Original Article

Written corrective feedback in English for specific purposes nursing students' writing courses: A quasi-experimental study

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Abstract

Background & Objective: In the field language, teaching written corrective feedback (WCF) has attracted considerable attention as a beneficial pedagogical technique. The present study aimed to determine the short-term and long-term effectiveness of WCF strategies for ameliorating English for specific purposes (ESP) nursing students' writing ability in English nursing reports.

Materials & Methods: In this quasi-experimental study, the researcher employed convenience sampling to select 93 intermediate-level learners from three intact classes at a university of medical sciences in Iran as participants based on their results on the Oxford Placement Test. The researcher then assigned these classes to three experimental groups, including direct WCF, indirect WCF, and meta-linguistic WCF groups. He administered a writing pre-test to all groups. Subsequently, each of these groups received their pertinent WCF treatment in 10 sessions. Following the completion of the treatment, a post-test was administered to all of the groups. The researcher conducted a follow-up test one month after the post-test. Finally, SPSS 24 was used to analyze the data.

Results: The results highlighted the fact that the meta-linguistic WCF proved more effective than the direct and indirect WCF strategies ($p < 0.05$. Furthermore, the direct WCF strategy had a more positive effect on the ESP nursing students' writing ability in comparison with the indirect WCF strategy ($p < 0.05$).

Conclusion: These results may provide the ESP teacher educators, syllabus designers, and instructors guiding principles regarding the use of WCF in ESP nursing students' writing courses.

Keywords: corrective feedback, ESP, nursing students, WCF strategies

Introduction

An in-depth review of the relevant literature highlights that second language acquisition (SLA) researchers have focused on corrective feedback (CF) in the last decade and have conducted numerous studies on the subject (1-6). The interest in this instructional technique has originated from its utility for improving language learners' acquisition of diverse language forms, such the vocabulary items and grammatical structures, among others. The fascination with this technique has prompted the SLA researchers to define it in different ways. In this regard, CF is defined as the peers or instructors' reactions to the learners' erroneous uses of the target language in the process of second language communication (7). Likewise, it is pointed out that CF encompasses the reactions to the learners' non-native language use that increase their language use accuracy by informing them about their errors, improving their motivation, and inhibiting their hesitancy and irresolution (8).

The preceding discussions have focused on oral CF. Nonetheless, it is noted that they focus on written corrective feedback (WCF) in a similar way (7). WCF has been considered a prerequisite to second language writing development (9). It is noted that WCF is indispensable in writing courses primarily because it directs the learners' conscious attention to the lack of congruence between their language use and native-speaker language use and enables them to enhance their utilization of the diverse language structures in the process of writing task performance (10).

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Notwithstanding, the above-mentioned argument has been criticized by a number of researchers who support the eradication of grammar instruction from language classes. In this regard, it was noted that WCF contradicts the language learners' natural order of second language acquisition (11). That is, the alleged beneficial impact of WCF on the learners' writing accuracy is apparent in their current tasks, and they struggle to transfer the WCF-induced knowledge to their upcoming writing tasks (12).

The above-mentioned controversy over the utility of WCF in writing courses has motivated several studies. A number of these studies have reported the favorable impact of WCF on writing ability (13). On the other hand, other studies (14-16) have highlighted its ineffectiveness for improving the learners' writing skill development.

Beyond these discussions, a number of SLA researchers have focused on WCF strategies. One of the classifications of these strategies is the most comprehensive (17). This classification identified six feedback strategies: a) direct WCF, where the instructor corrects learners' errors directly; b) indirect WCF, in which the instructor indirectly makes the learners aware of the existence of errors; c) meta-linguistic WCF, in which the instructor furnishes the learners with meta-linguistic information on the accurate forms of their erroneous language use; d) focus of WCF, which refers to the emphasis on all of the errors or a certain group of errors; e) electronic WCF, in which the instructor uses hyperlinks to make the learners cognizant of their errors; f) reformulated WCF, in which the instructor provides the learners with a native-speaker-reformulated version of their writing tasks (17).

The above-mentioned discussion of WCF highlights the fact that, in general, SLA researchers have been concerned with this pedagogical technique in General English courses and have overlooking its application in english for specific purposes (ESP) courses. ESP is defined as a diverse range of language courses which leverage needs analysis to identify the language learners' vocational needs, developing specific materials that address the relevant needs, and providing the learners with specific language instruction that facilitates and expedites their use of the target language in their workplace (18).

The examination of the ESP courses in academic settings highlights the fact that the ESP nursing courses have attracted considerable attention in the field of SLA. This focus arises from the significant role of English in the field of nursing. The scrutiny of the WCF studies shows that they reveal a concentration on specific lines of research, often neglecting others. For instance, some studies were conducted to determine the degree to which direct WCF ameliorated the EFL learners' use of the past tense in successive writing tasks (19).

On the other hand, other studies endeavored to compare the effectiveness of explicit meta-linguistic WCF in enhancing learners' use of relative clauses (17). In addition, a number of studies tried to highlight the advantages and disadvantages of the direct and indirect WCF strategies in ESL classes (20, 21). Additionally, certain studies investigated the effectiveness of teachers' WCF for improving the learners' ability to organize their writing tasks (22, 23). These lines of research highlight the fact that WCF studies have disregarded ESP courses, including nursing ESP courses.

Furthermore, the examination of the studies that have focused on ESP nursing courses shows that a number of them have focused on the communication patterns between the nurses and patients (1). Moreover, some of them have examined the nursing students' communicative competence (18). Lastly, a number of these studies (2, 24) have investigated the nursing students' socialization patters. Nonetheless, these studies have disregarded the effectiveness of pedagogical techniques including WCF for ameliorating the writing ability of ESP nursing students, encompassing their proficiency in composing nursing reports in a workplace setting.

The present study endeavors to address this issue in the EFL context of Iran. That is, the study strived to investigate the short-term and long-term effectiveness of the direct, indirect, and meta-linguistic WCF strategies for enhancing the writing ability of ESP nursing students for composing nursing reports in their professional contexts.

Materials & Methods

Design and setting(s)

The present study was a quasi-experimental study with pre-test and post-test assessments. It was conducted at Urmia University of Medical Sciences, Iran, from 17/02/2023 to 21/05/2023.

Participants and sampling

During the study period, 367 students were enrolled in nine classes in the faculty under study. All of these students were examined for eligibility. 274 students were excluded for not meeting the inclusion criteria: 141 due

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to failing the level test, 112 due to time constraints, and 21 due to the absence of consent. Consequently, 93 people met the entry criteria. These participants were distributed into three classes or groups: The direct WCF group (n = 31), indirect WCF group (n = 31), and the meta-linguistic WCF group (n = 31). Note that the sampling method was convenience sampling, and we used a non-randomized approach to assign students to the three study groups. However, after the non-random distribution of the students into three groups, we determined assigned the method that would be used in each class.

The inclusion criteria were: a) being a nursing student; b) being at an intermediate level of English based on the Oxford placement test; c) having Azerbaijani, Persian, Kurdish, or Arabic as a mother tongue; and d) having consent to participate in the study.

Exclusion criteria were: a) absence from more than three class sessions; b) procrastination in completing homework; and c) reluctance to continue participating in the study for any cause or reason.

Tools/Instruments

In this study, we used four tools to facilitate the processes of teaching and learning, intervention evaluation, and data collection.

Oxford placement test

To determine the level of the studied students, we used the Oxford placement test (25). The Oxford Placement Test has two sections: Use of English and Listening. The Use of English section evaluates students' knowledge of grammar and vocabulary. The listening section evaluates students' overall listening ability. The validity and reliability of this test have been validated for global application (26).

Nursing report samples

In real-world learning scenarios, we used 13 nursing reports in English as an example. A nursing report is a document that provides the correct and necessary information that is needed. It is a record of both verbal and written data about a patient, their information, their treatment, their health, and of course the results.

Writing rating scale

To assess the writing ability of nursing students before and after the intervention in this study, we used the modified version of the writing rating scale (27). This rating scale could evaluate four main subcategories including style, mechanics, punctuation, and structure. Each of these subcategories is graded on a scale of 20. Therefore, the total scale score is 80. To evaluate the reliability coefficient of this tool, we used the Interrater Reliability method with the help of Cohen's Kappa coefficient and achieved a value of 0.820, which was satisfactory.

WCF typology

In the present study, we used the typology of written corrective feedback (7) to implement relevant interventions for the research experimental groups. This typology includes six main categories: a) direct feedback, b) indirect feedback, c) meta-linguistic feedback, d) focused feedback, e) electronic feedback, and f) modification. It is noted that in direct feedback, the teacher provides the students with the correct forms of the second language. In addition, in indirect feedback, it indirectly locates the wrong parts using a cursor. In addition, in meta-linguistic feedback, the instructor provides detailed information about the source of errors and grammatical rules. Additionally, in e-feedback, the instructor uses links to inform learners of their errors. Furthermore, in reformulation, the instructor provides learners with a native language-formulated version of their writing tasks. Finally, focused feedback refers to the degree to which feedback deals with all aspects of the writing task (i.e., decentralized feedback) or with specific aspects of learners' output (i.e., focused feedback) (7).

Pre-test and post-tests

We used it to assess students' writing abilities both before and after the intervention. To achieve this, information related to the condition of a hypothetical patient was provided to them and they were asked to compose a nursing report about that specific patient in English.

Procedure

In the current investigation, the researcher followed the following procedure: First, the head of the nursing department was called, and his agreement for the research was gained. Second, a total of 93 intermediate-level nursing students were selected from three entire courses. Third, signed informed consent was obtained from all participants before the intervention started. Fourth, the researcher allocated the three intact classes to three separate groups: The direct feedback group, the indirect feedback group, and the meta-linguistic feedback group. Fifth, a writing pre-test was delivered to all groups. This exam presented participants with information about a particular patient and asked them to write a nursing report on him within a 30-minute time period. Sixth, during the treatment phase, each group got their individual WCF therapy in ten sessions over a 40-

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day period (i.e., two sessions per week). In the first session for all groups, the researcher supplied learners with the general structure of a nursing report and described each element to acquaint them with their writing duties. After the initial session, each group got their respective intervention in the remaining 10 sessions. In the direct feedback group, learners were supplied with appropriate information about the patients, required to create the nursing report within 30 minutes, and given direct WCF. This input entailed identifying their flaws and offering the right forms of their lexical and grammatical errors. The identical technique was used for the indirect feedback group, with the distinction that underneath and cursors were used to show the position of problems without supplying the right forms. Similarly, in the meta-linguistic feedback group, the researcher marked the location of erroneous portions and supplied learners with meta-linguistic information on important grammatical rules.

Seventh, an instant writing post-test was provided to all groups to assess the efficacy of the therapies. Similar to the writing pre-test, this test gave learners with the essential material and asked them to produce a nursing report within 30 minutes.

Eighth, a follow-up test was conducted one month after the post-test, using a similar process, to examine the long-term influence of the study's therapies.

Upon completion of the ten sessions, an instant writing post-test was provided to all groups to assess the immediate effect of the intervention. Additionally, a follow-up test was conducted one month following the post-test to determine the long-term efficacy of the WCF strategies. A summary of the study process is shown in Figure 1.

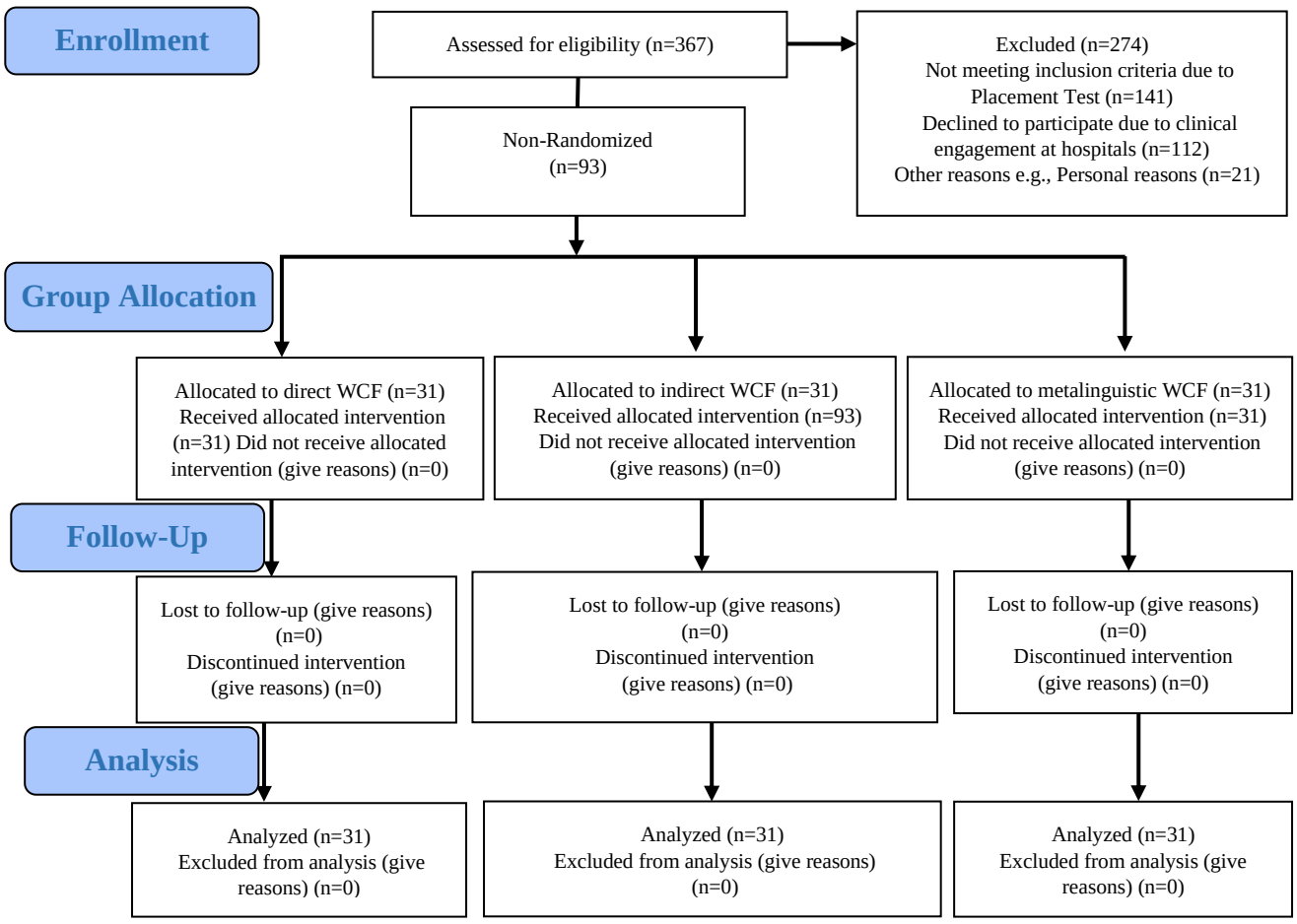

Figure 1. Study process flow diagram

Data analysis

Descriptive statistics were applied to assess the frequency and percentage of qualitative factors relevant to participants, including gender, age, grade point average (GPA). For quantitative characteristics relating to participants, such as age, general academic average,

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and scores in the pre-test and post-tests, mean and standard deviation were applied in order to provide descriptions. To examine the normal distribution of quantitative data, the Shapiro-Wilk test was applied, demonstrating that the scores followed a normal distribution ($P > 0.05$). After determining the normal distribution assumption, a repeated measures ANOVA was utilized to compare the average scores of students over three time periods. A Tukey post-hoc test was done to identify exactly which groups differ from each other. To compare the three groups prior to the intervention in terms of quantitative demographic characteristics, an ANOVA was employed. Furthermore, a chi-square test was utilized to compare the three study groups based on qualitative demographic data. SPSS-24 was applied for all these analyses, and a significance level of $P < 0.05$ was accepted as statistically significant.

Results

There was no statistically significant difference ($p > 0.05$) between the three groups of students based on demographic variables (control variables) and their scores in the writing skill test before the intervention (Table 1).

The results of the repeated measures ANOVA showed that each writing ability of all three groups increased significantly after the intervention compared to the pre-test score ($F (2, 91) = 4.71$, $p = 0.000$). In addition to this, the writing ability score of the three investigated groups also had a statistically significant difference ($F (2, 91) = 4.23$, $p = 0.000$) (Table 2 and Figure 2). Tukey's post-hoc test showed that the mean score of the meta-linguistic group in the writing ability test was significantly higher than the two direct and indirect feedback groups. And the average score of students' writing ability in the direct feedback group was also higher than the indirect group (Table 3 and Table 4).

Table 1. Overview and comparison of the three groups' baseline academic status, demographic data, and writing ability

Variables	Direct Feedback Group	Indirect Feedback Group	Meta-linguistic Feedback Group	Sig.
Gender n (%)				
Female	16 (51.6)	14(45.1)	17(54.8)	X2 = 0.336
Male	15 (48.4)	17(54.9)	14(45.2)	P = 0.774
Age Mean ± SD	19.54 ±2.41	20.1±1.73	19.89±2.25	$F_{(2, 91)} = 0.068$ P = 0.072
GPA Mean ± SD	17.53±4.32	17.02±3.45	16.97±3.87	$F_{(2, 91)} = 0.73$ P = 0.084
Pre-test Mean ± SD	45.45±5.47	47.65±4.43	46.52±5.10	$F_{(2, 91)} = 0.62$ P = 0.716

Note: One way ANOVA test was used to compare participants based on quantitative demographic variables of three groups. Chi-square test was employed to compare participants based on qualitative variables.
Abbreviations: n, number of participants; SD, standard deviation; GPA, grade point average; X2, Chi-square test; F, analysis of variance test; Sig, statistical significance; p, probability-value.

Table 2. Comparative evaluation of the writing skill of the students in the three groups under study

	Pre-test Mean ± SD	Post-test Mean ± SD	Follow-up test Mean ± SD	Sig.
Direct Group	45.45±5.47	58.74±5.03	53.06±6.50	$F_{(2, 91)} = 3.32$ P = 0.000
Indirect Group	47.65±4.43	54.84±4.96	47.94±3.38	
Meta-linguistic Group	46.52±5.10	65.03±3.92	60.58±3.45	
Total	46.54±5.04	59.54±6.25	53.86±6.97	$F_{(2, 91)} = 4.64$, P =0.000

Note: We employed repeated measures analysis of variance to assess the impact of educational interventions on students' writing ability.
Abbreviation: SD, standard deviation; F, repeated measures analysis of variance; Sig, statistical significance; p, probability-value.

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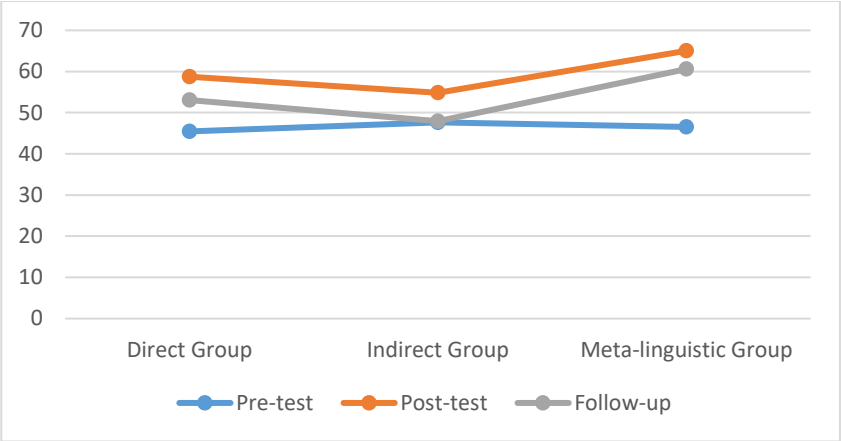

Figure 2. Mean performance of writing ability at baseline (pre-test), immediate after intervention (post-test), and after one month (follow-up) of intervention

Table 3. Tukey test of the performances of the direct, indirect, and meta-linguistic feedback groups on the immediate post-test

(I) Groups Post-Test	(J) Groups Post-Test	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Direct	Indirect	3.90*	1.18	0.004	1.08	6.73
	Meta-linguistic	-6.29*	1.18	0.000	-9.12	-3.46
Indirect	Direct	-3.90*	1.18	0.004	-6.73	-1.08
	Meta-linguistic	-10.19*	1.18	0.000	-13.02	-7.37
Meta-linguistic	Direct	6.29*	1.18	0.000	3.46	9.12
	Indirect	10.19*	1.18	0.000	7.37	13.02

Notes: The mean difference is significant at the 0.05 level.
Abbreviation: Std, standard deviation; Sig, statistical significance.

Table 4. Tukey test of the performances of the direct, indirect, and meta-linguistic feedback groups on the follow-up test

(I) Groups Follow-up	(J) Groups Follow-up	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Direct	Indirect	5.12*	1.18	0.000	2.30	7.96
	Meta-linguistic	-7.51*	1.18	0.000	-10.35	-4.68
Indirect	Direct	-5.12*	1.18	0.000	-7.96	-2.30
	Meta-linguistic	-12.64*	1.18	0.000	-15.48	-9.81
Meta-linguistic	Direct	7.51*	1.18	0.000	4.68	10.35
	Indirect	12.64*	1.18	.000	9.81	15.48

Note: The mean difference is significant at the 0.05 level.
Abbreviation: Std, standard deviation; Sig, statistical significance.

Discussion

The current research assessed the immediate and prolonged efficacy of three WCF strategies for improving the ESP nursing students' ability to write reports. The findings showed that, in the short- and long-term, all of the direct, indirect, and meta-linguistic WCF strategies had a significant positive impact on the participants' writing performance. However, the meta-linguistic WCF was more effective than the others. Moreover, the direct WCF had a more advantageous impact on these learners' nursing report writing ability in comparison with the indirect WCF. In general, these results support the results of a number of studies (4, 22). These studies reported that WCF improved the EFL learners' language skills in the short-term. Nonetheless, the results are not completely in line with (28). This study indicated that indirect WCF had no significant impact on the learners' language skills in the short-term, but proved effective in the long term. The results of the present study and the above-mentioned study may stem from the differences between their participants. More specifically, while the ESP learners considered the indirect WCF as an opportunity to develop a better understanding of the requirements of acceptable nursing reports, the general English learners of the aforementioned study regarded it as an additional educational burden and did not make an effort to determine the reason behind the feedback.

Moreover, based on the results, there was a decrease in the efficacy of all of the direct, indirect, and meta-linguistic WCF strategies in the long-term.

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Notwithstanding, their impact on the ESP nursing students' nursing report writing ability was significant. Furthermore, similar to the post-test, meta-linguistic, direct, and indirect WCF strategies were the first, second, and third, most effective WCF strategies for ameliorating the participants' writing ability on the follow-up test. In general, these results corroborate the results of certain studies (19, 21, 29, 30). These studies have shown that WCF has a positive effect on EFL learners' writing ability in the long term. However, the results of some study (3, 31) do not completely support the results of the present study since they reported that there were no significant differences between the effects of meta-linguistic, direct, and indirect WCF strategies on the learners' language learning in the long term. The difference between the results of this study and the previously mentioned studies may stem from the type of language learning tasks. That is, while the nursing repot writing tasks of the present study were vitally important to the ESP learners and facilitated their occupational performance in their workplace, the general writing tasks of the aforementioned studies were not particularly important to the learners' process of education in their relevant academic settings.

It is possible to expound on the above-mentioned results by taking advantage of the computational model of language learning (32) that ascribes language learning to the cognitive processing of linguistic information. In this regard, noticing hypothesis that is compatible with the computation model may shed light on the results. This hypothesis argues that conscious attention to linguistic forms (e.g., grammatical structure) is a prerequisite to the conversion of input to intake, which results in long-term language learning. Moreover, it is noted that this kind of attention empowers the language learners to make a cognitive comparison between their own output and the native speakers' language use in various situational contexts (33). A close scrutiny of the characteristics of the meta-linguistic and direct WCF strategies underlines their explicit nature and indicates that they are more likely to direct the learners' conscious attention to the linguistic forms. On the other hand, it is pointed out that the implicit WCF strategies, including indirect WCF, may ameliorate the learners' awareness of the forms. Nonetheless, they are not able to direct the learners' attention to the forms in a satisfactory way (34).

Considering these issues, it can be argued that, in the present study, the beneficial impact of both the meta-linguistic and direct WCF strategies on the ESP learners' writing ability stemmed from the fact that these strategies ameliorated their cognitive comparison and empowered them to redress their cognitive conceptualization of second language forms. Moreover, the advantageous effect of the indirect WCF on these learners' writing skills was related to its awareness-raising capacity.

In addition to the computation model, the results may be explained in light of the sociocultural theory of language learning. This theory ascribes language learning to the interaction between more proficient and less proficient language users. To this end, it defines leaning in terms of zone of proximal development (ZPD). In this theory, ZPD refers to the difference between the learners' current language ability without expert assistance and their potential language ability with expert assistance (35). Considering this issue, it can be argued that the meta-linguistic, direct, and indirect WCF strategies enabled the learners to bridge the gap in their ZPD and to develop more advanced ZPDs that reflected their more native-like use of the target language in different situational contexts.

The present study had a number of limitations since it was not able to examine the effect of the language learners' age and language background on the obtained results. We delimited the study by focusing on intermediate language proficiency and selecting the ESP nursing students without dealing with the ESP learners of the other allied medical sciences. We did not have a control group in this study. On the other hand, although we chose the type of intervention for the classes randomly, the random assignment of students in the three groups was not done randomly. Future studies have to deal with these limitations and delimitations.

Conclusion

Based on the above-mentioned results, it can be stated that there is a need to redress the ESP teacher training courses. The perusal of the ESP teacher educators' characteristics shows that they are adequately experienced instructors who have obtained international and national ESP teacher education certificates. Nonetheless, they are mainly concerned with the technical knowledge of the relevant fields of study (44) and disregard efficacious language instruction techniques and strategies, including WCF. Therefore, there is a need to re-educate the ESP teacher educators to apprise them of the efficacious WCF strategies.

Ethical considerations

The researcher obtained written informed consent from all of the participants before the beginning of the study.

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Conflict of interest

The researcher declares that there is no conflict of interest.

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Data availability statement

The data that support the findings of this study are available on request from the author, [Milad Ramazani].

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