Research Article

Developing Process Writing Ability in Virtual Learning Environment via (Reinforced) Metalinguistic Corrective Feedback

Maryam Naderi Farsani[1], Parviz Alavinia[2*], Mehdi Sarkhosh[3]
1,2,3 Department of English Language, Urmia University, Urmia, Iran
*Corresponding author: p.alavinia@urmia.ac.ir

Abstract

   The current study was performed to investigate the impact of metalinguistic oral and written corrective feedback on learners' process writing ability through virtual learning environment. To this aim, a total of 66 Iranian EFL students in Shahrekord University participated in the study. To conduct the study, a sample of IELTS expository writing (Writing Task 1) was administered to all participants for homogeneity purposes. Then, each of the two classes was divided into two parts, and each was randomly assigned to one of the four comparison groups (oral metalinguistic feedback, written metalinguistic feedback, oral metalinguistic + error logs, and written metalinguistic + error logs). Next, the writing pretest (a process writing task) was given to participants prior to instruction. The treatment lasted for eight weeks, and then process writing posttest was administered. The results revealed that all groups made progress from pretest to posttest. However, no significant difference was found among the four types of metalinguistic corrective feedback. The implications of the findings are discussed throughout the paper.

 Keywords: Oral metalinguistic feedback, written metalinguistic feedback, error logs, virtual learning environment

Introduction

The ability to write professionally in an academic context is one of the most pivotal skills required to be achieved by L2 learners (e.g., Alavinia & Hassanlou, 2014; Modirkhameneh, Pouyan & Alavinia, 2018). Hyland (2003) contends that the ability to communicate information and beliefs properly through the universal digital network depends significantly on adequate writing skill. Despite the paramount role of writing skill in academic success, as White and Arndt (1991) argue, it hasn't been given the attention it deserves. It must also be noted that ample and timely provision of corrective feedback (CF) can aid the learners to overcome their writing difficulties (Muncie, 2000; Myers, 1997). In other words, CF boosts the learners' awareness of their errors and assists them to avoid committing similar errors in the subsequent occasions (Karim & Nassaji, 2020; Xu & Zhang, 2021).

Apart from the constructive role CF plays in boosting learning, the appropriate provision of feedback in terms of time, manner and degree is a challenging issue over which there is a lot of debate among the scholars (e.g., Ferris, 2007). Additionally, there is some dispute among investigators concerning the efficacy of CF. While some researchers raise doubts about the usefulness of feedback for language development (Truscott, 1996; Truscott & Hsu, 2008), others are of the view that CF has a significant effect on the development of students' language skills (Bitchener, Young & Cameron, 2005; Ellis, 2009). Oral corrective feedback (OCF) can take a variety of forms, including recast, elicitation, clarification request, and metalinguistic feedback (Ellis, 2008; Richards & Schmidt, 2010). Likewise, written corrective feedback (WCF) can be provided in a variety of ways, namely through direct, indirect, metalinguistic, focused, unfocused, and electronic modes or by means of reformulation (Ellis, 2009).

One category of CF, known as metalinguistic feedback, which also constitutes the focus of the current study, refers to the kind of feedback in which the instructor supplies metalinguistic clues by either providing error codes or grammatical descriptions based on the nature of the error (e.g., Ferris, 2004; Sheen, 2007). In line with the classification of corrective feedback suggested by Lyster and Ranata (1997), metalinguistic feedback is regarded as the explicit correction.

In second language writing classes, various technological tools and devices have aided the teachers in CF provision. Research on the role of technology in boosting CF has indicated that utilizing online materials and electronic tools can assist the learners to monitor their own learning, reach better uptake, and further develop their writing ability (e.g., Hewett, 2006).

Though research abounds on the role of metalinguistic feedback in different aspects of language learning, the results are still inconclusive. Particularly, when it comes to the feedback provided through virtual learning environment and online learning, the paucity of research is quite outstanding. The other aspects that might render the current study different from previous studies is its focus on an underresearched mode of writing known as process writing (informational type), and the use of passive structure, as well as its attention to the role of error logs (as a reinforcing element which might facilitate uptake).

Despite the aforesaid controversy over the efficacy of CF, and debates regarding when, how and to what extent it is to be provided, most researchers today unanimously contend that proper and timely provision of feedback leads to language learning enhancement. Furthermore, many researchers argue that feedback is an efficacious strategy to develop learners' writing skill (e.g., Kara & Abdulrahman, 2022). Marboyeh (2011) found that the teachers and peers' written corrective feedback had a significant impact on the learner's writing performance. Likewise, Rabiee (2010) stated that learners profit more from teachers' feedback than peer feedback.

Among diverse kinds of corrective feedback applied in language classes, Ellis (2006) contrasted the impact of metalinguistic feedback and recasts, and found that metalinguistic feedback is more beneficial than recasts. Though the results of studies on different modes of corrective feedback and their efficacy are inconclusive, the findings indicate that when different types of corrective feedback are used and contrasted, explicit types lead to more beneficial outcomes than implicit ones (Ortega, 2013).

Though research into corrective feedback has addressed miscellaneous issues and concerns, four major strands are prominent in the literature: 1) the efficacy of different feedback types (in this regard, the comparison between implicit and explicit feedback types or so to speak, recast and prompt is more ubiquitous); 2) The cognition and perceptions of teachers and learners regarding the efficacy of different feedback modes; 3) The efficacy of current modes of CF provision, particularly electronic feedback and computer-mediated, mobile-assisted or social media-enriched feedback; and 4) The role of learner engagement with corrective feedback, which is a brand new and quite under researched area. Each of these distinct strands is going to be reviewed in what follows, and examples from literature are provided.

In regard to the first research strand, that is, the efficacy of different feedback types, particularly recast vs. prompt, mention can be made of Banaruee, Khatin-Zadeh, and Ruegg's research (2018) in which the researchers exposed forty high school EFL learners to two kinds of treatment,

namely recasts and direct corrective feedback. As the findings indicated, though both groups significantly improved on the writing posttest, the recast group outperformed the direct feedback group in terms of their writing performance.

In a similar vein, Sarandi and Çelik (2019) compared the influence of recasts and prompts on the acquisition of third person -s. To conduct the study, a total of 36 students from the university context in Turkey were selected and assigned to a control and two treatment conditions. To elicit and measure the acquisition of the target structure, oral narration tasks and grammaticality judgment tests were employed. The main finding of their research was the vivid privilege of recast, as opposed to prompt, as revealed by the posttest and delayed posttest results.

In a more recent investigation, Seyedebrahimi, Rahimi Esfahani, and Sepehri (2022) compared the relative effects of recast and explicit corrective feedback on test takers' speaking anxiety. A total of 90 Iranian learners taking IELTS test were assigned into two experimental groups that went through a 10-session treatment, and a control group. The treatment in the explicit group was done through on-the-spot correction. Also, for measuring speaking anxiety, Chowdhury's (2014) questionnaire was administered prior and successive to treatment. In line with the findings, while for upper-intermediate level learners no significant difference was revealed, for advanced learners, significant differences were observed between the control group and experimental groups.

Drawing on the findings garnered from the literature, some of which were reported in this section, it can be concluded that among diverse kinds of corrective feedback applied in language classes, research has indicated that recasts are the most recurrently utilized (e.g., Ellis, 2006; Li, 2010; Loewen & Philp, 2006). Nevertheless, other studies have shown that recasts do not have as much of a positive effect on learners' accuracy as the other feedback types. Examples of such research include Jafarigohar and Gharbavi's (2014) investigation of the impact of prompts and recasts on learners' grammatical competence, which revealed that recasts are not as effective as prompts.

Though the results of studies on different modes of corrective feedback and their efficacy are inconclusive, the findings indicate that when different types of corrective feedback are used and contrasted, explicit types lead to more beneficial outcomes than implicit ones (Ortega, 2013). For instance, in a study germane to the focus of the current research, Ellis (2006) contrasted the impact of metalinguistic feedback and recasts, and found that metalinguistic feedback is more beneficial than recasts.

The second major avenue of research in the recent years has addressed the perceptions of EFL teachers and learners as regards the efficacy of corrective feedback. As a case in point, Ha and Nguyen (2021) probed learner and teacher beliefs concerning the sources of CF. Done in the Vietnamese EFL contexts of learning, their study relied on the data collated via questionnaires and interviews. As the findings indicated, the students voiced their tendency for receiving different feedback types, whereas the teachers tended to be more selective in their choice of error types. As regards CF sources, the students revealed a predilection for teacher feedback, as opposed to self- and peer-correction. Likewise, the teachers believed that instructors have a more prominent role in providing corrective feedback for learners.

In the study conducted by Ha (2022) in the Vietnamese EFL context, teachers' beliefs and practices in terms of corrective feedback, and the relationship between them, were probed. In so doing, 10 high school teachers were researched through interviews and classroom observations. As the results indicated, a strong relationship existed between the focus of the lesson and the teachers' preferred corrective feedback behavior. In other words, the CF strategies utilized in form-focused lessons and meaning-focused ones were different.

In another study, Bao and Wang (2023) investigated teachers and learners' perceptions and preferences for corrective feedback types in a Chinese context. The study was conducted using a questionnaire and interviews with 328 students and 46 teachers. The result overall revealed a preference on the part of students for explicit correction and metalinguistic feedback. The teachers, on the other hand, opted for recasts as the preferred mode of feedback. The findings also pointed towards the discrepancy between teacher and student beliefs as regards the efficacy of explicit correction, clarification request, and metalinguistic feedback.

In like manner, Nassaji, Bozorgian, and Golbabazadeh (2023) explored the relationship between teacher cognition and real class conduct with regard to corrective feedback provision. To gather the data, the researchers made use of the recorded class audios, stimulated recall and a cognition questionnaire. Based on the findings, discrepancies were observed between the teachers' perceptions and their real practices, as regards both feedback type and amount.

It is worth noting that in recent years, a transition toward current modes of feedback provision, for instance via computers and cell phones, is remarkable. In this regard, AbuSeileek and Rabab'ah (2013) investigated the impact of corrective feedback through technology on different aspects of writing, including fragments and run-ons, misused words, capitalization,

punctuation, negation, possessives and plurals, relative clauses, verb phrases, questions, subject-verb agreement, and noun phrases. The results of their study depicted that the learners who received feedback through technology performed better on these aspects of writing.

With regard to this strand of research, the paucity of investigations was tangible during the pre-pandemic era. However, in the post-pandemic era, the outstanding growth in such research is quite noteworthy. The studies in this domain were initially more focused on synchronous versus asynchronous modes of feedback provision using computers, but later included mobile-assisted and social media-enriched modes of corrective feedback. As a case in point, Akbar (2017) was interested in comparing the effect of synchronous vis-à-vis asynchronous computer-mediated feedback on learner uptake. In so doing, the researcher made use of four native/nonnative speaker dyads, and uptake was operationalized as the immediate or delayed response provided by learners to corrective feedback. Based on the findings, the feedback was given in the synchronous mode only in the form of recast, whereas in the asynchronous mode clarification request were more eye-catching. Additionally, delayed effect of feedback and hence uptake was more predominant than its immediate impact.

In the study conducted by Ene and Upton (2018), the efficacy of teacher electronic feedback (TEF) in face-to-face and online modes was compared. Their targeted skill was students' writing proficiency. Their findings revealed that though synchronous and asynchronous electronic feedback were both useful and complemented one another, asynchronous feedback led to better uptake. Furthermore, both students and teachers found electronic feedback to be highly practical in improving their writing proficiency.

In a later investigation, Rassaei (2019) probed the relative effects of audio-based and text-based electronic corrective feedback. In so doing, he also took into account the role of learners' favored perceptual style in acquiring the article system in English. A total of 89 participants were used and assigned to one control and two experimental groups. Using a written task and an oral production task, the researcher concluded that both treatment conditions led to significant enhancement in learners' L2 development as regards the English article system. His study, accordingly, offered insights for the efficacy of coordinating the type of computer-mediated CF with the learners' perceptual styles.

More recently, Altamimi and Masood (2021) probed the efficacy of electronic feedback. The results of their study displayed that electronic feedback can prove to be highly efficacious and at the same time motivating. Likewise, as Pamungkas and Amroni (2021) argued, preparing electronic

corrective feedback to improve learners' writing skill is an important tool that teachers can properly apply in their classes.

Finally, turning to the last strand of research on corrective feedback, that is, learner engagement with feedback, it is found that scant research has been conducted on this novel aspect of CF. However, in what follows three seminal studies in this regard are reported. Tsao (2021), for instance, was interested in finding the role of self-efficacy in second language writing on learners' engagement with feedback. To this aim, 227 high school students from Taiwan were asked to fill out two questionnaires, namely L2 writing self-efficacy measure and engagement with CF scale. The major subcategory of L2 self-efficacy which was found to have the greatest predictive power for the degree of learner engagement with feedback was self-regulation.

In a later study, Shen and Chong (2023) probed learners' engagement with CF from the perspective of perception-based framework. Using grounded theory, the researchers attempted to pinpoint the feedback engagement patterns and specify the association between the factors underlying learner engagement with feedback. The results pointed toward the individualized, contextualized, multifaceted and dynamic nature of learner engagement with CF. In much the same way, Liu and Feng (2023) highlighted the importance of learner engagement with feedback as a key determiner of feedback efficacy, and advocated the use of proper strategies for improved learner engagement with CF.

Although various investigations have been conducted regarding the efficacy of different modes of corrective feedback, the obtained outcomes are still inconclusive. Furthermore, despite the plethora of studies conducted on different CF types, scant research seems to have focused on the social-media-based and online modes of offering corrective feedback. In an attempt to bridge the gap in this regard, the current study focused on the effects of oral versus written metalinguistic feedback through virtual learning platform and social media on process writing ability of learners. Moreover, the inclusion of error logs and grammar journals as a follow-up for metalinguistic feedback and as a kind of reinforcement can be regarded as another novelty aspect of the current research. It's worth noting that the targeted grammatical structure in the study was passive voice. In accordance with the objectives of research, the researchers sought to address the following research questions:

RQ1: Does teacher's metalinguistic oral corrective feedback via virtual learning platform and social media have any significant effect on Iranian intermediate EFL learners' process writing ability?

RQ2: Does teacher's metalinguistic written corrective feedback via virtual learning platform and social media have any significant effect on Iranian intermediate EFL learners' process writing ability?

RQ3: Does teacher's metalinguistic oral corrective feedback through virtual learning platform and social media followed by keeping error logs and grammar journals have any significant effect on Iranian intermediate EFL learners' process writing ability?

RQ4: Does teacher's metalinguistic written corrective feedback through virtual learning platform and social media followed by keeping error logs and grammar journals have any significant effect on Iranian intermediate EFL learners' process writing ability?

RQ5: Is there a significant difference among the four types of metalinguistic corrective feedback (oral, written, oral + error log, written + error log) as regards Iranian intermediate EFL learners' process writing ability?

Method

Participants

A total of 66 Iranian EFL students in Shahrekord University took part in the study. The learners were in two intact classes, and hence convenience sampling procedure was followed. The participants were from both genders, and their age ranged from 20 to 30. They were all bachelor learners and had Persian as their mother tongue. In assigning the participants into groups, each of the two classes was divided into two parts, and each was randomly assigned to one of the four comparison groups, including oral metalinguistic feedback, written metalinguistic feedback, oral metalinguistic + error logs, and written metalinguistic + error logs.

Instruments

The instruments used in this study comprised 1) IELTS expository task 1 (Cambridge English IELTS book 9) as proficiency test that intended to ensure the homogeneity of the learners prior to instruction; 2) a pretest of process writing that was adopted from IELTS expository task 1 (Cambridge English IELTS), and 3) a posttest of process writing taken from IELTS expository task 1. It's worth noting that both pretest and posttest were developed in order to measure learners' performance on process writing ability with a focus on passive voice as the target structure. Indeed, process writing was selected as opposed to other modes of writing like narration, cause/effect, and comparison/contrast due to its reliance on passive voice. In so doing, the topics

for pretest and posttest were selected with a lot of care, so that they could lend themselves to process writing, and would evoke the use of passive structure.

Prior to implementing the study, some guidelines were provided for learners regarding the procedure for writing an informational process paragraph in which passive structure must be used as the dominant structure. To this aim, one or two sample informational process paragraphs were presented for learners. In selecting the topics for pre-and post-test, an attempt was made to choose them from among IELTS samples of task 1 which were expository and so process type in nature. Both tests had a 150-word limit and were administered in 20 minutes based on IELTS regulations. Furthermore, the treatment included practice with process writing (informational mode) and the feedback was focused on passive structure.

Procedure

At the outset, a sample of IELTS expository writing task 1 (Cambridge English IELTS book 9) was administered to all participants to ensure homogeneity. In line with the guidelines for IELTS writing task 1, the students were required to write a paragraph of at least 150 words within 20 minute. Two PhD candidates in TEFL (each with approximately 6 years of English language teaching experience) rated the participants' written paragraphs. Learners' writings were then scored based on IELTS scoring rubrics and band descriptors between 0 and 9. After ensuring the homogeneity of the learners, the researchers formed four randomly assigned comparison groups (oral metalinguistic feedback, written metalinguistic feedback, oral metalinguistic + error logs, and written metalinguistic + error logs).

Next, the pretest containing a process writing task was given to all participants before going through instruction. The pretest likewise consisted of IELTS expository writing task 1, but the topic was selected with a lot of care, so that it could lend itself to process writing, and would evoke the use of passive structure. Again the learners were given 20 minutes to write a paragraph of at least 100 words in line with IELTS guidelines for task 1. It must be noted that the learners' writings were scored in two ways: once based on band descriptors (between 0 and 9), and the second time based on the ratio of the instances of correct use of passive structure to the total number of passive structures utilized in the text.

Subsequently, the treatment was applied for all four groups in line with the focus of CF in each group. Every treatment session lasted for about forty minutes through virtual learning environment. During the treatment sessions, a variety of topics from IELTS writing task one were selected and given to learners to write about. Afterwards, the feedback was provided on the

learners' errors in each group based on the focus of CF in that specific group. In so doing, an attempt was made to mainly focus on the correct use of passive voice in informational process writing paragraphs. In written metalinguistic feedback groups, as noted earlier, two major approaches for feedback provision were pursued: 1) Applying error codes, using abbreviated labels or writing codes as regards the correct use of passive voice, and 2) Providing grammatical descriptions below the text. However, in oral metalinguistic feedback group the feedback was provided orally. In two of the groups, CF was followed by keeping error logs and grammar journals intended to reinforce and consolidate the given feedback. Eight treatment sessions were held for the participants in each group. Participants were required to write a 150-word paragraph per session. One week after the last session, the posttest was administered in a manner akin to pretest.

Design

This study was based on a quasi-experimental pretest-posttest design. Process writing ability of the participants was identified as the dependent variable and different modes of applying metalinguistic corrective feedback (oral metalinguistic feedback, written metalinguistic feedback, oral metalinguistic + error logs, and written metalinguistic + error logs) constituted the independent variable.

Data analysis

To analyze the data, SPSS 22 was used. RQs 1 to 4 were investigated via paired samples t-test (or its nonpaprametric equivalent, Wilcoxon Signed Rank Test). However, RQ5 five was analyzed through running one-way ANOVA.

Results
Findings Obtained for Research Question One

The first research question of the study (RQ1) explored the potential effect of teacher's metalinguistic oral corrective feedback via virtual learning platform and social media on Iranian intermediate EFL learners' process writing ability. In dealing with this research question, initially test of normality was run to find out whether the scores enjoyed normal distribution. This was done to guide the researchers as to their choice of parametric/non-parametric statistics. Table 1 summarizes the results of normality tests for pretest and posttest results ensuing from metalinguistic oral corrective feedback.

Table 1
Normality Test Results for Pretest and Posttest of Writing for Oral Metalinguistic Group

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PreWritingOralMeta	.143	14	.200[*]	.969	14	.868
PostWritingOralMeta	.177	14	.200[*]	.882	14	.062
*. This is a lower bound of the true significance.						
a. Lilliefors Significance Correction						

As is evident from Table1, based on both Kolmogorov-Smirnov and Shapiro-Wilk tests, the pretest and posttest scores enjoy normal distribution ($p > .05$), and hence to compare learners' pretest and posttest results in metalinguistic oral corrective feedback group, paired samples t-test was used. Table 2 illustrates the results thus obtained.

Table 2
Paired Samples t-test for Metalinguistic Oral Corrective Feedback Group

	Paired Differences							
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
				Lower	Upper			
Pair 1 PreWritingOralMeta - PostWritingOralMeta	-1.85714	.79490	.21245	-2.31611	-1.39818	-8.742	13	.000

As is seen in Table 2, there is a significant improvement from pretest to posttest for metalinguistic oral corrective feedback group, and hence the first null hypothesis of the study is rejected.

Findings Obtained for Research Question Two

The second research question (RQ2) explored the potential effect of teacher's metalinguistic written corrective feedback via virtual learning platform and social media on Iranian intermediate EFL learners' process writing ability. In dealing with this research question, initially test of normality was run to find out whether the scores enjoyed normal distribution. Table 3 summarizes the results of normality tests for pretest and posttest results ensuing from metalinguistic written corrective feedback.

Table 3
Normality Test Results for Pretest and Posttest of Writing for Written Metalinguistic Group

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PreWritingWrittenMeta	.178	14	.200[*]	.926	14	.271
PostWritingWrittenMeta	.258	14	.062	.900	14	.113
*. This is a lower bound of the true significance.						
a. Lilliefors Significance Correction						

As is evident from Table 3, based on both Kolmogorov-Smirnov and Shapiro-Wilk tests, the pretest and posttest scores enjoy normal distribution ($p > .05$), and hence to compare learners' pretest and posttest results in metalinguistic written corrective feedback group, paired samples t-test was used. Table 4 illustrates the results thus obtained.

Table 4
Paired Samples t-test for Metalinguistic Written Corrective Feedback Group

		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	PreWritingWritten Meta - PostWritingWritten Meta	-1.39286	.85886	.22954	-1.88875	-.89697	-6.068	13	.000

As is seen in Table 4, there is a significant improvement from pretest to posttest for metalinguistic written corrective feedback group, and hence the second null hypothesis of the study is rejected.

Findings Obtained for Research Question Three

The third research question of the study (RQ3) explored the potential effect of teacher's metalinguistic oral corrective feedback via virtual learning platform and social media followed by keeping error logs and grammar journals on Iranian intermediate EFL learners' process writing ability. In dealing with this research question, initially test of normality was run to find out whether the scores enjoyed normal distribution. Table 5 summarizes the results of normality tests for pretest and posttest results ensuing from metalinguistic oral corrective feedback followed by keeping error logs and grammar journals.

Table 5
Normality Test Results for Pretest and Posttest of Writing for Oral Metalinguistic Group Followed by Keeping Error Logs and grammar journals

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PreWritingOralMetaError Log	.163	19	.200[*]	.931	19	.183
PostWritingOralMetaErrorLog	.181	19	.100	.920	19	.113
*. This is a lower bound of the true significance.						
a. Lilliefors Significance Correction						

As indicated in Table 5, based on both Kolmogorov-Smirnov and Shapiro-Wilk tests, the pretest and posttest scores enjoy normal distribution ($p > .05$), and hence to compare learners' pretest and posttest results for metalinguistic oral corrective feedback followed by keeping error logs and grammar journals, paired samples t-test was used. Table 6 illustrates the results thus obtained.

Table 6
Paired Samples t-test for Metalinguistic Oral Corrective Feedback Group Followed by Error Logs and Grammar Journals

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 PreOralWrittenMeta + ErrorLog – PostOralWrittenMeta + Error Log	-2.94737	1.21215	.27809	-3.53160	-2.36313	-10.599	18	.000

As illustrated in Table 6, there is a significant improvement from pretest to posttest for metalinguistic oral corrective feedback group followed by error log and grammar journals, and hence the third null hypothesis of the study is rejected.

Findings Obtained for Research Question Four
The fourth research question of the study (RQ 4) explored the potential effect of teacher's metalinguistic written corrective feedback via virtual learning platform and social media followed by keeping error logs and grammar journals on Iranian intermediate EFL learners' process writing

ability. In dealing with this research question, initially test of normality was run to find out whether the scores enjoyed normal distribution. Table 7 summarizes the results of normality tests for pretest and posttest results ensuing from metalinguistic written corrective feedback followed by keeping error logs and grammar journals.

Table 7
Normality Test Results for Pretest and Posttest of Writing for Written Metalinguistic Group Followed by Keeping Error Logs and grammar journals

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PreWritingWrittenMetaError Log	.250	19	.003	.887	19	.028
PostWritingWrittenMetaErrorLog	.232	19	.008	.868	19	.013
a. Lilliefors Significance Correction						

As shown in Table 7, based on both Kolmogorov-Smirnov and Shapiro-Wilk tests, the pretest and posttest scores enjoy normal distribution ($p > .05$), and hence to compare learners' pretest and posttest results for metalinguistic written corrective feedback followed by keeping error logs and grammar journals, paired samples t-test was run. Table 8 illustrates the results thus obtained.

Table 8
Paired Samples t-test for Metalinguistic Written Corrective Feedback Group Followed by Error Logs and Grammar Journals

		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	PreWritingWrittenMeta + ErrorLog – PostWritingWrittenMeta + Error Log	-2.42105	.67213	.15420	-2.74501	-2.09710	-15.701	18	.000

As is seen in Table 8, there is a significant improvement from pretest to posttest for metalinguistic written corrective feedback group followed by

error logs and grammar journals, and hence the third null hypothesis of the study is rejected.

Findings Obtained for Research Question Five

The fifth research question of the study (Table 5) explored the potential difference among the four types of metalinguistic corrective feedback (oral, written, oral + error log, written + error log) as regards Iranian intermediate EFL learners' process writing ability. In dealing with this research question, one-way ANOVA was run the results of which are indicated in Tables 9 for pretest scores and 10 for posttest scores.

Table 9

One-way ANOVA Results for Pretest Writing Scores regarding Different Types of Metalinguistic Corrective Feedback

		Sum of Squares	df	Mean Square	F	Sig.
PreWritingOralMetaErrorLog	Between Groups	1.617	1	1.617	3.269	.088
	Within Groups	8.409	17	.495		
	Total	10.026	18			
PreWritingOralMeta	Between Groups	.292	1	.292	.380	.549
	Within Groups	9.208	12	.767		
	Total	9.500	13			
PreWritingWrittenMetaErrorLog	Between Groups	.374	1	.374	.872	.363
	Within Groups	7.284	17	.428		
	Total	7.658	18			
PreWritingWrittenMeta	Between Groups	.180	1	.180	.281	.605
	Within Groups	7.677	12	.640		
	Total	7.857	13			

As represented in Table 9, there is no significant difference among the performances of four groups on writing pretest. Table 10 illustrates the result of one-way ANOVA for writing posttest.

Table 10

One-way ANOVA Results for Posttest Writing Scores regarding Different Types of Metalinguistic Corrective Feedback

		Sum of Squares	df	Mean Square	F	Sig.
PostWriting OralMetaErrorLog	Between Groups	.733	1	.733	1.303	.269
	Within Groups	9.557	17	.562		
	Total	10.289	18			
PostWritingOralMeta	Between Groups	.121	1	.121	.402	.538
	Within Groups	3.594	12	.299		
	Total	3.714	13			

PostWriting WrittenMetaErrorLog	Between Groups	.612	1	.612	2.291	.149
	Within Groups	4.545	17	.267		
	Total	5.158	18			
PostWritingWrittenMeta	Between Groups	.121	1	.121	.364	.557
	Within Groups	3.969	12	.331		
	Total	4.089	13			

Base on the results in Table 10, there is no significant difference among the performances of four groups on writing posttest ensuing from four kinds of metalinguistic corrective feedback, and hence the fifth null hypothesis of the study is confirmed.

Discussion

The major goal of the present study was to determine the effect of metalinguistic CF on Iranian EFL learners' process writing ability through virtual learning environment (VLE). The first research question explored the potential effect of teachers' oral metalinguistic feedback via VLE and social media on Iranian EFL learners' process writing ability using passive voice structure. Results showed that there was a significant improvement from pretest to posttest for this group. Therefore, the first null hypothesis of the research was rejected. Also, analyzing the second research question pointed to the potential effect of written metalinguistic CF via VLE and social media on Iranian EFL learners' process writing using passive voice as the target structure.

There is related research that investigated the effect of different types of feedback on diverse aspects of language. The findings obtained for the first and second research questions resonates with the one obtained by Hashemian and Farhang-Ju (2018), since their study also indicated that the experimental group that received metalinguistic feedback had more improvement in their writing accuracy than control group that received no feedback. This finding also corroborates the one reported by Khodi and Abbasi Sardari (2015), which highlighted the effectiveness of metalinguistic CF, particularly the focused type. Further support for the current finding is provided from the study conducted by Duong and Nguyen (2022), in which the practicality of direct and explicit feedback types, including metalinguistic feedback, was confirmed. This finding is also in line with the ones obtained in Gao and Ma (2020) and Kocaman and Maral's (2022) studies, both of which highlighted the efficacy of explicit, and particularly metalinguistic, feedback for learners' writing enhancement.

Furthermore, as regards the third research question, the results indicated that there was a meaningful development from pretest to posttest for

metalinguistic oral CF group followed by error logs, in terms of both writing performance and the use of passive structure. Likewise, concerning the fourth research question it a significant improvement was found from pretest to posttest for metalinguistic written corrective feedback group followed by error log and grammar journals, as regards writing performance and the use of passive structure.

Though direct evidence for this finding and the claim that reinforced metalinguistic feedback and practice effect with error logs and grammar journals can lead to better uptake could not be gathered from the literature, the researchers in the current study are of the view that this finding pertains to the degree of learner engagement with feedback. To put it differently, reinforced metalinguistic feedback and practice effect with error logs is likely to augment the degree of learner involvement with feedback. Support for this finding, hence, can be gleaned from the recent studies reported in the literature regarding learner engagement with CF, and mainly from the research conducted by Tsao (2021), Liu and Feng (2023) and Shen and Chong (2023). Liu and Feng (2023), for instance, referred to learner engagement as the key factor underpinning feedback efficacy, and Shen and Chong (2023) claimed that there is a plethora of individual and contextual factors that underlie learner engagement with feedback, and it is not enough to only rely on the uptake.

Finally, the fifth research question of the study examined the potential difference among the four types of metalinguistic corrective feedback (oral, written, oral + error log, and written + error log). Results showed there was no significant difference among the performances of four groups resulting from different treatment types. This finding, though different from the current researchers' expectations, can be justified on account of the fact that the learners possibly were not sufficiently engaged with the CF provided on their errors. This is in compliance with the claims made by Liu and Feng (2023) and Shen and Chong (2023).

To sum it up, the researchers in current study embarked on pinpointing the effect of different types of metalinguistic corrective feedback on learners' writing enhancement. As the results revealed, all four types of metalinguistic feedback (oral, written, oral + error log, and written + error log) led to noticeable improvement in learners' performance on writing and use of passive structure from pretest to posttest. However, no significant difference was identified among the four types of metalinguistic feedback.

Based on the findings, a number of implications can be drawn as regards all stakeholders in the context of higher education, including university students, professors, syllabus designers, researchers, material developers, and

policy makers. Particularly, academic writing course instructors might consider integrating metalinguistic feedback into their syllabus. Regarding the significant and positive influence of metalinguistic feedback on learners' process writing through social network and virtual learning environment, this strategy can be utilized more extensively in educational centers where English is applied as the medium of instruction. Moreover, practice effect might be regarded as a key factor in augmenting the efficacy of feedback and achieving appropriate uptake. The new mode of metalinguistic feedback followed by error logs and grammar journals used in the current study can be regarded as a practical technique for increasing the effectiveness of such feedback.

Ultimately, like all other research studies, the researchers in the current study also suffered from a number of limitations. One notable limitation was insufficiency of prior research on the topic, particularly as regards the use of the new mode of feedback, i.e. metalinguistic feedback reinforced through error logs and grammar journals. In addition, the comparatively low number of learners can be regarded as another limitation in the study, and this was naturally due to the pandemic era during which the research was conducted. Hence, future researchers are recommended to replicate the study with a larger and more representative sample to increase the generalizability of results. It must also be noted that as the current study was done in the academic context, and hence focused only on upper-intermediate to advance students, the role of proficiency level in generating different degrees of writing enhancement (as Pouyan, Modirkhamene, Alavinia, & Ahangaran, 2023 contend) can constitute another area of focus for the future researchers.

The other constraint was time. Actually, time for giving feedback to all learners' process writing is an important factor which is to be taken into consideration. Another limitation was that the present study focused on just one pattern of paragraph development, i.e. process writing. Thus, the future investigators who are interested in the topic might choose to work on other types of writing and modes of paragraph development. The use of comparison groups instead of having control group can be referred to as the other major limitation of the study, which is to be taken into account by the future researchers interested in the topic. Lastly, it goes without saying that one of the most critical limitations of online teaching is the challenges of managing virtual classes. Learners are often late for the class and leave the class in the middle of the lesson or get disconnected. Moreover, the majority of the learners do not want to turn on camera in virtual classrooms and this makes the communication between the teacher and the learners even more difficult. Therefore, now that we are beyond the pandemic era and on-site classes have been made possible, it is recommended that the future researchers replicate

the current study in face-to-face classes to see if the same or partly different results are obtained.

Declaration of interest: None

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Biodata

Maryam Naderi is a PhD candidate in TEFL and applied linguistics at Urmia University. She is mainly interested in research into corrective feedback.

Parviz Alavinia holds a PhD in TEFL/TESOL from Allameh Tabataba'i University in Tehran. He is currently a full-time associate professor at Urmia University. He has published prolifically in various domestic and foreign journals and presented papers and held workshops in dozens of national and

international conferences. His main areas of interest fall within the realm of psycholinguistics, particularly issues such as motivation, emotional intelligence, learner autonomy and self-regulation.

Mehdi Sarkhosh is a full-time academic member of the department of English language and literature at Urmia University. He has been researching in different fields including testing and assessment, discourse analysis, and corrective feedback, and has published a lot of papers in domestic and international journals.