$, $p < .0001$, $\eta^2 = 0.66$;

Control group $F(2.19) = 5.80$, $p < .0001$, $\eta^2 = 0.38$.

The pairwise comparisons and within group effect sizes for all the groups are shown in Table 5 below.

Table 5: Effect sizes in the form of Cohen's d for accuracy scores for the three tests

Group	N	Pre-test and Intermediate post test		Immediate post-test and delayed post-test		Pre-test and Delayed post-test	
		d^1	p^2	d	p	d	p
Direct corrective Feedback	25	2.28	0.00	0.35	0.35	1.68	0.00
Direct corrective Feedback with revision	25	1.75	0/00	0.11	1.00	1.64	0.00
Metalinguistic explanation	26	1.47	0.00	0.01	1.00	1.44	0.00
Metalinguistic explanation with revision	24	1.46	0.00	0.08	1.00	1.43	0.00
Control group	25	0.14	1.00	0.56	.008	0.40	.23

The study findings show that the four experimental groups noticeably improved when they move from the pre-test to the immediate posttest; the value of the corrective feedback was the highest. However, no significant differences for all groups from the immediate post-test and delayed post-test were found as the values ranged from 0.01 to 0.35; this proved that the experimental groups had sustained this development. Cohen's d values show that the results of the pre-test to the delayed post-test are more significant than that of pre-test to the immediate post-test as. Finally, the control group showed no significant differences when comparing the three various phases; the scores were decreasing. In sum, the experimental groups made use of corrective feedback over time and that the direct corrective feedback was relatively higher than all other groups within time.

In order to find out whether revision of feedback is fruitful or not, the researcher combined the two revision groups together and the two groups which are not supposed to revise feedback together; then the new two groups were compared with the control group at the three tests as shown in table 6 below.

Table 6: Descriptive statistics for accuracy score in the written tasks

Group	N	Pre-test		Immediate post-test		Delayed post-test	
		M	SD	M	SD	M	SD
Direct corrective Feedback and Metalinguistic explanation (WITHOUT REVISION)	51	38.60	27.43	80.44	19.12	76.55	23.70
Direct corrective Feedback and Metalinguistic explanation (WITH REVISION)	49	54.32	26.46	86.62	12.7	85.30	13.1
Control group	25	55.6	32.8	59.9	30.12	42.12	34.32

The study findings show that accuracy of the experimental groups increased noticeably when moving from the pre-test to the immediate post-test; however, the changes from the immediate post-test to the delayed post-test slightly decreased. The accuracy of control group improved slightly when moving from the pre-test to the immediate post-test while they dropped sharply at the delayed post-test. In General, the experimental groups did better in the pre-test than the control group; the scores of the experimental groups are higher than the scores of the control group; and that the mean scores of the experimental groups without revision were low compared with the other groups. This could be a matter of worry because if the there are differences among groups during the pre-test, the differences among groups in the post-tests could be attributed partially to differences in the pre-test stage rather than treatment. Consequently, ANOVA was carried out to compare groups at the pre-test stage and the results are shown in table 7 below.

Table 7: Descriptive statistics of Gain scores for accuracy scores in the written tasks

Group	N	Gain 1		Gain 2	
		M	SD	M	SD

Direct corrective Feedback and Metalinguistic explanation (WITHOUT REVISION)	51	42.84	27.66	38.94	28.12
Direct corrective Feedback and Metalinguistic explanation (WITH REVISION)	49	33.32	26.16	30.6	24.7
Control group	25	5.6	32.1	-14.2	33.32

There are significant differences among groups during the pre-test based on the given formula $F_{(2.99)} = 4.228$, $P = .019$, $\eta^2 = 0.076$. To overcome this worry, the researcher has changed the raw scores to gain scores for the immediate post-test and the delayed one; look at table 8 below.

Table 8: Effect sizes in the form of Cohen's d for accuracy scores among groups

Group contrast	Gain 1		Gain 2	
	d^1	p^2	d	P
Direct corrective Feedback and Metalinguistic explanation (WITHOUT REVISION) vs. Direct corrective Feedback and Metalinguistic explanation (WITH REVISION)	0.38	0.37	0.28	0.80
Direct corrective Feedback and Metalinguistic explanation (WITHOUT REVISION) vs. Control Group	1.33	0.00	1.74	0.00
Direct corrective Feedback and Metalinguistic explanation (WITH REVISION) vs. Control Group	1.02	0.002	1.65	0.00

The results in table 8 show that the experimental groups outperformed better the control group because Cohen's *d* values for them are 1.33 and 1.02 respectively. They also show that the value for the experimental without revision was higher than that of the group with revision. The analysis failed to find out any significant differences between the experimental groups themselves as the d value (0.38) detected a small effect size. With respect to gain 2, the results showed that the experimental groups did better than the control group because Cohen's *d* values for them are 1.74, 1.64; they are considered as having large effect sizes. However, the value of d for the experimental group without revision was higher than that with revision as opposed to the control group. Finally, because d value for the two experimental groups when compared together was small (0.38), the analysis failed to find out any significant differences among them.

In order to detect the effect of revision among these groups during the three tests, repeated measures of ANOVA are conducted and the results are shown in table 9 below.

Table 9: Effect sizes in the form of Cohen's d for accuracy scores for the three tests

Group	N	Pre-test to/and Intermediate post test		Immediate post-test to/and delayed post-test		Pre-test to/and Delayed post-test	
		d^1	p^2	d	p	d	P
Direct corrective Feedback and Metalinguistic explanation (WITHOUT REVISION) vs. Control Group	51	1.92	0.20	0.23	0.55	1.60	0.00
Direct corrective Feedback and Metalinguistic explanation (WITH REVISION) vs. Control Group	49	1.72	0.00	0.12	1.10	1.66	0.00
Direct corrective Feedback and Metalinguistic explanation (WITHOUT REVISION) vs. Control Group	25	0.17	1.00	0.61	0.01	0.50	0.25

The results revealed that all groups have significant impacts for each test $F(2.99) = 45.2$, $P < .01$, $\eta^2 = 0.50$. The experimental groups improved significantly from the pre-test to the immediate post-test as Cohen's *d* values are 1.92 and 1.72 respectively. The d values of the experimental group which was not allowed to revise the feedback was higher than that of the group which was allowed to revise the feedback from the pre-test to the immediate post-test. No significant differences for these two experimental groups have been found when they moved from the immediate post-test to the delayed post-test. The Cohen's *d* values for them were 0.23 and 0.12 respectively. The scores for the pre-test to the delayed post-test were higher than those of the pre-test to the immediate post-test and that the group with revision had a greater value that the one without revision. No

significant differences have been found when the control group moved from the pre-test to the immediate post-test to delayed post-test stage. The treatment groups proved to be effective; the group without revision was better at the immediate post-test stage while the group with revision did better when the time span was longer; in other words, revision proved to be better during the delayed post-test rather than the immediate one.

Discussion

The study results showed that the treatment groups outperformed the control group and show greater accuracy when moving from the pre-test to the immediate post-test but when they moved to the post-test, improvement decreased slightly and the decrease in accuracy was not significant. Accuracy rates for the control group did not improve significantly during the three stages. Such results support the theoretical expectation and are consistent with previous studies.

The study findings also showed that all the experimental groups improved better than the control group irrespective of time span intervals due to the fact that information or input processing (e.g., feedback) may help learners develop explicit knowledge. Input undergoes central processing via intake and integration and may develop into output. The current study showed that feedback may help learners develop the use of complex structures like the present perfect simple.

Additionally, the researcher found that written corrective feedback was better than other treatments used in the study. This could be attributed to the fact that the degree of explicitness in direct corrective feedback was higher than that provided in metalinguistic explanation as it included more information about the correct form of the target structure, on the one hand, and reduced any confusion that learners might encounter, on the other hand. The feedback provided in metalinguistic explanation in the handout was void of incorrect sentences related to the target structure. These results were consistent with Bitchener (2008) and Shintani et al. (2014) who maintained that direct corrective feedback is better than any other form of feedback including metalinguistic explanation.

Rummel (2014) found out that there were no differences between the two types of provided feedback when processing the past tense and present perfect tense. This could

be attributed to the fact that in Rummel (2014), the metalinguistic group received explicit feedback in the form of identifying the errors and providing explicit explanations on them. Consequently, the two types of feedback in the current study had different degrees of explicitness where direct feedback was more explicit than metalinguistic explanation.

As for the effect of revision, the study results indicated that revision was proved to be significant in the long run. In other words, input processing is very likely to be promoted and deepened when students are directed to revise texts and consolidate their knowledge of the structure under scrutiny, i.e. the present perfect simple. The researcher also found that all the experimental groups manifested higher rates of accuracy when moving from the pre-test to the immediate and delayed tests and that the non-revision groups showed greater accuracy than the revision ones in the immediate post-test. Furthermore, the accuracy of the groups that are allowed to revise their tasks proved to last longer. Empirically these findings are consistent with Shintani et al. (2014).

In this study, when the students were asked to perform revisions, they did not have the chance to get to their initial text when they finished their immediate post-test. Furthermore, students were supposed to do the revision and the immediate post-test in the same session. For these reasons, such results could be theoretically explained in the sense that carrying out two procedures or tests (i.e., revision and immediate post-test) in one session was really demanding; consequently, it added a greater cognitive burden on the revision group that was not given the chance access the initial texts on which they have got feedback.

The revision and non-revision groups showed greater accuracy than the control group in the delayed post-test and that the non-revision group outperformed the revision and the control groups in the delayed post-test. In Shintani et al. (2014) the accurate rates of the revision group were higher than those of the control group in the delayed post-test due to the fact that the revision groups were allowed access to the initial draft on which they had received feedback while doing the revision text; while learners in the current study had no access to the initial draft that they received feedback on. Access to the first draft in Shintani et al. (2014) meant that the revision group were exposed to little

cognitive burdens when correcting errors than the revision group in the current study. When learners had the chance to access the initial draft on which students had received feedback, this helped them observe the accurate use of the target structure and enabled them to correct their errors in the writing task, Shintani (2017). Furthermore, as stated previously, carrying out two tests simultaneously, in the present study, was not easy and could result in adding greater cognitive burdens on the revision group. Finally, the post-test in Shintani et al. (2014) was carried out at least one week after the treatment session. Consequently, it is likely that in Shintani et al. (2014), the gap between the treatment session and post-test may also have resulted in different findings.

Conclusion

The current study attempted to address the effect of direct focused written feedback and metalinguistic explanation on medicine students' language development using brand new pieces of texts over a one-semester period of time. It also aimed at investigating whether revising the new text without having access to the text they had got feedback on enhances the effect of feedback or not.

The study results indicated that one single shot of written corrective feedback developed accuracy not only immediately but also and over time for all the treatment groups rather than the control group. Furthermore, the study findings indicate that the non-revision groups have high rates of accuracy in the immediate post-test; however, the revision groups have retained accuracy over a longer period of time.

The findings of this study give solid evidence to the various aspects of the cognitive processing model of Gass (1997) that relates to written frameworks. In other words, Gass (1997) showed that one single session of explicit input processing may assist students improve their explicit knowledge. Consequently, explicit input of knowledge goes through intake and integration, i.e. central processing, and results, eventually, in output.

Moreover, the study findings confirmed many theories related to skill acquisition in written frameworks. McLaughlin (1987) argued that such theories postulated that knowledge has to be "processed with conscious attention (i.e., controlled processing)"

and that "declarative knowledge must be proceduralized" (Anderson, 2000). Within the boundaries of language acquisition theories, conscious learning (e.g., by means of explicit written corrective feedback) may have a significant role in controlled stages. Thus, language acquisition theories can be utilized to explain how language learners may develop their use of any target structure (e.g., the English present perfect simple) not only immediately but also over time. In addition, revision can be taken into consideration from a language learning point of view simply because changing information, input or data through revising and correcting an initial draft can "provide the practice required for the proceduralization of explicit knowledge" (Frear, 2012). Additionally, the absence of improvement by the control group in this study means that treatment groups' accuracy results the explicit written corrective feedback provided.

Despite the fact that the researcher had achieved his aims, a number of limitations and shortcomings are acknowledged. The participants have used of the same sort of writing tasks in the three stages. The nature of the reconstruction writing tasks could have created an appropriate context for the study participants to use the target structure more precisely than in free writing; the reconstruction of the text could be considered as an aid/basis for the learners.

The duration of the current study could also be considered as another limitation. The study was carried out over four months (a semester) and the delayed post-test was administered two weeks after the immediate post-test. Although the study findings resulted in accuracy improvement for the experimental groups over four weeks, it is unclear whether the participants could have been able to maintain such accuracy over a longer period of time. Thus, the researcher recommends that delayed post-tests are to be administered after time periods that are longer than the two weeks that are used by the researcher of the current study.

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