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The Effects of Online Teacher Feedback and Online Peer Feedback on Writing Development and Language Mindset of the EFL Learners

[1]Amin Bigverdi*
[2]Masoud Khalili Sabet

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Abstract: This study examined the impacts of Online Peer Feedback (OPF) and Online Teacher Feedback (OTF) on the writing development and language mindset of Iranian EFL learners. A quasi-experimental design was employed, with 72 EFL learners randomly assigned to two experimental groups and one control group. During the course, the OTF group received online feedback from their teacher while the OPF group received online feedback from their pairs. The findings revealed substantial improvements in the writing development of both OPF and OTF groups in terms of achievement, coherence and cohesion, lexical resources, and grammatical range and accuracy with OPF showing a significantly more positive impact over OTF. In addition, OPF boosted participants' language mindset across all three sub-components of the Language Mindset Inventory (LMI). These results highlight the importance of integrating online feedback mechanisms, particularly peer feedback, which not only enhances language proficiency but also cultivates a mindset conducive to continuous learning and improvement. These insights are crucial for educators and policymakers seeking to optimize language teaching strategies in increasingly digital educational environments.

Keywords: Language Mindset, Online Peer Feedback, Online Teacher Feedback, Technology-assisted Instruction, Writing Development

Introduction

Over the past decades, despite a small number of opponents toward corrective feedback (Truscott, 1996; Truscott & Hsu, 2008), research has consistently shown that feedback is beneficial for learning, particularly for student language performance in school settings (Brown, 2016; Hancock, 2002; Hattie, 2003; Nassaji & Kartchava, 2020; Sato, 2011). Gagné (1985) has defined feedback as an "external learning condition" that significantly enhances the efficiency of the learning process (p.9).

Traditionally, teachers were considered the only source of corrective feedback in L2 classrooms. However, this view has been challenged in recent years due to a transition from teacher-centered to student-centered approaches in L2 teaching. This transition has emphasized the importance of students actively participating in corrective feedback activities, especially through peer feedback (Hyland & Hyland, 2019). Supporters of Peer Feedback (PF) believe that it is a valid and effective teaching method that can be used to complement feedback from the teacher (Oxford, 1997). Peer feedback is considered a type of peer-based learning that has the potential to enhance intellectual skills and knowledge. This method is gaining popularity and receiving more attention in educational environments due to its efficacy (Topping, 2017).

The act of giving feedback is a long-established practice and continues to be extensively applied in language education. Nonetheless, the techniques for delivering feedback have transformed due to technological advancements. Electronic feedback (E-feedback) has become increasingly popular in recent years as educational institutions have begun to offer their courses on online platforms. This

[1] PhD Candidate in TEFL (Corresponding Author), amin.bigverdi@gmail.com; Department of English Language and Literature, University of Guilan, Rasht, Iran.

[2] Associate Professor of Applied Linguistics, khalilisabet@guilan.ac.ir; Department of English Language and Literature, University of Guilan, Rasht, Iran.

research distinguishes between online feedback, enabled through technological means without the necessity for immediate interaction among students, and offline feedback, occurring within the conventional classroom environment.

Providing online feedback and assessment has advantages compared to traditional paper-based methods. Online feedback allows for anonymity, making students more comfortable giving negative feedback (Vanderhoven et al., 2015). Moreover, it allows students to carefully evaluate their classmates' papers and write thoughtful comments to offer feedback (Jongsma et al., 2023). It can also save teachers time by streamlining the feedback process, especially when automation is used (Ashenafi, 2017; Henderson & Phillips, 2015). Having access to the internet allows teachers to give feedback at different times and locations (Ab Hamid, 2021). Additionally, online peer feedback enables teachers to easily track and monitor the comments students exchange, which is more challenging during face-to-face peer feedback sessions (DiGiovanni & Nagaswami, 2001).

On the other hand, there are concerns about the potential negative emotional effects of peer corrective feedback (offline or online), such as rage, nervousness, and humiliation. These negative emotions are reduced in teacher corrective feedback situations because they create less harmful competition among students (Kaivanpanah et al., 2015). Therefore, it is essential for teachers to recognize how different teaching methods can influence motivational factors (Lee & Evans, 2019).

In recent years, the concept of Mindset has garnered growing attention as another notable affective factor in predicting academic achievements (Cutumisu & Lou, 2020; Dweck & Yeager, 2019; Lou & Zarrinabadi, 2022). The idea of mindset is gaining traction in the realm of language teaching, and scholars are now exploring language mindsets, which are attitudes toward the malleability of language-learning abilities (Elahi Shirvan et al., 2021). This theory suggests that individuals have an inherent belief or mindset regarding intelligence. There are two primary mindsets: the fixed mindset, which believes that intelligence is unchangeable and cannot be enhanced, and the growth mindset, which thinks that intelligence is malleable and can be developed and augmented through effort (Dweck, 1999). The significance of having a growth mindset for language acquisition is widely recognized and studies indicate that teachers have the capability to cultivate a growth-focused mindset among learners. This type of outlook can assist learners in dealing with challenges and difficulties (Papi et al., 2019). Moreover, students' language mindset and their beliefs about language learning and abilities significantly influence their engagement with feedback, particularly their willingness to actively seek it out (Cutumisu & Lou, 2020; Doss & Bloom, 2023).

Literature Review

Teacher and Peer Online Feedback

Research on peer offline feedback has yielded mixed results regarding its effectiveness compared to teacher offline feedback or no feedback. Some studies have found that peer feedback, by changing learners from passive receivers of information to active and autonomous participants in the learning process, positively impacts student performance, even more so than Teacher Feedback (TF), across different educational levels and feedback characteristics (Double et al., 2020; Li et al., 2009; Panadero et al., 2023). Peer feedback and assessment actively involve students in this process, leading to several benefits. It promotes students' autonomy, allowing them to assume responsibility for their educational journey. Additionally, peer feedback enhances self-regulated learning, as students ponder over their own assignments as well as those of others, improving their ability to monitor and adjust their learning strategies (Ibarra-Sáiz et al., 2020; Reinholz, 2016).

However, other studies have reported that TF may be more effective than PF because of factors such as students' insufficient confidence in themselves or their peers' language abilities, teacher's ability to provide more explicit and targeted feedback, limited time in the classroom, and concerns about saving face (Adams et al., 2011; Thirakunkovit & Chamcharatsri, 2019; Zhang, 1995) or even there is no difference between TF and PF on writing development (Huisman et al., 2019).

Regarding online feedback, some studies have shown that students improve when they receive electronic writing feedback from their teachers as the amount and quality of feedback given electronically is notably better than traditional methods (Johnson et al., 2019). Just similar to teacher feedback, research has also shown that online peer feedback can help students improve their writing (Noroozi, 2016; 2018). For instance, Ciftci and Kocoglu (2012) examined how online peer feedback via blogs affected the writing skills and perspectives of Turkish students learning English as a foreign language. The study involved a control group receiving traditional in-class feedback and an experimental group using blogs for peer feedback. Results indicated that both groups improved their writing, but the experimental group showed greater enhancement. Additionally, the students expressed positive views on the use of blogs, highlighting benefits such as increased engagement and the opportunity for authentic interaction, suggesting that blogs can be a valuable tool for language education. In a separate research, Pham, Lin, Trinh, and Bui (2020) examined the impact of online peer feedback on the learners' writing skills. 40 Vietnamese students improved their writing skills by widening their vocabulary, correcting grammar mistakes, and using complex structures. The practice of online peer feedback helped students focus on improving different aspects of writing.

However, there is a scarcity of studies that directly compare the impacts of online teacher feedback versus online peer feedback within a single study. Liu and Zhou (2018) investigated how online feedback from teachers and peers affects writing abilities and perceptions of feedback among university students in China studying a foreign language. However, the study found no significant difference in outcomes between students who received TF and those who received PF. In another study, Lv et al. (2021) performed a meta-analysis encompassing 17 studies to examine how online feedback affects the writing quality of ESL/EFL learners. The findings indicated that online feedback significantly improved the overall quality of writing (Hedges' g = 0.753). While online feedback was generally beneficial, TF proved to be more effective, with a larger effect size (g = 2.248) compared to PF (g = 0.777). The conclusions drawn from this review should be considered with caution because there is a significant imbalance in the number of studies included for online teacher feedback (n=1) and online peer feedback (n=13). This makes it difficult to draw any meaningful comparisons between the two types of online feedback.

Feedback and Language Mindset

Prior studies have explored the link between different language mindsets and feedback-seeking behavior (Cutumisu & Lou, 2020; Doss & Bloom, 2023; Vaghei et al., 2020). Additionally, some studies have investigated the impact of feedback on mindset in other academic disciplines (Dubey, 2021; Gauthreaux, 2015). However, the impact of different types of feedback on language mindset has been explored in a limited number of studies (Jeffs et al., 2023; Zhang et al., 2020). As far as the authors are aware, there has been no research conducted on the impact of utilizing digital or online feedback on the language mindset of the learners.

Zhang et al. (2020) conducted a study on how PF affects the mindsets towards learning and the academic drive among students from China and Finland. The study involved 1,862 participants from both countries and utilized multiple-group structural equation modeling (SEM) to analyze the data. The research aimed to investigate both the universal and culture-specific aspects of student feedback, attitudes towards learning, and the drive for academic achievement. Findings suggest that the type of praise given in peer feedback—whether person-focused or process-focused—can prime and modify students' mindsets and academic motivations differently across the two cultures. Chinese learners showed a preference for praise that is centered on the process and the individual, indicating their inclination towards a growth mindset and an enhanced attitude in their academic pursuits, while Finnish students favored neutral praise and exhibited more negative academic motivation. The study highlights the influence of feedback in molding students' learning mindsets and motivations within cultural contexts.

In their study, Jeffs et al. (2023) investigated the emotional distress of the instructors associated with receiving feedback in academic settings. The study involved faculty, postdoctoral scholars, staff,

and students from the University of Calgary, who participated in events designed to discuss and practice feedback reception. Utilizing a mixed-methods pre-post-test design, the research measured distress levels using a distress thermometer and open-ended questions. The findings revealed a decrease in distress levels post-event and a shift from a fixed to a growth mindset regarding feedback, suggesting that higher education institutions should provide opportunities to foster conversations about feedback to promote teaching growth and development.

Research in this area is insufficiently explored, indicating a gap in studies that examine how L2 learners actually use corrective feedback when it is provided by peers versus teachers. Most studies on the effectiveness of PF and TF have primarily examined learners' attitudes and preferences, and have made conclusions based on what learners think rather than what they actually do. This means we lack concrete evidence of how these approaches truly impact learning outcomes. These studies have assumed that learners' beliefs have a significant impact on how well they use feedback (Sato, 2013). Some studies (e.g. Ferris & Roberts, 2001; Sippel & Jackson, 2015) have found that learners' self-reported perceptions of their abilities may not accurately reflect their real-world proficiency in specific L2 contexts. This highlights the importance of conducting empirical research to acquire a more accurate comprehension of how learners use feedback. Using this classification system can be advantageous in comprehending how people react to receiving different types of feedback and gain from shifting from a mindset that is set in stone to one that embraces growth in an online setting. Therefore, this study aims to address the following research questions:

Research Question One: Is there any difference between online teacher feedback and online peer feedback in terms of enhancing the writing development of Iranian EFL learners?

Research Question Two: Is there any difference between the effect of online teacher feedback and online peer feedback on the language mindset of EFL learners?

Methodology

Design of the Study

The study utilized a quasi-experimental design with participants divided into three groups: an Online Teacher Feedback (OTF) group, an Online Peer Feedback (OPF) group, and a Control (C) group. The OTF group received online feedback from their teacher, while the OPF group engaged in peer review activities, and the C group did not receive any additional feedback beyond the regular course assessments. Both the OTF and OPF received online feedback on their writing assignments throughout the course. The feedback concentrated on grammatical and linguistic, content development, and overall writing quality. The feedback was provided using a standardized rubric and included specific suggestions for improvement.

Participants

The study involved 72 students who were enrolled at an English language center in Iran. Among them, there were 42 female students (58.3%) and 30 male students (42.7%), all aged between 15 and 18, with an average age of 16.8. These participants were all intermediate EFL learners who volunteered for the study. The participants were informed of the study's purpose and procedures, and written consents were obtained prior to their participation. To ensure their homogeneity, participants' writing portfolios and documented writing samples were reviewed to ensure a similar baseline proficiency level, and an Oxford Quick Placement Test (OQPT) was used. Those with scores that were one standard deviation above and below the mean were chosen and randomly divided into three groups by the teacher using an online weblog to generate random numbers. A total of 72 participants were randomly assigned into three groups: 24 were placed in the first experimental group, another 24 in the subsequent experimental group, and the remaining 24 were designated as the control group.

Instruments

Oxford Quick Placement Test (OQPT)

Oxford Quick Placement Test (OQPT) is a standardized English proficiency test and flexible test of English language proficiency developed by Oxford University Press and Cambridge ESOL. The test consists of questions that have been subjected to quality control processes by Cambridge ESOL. The participants are supposed to answer 60 multiple questions of OQPT (version 1) in two different parts to assess their English language knowledge regarding usage propositions, and vocabulary in the form of fill in the blank questions and cloze passages. Part 1 which consists of 30 questions was taken by all candidates.

Language Mindset Inventory

Language Mindset Inventory (LMI) developed by Lou and Noels (2017) consists of 18 questions on a 6-point Likert scale, ranging from 1 (strongly disagree) to 6 (strongly agree), which was used to assess learners' language mindsets ($\alpha = 0.85$). Research has consistently shown the measure to be both reliable and valid, across various countries (Eren & Rakıcıoglu-Soylemez, 2020; Khajavy et al., 2021). The instrument includes nine items that assess a growth mindset towards language learning (e.g., "You can always substantially change your language intelligence"), and nine items that assess a fixed mindset (e.g., "Many people can never do well in foreign languages even if they try hard because they lack natural language intelligence"). The LMI is organized into three distinct categories that represent different facets of language mindset. These categories consist of items that indicate beliefs about general language intelligence (GLB), beliefs about second language learning (L2B), and beliefs about age sensitivity and language learning (ASB). For this study, the Persian version of LMI (Khajavy et al., 2021) was employed.

IELTS Writing Task

The instrument chosen for this research was the International English Language Testing System (IELTS) writing tasks. The IELTS writing component consists of two tasks: Task 1, which requires test-takers to describe a diagram, graph, chart, or table in their own words; and Task 2, which involves writing an essay in response to a viewpoint, argument, or problem. Both tasks evaluate academic writing skills in English using a four-point rubric that assesses task achievement, coherence and cohesion, lexical resource, and grammatical range and accuracy. To ensure the chosen tasks were appropriate for this study, two experienced IELTS trainers reviewed a selection of previous IELTS sample tests and handpicked the most suitable ones.

Prior to the main study, a pilot study was conducted to ensure the validity and reliability of the IELTS writing tasks as an instrument for measuring academic writing proficiency in English. The pilot study included 23 participants who were similar to the target population of the main study in terms of their academic background and level of English proficiency. Each participant was asked to complete both writing tasks under exam conditions. The responses were then independently scored by two experienced IELTS examiners. Scores range from 1 to 9 (extremely poor = 1, very weak = 2, weak = 3, below average = 4, average = 5, above average = 6, good = 7, very good = 8, and excellent = 9) and the total score for the writing sample ranged between 4 and 36 points.

Inter-rater reliability was estimated to assess the consistency of the scoring between the two independent examiners. The Intraclass Correlation Coefficient (ICC) was calculated based on a two-way mixed-effects model for absolute agreement. The results showed an ICC of 0.86 for Task 1 and 0.90 for Task 2, indicating excellent inter-rater reliability and suggesting that the scoring was highly consistent between the two examiners.

The reliability of the IELTS writing tasks as an instrument was further supported by the pilot study's outcomes. The internal consistency for each task was calculated using Cronbach's alpha, yielding an alpha of 0.88 for Task 1 and 0.91 for Task 2, demonstrating that the tasks are reliable measures of academic writing proficiency.

Data Collection Procedure

Data was collected through pre-and post-test assessments measuring writing accuracy and language mindset. The study was conducted over a period of 4 weeks, with participants engaging in regular writing assignments and feedback activities. Pre-tests were administered at the beginning of the study, with post-tests conducted at the end of the 4-week period. It's worth mentioning that the traditional classes took place once a week in a physical classroom setting with face-to-face interaction, while only the feedback was provided online. Therefore, the teaching method was technology-assisted rather than technology-based.

At the start of the course, in the OPF group, the teacher randomly assigned students into pairs using a website. Additionally, these students participated in a 1-hour PF training session at the beginning of the semester to equip them with the skills to provide effective peer feedback. Training on the assessment criteria and skills leads to a reduction in the variation between teacher and student evaluations, as well as enhancements in the quality of PF (Liu & Sadler, 2003). In contrast to teacher corrective feedback, giving feedback on language errors from peers can be seen as socially inappropriate by both the giver and the receiver (Lyster et al., 2013). During this session, the teacher aimed to explain the importance of creating a collaborative learning atmosphere. The students in the OPF group were given checklists and peer assessment forms that emphasized different aspects of writing. To minimize the adverse effects of providing feedback in online environments, students were encouraged to utilize emojis (Wilson & Brewster, 2017). In the OPF group, each learner submitted four writing assignments over the course of the study. For each assignment, they received online feedback from their peer through an online platform (Telegram). The provided corrective feedback focused on lexical resources, coherence and cohesion, task achievement, and grammatical range and accuracy of the writing. In order to ensure feedback quality and timeliness, the participants were also required to submit a copy of their feedback to the instructor.

Table 1

Research Design of The Study

Groups	Week 1 (Pre-Test)	Week 2	Week 3	Week 4 (Post-Test)
OTF	Writing I	Writing II	Writing III	Writing IV
OPF	Training Session + Writing I	Writing II	Writing III	Writing IV
C	Writing I	----------	----------	Writing IV

In the OTF group, each student submitted four writing assignments throughout the semester. For each writing assignment, the teacher provided online feedback focusing on the 4 mentioned criteria through the same online platform (Telegram) used by the peer feedback group. The control group only took the pre-test and post-test without receiving any feedback during the study.

Results

To achieve the study's objectives, 72 students were divided into three groups, and their performance was assessed. The collected data was subjected to analysis of variance (ANOVA), and the findings are presented in this section. Before carrying out the ANOVA, it was necessary to verify the normality and equality of variance assumption. To do this, the Shapiro-Wilk normality test was utilized, and it showed

that all the data sets followed a normal distribution. To check equality of variances, Levene's test of homogeneity of variance was utilized for each pair of groups.

Table 2

Test of Homogeneity of Variances for the Pre-test Scores

Test of Homogeneity of Variance					
		Levene Statistic	df1	df2	Sig.
Writing (Pre-test)	Based on Mean	.359	2	69	.700
	Based on Median	.327	2	69	.722
	Based on Median and with adjusted df	.327	2	67.517	.722
	Based on trimmed mean	.388	2	69	.680
Beliefs About General Language Intelligence (Pre-test)	Based on Mean	.750	2	69	.476
	Based on Median	.912	2	69	.406
	Based on Median and with adjusted df	.912	2	65.388	.407
	Based on trimmed mean	.808	2	69	.450
Beliefs About Second Language Learning (Pre-test)	Based on Mean	.390	2	69	.679
	Based on Median	.557	2	69	.575
	Based on Median and with adjusted df	.557	2	64.449	.576
	Based on trimmed mean	.405	2	69	.668
Beliefs About Age Sensitivity and Language Learning (Pre-test)	Based on Mean	.737	2	69	.482
	Based on Median	.822	2	69	.444
	Based on Median and with adjusted df	.822	2	68.586	.444
	Based on trimmed mean	.754	2	69	.474
Language Mindset (Pre-test)	Based on Mean	.668	2	69	.516
	Based on Median	.693	2	69	.504
	Based on Median and with adjusted df	.693	2	65.720	.504
	Based on trimmed mean	.690	2	69	.505

According to Table 2, the pre-test scores across the groups showed no statistically significant differences in variance ($p > .05$). the results indicated that the equality assumption had been met.

E-feedback and Writing

The first research question examined the differential effects of OPF and OTF on the writing development of EFL learners. To investigate group differences in performance, ANOVA tests were performed. Table 3 provides a summary of the results from these analyses.

Table 3

Analysis of Variance for Writing Development in the Pre-test and Post-test

		Sum of Squares	df	Mean Square	F	Sig.
Writing (Pre-test)	Between Groups	.194	2	.097	.019	.982
	Within Groups	361.458	69	5.239		
	Total	361.653	71			
Writing (Post-test)	Between Groups	238.583	2	119.292	14.024	.000
	Within Groups	586.917	69	8.506		
	Total	825.500	71			

Table 3 reveals no significant difference in writing development scores between the four groups in the pre-test. The significance value (p = 0.982) is above the threshold of 0.05, indicating that the observed differences in mean scores are not statistically significant. The ANOVA results showed a highly significant difference (p = .000) in post-test writing scores among the three groups. To identify the specific groups contributing to this overall difference, it was necessary to conduct multiple comparisons. Table 4 displays the results of these comparisons, revealing which pairs of groups showed statistically significant differences in their writing performance.

Table 4

Post-Hok Multiple Comparison for Writing Development in Post-test

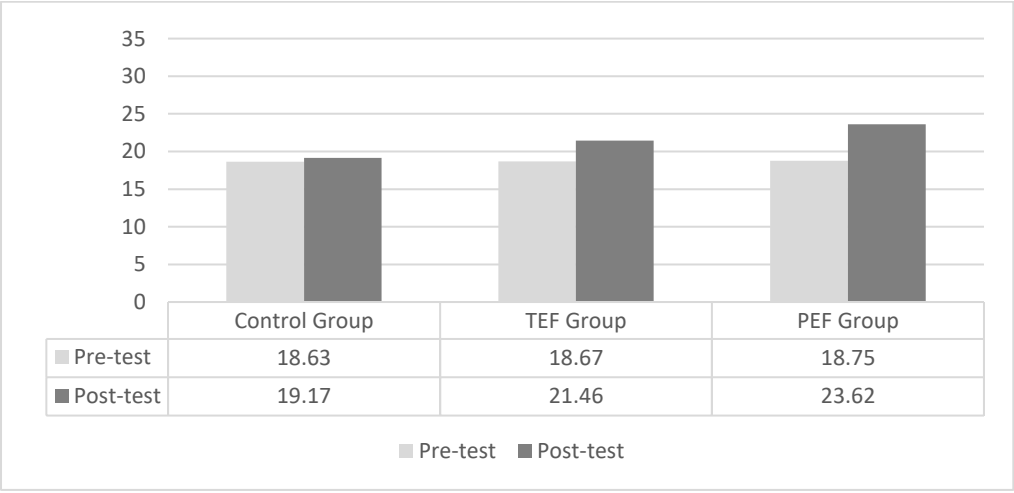
Tukey HSD						
(I) Groups	(J) Groups	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
OTF Group	OPF Group	-2.167*	.842	.032	-4.18	-.15
	C Group	2.292*	.842	.022	.27	4.31
OPF Group	OTF Group	2.167*	.842	.032	.15	4.18
	C Group	4.458*	.842	.000	2.44	6.48
C Group	OTF Group	-2.292*	.842	.022	-4.31	-.27
	OPF Group	-4.458*	.842	.000	-6.48	-2.44

*. The mean difference is significant at the 0.05 level.

The results of the Tukey Honestly Significant Difference (HSD) multiple comparisons test revealed significant differences in the mean scores of the writing post-test among the three groups. Specifically, the C Group demonstrated a significantly lower mean score compared to both the OPF Group (Mean Difference = -4.458, p = .000) and the OTF Group (Mean Difference = -2.292, p = .022) indicating the impact of both OTF and OPF on the writing development of the participants. On the other hand, the OPF group outperformed both the OTF group (Mean Difference = 2.167, p = .032) and the C group (Mean Difference = 4.458, p = .000) in terms of writing development mean scores. Figure 1 visually depicts the overall mean writing development scores achieved by the OPF, OTF, and control groups.

Figure 1

The Mean Difference Between Groups (Writing Development)



These results indicate that there are distinct differences in the writing performance of the three groups, with the OPF group performing significantly better than the other two groups.

E-feedback and Language Mindset

The second research question was raised to explore if OPF and OTF have different effects on EFL learners' language mindset. To determine if there were significant differences in the performance of the three groups the ANOVAs carried out. The findings are displayed in Table 5.

Table 5

Analysis of Variance for Language Mindset in the Post-test

		Sum of Squares	df	Mean Square	F	Sig.
GLB (Post-test)	Between Groups	75.028	2	37.514	4.038	.022
	Within Groups	640.958	69	9.289		
	Total	715.986	71			
L2B (Post-test)	Between Groups	83.250	2	41.625	4.950	.010
	Within Groups	580.250	69	8.409		
	Total	663.500	71			
ASB (Post-test)	Between Groups	58.528	2	29.264	3.602	.033
	Within Groups	560.583	69	8.124		
	Total	619.111	71			
Language Mindset (Post-test)	Between Groups	636.750	2	318.375	4.712	.012
	Within Groups	4662.125	69	67.567		
	Total	5298.875	71			

The p-values of .022 GLB, .010 for L2B, 033 for ASB, and .012 for language mindset suggest that the mean scores of the three groups were significantly different on the post-test. In order to pinpoint the exact locations of these differences, we performed multiple comparisons between the three groups. Table 6 presents the results of these multiple comparisons, outlining which specific groups exhibit statistically significant differences from each other.

Table 6

Post-Hok Multiple Comparison for Language Development in Post-test

Dependent Variable	(I) Groups	(J) Groups	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
GLB (Post-test)	OTF Group	OPF Group	-1.625	.880	.162	-3.73	.48
		C Group	.833	.880	.613	-1.27	2.94
	OPF Group	OTF Group	1.625	.880	.162	-.48	3.73
		C Group	2.458*	.880	.018	.35	4.57
	C Group	OTF Group	-.833	.880	.613	-2.94	1.27
		OPF Group	-2.458*	.880	.018	-4.57	-.35
L2B (Post-test)	OTF Group	OPF Group	-1.500	.837	.180	-3.51	.51
		C Group	1.125	.837	.376	-.88	3.13
	OPF Group	OTF Group	1.500	.837	.180	-.51	3.51
		C Group	2.625*	.837	.007	.62	4.63
	C Group	OTF Group	-1.125	.837	.376	-3.13	.88
		OPF Group	-2.625*	.837	.007	-4.63	-.62
ASB	OTF Group	OPF Group	-1.750	.823	.092	-3.72	.22

(Post-test)		C Group	.292	.823	.933	-1.68	2.26
	OPF Group	OTF Group	1.750	.823	.092	-.22	3.72
		C Group	2.042*	.823	.041	.07	4.01
	C Group	OTF Group	-.292	.823	.933	-2.26	1.68
		OPF Group	-2.042*	.823	.041	-4.01	-.07
Language Mindset (Post-test)	OTF Group	OPF Group	-4.875	2.373	.107	-10.56	.81
		C Group	2.250	2.373	.612	-3.43	7.93
	OPF Group	OTF Group	4.875	2.373	.107	-.81	10.56
		C Group	7.125*	2.373	.010	1.44	12.81
	C Group	OTF Group	-2.250	2.373	.612	-7.93	3.43
		OPF Group	-7.125*	2.373	.010	-12.81	-1.44

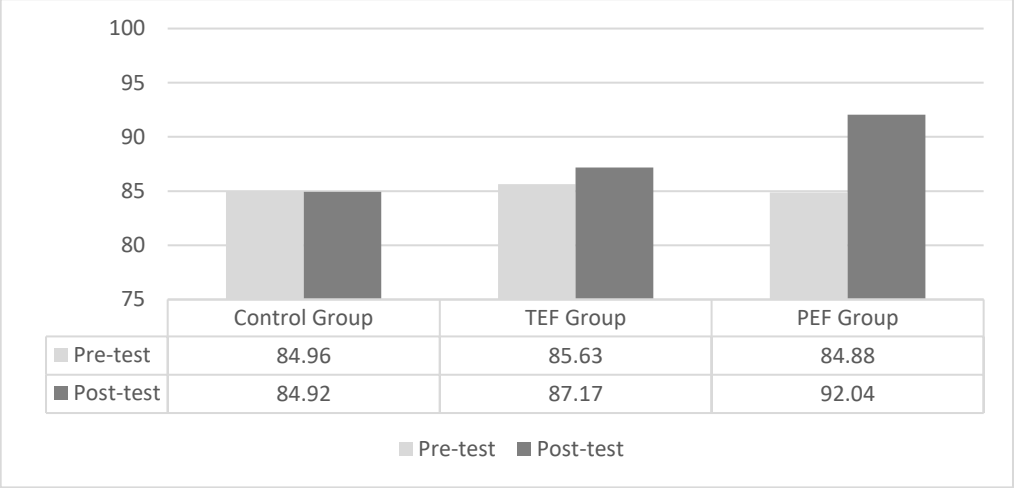
*. The mean difference is significant at the 0.05 level.

As reported in Table 6, the mean language mindset of the three groups was computed in terms of three subcomponents of the Language Mindset Inventory. The OPF group demonstrated significantly higher scores than both the OTF and control groups across all three subcomponents of the LMI.

Figure 2 presents a visual representation of the average language mindset scores across all three study groups.

Figure 2

The Mean Difference Between Groups (Language Mindset)



This figure illustrates noticeable disparities in the language mindset across the three groups, particularly highlighting significant advancements in the OPF group.

Discussion

E-feedback and Writing

Within-group analyses revealed substantial enhancements in the writing ability of both OTF and OPF learners. These results align with previous research findings (e.g. Al Abri et al., 2021; Jongsma et al., 2023; Noroozi et al., 2016; Pham et al., 2020) emphasizing the importance of online feedback and social networking applications in language teaching. An explanation for the observed positive

impact might be the asynchronous nature of online feedback, which allows both students and teachers the flexibility to carefully evaluate work and craft thoughtful responses before providing feedback. Online feedback's flexibility allows it to be used effectively beyond the confines of the classroom schedule to free up more classroom time for additional activities.

However, this study's findings differ from those reported by Dehghan et al. (2017), who found no impact of online feedback. One possible explanation is that the research conducted did not employ a uniform set of online tools for facilitating peer feedback, potentially leading to variability across the studies. Among the various platforms utilized were Weblogs, Google Docs, WhatsApp, and video-based methods for peer feedback exchange. Another possible explanation is that the technology was used as a tool to facilitate feedback, rather than as the primary method of instruction. Higgins et al. (2019) found that technology-assisted teaching, where technology is used as a tool to support learning, is more motivating than technology-based teaching, where technology is the main method of teaching.

Technology can be an external motivator, which can lead to students being more engaged with the PF interaction (Mellati & Khademi, 2014). Furthermore, utilizing an online platform for providing PF may offer a more convenient and efficient method compared to traditional paper-based peer feedback tasks (Ciftci & Kocoglu, 2012) as the teacher could keep a closer eye on feedback comments.

Between-group analyses revealed that the participants who received online peer feedback performed significantly better than those who received online teacher feedback or were in the control group. This result does not align with the observations of Lv et al. (2021), who reported a greater influence of OTF. According to Noroozi et al. (2016), one potential explanation for the effectiveness of OPF is that it benefits both the person giving the feedback (the provider) and the person receiving the feedback (the receiver). Martin and Sippel (2024) posit that the act of providing feedback holds greater significance than that of receiving it, and the enhancement of learners' second language skills appears to originate more from the act of providing peer corrective feedback (PCF) than from the act of receiving it. To provide corrective feedback, learners first had to identify errors in their peers' language production. This allows students to verify information from multiple sources before providing feedback to others and this monitoring process helped improve the accuracy of the feedback providers. Receiving corrective feedback was also beneficial for the receivers because it allowed them to reorganize incorrect linguistic patterns and evaluate their comprehension.

During the study, researchers observed a more dialogic conversation around online feedback in the OPF group as students were more inclined to doubt feedback from their peers compared to feedback from their teachers and frequently questioned the corrective feedback they were given and only embraced the corrections once they grasped the rationale behind them. In turn, this dialogue can enhance their involvement in the process of exchanging PF. This finding aligns with the observations of Nassaji and Kartchava (2017), who also reported increased interaction during peer feedback sessions.

Another potential explanation for the improved performance of the OPF group is that the fear of making mistakes, losing face, and feeling embarrassed or ashamed in front of their peers may have motivated them to dedicate more time and energy to their studies (Mahvelati, 2021). OPF allows learners to thoughtfully compose their feedback, without the time constraints of in-class activities and encourages more critical feedback comments, which can significantly improve their writing ability (Lee & Evans, 2019; Novakovich, 2016).

E-feedback and Language Mindset

Between-group comparisons were carried out, revealing that students in the OPF group outperformed significantly in all three subcomponents of language mindset compared to their peers in the OTF and C groups. A potential explanation for the enhanced performance observed in the OPF group could be that, by pointing out and addressing their peers' errors, students come to realize that errors are a common and

integral aspect of the learning process. This aligns with Martin and Sippel's (2024) research which suggested that giving feedback can be more beneficial than receiving feedback. Providing feedback can broaden providers' understanding of the subject and challenge their existing beliefs or assumptions about language acquisition as students come to recognize that they have the ability to provide valuable insights and contribute meaningfully to their peers' learning experiences. This realization helps to foster a growth mindset, as the OPF environment encourages learners to perceive errors not as setbacks, but as valuable stepping stones towards progress and development.

In contrast to the observed improvements in writing performance among the OTF group compared to the C group, the analysis revealed no significant improvement in the mean language mindset scores of the OTF group. This result suggests that while teacher feedback may influence immediate writing outcomes, its impact on broader language mindset constructs, such as attitude towards language learning or cognitive approach, did not show measurable improvement. This finding highlights the need for further investigation into how different types of feedback may interact with cognitive and affective dimensions of learning.

As noted by Cutumisu and Lou (2020), the growth mindset is the “catalyst” and serves as the driving force behind the connection between constructive feedback and the learning process (p. 24). Engaging in PF and providing comments can boost learners' confidence, validate their efforts, and afford them with the necessary encouragement to strive for improvement in their language skills and academic performance. When students give feedback to their peers, they are also reinforcing their own understanding of the language. Articulating their observations and suggestions can help solidify their own knowledge and skills, leading to a more confident and competent language learner.

Peer feedback, especially when delivered electronically, can encourage a sense of community and collaboration among students. Engaging in this feedback process can create a supportive learning environment where individuals feel motivated to participate actively in their academic endeavors. Through active participation in dialogue and the exchange of critiques with their fellow students, learners can cultivate a mindset that embraces language learning as a process of mutual improvement and growth. This mindset empowers them to recognize that, through dedication and practice, they can not only improve others but also, they can be improved by others.

Conclusion and Implications

This study found significant improvements in writing accuracy among OTF and OPF learners, supporting the role of online feedback and technology-assisted learning in language teaching. Online feedback offers benefits such as flexibility in timing, allowing students to participate at their convenience without the time pressure of in-class activities, which are constrained by time and location. With a significantly better performance observed for online peer feedback compared to online teacher feedback, it also allows students to explore alternative sources prior to providing feedback. This can lead to more in-depth and analytical feedback remarks, ultimately benefiting the learning outcomes of both the feedback provider and recipient. Online peer feedback also facilitates more dialogic conversations and increased interaction, which can enhance student engagement and understanding.

Establishing a culture of feedback literacy not only encourages learners to actively engage with feedback but also equips them with the skills to interpret and apply it effectively. This, in turn, enhances their ability to self-reflect, set meaningful goals, and navigate their learning journey with greater autonomy and insight. By integrating feedback as a core component of the educational experience, learners are better prepared to leverage insights from their peers and educators, fostering a continuous cycle of improvement and growth.

Participants in the Online Peer Feedback (OPF) group demonstrated significantly higher levels of language mindset in all four subcomponents compared to students who received Online Teacher Feedback (OTF) or were in the control group (C). This enhanced performance may be attributed to the realization that errors are a natural part of learning, fostered by the act of providing feedback to peers. Peer feedback plays a pivotal role in shaping the language mindset of learners. It not only deepens their

understanding of language and error but also cultivates a sense of responsibility and engagement in the learning journey, ultimately contributing to a more positive and growth-oriented approach to language acquisition.

Educators should incorporate technology-enhanced feedback, particularly peer electronic feedback sessions, into their writing curriculum. This approach helps to create a more nurturing classroom environment optimizes students' learning capabilities and develops a growth mindset. Educators ought to ensure that students are aware of the advantages of peer feedback, elucidate the stages involved in the process of providing corrective feedback, and instruct them on delivering meaningful feedback to their classmates.

By integrating teacher training into professional development sessions, educators will be better prepared to effectively utilize E-feedback tools and methodologies. This will enable them to not only provide constructive and timely feedback to their students but also to guide and manage peer E-feedback processes.

This research possesses various limitations, a number of which could be tackled in subsequent studies. Firstly, the results obtained must be considered with care, given their restricted generalizability, which is a consequence of the study's small sample size consisting of students from a private language center in Iran. Future research could broaden the scope of this study by replicating it with a larger and more diverse group of participants, which would strengthen the generalizability of the findings. Secondly, future research should consider the quantity and quality of online feedback, as various factors such as typing skills, emotions, and personality can introduce variations or errors (Bigverdi & Sorahi, in press). Thirdly, given that the participants were volunteers from a language institute, potentially more motivated and engaged in their learning, this could influence the study's outcomes. Therefore, future research should encompass a diverse group of learners across various educational contexts and online platforms. Finally, since this study focused on writing skills, future research could explore the influence of online feedback on the development of other language skills and components.

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Declaration of Conflicting Interests

The authors hereby declare that there are no conflicts of interest regarding the publication of this article. This includes any financial, personal, or professional relationships that could potentially influence or bias the research and its findings. The integrity and objectivity of this research have been maintained throughout the study, adhering to ethical standards of scientific inquiry.

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