

The Utility of Written Corrective Feedback in Tertiary Education: The Case of Iraqi ESP Students

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Research Paper

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Abstract: This study examined the degree to which metalinguistic, direct, and indirect written corrective feedback strategies influenced Iraqi nursing students' nursing report writing task performance in ESP courses. Moreover, it investigated these students' perspectives on these feedback strategies. Consequently, the study was carried out using a mixed-methods design. To this end, in the quantitative phase, the researchers used convenience sampling to select 112 nursing students from four classes of a public university in Iraq as the participants and randomly assigned these classes to three experimental groups and one control group. Moreover, they used a nursing report pretest, 14 treatment sessions, and a nursing report posttest to gather the data. Furthermore, in the qualitative phase, the researchers randomly selected 10 nursing students in each of the experimental groups and probed their attitudes toward their feedback strategy using an interview protocol. The results showed that all of these feedback strategies had significant positive impacts on the participants' ESP writing ability. Nonetheless, the metalinguistic and direct strategies proved to be more advantageous than the indirect strategy. In addition, the nursing students indicated a strong preference for metalinguistic and direct strategies in their writing tasks. The results can have practical implications in Iraqi context.

Keywords: Error Treatment, Written Corrective Feedback Strategies

Introduction

The perusal of the related literature (Aghaei et al., 2022; Bigverdi & Khalili Sabet, 2024; Khalili et al., 2024 a, b; Rahmani et al., 2020; Sanchooli et al., 2022) highlights the fact that researchers have paid considerable attention to Corrective Feedback (CF) in recent years. Nassaji and Kartchava (2017) defined CF as a viable pedagogical intervention that empowers language learners to ameliorate their language use by dealing with its erroneous aspects. Likewise, Mao and Lee (2020) noted that CF encompasses the reactions to learner errors that apprise them of their errors and mistakes, help them to determine the causes of errors by means of cognitive comparisons, and enable them to integrate the correct uses of the target language into their interlanguage system.

Sheen (2007) noted that Written Corrective Feedback comprises the written modality of CF that enables the learners to improve the accuracy and complexity of their written work and prompts them to cast aside their language writing inhibitions. In addition, Ferris (2010) remarked that WCF is an advantageous pedagogical intervention owing to its need-oriented nature. As Ferris (2010) explained, the diverse implicit and explicit WCF strategies can be used to address language learners' writing problems in different proficiency levels, age groups, contexts, and academic settings.

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Moreover, Bitchener and Ferris (2012) believe that WCF strategies are useful in treating learners' writing errors owing to the fact that they allow teachers to adapt their feedback to the writing conventions of language learners' first language. Finally, Bitchener (2018) noted that the efficacy of WCF strategies stems from their compatibility with the aims of both general English courses and English for Specific Purposes (ESP) courses. As Bitchener (2018) stated, ESP courses refer to the language courses that aim to provide the language learners with the opportunity to develop language skills and to learn the language aspects that are essential to perform language tasks in their profession or in their relevant academic major as well as their work place.

Nonetheless, the efficacy of Written Corrective Feedback has been a moot point in language instruction (Bitchener, 2009, 2018; Kashef & Khalili, 2023; Truscott, 2007, 2010 a, b). The opponents of WCF have criticized it in terms of content and procedure. As Van Beuningen et al. (2012) claimed, in terms of content, WCF may provide learners with negative evidence that is not a part of language acquisition in natural contexts. Furthermore, as they explained, in terms of procedure, WCF constitutes a laborious and time-consuming procedure that may not be practical in many teaching situations. On the other hand, proponents of WCF have underpinned its use owing to its purported positive effect on learners' comprehension of the writing intricacies and ability to integrate the received form-based corrections into their successive written work (Truscott, 2007).

The controversy over the efficacy of Written Corrective Feedback has motivated researchers to examine the functions of its strategies. In this regard, a number of studies have compared computerized WCF with traditional WCF. For instance, Gharanjik and Ghoorchaei (2020) examined the role of automated and teacher provided WCF in EFL learners' writing accuracy. Likewise, Fahmi and Cahyono (2021) compared the impacts of Grammarly-provided and teacher-furnished WCF on learners' use of prepositions in writing tasks. Similarly, Hajebi (2018) and Koltovskaia (2020) scrutinized the utility of automated feedback for enabling the learners to deal with their relative clause errors in their written work.

In addition, certain studies have focused on the effectiveness of the Written Corrective Feedback strategies that have different structures. In this regard, Almasi and Tabrizi (2016) compared the effects of both direct and indirect WCF strategies on EFL learners' writing performance. Likewise, Ekiert and Di Gennaro (2021) made an endeavor to determine the extent to which direct and indirect strategy types ameliorated ESL learners' uses of complicated grammatical structures.

Additionally, some studies have strived to determine the role of *WCF focus* in learners' writing performance. For example, Talatifard (2016) compared the effects of focused and unfocused WCF on learners' correct uses of verb tenses. Finally, a few studies have scrutinized the role of electronic and metalinguistic WCF strategies in learners' writing ability improvement. In this regard, Milton (2006) focused on the effect of web-based electronic WCF on learners' writing accuracy and Khalili et al. (2022a) tried to examine the usefulness of metalinguistic WCF in the process of learners' self-correction.

Notwithstanding, the pertinent studies of Written Corrective Feedback have disregarded certain research lines. First, most of these studies have selected English-major students as their participants and have not dealt with the students of other majors such as nursing. Second, these studies have mostly focused on the utility of one or two WCF strategies such as direct and indirect strategies and have disregarded the other strategies. Third, a large number of these studies have examined the utility of focused WCF owing to its limited scope and have not scrutinized the utility of unfocused WCF. Fourth, the above-mentioned studies have generally adopted the quantitative approach to research and have not used qualitative research methods to provide a better understanding of the efficacy of WCF in language classes. Finally, the previous studies have mostly focused on the utility of WCF in general English courses and have barely considered ESP courses. Therefore, there is a need for more studies of WCF strategies in EFL contexts including the Iraqi context.

Review of the Related Literature

In the field of language teaching, CF constitutes one of the main requirements of *discourse repair* (Ellis, et al., 2005). This kind of repair stems from the learners' intention to deal with the communication-related or language-based issues in second language interactions (Bitchener, 2008). Ellis (2008) noted that communication-related problems emanate from language learners' miscommunication or communication break-off that respectively refer to their lack of ability to express their intended meanings and their inability to continue the process of communication. On the other hand, Ellis (2008) argued that language-related problems are caused by inaccurate uses of language forms that may or may not interrupt the process of communication.

Bitchener (2008) argued that both communication-related and language-based issues tend to lead to *negotiation* between the interlocutors. Negotiation may encompass *negotiation of meaning* that refers to the process during which interlocutors collaborate with each other to reach an agreement regarding each other's intended meanings (Bitchener, 2018). Moreover, it may encompass negotiation of form process that helps the interlocutors to determine the correct uses of language forms (Truscott, 2007).

Negotiation of form results in the use of various CF strategies (Santos et al., 2010). Bitchener and Ferris (2012) define CF as teachers' feedback that empowers the learners to deal with their erroneous uses of the language. As they claim, CF can furnish learners with either positive evidence that refers to possible uses of language or negative evidence that comprises impossible language use patterns. In addition, Sachs and Polio (2007) point out that CF may be either *input-providing* or *output-prompting*. As they explain, input-providing CF furnishes the learners with either negative or positive evidence. On the other hand, output-prompting CF requires the learners to correct their erroneous language uses. Finally, Bitchener and Ferris (2012) believe that CF may be either *explicit* or *implicit*. According to them, while explicit CF directly attracts the learners' attention to corrections, implicit CF does not directly make the learners aware of the teacher corrections.

Written Corrective Feedback Strategies

Ellis (2009a) argues that WCF encompasses the CF that is provided to learners to apprise them of their errors in their written work and to empower them to deal with the relevant errors in an effective way. In light of the features of WCF, Ellis (2009a) has developed a framework of WCF strategies. One aspect of this framework focuses on the *scope* of the feedback and makes a distinction between *unfocused feedback* and *focused feedback*. Ellis (2009a) notes that while unfocused feedback deals with all categories of learner errors, focused feedback aims to enable the learners to correct specific categories of errors such as the preposition related errors and relative clause errors among the others.

The other aspect of the framework focusses on the structure of the feedback and itemizes five major categories of WCF strategies including *direct*, *indirect*, *metalinguistic*, *electronic*, and *reformulation-based* WCF strategies. Ellis (2009a) explains that in direct feedback, teachers provide the learners with the correct forms of their erroneously used language forms. Moreover, in indirect feedback, the learners are informed about the existence of the errors in their written work by means of certain techniques such as underlying and using arrows that locate or indicate the erroneous sections of the learners' written work. In addition, metalinguistic feedback refers to the explanations that make the learners cognizant of the rules of the target language and help them to self-correct their written work. Additionally, in electronic feedback, the learners are provided with a hyperlink that helps them to examine a native speaker corpus and to determine the native speakers' correct uses of their errors. Finally, as Ellis (2009a) notes, in reformulation-based WCF, learners are furnished with a native-speaker-reworked version of their written work.

The Present Study

The inadequacies of research on WCF highlight the fact that the present study may constitute an important study in the field of language teaching. That is, this study is likely to make a significant

contribution to research on WCF since it compares the utility of three WCF strategies in the language classes of EFL context of Iraq. Moreover, the study determines the extent to which WCF may improve nursing students' writing ability in a university setting. In addition, this study uses the unfocused WCF and tries to deal with all of the participants' error categories in their written work. Additionally, the present study uses a mixed-methods design and corroborates the quantitative data with qualitative findings. Lastly, this study provides a better understanding of the effectiveness of WCF strategies in ESP courses.

In light of the above-mentioned aims, the present study made an effort to answer three questions in the foreign language context of Iraq:

Research Question One: Do direct, indirect, and metalinguistic WCF strategies have significant effects on Iraqi nursing students' ability to complete nursing report writing tasks in ESP courses?

Research Question Two: Are there any significant differences between the impacts of direct, indirect, and metalinguistic WCF strategies on Iraqi nursing students' ability to complete nursing report writing tasks in ESP courses?

Research Question Three: What are Iraqi nursing students' perspectives on the utility of direct, indirect, and metalinguistic WCF strategies in the process of their writing tasks in ESP courses?

Methodology

Design of the Study

Given the objectives, explanatory mixed-methods design was employed to carry out this study. In this design, quantitative data collection is followed by qualitative data gathering and the findings of the qualitative phase are used to underpin and interpret the quantitative results (Creswell & Creswell, 2017). Likewise, in this study, the results of nursing report pretest and posttest were corroborated using the findings of the WCF interview protocol.

Participants

The researchers took advantage of convenience sampling to choose 112 (i.e. 54 male & 58 female) intermediate level Iraqi nursing students from four ESP classes at a public university in Iraq as the participants of the study. Each class involved 28 students. These participants were selected based on the results of a proficiency test and were asked to complete the written consent form of the study. They spoke Arabic, Kurdish, or Turkish as their mother tongue and ranged in age from 19 to 28.

Instruments

Proficiency Test

In light of the objectives, the researchers utilized *Oxford Placement Test* (OPT) (Allan, 2004) to select the nursing students in ESP classes as the participants. This test involved three main sections including grammar, vocabulary, and cloze test. There were 20 items in each section of the relevant test. To ensure test reliability, Cronbach's Alpha (CA) index was used in a pilot study that encompassed 40 nursing students (20 male & 20 female) whose characteristics were similar to the selected participants' characteristics. The results of CA analysis indicated that the reliability index of OPT was 0.89 and it could be used in Iraqi context.

Nursing Report Pretest and Posttest

In this study, the researchers used two nursing-report writing tasks as the nursing report pretest and posttest. The researchers developed these tasks using the ESP nursing textbook entitled *Oxford English for Careers: Nursing* (Grice & Meehan, 2009) that involves different reading comprehension texts and writing tasks for nursing students. In each of these tasks, the students were asked to write a 250-word imaginary nursing report for a certain patient based on the provided information.

Nursing ESP Textbook

Considering the aims, the researchers took advantage of the nursing ESP textbook entitled *Oxford English for Careers: Nursing* (Grice & Meehan, 2009) in order to develop the nursing-report pretest and posttest of the study. Furthermore, the researchers used this textbook to select the nursing report writing topics of the treatment sessions of the nursing students in their ESP course.

Writing Assessment Framework

The researchers needed to assess the ESP students' nursing report pretest and posttest performances in an objective way. To this end, they used Brown and Bailey's (1984) writing assessment framework. This framework focuses on three underlying aspects of students' written work including *structure*, *style*, and *mechanics* and objectively assesses each of the pertinent aspects on a 20-point scale. The researchers used *inter-rater correlation coefficient* to make sure that their assessment procedure was reliable. Based on the results, the inter-rater reliability index was 0.84. Therefore, the assessment procedure was satisfactorily reliable.

Written Corrective Feedback Interview Protocol

Based on the objectives of the study, the researchers used a three-item semi-structured interview protocol for probing nursing students' perspectives on the examined WCF strategies in their ESP course. The researchers used the focus-group interview method in qualitative research to develop this protocol. More specifically, first, they invited four Applied Linguistics professors at two public universities in Iraq to attend a 60-minute focus-group interview session. These professors had adequate experience in using WCF and had taught different ESP courses during their service years. Next, the researchers adopted the role of session facilitators and prompted the professors to discuss different aspects of WCF strategies in ESP courses. The interview session was recorded. Then, they transcribed the recorded interview session. After that, they used *thematic analysis* (Braun & Clarke, 2021) to extract the codes and themes in the interview transcripts. Finally, they developed the primary version of the protocol items based on the pertinent themes. To examine the validity of this protocol, the researchers used *participant checking* method (Creswell & Creswell, 2017). Accordingly, they provided the Applied Linguistics professors with the first version of this instrument and encouraged them to scrutinize its items. Moreover, they changed the items of the protocol in light of professors' comments and finalized them.

Procedure

In this study, first, the researchers selected 112 nursing students in four intact classes (i.e. 28 students in each class) of a public university in Iraq as the participants. Second, they obtained these students' consent prior to the onset of the study. Third, they randomly assigned these classes to three experimental groups including Metalinguistic Feedback Group (MFG), Direct Feedback Group (DFG), and Indirect Feedback Group (IFG), and one Control Group (CG).

Fourth, the researchers administered the nursing report pretest of the study to the participants in all of the groups. The results of the pretest writing assessment indicated that the groups were homogenous in terms of ESP nursing report writing ability. Fifth, the researchers used Ellis's (2009a) WCF framework to provide the experimental groups with their relevant WCF treatment during 14 sessions in a seven-week period (i.e. two sessions per week). Nonetheless, CG was provided with

product-oriented nursing report writing instruction. That is, in this group, the students received the relevant topics and completed the nursing report writing tasks in a pre-determined period.

Sixth, the researchers administered the nursing report posttest to the participants to examine the effectiveness of the treatment in the experimental groups. Seventh, the researchers randomly selected 10 (i.e. five male & five female) nursing students in MFG, DFG, and IFG and examined their perspectives on their WCF strategies using the interview protocol of the study. The interviews were conducted in Arabic (i.e. the official language in Iraq), lasted for 30 minutes, and were recorded. Finally, the researchers transcribed the interview files and extracted their codes and themes using *thematic analysis* (Braun & Clarke, 2021).

Data Analysis

In the present study, Mean and Standard Deviation (SD) values along with paired-samples t-test and one-way ANOVA test were used to analyze the data of the quantitative phase using SPSS 25 software. Moreover, the researchers took advantage of thematic analysis (Braun & Clarke, 2021) to perform the qualitative data analysis.

Results

Quantitative Results

In the process of data analysis, first, the researchers scrutinized the characteristics of the obtained data on nursing report pretest and posttest to specify the needed tests. The results showed that the underlying parametric test assumptions were not violated owing to the independence of data collection processes, interval nature of data, and normal distribution of data based on the results of Kolomogrov-Smirnov and Shapiro-Wilk normality tests ($p > .05$). As a result, paired-samples t-test and one-way ANOVA were used to perform the pertinent analyses.

The first step in quantitative data analysis was ensuring group homogeneity in terms of nursing report writing ability prior to the onset of the treatment. Accordingly, the researchers used a one-way ANOVA to examine pretest group homogeneity. Table 1 shows descriptive statistics on pretest results:

Table 1

Descriptive Statistics on Pretest Performances

	N	M	SD
MFG	28	23.68	2.091
DFG	28	22.86	2.272
IFG	28	23.61	2.807
CG	28	23.75	2.084

The results of Levene's test showed that the group variances were homogeneous ($p = .172$). Consequently, the researchers examined ANOVA results. Table 2 provides these results:

Table 2

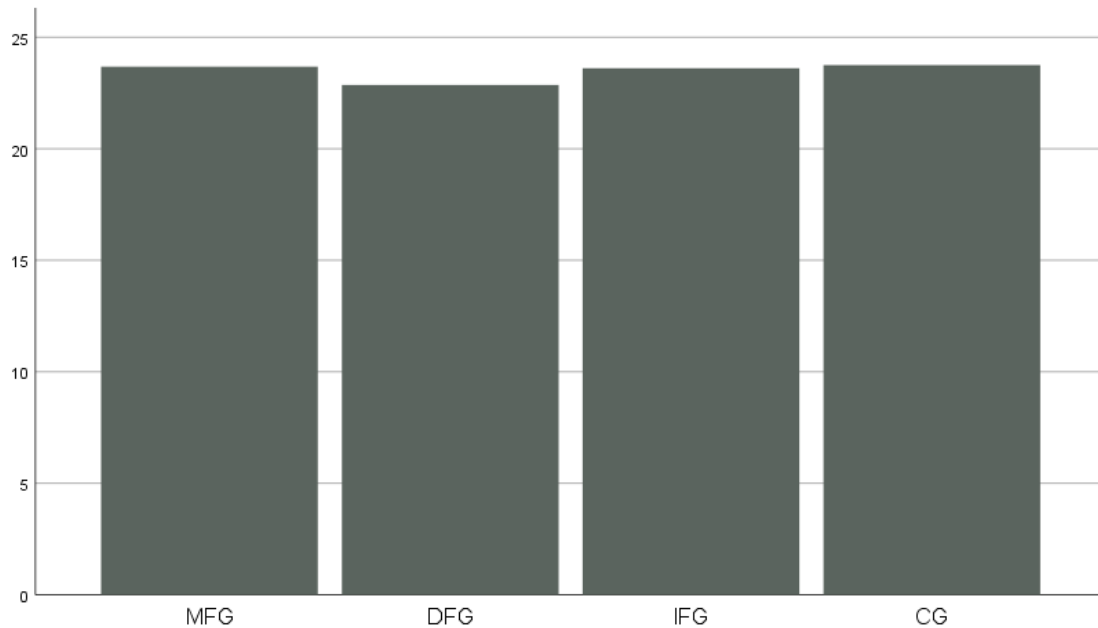
ANOVA Test of Pretest Performances

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	14.455	3	4.818	.886	.451
Within Groups	587.464	108	5.439		
Total	601.920	111			

According to Table 2, there were not any significant differences between the pretest performances of the groups ($p > .05$) and the groups were homogenous in terms of their nursing report writing ability. Figure 1 shows the relevant results:

Figure 1

Writing Pretest Performances



Consequently, the researchers proceeded to perform the analysis:

RQ1: Do direct, indirect, and metalinguistic WCF strategies have significant effects on Iraqi nursing students’ ability to complete nursing report writing tasks in ESP courses?

The researchers used three paired samples t-tests to analyze the data. Table 3 provides the descriptive statistics on pretest and posttest performances of MDG, DFG, and IFG:

Table 3

Descriptive Statistics on Pretest and Posttest Performances

		M	N	SD
Pair 1	MFG Pretest	23.68	28	2.091
	MFG Posttest	39.18	28	2.597
Pair 2	DFG Pretest	22.86	28	2.272
	DFG Posttest	34.46	28	1.503
Pair 3	IFG Pretest	23.61	28	2.807
	IFG Posttest	29.86	28	2.745

To examine statistical significance, the researchers used paired-samples t-test. Table 4 shows these results:

Table 4

The T-test of Pretest and Posttest Performances

		M	SD	SEM	95% Interval of the Difference	Lower	Upper	t	df	Sig.
Pair 1	MFG Pretest	-15.500	3.283	.620	-16.773	-14.227	-24.983	27	.000	
	MFG Posttest									
Pair 2	DFG Pretest	-11.607	2.615	.494	-12.621	-10.593	-23.484	27	.000	
	DFG Posttest									

Pair 3	IFG Pretest	-6.250	3.351	.633	-7.550	-4.950	-9.868	27	.000
	IFG Posttest								

According to Table 4, there were significant differences between the pretest and posttest performances of all of these groups ($p < .05$). That is, metalinguistic, direct, and indirect WCF strategies had significant positive impacts on nursing students' writing ability in ESP courses. Figure 2, Figure 3, and Figure 4 show the relevant results:

Figure 2

Pretest and Posttest Performances of MFG

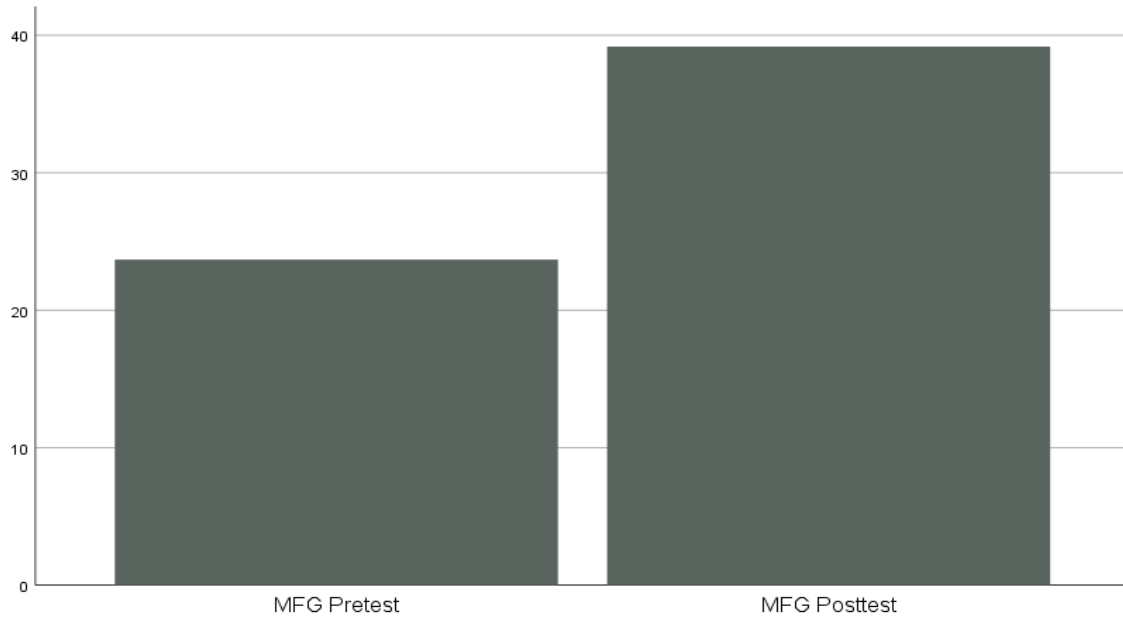


Figure 3

Pretest and Posttest Performances of DFG

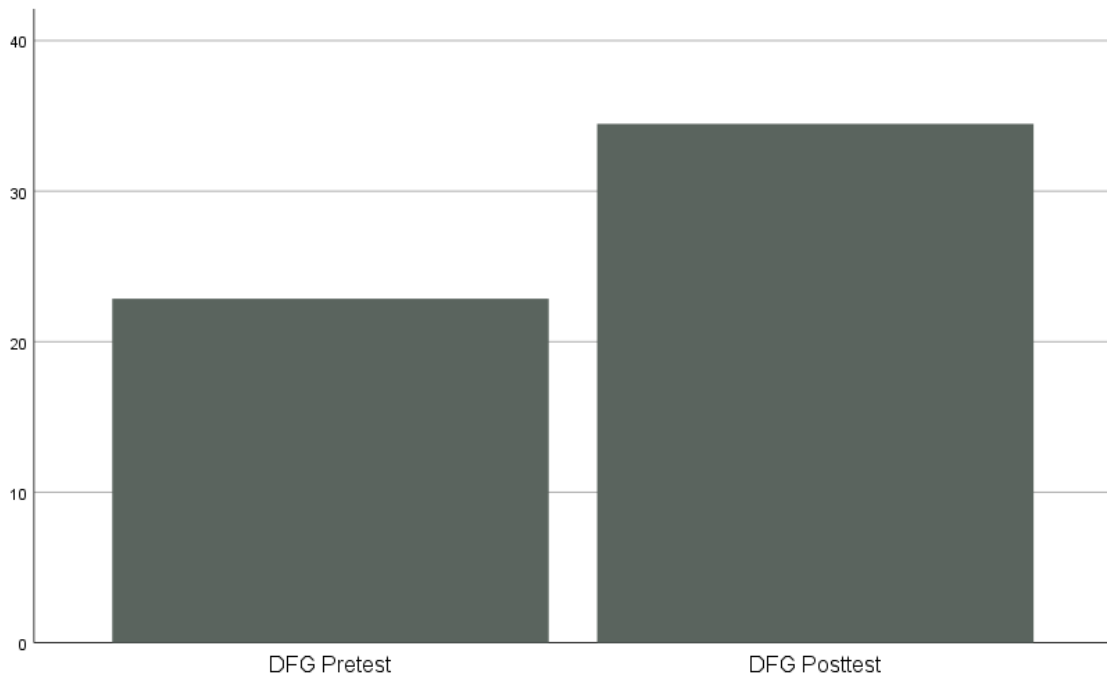
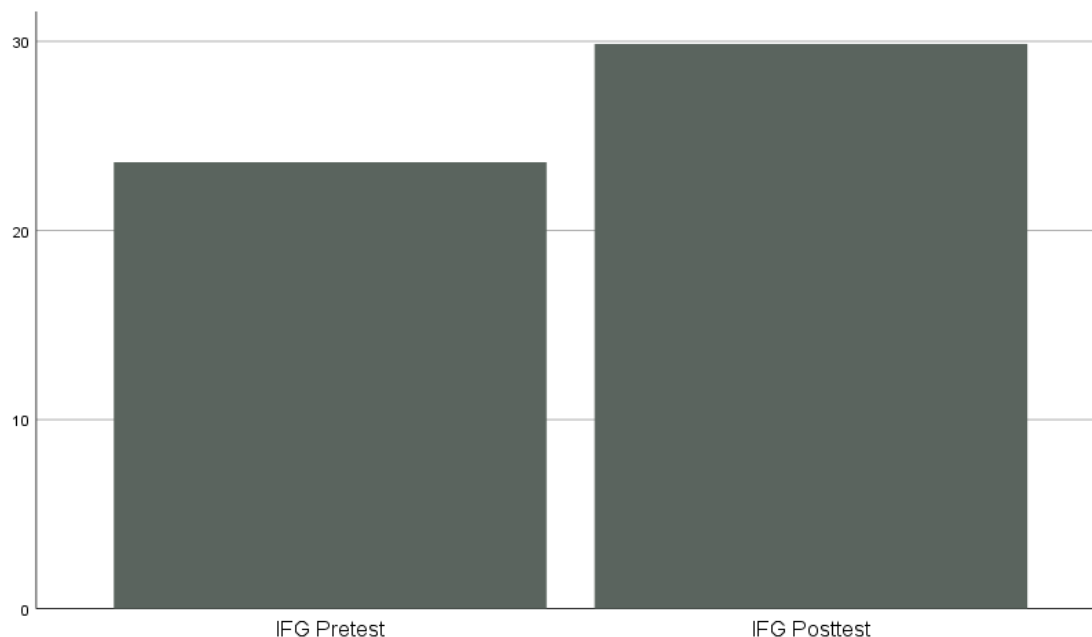


Figure 4*Pretest and Posttest Performances of IFG*

RQ2: Are there any significant differences between the impacts of direct, indirect, and metalinguistic WCF strategies on Iraqi nursing students' ability to complete nursing report writing tasks in ESP courses?

The researchers ran a one-way ANOVA test to examine the differences between the posttest performances of the groups. Table 5 provides these results:

Table 5*Descriptive Statistics on Posttest Performances*

	N	M	SD
MFG	28	39.18	2.597
DFG	28	34.46	1.503
IFG	28	29.86	2.745
CG	28	24.75	2.137

According to the results of Levene's test, group variances were homogeneous ($p=.226$). Therefore, the researchers examined ANOVA results. Table 6 shows the relevant results:

Table 6*ANOVA Test of Posttest Performances*

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3212.813	3	1070.938	203.004	.000
Within Groups	569.750	108	5.275		
Total	3782.563	111			

According to Table 6, there were significant differences between the posttest performances of the groups ($p<.05$). Nonetheless, there was a need to examine the results of the Tukey post hoc test to determine the places of these differences. Table 7 provides these results:

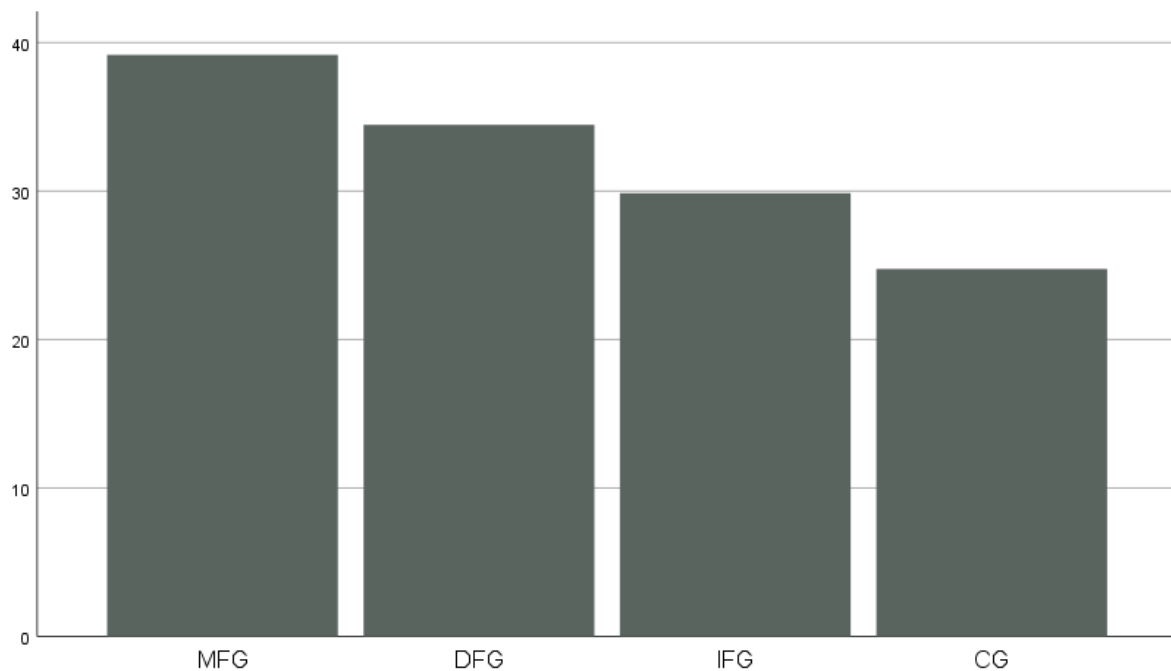
Table 7*Tukey Post Hoc Test of Posttest Performances*

(I) Groups	(J) Groups	Mean Difference (I-J)	SE	Sig.
MFG	DFG	4.714*	.614	.000
	IFG	9.321*	.614	.000
	CG	14.429*	.614	.000
DFG	MFG	-4.714*	.614	.000
	IFG	4.607*	.614	.000
	CG	9.714*	.614	.000
IFG	MFG	-9.321*	.614	.000
	DFG	-4.607*	.614	.000
	CG	5.107*	.614	.000
CG	MFG	-14.429*	.614	.000
	DFG	-9.714*	.614	.000
	IFG	-5.107*	.614	.000

As shown in Table 7, there were significant differences between the performances of all of the groups ($p < .05$). More specifically, MFG, DFG, IFG, and CG had the first, the second, the third, and the fourth best performances respectively. Figure 5 shows the relevant results:

Figure 5

Writing Posttest Performances



Qualitative Results

This section answers the third question:

RQ3: What are Iraqi nursing students' perspectives on the utility of direct, indirect, and metalinguistic WCF strategies in the process of their writing tasks in ESP courses?

The thematic analysis of the obtained interview data highlighted the existence of two main themes in the data on MFG. Table 8 provides the themes in the data on this group:

Table 8

Codes and Themes in the Data on MFG

Codes	Themes
Using correct sentences as models	Cognitive-comparison-inducing nature of metalinguistic WCF
Determining causes of errors using explanations	
Taking advantage of explanations to improve writing performance	
Looking for correct uses of structures	Prolonged utility of metalinguistic WCF
Utilizing metalinguistic explanations during the process of language learning	

The first major theme in the obtained data was *cognitive-comparison-inducing nature of metalinguistic WCF*. Nine of the participants stated that metalinguistic WCF enabled them to specify the reasons behind their writing errors. In this regard, participant no. 2 noted that:

“Teacher’s explanations were guidelines that enabled me to understand the differences between my incorrect uses of language structures and native speakers’ language uses”.

Moreover, according to Table 8, another theme in the data on this group was *prolonged utility of metalinguistic WCF*. Seven of the participants stated that they used the provided metalinguistic feedback during the treatment sessions. Regarding this theme, participant no. 6 stated that:

“I used the teacher’s grammatical explanations whenever I was not sure about the correct uses of the relevant structures. They were useful during the performances of all of our writing tasks”.

In addition, Table 9 shows the codes and themes in the interview data on DFG:

Table 9

Codes and Themes in the Data on DFG

Codes	Themes
Asking the teacher to provide the same feedback over the following sessions	Short-term efficacy of direct WCF
Not remembering the corrections	
Paying attention to teacher corrections	Immediate usefulness of direct WCF for dealing with errors
Dealing with errors using the provided feedback	

According to Table 9, the first theme in the data on DFG was *short-term efficacy of direct WCF*. Six of the participants stated that they forgot the feedback during the treatment sessions. For instance, participant no. 2 stated that:

“I tried my best to remember the corrections and to use them. However, I was able to take advantage of them for one or two tasks. That is, I did not know how to relate them to the other tasks”.

Furthermore, based on Table 9, the second theme in the data was *immediate usefulness of direct WCF for dealing with errors*. Eight of the participants noted that direct WCF helped them to determine the correct uses of language forms. Regarding this theme, participant no. 9 pointed out that:

“Teacher’s comments and corrections enabled me to determine the correct grammatical structures. As a result, I paid attention to them and revised my written work accordingly”.

Finally, Table 10 indicates the codes and themes in the data on IFG:

Table 10

Codes and Themes in the Data on IFG

Codes	Themes
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Disregarding some feedback Using few feedback instances	Unsatisfactory impact of indirect WCF on writing skill development
Being unable to pay attention to teacher feedback Not being able to determine the purpose of the feedback	Bewildering nature of indirect WCF

According to Table 10, the first theme in the data on IFG was *unsatisfactory impact of indirect WCF on writing skill development*. Nine of the participants stated that indirect WCF was not very effective in helping them to deal with their errors. For instance, participant no.10 noted that:

"I was able to determine the causes of one or two of my mistakes and errors and did not understand the other comments".

Finally, the second theme in the data on this group was *bewildering nature of indirect WCF*. Six of the participants stated that most of the indirect WCF instances were confusing. Regarding this theme, participant no. 2 noted that:

"I had difficulty in determining the purpose of my teacher's comments and feedback. As a result, I tended to ignore most of them".

Discussion

Research question one focused on the effects of WCF strategies on Iraqi nursing students' ability to write nursing reports in ESP courses. The findings showed that all of the metalinguistic, direct, and indirect strategies had significant beneficial impacts on these students' nursing report writing performance. Generally, these results corroborate the results of the studies that were carried out by Mohammadnia and Khalili (2014 a, b, c), Khanlarzadeh and Nemati (2016), Karim and Nassaji (2020 a, b), Ekiert and Di Gennaro (2021), and Zohrabi and Khalili (2024a). These studies reported that various WCF strategies ameliorated language learners' writing performance.

It is possible to interpret these results in light of socio-cultural theory that ascribes the improvement in writing performance to *expert support* (Nassaji & Swain, 2000). According to Lantolf and Thorne (2006), the gap between learners' actual language ability and their potential ability constitutes their Zone of Proximal Development (ZPD) that can be developed using expert support that may take the form of teacher feedback. Therefore, the advantageous effect of WCF strategies on nursing students' writing performance may be attributed to their utility for empowering the learners to develop satisfactory ZPDs.

In addition, the results may be explained using the cognitive view of language learning. In this regard, Schmidt (2001) formulated the *noticing hypothesis* and argued that learners' conscious attention to language forms enables them to notice the relevant forms and to integrate them into their interlanguage. Moreover, Ellis (2009b) pointed out that pedagogical interventions may expedite learners' cognitive processing of language data and may facilitate the transfer of the data to their long-term memory. Consequently, the effectiveness of WCF strategies in this study may be attributed to their positive role in learners' noticing of language form uses and their facilitation of the learners' cognitive language information processing.

Research question two strived to determine the differences between the impacts of metalinguistic, direct, and indirect strategies on Iraqi nursing students' nursing report writing ability. Based on the results, metalinguistic, direct, and indirect strategies were respectively the first, the second, and the third most effective strategies in this regard. In general, these results corroborate the results of the studies that were carried out by Saadi and Saadat (2015), Mak (2019), Valizadeh and Soltanpour (2021), Wang and Han (2022), Zohrabi and Khalili (2023), and Khalili, et al. (2025). The results of these studies proved that explicit WCF strategies were more efficacious than the implicit strategies for improving learners' writing ability.

The results can be explained in view of Ellis et al.'s (2005) notion of *cognitive comparison*. Ellis et al. (2005) stated that explicit WCF strategies direct learners' conscious attention to native-like

uses of the language and prompt them to draw a cognitive comparison between their written work and the accurate language uses. As they explained, this type of comparison allows the learners to discover the reasons behind their erroneous uses of the language and to integrate correct language uses into their long-term memory. Moreover, the results may be ascribed to Tomlin and Villa's (1994) construct of *detection*. Tomlin and Villa (1994) defined detection as a cognitive process during which the input is registered in the short-term memory. According to them, explicit WCF strategies ameliorate learners' language form detection that in turn increases the possibility of the conversion of input into intake and is likely to result in the internalization of language knowledge. Considering these discussions, the supremacy of metalinguistic and direct WCF strategies over the indirect strategy in the present study may be attributed to their cognitive-comparison-inducing nature and their detection-promoting structure.

Finally, research question three focused on Iraqi nursing students' perspectives on the utility of direct, indirect, and metalinguistic WCF strategies in the process of their writing tasks in ESP courses. The findings indicated that the nursing students preferred metalinguistic and direct WCF strategies to the indirect strategy owing to the fact that they helped them to monitor their writing performance, ameliorated their short-term and long-term error correction capability, and expedited their cognitive comparison. The results are in line with the findings of the studies that were carried out by Yu and Hu (2017), Merkel (2018), Abbaspour et al. (2020), Koltovskaia (2020), Guo et al. (2021), Khalili et al. (2022a), Dobakhti and Khalili (2024), and Khalili, and Zohrabi (2024). Based on the results of the above-mentioned studies, language learners had more positive attitudes toward explicit WCF strategies in comparison to the implicit strategies.

The findings may be interpreted in light of the *self-regulation* notion of sociocultural theory. Ohta (2001) noted that self-regulation constitutes a process during which learners take advantage of artifacts to gain control over their higher-order thought processes and to internalize knowledge of the language. As a result, nursing students' preference for metalinguistic and direct WCF strategies in the present study may be related to the fact that they used the pertinent strategies as artifacts to internalize the correct uses of the target language. Lastly, the results may be attributed to the notion of *negative evidence* in the cognitive view of second language acquisition (Luquin & García Mayo, 2021; Sheen, 2007). Long (1996) argued that negative evidence encompasses the pedagogical interventions that make learners cognizant of the impossible uses of the target language and enable them to deal with their errors. Therefore, the nursing students' positive attitudes toward metalinguistic and direct WCF strategies may be related to the fact that these strategies furnished them with negative evidence and empowered them to ameliorate their writing performance in nursing report writing tasks.

Conclusion and Implications

The present study endeavored to examine the utility of metalinguistic, direct, and indirect WCF strategies for improving Iraqi nursing students' nursing report writing ability in ESP courses. Furthermore, it attempted to determine these students' opinions on the efficacy of these strategies in the process of nursing report writing tasks. The results showed that all of these strategies had significant positive impacts on the participants' writing ability in ESP courses. Nonetheless, metalinguistic and direct WCF strategies proved to be more advantageous than the indirect strategy. In addition, nursing students indicated a strong preference for metalinguistic and direct WCF in their writing tasks.

These results have certain implications for different stakeholders. First, the results indicated that the ESP teacher education courses in Iraq must be redressed in terms of content and educators. More specifically, most of these courses predominantly focus on the instruction of field-specific vocabulary items and consider the writing ability to be a by-product of vocabulary knowledge. Consequently, it is essential to integrate a module into these courses that apprises the ESP teachers of the various WCF strategies and their impacts on ESP students' writing performance. Second, the educators of these courses have to receive education of WCF in order to be able to integrate its

discussions into their courses and to encourage prospective ESP teachers to use WCF strategies to promote their learners' ESP writing ability.

Second, the results highlighted the need to revise the ESP teaching materials of different majors including the nursing major. The examination of the materials of these courses shows that they mainly focus on reading comprehension texts that aim to expose learners to the specific vocabulary of the relevant majors and disregard their need to develop ESP writing skills. Therefore, ESP syllabus designers need to include writing sections in the units of the ESP textbooks including ESP nursing textbooks in which the learners are required to perform the writing tasks of their major (e.g., writing nursing reports). These sections can provide the ESP teachers with the opportunity to furnish the ESP students with appropriate WCF in order to ameliorate their ESP writing performance.

Finally, based on the results, ESP teachers have to develop a satisfactory understanding of the efficacy of WCF strategies and should take advantage of them in ESP courses. To this end, they can use implicit WCF strategies such as indirect WCF in combination with the explicit strategies such as metalinguistic and direct strategies. Furthermore, they may take advantage of WCF strategies based on error gravity (Sheen, 2007). To this end, they can use explicit strategies for dealing with global errors that cause miscommunication. On the other hand, they may use implicit strategies to address local errors that affect certain forms without negatively affecting the process of communication (Long, 1996).

The present study suffered from two main limitations since it was not able to randomly select the participants and could not examine the effects of the participants' personal characteristics including language background and gender on the results. Additionally, the study was delimited by examining the ESP courses of Iraqi nursing students and by selecting the participants from the intermediate proficiency level. The future studies might deal with these issues. Moreover, these studies could focus on the WCF strategies such as electronic WCF that were not examined in this study. Furthermore, these studies need to select their participants from various ESP courses such as the ESP courses of engineering and applied medical sciences majors among the others. Finally, the future studies might be conducted in both foreign and second language contexts to determine the utility of WCF strategies.

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Declaration of Conflicting Interests

The authors declare that they have no conflict of interests.

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