

Research Article

Effects of Teachers' Written Corrective Feedback on the Writing Achievement of First-Year Ethiopian University Students

Baymot Mekuriaw Wondim , **Kassie Shifere Bishaw** , and
Yinager Teklesellassie Zeleke 

Department of English Language and Literature, Bahir Dar University, Bahir Dar, Ethiopia

Correspondence should be addressed to Baymot Mekuriaw Wondim; wondimbaymot@gmail.com

Received 4 November 2022; Revised 18 January 2023; Accepted 21 January 2023; Published 16 February 2023

Academic Editor: Yuqing Geng

Copyright © 2023 Baymot Mekuriaw Wondim et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

An increasing number of studies have confirmed that written corrective feedback (hereafter WCF) is vital for improving learners' L2 writing. However, many scholars could not agree whether this improvement was due to direct, indirect, or both forms of WCF. Thus, this study first investigated the role of WCF students' writing achievement; it then investigated if there was a statistically significant difference in writing achievement between groups that received direct and indirect WCF forms. To this end, a quasi-experimental research design involving three intact first-year classes from a university found in northwest Ethiopia was used. Two experimental groups and one comparison group of learners were participants in this study. Test scores analyzed by analysis of covariance (ANCOVA) revealed that WCF has an influential role in enhancing learners' writing performance. Moreover, this study showed that learners in the direct WCF accompanied by a metalinguistic explanation group outperformed their counterparts in the indirect WCF group in writing paragraphs. Based on the study's findings, it is possible to conclude that the provision of WCF is vital in the Ethiopian context; moreover, learners could benefit more from using linguistic structures correctly if metalinguistic explanations accompany the provision of direct WCF.

1. Introduction

According to Deane's [1] notion, writing is the most significant development in human history. It serves as a platform for the transgenerational and international exchange of knowledge, information, thoughts, and opinions. Writing in the English language has a much greater relevance since it is a language that is widely used for communication and understanding of fundamental information [2]. Thus, enhancing learners' English language writing skills is necessary for success in language development, as suggested by Cole and Feng [3]. It is also one of the fundamental language skills that plays a crucial role in students' academic success. In light of this, the primary goal of teaching English writing at Ethiopian universities is to equip students with the communication abilities in written form needed to cope with the issues of English language writing on a local and global scale. Despite the fact that writing is an essential component of human life, it is frequently viewed as a component of teaching and learning English grammar and syntax which diminishes the value of writing and prevents its development.

Although writing is a vital language ability, it is not a simple task that students can quickly and easily learn elsewhere; rather, it necessitates well-designed procedural approaches. According to Myles [4], the capacity to write well is not inherited but must be practiced through times. Mitchell [5] also confirmed that writing is an incredibly difficult cognitive task requiring writers to be skilled in various areas, ranging from the learner's academic background and personal interests to particular linguistic, psychological, and cognitive phenomena. To this end, Williams [6] added that it is distinct from other language skills because it has two "inherent features of writing" (its durability and the fact that it does not have to be generated online) that "permit the learner more control over attentional resources as well as more need to attend to the language both during and after production" (p. 322). In a similar vein, Richards [7] claimed that learning to write in either L1 or L2 language is one of the most demanding skills that learners confront different challenges and that only a limited number of individuals can be said to have fully mastered it. A local study

by Negari [8] indicated that in Ethiopia, the most challenging ability for language learners to master in academic settings appears to be writing in a first, second, or foreign language. Thus, in this scenario, it is critical to provide learners with assistance like corrective feedback (hereafter CF). Regarding the role of CF, a substantial body of research ascertained that CF is a critical factor in assisting L2 learners [9–13]. Although there are still unresolved controversies over the effectiveness of various types of written corrective feedback (WCF) [14, 15], it can be concluded that WCF is an essential tool that is inextricably intertwined with language acquisition process since it assists English as a foreign language (EFL) learners in identifying their areas of strength and weakness in L2 writing classrooms.

However, CF is undeniably essential in second-language acquisition (SLA) and its role is hotly debated [16]. The controversies are attributed to scholars' viewpoints about offering WCF [17]. For instance, Truscott [18] claimed that errors are inevitable and essential to learners' language growth and that grammar correction is unnecessary and detrimental to learners. This scholar concluded that it should be completely abandoned due to its issues with pseudo-learning, learnability, and harmful side effects on the writing process. In contrast to this stance, others claimed that it is an essential pedagogical component that has an irreplaceable role in improving learners' writing achievement [6, 16]. Although it is evident that CF plays an irreplaceable role in assisting EFL learners' writing skills, previous studies produced inconsistent results due to the researchers' divergent viewpoints on CF. For example, some believed that direct WCF is more effective than indirect WCF [19–21]. In contrast, others claimed that indirect CF is superior to direct CF because it allows learners to engage in their learning [15, 22]. Thus, it can be claimed that variations in study results are attributed to methodological flaws in the WCF offering since earlier studies relied on predetermined simple rule-based linguistic aspects [19, 22–26] or lack of comparability between these studies due to poor research design [27, 28].

Thus, it was generally accepted that available study results are inadequate to determine whether one form of WCF is effective or ineffective in light of various confounding variables disclosed in earlier studies. For instance, methodological flaws in previous studies made it challenging to assess the effects of WCF throughout studies, which are one of the causes for the results of studies on WCF being contested and inconsistent [27]. Moreover, although many scholars and methodologists in the field have acknowledged the value of WCF, it has also been projected that other variables like the type of information given, learners' level of proficiency and their capacity to connect it to other linguistic knowledge, and the complexity of the language focus [29, 30] may undermine its effectiveness. In short, most of the previous studies have only concentrated on a limited number of rule-based structures [24, 26, 31]; thus, one source of uncertainty is how WCF may affect item-based structures. Furthermore, the literature has not focused significantly on the importance of WCF, which comprises a metalinguistic description of the target structure [29]. For instance, according to Van Beuningen et al. [21], these

contradictory results should be viewed cautiously since unsystematic modifications can affect the impact of comprehensive feedback.

Therefore, it can be stated that further studies are needed to uncover previously overlooked methodological flaws to determine the type of WCF that will best assist learners in improving their writing performance. Thus, to the best of the researchers' reading, no local study has examined the effects of unfocused direct feedback accompanied by a metalinguistic explanation and indirect WCF on first-year university students writing achievement, with the exception of a study by Nurie [32] on graduate students' perceived needs and preferences for supervisors written feedback for thesis writing, by Semie [33] on EFL instructors' beliefs and practices and students' preferences regarding WCF, and by Mathewos [34] on the effects of teacher versus guided self-correction on the grammatical accuracy of the student-written text. In light of this, it can be stated that no comparable studies have been conducted locally. Notably, in countries like Ethiopia, where the English language is imparted as EFL and where students are from a variety of linguistic backgrounds, applying the results from studies carried out in different contexts would not result in the desired outcome—suggesting that country-based studies are required.

To this purpose, this study was mainly conducted on the effects of unfocused direct WCF accompanied by a metalinguistic explanation and indirect WCF on Ethiopian first-year university students' writing achievement. To this end, as noted above, three intact classes of first-year university students were used as participants in this study. In this study, a comparison group was included since an experimental study without a control group does not provide evidence for the effectiveness of either of the WCF types [28, 35, 36]. Furthermore, sustained WCF was given in this study because most previous studies gave one-shot feedback that could not bring the desired effect on learners' writing achievement and no valid conclusions could be obtained from such studies. In general, it can be claimed that this study responds to calls for longitudinal research on the effectiveness of different types of WCF in that it was conducted semester-wise in actual teaching–learning contexts (in a natural setting) quasi-experimental design rather than in contrived experimental situations design [16, 21, 36] and, relatively unusually, focuses on writers in a non-English speaking country [15, 37]. Thus, it can be claimed that the methodological and practical gaps left by studies in the past are believed to be filled in this study.

2. Literature Review

Along with changes in approaches and methodologies in language instruction, there have also been significant changes in the perception of individuals towards the role of feedback in language classes. Under the influences of behaviorism and structuralism theories, error correction was considered to be an important pedagogical tool for addressing the linguistic shortcomings of EFL learners. However, it was overlooked later during the 1970s and 1980s because it was seen to interfere with language learning since language learning is nonpredictable

and seen as a natural process [38]. Evidence from the literature suggests that there are still debates and disagreements on the worth of CF, and these differences and disputes are based on a range of research with methodological and practical flaws in their design. Studies and articles have typically been launched with distinct domains based on opposing points of view; for example, those presenting evidence for the ineffectiveness of CF and those advocating for its provision.

Among the researchers who hold the position that the CF does not provide any significant effect on language learning [18, 38–42] were few of them; however, Truscott is known to be at the heart of the argument having the most extremist viewpoints on downplaying the role of CF in classrooms. In his advocacy against CF, he underlined the psychological effect that may inflict on the learners and the fact that he thought feedback had a very negligible impact on the learning process. He attempted to demonstrate that most studies on the effectiveness or ineffectiveness of CF aimed to be optimistic about the outcomes by analyzing the articles and research on these topics [18]. In his argument, Truscott aimed to emphasize how challenging it is to anticipate which grammatical concepts learners will be developmentally prepared to learn in the target language. As a result, this researcher came to the conclusion that CF is not necessary, detrimental to language learning, and should be abandoned since it may interfere with student's ability to communicate [18]. It is imperative to note that Truscott's position was in line with Krashen's [38] monitor model hypothesis, which downplays the relevance of CFs in SLA. Regarding this, even scholars with the same stance as Truscott, such as Kepner [39], who compared the feedback on grammatical structure with feedback on the content of the writing of students, reached on a conclusion that those who received feedback on content performed better in their papers. A similar result was reported by Sheppard [40], who was one of the opponents of the role of CF.

Contrary to the aforementioned authors' assertions on the ineffectiveness and harmfulness of CF, there are a variety of theories and hypotheses that pinpoint CF's role in language instruction. For instance, interactionist hypothesis, noticing hypothesis, and sociocultural theories can be quoted for their strong dedication to determine that CF is an irreplaceable tool that has a crucial role in facilitating L2 learners' writing abilities in opposition to opponents' perspective on CF. More importantly, along with other theories that advocate the role of CF, its relevance is mainly attributable to the interaction approach to language learning and instruction, which emphasizes the need for error correction and eventually appreciated feedback to gain a place in EFL classrooms. In addition to the aforementioned theories, there is a growing number of studies that have continued to demonstrate how CF can be effective and useful as a tool in helping learners [9, 12, 13, 19, 20, 23, 43–47]; these studies confirmed that CF (WCF in this study context) is an essential instructional tool that helps learners to identify and notice the linguistic gaps that they have and enables them to improve their writing skills based on the provided input. So, EFL learners can only discover the pitfalls they have made and correct the errors with guidance and assistance; this can be achieved via

scaffolding, where CF can be one of its manifestations, and students are provided with support based on their zone of proximal development (ZPD) [48]. Thus, it can be concluded that scholars who stand against the role of CF came across compelling evidence from a number of scholars who argue that WCF is an essential pedagogical tool that aids students in recognizing their linguistic gaps and allowing them to develop their writing skills based on the input given it assists students to write more accurately than they can before.

The issues of the effectiveness of different types of WCF have been another source of disagreements in this field of study. To do with the effectiveness of various forms of WCF, substantial bodies of studies have been conducted to compare the effectiveness of different types of CF, although they failed to draw clear and consistent conclusions [20, 43, 49]. For instance, according to Ferris and Roberts [49], indirect feedback is more productive since it involves students in guided learning, encourages contemplation and attention to the form, and appears to help with long-term retention. Chandler [20] also compared the effects of direct and indirect feedback on students' writing and came to the conclusion that both forms were far more helpful than just disclosing the specific error to the students. In a similar vein, the effects of several forms of feedback (direct CF + written and oral metalinguistic explanation, direct CF + written metalinguistic explanation, and only direct CF) on the functional usage of the English article system "a" and "the" were examined by Bitchener and Knoch [43]. They concluded that the provision of CF suffices after observing no differences between the low-intermediate groups getting the various types of feedback.

Therefore, however, to date, a plethora of empirical studies have been conducted concerning the effectiveness of direct or indirect WCF; they failed to generate clear and consistent conclusions as they can be affected by prevailing variables, including the student's level of target linguistic background according to Ferris [27] and K. Hyland and F. Hyland [50], targeted error types according to Ferris [12], or the sort of existing knowledge (i.e., already partially acquired knowledge vs. new knowledge) an instructor desires to address through CF according to Ellis et al. [44]. Similarly, learners' perceptions of their learning needs (areas of difficulty) and whether or not the teacher recognizes and meets those needs in their feedback, for instance, the studies by Ferris et al. [15] and Van Beuningen [51], are other essential variables that strongly shaped students' responses to feedback. According to Van Beuningen [51], it can be concluded that "various hypotheses considering the effectiveness of direct and indirect CF have been put forward, some in favor of direct error correction, others supporting the indirect approach." There are still ongoing disputes over the effectiveness of different types of WCF.

Evidence from empirical studies claims that diverging viewpoint is due to various limitations of studies in the past. For instance, as described by Ellis et al. [44], Truscott provided a list of issues and limitations that some previous studies had, which made their conclusions invalid. The absence of a control group in several studies was brought up first [13, 52–54]. Second, they "did not investigate the impact

of CF on new pieces of writing” [54, p. 354]. Researchers like Ashwell [55] and Ferris and Roberts [49] conducted additional analyses of the impact on later drafts of the same text. The studies’ failure to include a pretest to homogenize the learner groups is their third shortcoming [39]. Thus, the ultimate goal of this study was to investigate the effects of teachers’ WCF on first-year Ethiopian University students’ writing achievement. To this end, two experimental groups and one comparison group of learners at Debre Tabor University were actively involved in the study process.

Regarding feedback scope, it refers to the coverage extent of errors to be corrected in the text. According to Ellis [56], the feedback scope can be identified as focused or unfocused error correction. To this end, Lee [57] and Van Beuningen [51] recognized that unfocused CF is the concept that refers to the teacher’s response to all errors committed by the students, whereas selective (focused) is termed as a feedback provision practice in which the feedback provider gives CF selectively on certain linguistic features, such as subject–verb agreement, prepositions, articles, active/passive, or verb tense. According to Bitchener [35] and Ellis et al. [44], the effectiveness of focused CF has gained attention; from its practical grounds, limiting WCF to a small number of errors is insufficient if a teacher wishes to increase writing correctness in general rather than just the use of a particular grammatical feature when he is correcting his students’ written text [16]. Feedback on predetermined errors might help students to improve on selected language features. Still, the generalizability and validity of such studies have been questioned because teachers frequently point out multiple types of errors rather than a single error [36]. Moreover, it may confuse students when they see that some of their errors have been rectified but not all of them.

Given that students and teachers expect feedback on all of their language errors in a natural classroom context to enhance their writing correctness, Ferris’ [16] further studies emphasized that the results from such research lack ecological validity and reliability. The researchers in this study concluded that providing feedback on accuracy, content, and organization was necessary for learners’ overall writing achievement. Hence, the experimenter in this study corrected all treatable linguistic errors. Errors that adhere to a set of standards, such as “subject–verb agreement, run-ons and comma splices, missing articles, and verb form errors,” are considered curable or treatable [12, p. 6].

2.1. Research Questions. Because there are divergent viewpoints over the effectiveness of WCF types on students’ writing performance, this article was mainly initiated by existing theoretical, pedagogical, and practical perspectives on the role of WCF; the research questions addressed in this article were:

- (1) Is there any relationship between EFL learners’ writing achievement and WCF in the Ethiopian University context?
- (2) Is there a statistically significant difference on EFL learners’ writing achievement between students who

receive direct WCF along with a metalinguistic explanation and those who only receive indirect WCF?

3. Methods

3.1. Research Design. This study was designed in a pretest–posttest quasi-experimental research design that employed tests as data collection instruments. For that purpose, three intact classes, two experimental groups, and one comparison group participated in this study. The participants in the experimental groups received unfocused direct WCF accompanied by metalinguistic explanations and indirect WCF versions. The first experimental group (hereafter called the direct group) was given with a direct WCF accompanied by metalinguistic illustrations. In contrast, the participants in the second experimental group (hereinafter referred to as the indirect group) were provided with only indirect WCF, while the control group received no feedback.

3.2. Participants. The participants of this study were first-year university students in the 2021/2022 academic year at a university found in the northwestern part of Ethiopia. Three intact classes consisting of 40 students in the direct group, 44 in the indirect group, and another 44 in the comparison group participated in this study, making the total number of students (128) participating in this study.

3.3. Instruments. This study used tests to collect data, including a pretest and two posttests. As a result, the study participants were asked to write comparable self-descriptive paragraphs three times (pretest and posttests 1 and 2).

3.3.1. Validity of Data Gathering Tools. Construct validity was used to check the instrument’s validity in this study. This was due to the reason that construct validity encompasses different forms of validity types. It was thought that construct validity could be assessed at various phases of data collection process because it is a psychological and emotional concept and cannot be verified using statistical measures. Thus, it can be stated that construct validity is maintained if the data collection instrument has the power to prompt the participants to provide the desired information in their paragraph writing.

3.3.2. Inter-Rater Reliability of Data Gathering Tools. Twenty test papers were randomly selected from the papers written by the participants in the pilot study to examine the inter-rater reliability (IRR) of the data collection tool. The paragraphs were duplicated three times because there were three scorers, so the scorers received copies of the papers and scored them based on the rubric. So, each scorer scored 20 papers. According to Hallgren’s [58] suggestion, the intra-class correlation coefficient (ICC) was the most often used metric while examining IRR. This scholar added that when evaluating ICC, the general rule of thumb is that a score of less than 0.40 is insufficient, 0.40–0.59 is adequate, 0.60–0.74 is acceptable, and 0.75 and above is excellent. As noted above, the ICC is more significant at 0.75. For this item, the ICC was 0.963^c, which led to the conclusion that the

TABLE 1: Pretest and immediate posttest 1 writing achievement score.

WCF	Pretest writing achievement score		Posttest 1 writing achievement score		N
	Mean	Standard deviation	Mean	Standard deviation	
Direct WCF and ME	11.18	4.23	15.72	4.145	40
Indirect WCF	9.32	5.468	11.91	5.229	44
CG	10.57	4.401	11.36	4.808	44
Total	10.33	4.854	12.91	5.102	128

WCF, written corrective feedback; ME, metalinguistic explanation; CG, control group.

data collection tool has acceptable IRR, showing that the item has reliability.

3.4. Procedure. This study involves three sessions: a pretest and two posttest sessions. As noted earlier, in the first week of the study, all participants, irrespective of their group assignment, participated in the pretest about self-descriptive paragraph writing. After they completed paragraph writing, the experimenter (the classroom teacher) provided WCF to just the experimental groups and scored the papers gathered from all groups. The papers were photocopied and provided to the researchers for analysis; the original papers were then handed back to the participants so that the learners may utilize the commentary feedback going forward. Based on the comments, the participants were expected to identify their linguistic weaknesses and strengths and use the evidence they have from WCF to resolve their linguistic issues in subsequent paragraph-writing sessions. Then, the first immediate posttest was given a week after the students received their papers. The primary purpose of administering a posttest one in this study was to see whether there was a statistically significant difference between the experimental groups in their writing achievements due to the effects of different WCFs. It is very important to note that the posttest one in this study, followed the same protocols as the pretest.

Next, the last posttest, that was posttest two, was undertaken 1 week later, the first treatment was completed, and the learners had their papers back; since the researchers designed to provide sustained WCF. The primary purpose of administering the second posttest was to determine if the participants' writing achievement would continue to improve due to the feedback they obtained on the first posttest. The procedure, content, and genre of paragraph writing in the second posttest were identical to the paragraph writing the participants did in their previous tests. Throughout the study process and testings, the participants had instructions on paragraph writing and were allowed to use just 40 min to finish writing their paragraphs. It is critical to highlight that the rubric, which included grammatical and nongrammatical issues, was devised and provided to the scorer to help him in grading the papers. The rubric was designed by involving writing concerns such as content, organization, grammar, and mechanics.

Moreover, it is salient to note that learners were provided with comprehensive WCF throughout the study process. The main reason for giving unfocused feedback is since feedback on predetermined errors might help students to improve on selected language features; the validity and generalizability

of such studies have been questioned because teachers frequently point out multiple types of errors rather than a single error [36]. Moreover, it may confuse students when they see that some of their errors have been rectified but not all of them. The researchers deemed giving unfocused WCF the best way to help them achieve the study's intended goals. In line with this, Ferris [16] emphasized that the results from such studies lack ecological validity and reliability. Finally, it is important to note that the researchers designed compensation classes for the comparison group with identical treatments in kind and scope, as the experimental groups were offered after they completed data collection.

3.5. Data Analysis. In this study, a one-way analysis of covariance (ANCOVA) was employed to analyze the data collected from the pretest, posttest one and posttest two. To analyze data, SPSS version 23 was used. A one-way ANCOVA was also performed to see if there were any statistically significant changes between the mean scores from the pretest and posttests. Likewise, data from the pre- and posttests were examined using ANCOVA to see if the interventions had any statistically significant effect on the writing achievement of university students.

4. Results

It is vital to note that before any treatment was given, all three groups were assigned to take the pretest. The pretest was mainly administered to assess the students' prior linguistic knowledge to determine whether there was a substantial difference in linguistic backgrounds between the participants regarding their writing skills prior to the intervention. The pretest results were also utilized as baseline data for the comparisons that would be made in each subsequent tests.

4.1. Comparison of the Mean Scores from the Pretest with the First Posttest. Table 1 shows learners' mean scores for writing achievement during the pretest and first posttest. During the pretest, the mean score and standard deviations of the participants of the study were 11.18 and 4.523 for the direct group, 9.32 and 5.468 for the indirect group, and 10.57 and 4.401 for the comparison group, indicating that there were no such statistically significant differences found in their writing achievement before the treatment was given which was indicative that learners had comparable writing achievement before the onset of treatment. However, in the first posttest, the mean score and standard deviations of students' marks/scores turned out to be 15.72 and 4.2, 11.91 and 5.229, and 11.4 and 4.8 in the direct, indirect, and comparison

TABLE 2: Tests of between-subjects effects.

Dependent variable: pretest writing achievement score						
Source	Type III sum of squares	df	Mean square	F	Sig.	Partial η^2
Corrected model	76.103 ^a	2	38.051	1.631	0.200	0.025
Intercept	13694.053	1	13694.053	586.999	0.000	0.824
Conditions	76.103	2	38.051	1.631	0.200	0.025
Error	2916.116	125	23.329			
Total	16646.000	128				
Corrected total	2992.219	127				

^a $R^2 = 0.025$ (adjusted $R^2 = 0.010$).

TABLE 3: Tests of between-subjects effects.

Dependent variable: immediate posttest 1 writing achievement score						
Source	Type III sum of squares	df	Mean square	F	Sig.	Partial η^2
Corrected model	2280.487 ^a	3	760.162	91.910	0.000	0.690
Intercept	523.757	1	523.757	63.327	0.000	0.338
Pretest score	1814.225	1	1814.225	219.355	0.000	0.639
Conditions	317.434	2	158.717	19.190	0.000	0.236
Error	1025.568	124	8.271			
Total	24653.000	128				
Corrected total	3306.055	127				

^a $R^2 = 0.690$ (adjusted $R^2 = 0.682$).

groups, respectively, revealing that the results showed increments when compared with the scores obtained in their pretest, indicating that these changes were due to the effects of the WCF learners received in their pretest. Based on the obtained results, it can be concluded that WCF is an effective pedagogical technique for improving learners' writing abilities in Ethiopian first-year university students writing achievements. Tests of between-subjects effects comparison were conducted for both the pretest and the posttest to determine whether there was a statistically significant difference or not in students' writing achievement before and after the treatment (Table 1).

4.2. Comparability of Group Results during Onset of the Study. After all, preliminary checks of the assumptions of a one-way ANCOVA, including the assumptions of normality, linearity, homogeneity of regression slopes, and homogeneity of variance, were assessed and met; a one-way analysis of variance was computed to determine if first-year Ethiopian University learners' writing achievement scores differ between experimental groups.

It was very important to examine whether learners had comparable linguistic backgrounds or variations in their linguistic resources during the onset of the study. To that end, a one-way ANCOVA was computed to identify whether there was a statistically significant difference between study participants before the treatment. The test result of the between-subjects effects in the Table 2 revealed no statistically significant difference in learners' writing achievement in their pretest, which was indicated by the p -value of $F(2, 125) = 1.631$, $p = 0.200$. As indicated above, $p = 0.2$, $p > \alpha$, and $\alpha = 0.05$,

meaning that no statistically significant differences were found in the learners' writing achievement scores among Ethiopian University students before the intervention was made. From this, a conclusion can be drawn that before the treatment, learners' had comparable linguistic backgrounds in their writing achievement, proving that their linguistic backgrounds would not impact the study's result. The outcome also proves that the learners' writing skills remain unaffected due to their previous language background (Table 2).

As shown in Table 2, from the results obtained during the pretest, no statistically significant difference was found in learners' writing achievement; however, in the first posttest, as shown in Table 3, a statistically significant difference was found. The p -value was indicated as $F(2, 124) = 19.190$, $p = 0.001$, $p < \alpha$, $\alpha = 0.05$, and $\eta_p^2 > 0.236$, indicating that the groups' performance varied depending upon the type of feedback provided, ensuring the role of WCF on learners' writing achievement. The aforementioned eta effect size can be taken as a large effect size from the benchmarks given by Cohen [59], who classified it as partial η^2 , where $\eta^2 = 0.01$ indicates a small effect, $\eta^2 = 0.06$ indicates a medium effect, and $\eta^2 = 0.14$ indicates a large effect. Thus, this study ($\eta = 236$) gives us a 24% effect size, which is a large effect size based on the given boundaries of effect size; therefore, this implies that a significant relationship between independent and dependent variables was found. This indicates that the independent variable strongly affected the dependent variable. So, it can be stated that this study has a large effect size, meaning that the percentage of variance in the dependent variable accounted for by the independent variable was large, which caused a change in learners' writing achievement. In light of these results, it was mandatory to identify where the differences were found. Table 4

TABLE 4: Bonferroni pairwise comparisons (post hoc analysis) during posttest 1.

Dependent variable: immediate posttest 1 writing achievement score		95% confidence interval for difference ^a				
Written corrective feedback (I)	Written corrective feedback (J)	Mean difference (I - J)	Standard error	Sig. ^a	Lower bound	Upper bound
Direct WCF with a ME	Indirect WCF	2.351*	0.636	0.001	0.808	3.895
	Comparison group	3.883*	0.629	0.000	2.356	5.410
Indirect WCF	Direct WCF with a ME	-2.351*	0.636	0.001	-3.895	-0.808
	Comparison group	1.531*	0.617	0.043	0.035	3.028
CG	Direct WCF with a ME	-3.883*	0.629	0.000	-5.410	-2.356
	Indirect WCF	-1.531*	0.617	0.043	-3.028	-0.035

Based on estimated marginal means. *The mean difference is significant at the 0.05 level. ^aAdjustment for multiple comparisons: Bonferroni. WCF, written corrective feedback; ME, metalinguistic explanation; CG, comparison group.

TABLE 5: Estimated marginal means learners' writing achievement in pretest and posttest 1.

Dependent variable	Pretest writing achievement score				Posttest 1 writing achievement score			
	Mean	Standard error	95% confidence interval		Mean	Standard error	95% confidence interval	
WCF								
Direct WCF and ME	11.175	0.764	9.664	12.686	15.057 ^a	0.457	14.153	15.961
Indirect WCF	9.318	0.728	7.877	10.759	12.706 ^a	0.437	11.841	13.570
CG	10.568	0.728	9.127	12.009	11.174 ^a	0.434	10.316	12.033

^aCovariates appearing in the model are evaluated at the following values: pretest writing achievement score = 10.33. WCF, written corrective feedback; ME, metalinguistic explanation; CG, comparison group.

shows that Bonferroni's pairwise comparisons carried out to identify the spots of significant group differences (with an α level of 0.05).

Based on the results, it can be stated that learners in a direct WCF group outperformed their counterparts in the indirect WCF group with a mean difference of 2.351* and with a p -value = 0.001, which is less than $\alpha = 0.05$, suggesting that there was a statistically significant difference between learners' writing achievement in the intervention groups. The result indicates that direct WCF is the most effective one in Ethiopian L2 writing classrooms, where learners lack linguistic elements when it is compared with indirect WCF. Moreover, the findings suggested that if the ultimate goal of WCF is to aid learners enhance their writing achievement, a direct WCF must be supplemented by a metalinguistic explanations (Table 4). Earlier studies have also shown that direct WCF is more beneficial for students with lower proficiency levels since they have relatively inadequate linguistic backgrounds [14] than indirect WCF. So, it can be noted that these changes were due to the treatment the experimental groups received during the pretest. However, during the onset of the study, the p -value was $F(2, 125) = 1.631$, $p = 0.200$, implying that there was no meaningful difference in learners' writing achievement before the intervention it was automatically changed into the p -value of $F(2, 124) = 19.190$, $p = 0.001$, in the posttest one inferring that WCF plays a vital role in assisting learners' in improving their L2 writing abilities. From these, one can infer that WCF is a key pedagogical tool in assisting EFL learners.

Based on the data obtained from a one-way ANCOVA in Table 5, the estimated marginal means were not similar, implying that different WCFs influenced learners' writing differently.

The estimated mean for direct WCF is $M = 15.057^a$, $SE = 0.457$ and for indirect WCF is $M = 12.706^a$, $SE = 0.437$. So, it can be stated that different WCFs have influenced university learners' writing achievements differently. The mean achievement writing score of learners' in direct WCF accompanied by a metalinguistic explanation during the pretest was 11.175, which was increased to 15.057^a in posttest 1 analysis conducted after the learners received the treatment. Similarly, in the indirect group, learners' mean writing achievement score was 9.318 in the pretest, which was changed to 12.706^a in the first posttest, suggesting that there was an improvement in learners' mean score writing achievement obtained from the pretest to posttest 1. In general, it can be stated that WCF plays a vital role in assisting EFL learners' in improving their writing achievement; furthermore, it is essential to underscore that students gained more benefits when they received direct WCF hybrid with metalinguistic explanations (Table 5).

4.3. Comparison of Group Writing Achievement Mean Score during Posttests 1 and 2. A one-way ANCOVA was also computed to determine whether first-year Ethiopian University students' writing achievement scores varied between experimental groups due to the feedback they received during posttests 1 and 2 while controlling the effects of covariates. As shown in Table 6, the learners' writing achievement scores during posttests 1 and 2 showed a noticeable improvements. However, as one can see from the results, both experimental groups did not equally helped learners improve their writing mean score achievement in different posttests. From this, an inference could be taken that different WCF types influenced learners' writing abilities differently; for instance, the mean and standard deviations of

TABLE 6: Writing achievement scores during posttests 1 and 2.

Written CF	Posttest 1 writing achievement score		Posttest 2 writing achievement score		N
	Mean	Standard deviation	Mean	Standard deviation	
Direct WCF and ME	15.72	4.145	16.15	4.246	40
Indirect WCF	11.91	5.229	12.75	4.799	44
CG	11.36	4.808	11.36	5.731	44
Total	12.91	5.102	13.34	5.330	128

WCF, written corrective feedback; ME, metalinguistic explanation; CG, comparison group.

TABLE 7: Tests of between-subjects effects during posttest 2.

Dependent variable: immediate posttest 2 writing achievement score						
Source	Type III sum of squares	df	Mean square	F	Sig.	Partial η^2
Corrected model	2067.640 ^a	3	689.213	58.097	0.000	0.584
Intercept	760.679	1	760.679	64.121	0.000	0.341
Pretest score	1595.220	1	1595.220	134.468	0.000	0.520
Conditions	361.789	2	180.894	15.248	0.000	0.197
Error	1471.040	124	11.863			
Total	26517.000	128				
Corrected total	3538.680	127				

^a $R^2 = 0.584$ (adjusted $R^2 = 0.574$).

TABLE 8: Bonferroni pairwise comparison (post hoc analysis) during posttest 2.

Dependent variable: immediate posttest 2 writing achievement score						
Written corrective feedback (I)	Written corrective feedback (J)	Mean difference (I - J)	Standard error	Sig. ^a	95% confidence interval for difference ^a	
					Lower bound	Upper bound
Direct WCF with a ME	Indirect WCF	2.027*	0.762	0.026	0.178	3.875
	Comparison group	4.156*	0.753	0.000	2.327	5.984
Indirect WCF	Direct WCF with a ME	-2.027*	0.762	0.026	-3.875	-0.178
	Comparison group	2.129*	0.739	0.014	0.336	3.922
CG	Direct WCF with a ME	-4.156*	0.753	0.000	-5.984	-2.327
	Indirect WCF	-2.129*	0.739	0.014	-3.922	-0.336

Based on estimated marginal means. *The mean difference is significant at the 0.05 level. ^aAdjustment for multiple comparisons: Bonferroni. WCF, written corrective feedback; ME, metalinguistic explanation; CG, comparison group.

the direct group during posttest 1 were 15.72 and 4.145, which were changed to 16.15 and 4.246 in the second posttest. Similarly, the mean and standard deviations of the indirect group were 11.91 and 5.229 in the posttest 1, which were changed to 12.75 and 4.799, respectively, during posttest 2, demystifying that WCF positively influenced first-year university students. Based on the results obtained, it can be concluded that Ethiopian first-year university writing achievement was highly influenced by the WCF they received in both posttests. In fact, direct with metalinguistic and indirect had an incomparable effect on learners' writing (Table 6).

From the results, in Table 7, it can be claimed that after controlling the effect of covariates, a statistically significant difference was found in Ethiopian first-year university learners' writing achievements among students who received different types of WCF in posttest 2. The p -value was $F(2, 124) = 16.061$, $p = 0.001$, which is less than $\alpha = 0.05$ and $\eta_p^2 > 0.197$, implying that the difference between groups

writing achievements was statistically significant. It also denoted that the value of η , $\eta_p^2 > 0.197$, gave us 20% of the effect size, which can be taken as a substantial effect size value, and led to a conclusion that the relationship between variables was very strong during the second posttest (Table 7). Based on the standard effect size given by Cohen [59], this study has a significant effect size, meaning that the percentage of variance in the dependent variable accounted for by the independent variable was large, implying that the WCF independent variable learners received in different treatment sessions in this study highly impacted learners' writing performance. A pairwise comparison was performed to find out where the difference exists. The result from the pairwise comparison is shown in Table 8.

As shown in Table 8, Bonferroni pairwise comparison during posttest 2 was presented. The analysis revealed that learners in the direct group outperformed their counterparts in the indirect group during the second posttest. The

TABLE 9: Estimated marginal mean variance between groups in posttests 1 and 2.

Dependent variable	Posttest 1 writing achievement score				Posttest 2 writing achievement score			
	Mean	Standard error	95% confidence interval		Mean	Standard error	95% confidence interval	
			Lower bound	Upper bound			Lower bound	Upper bound
WCF								
Direct WCF and ME	15.057 ^a	0.457	14.153	15.961	5.524 ^a	0.547	14.440	16.607
Indirect WCF	12.706 ^a	0.437	11.841	13.570	13.497 ^a	0.523	12.461	14.533
CG	11.174 ^a	0.434	10.316	12.033	11.368 ^a	0.519	10.340	12.396

^aCovariates appearing in the model are evaluated at the following values: pretest writing achievement score = 10.33. WCF, written corrective feedback; ME, metalinguistic explanation, CG, comparison group.

difference in their writing achievement score was significant at the p -value of $p = 0.026$, which is less than $\alpha = 0.05$, demonstrating that the difference was statistically significant after the covariate effects were controlled. So, this suggests that in a context where learners have limited linguistic resources, providing them only indirect WCF is insufficient; instead, the feedback providers must consider the language level of learners and offer direct error correction and supplement it with some explanations and justification about the nature of the fixed errors and how they could be corrected. For instance, advocates of direct CF, according to Chandler [20], have argued that the indirect approach might not succeed because it does not give learners sufficient information to fix problematic linguistic errors (e.g., syntactic errors). Besides this, Bitchener and Knoch [19] hypothesized that direct WCF is helpful since it provides students with the clear information required for assessing language-related theories about the target language (Table 8).

The estimated marginal means from posttest 1 to posttest 2 were compared and the results found to be quite different in each of the tests. The implication of the difference in the estimated marginal means is that different WCFs influenced learners' writing differently. For instance, the estimated mean for direct WCF is $M = 15.057^a$, $SE = 0.457$, and for indirect WCF, $M = 12.706^a$, $SE = 0.437$ during the posttest 1 were changed to $M = 15.524^a$, $SE = 0.547$ and indirect group $M = 13.497^a$, $SE = 0.523$ during posttest 2. It was significantly related to their writing $F(2, 124) = 13.650$, $p = 0.001$, $\eta_p^2 > 0.197$, demystifying that learners who were given various types of WCF performed differently on the second posttest. It can be stated that students in the direct WCF group, accompanied by a metalinguistic explanations, outperformed their counterparts in the indirect WCF in their writing achievement. In general, it can be stated that WCF plays a vital role in assisting EFL learners' in improving their writing achievement; furthermore, it is essential to underscore that students gained more benefits when they received direct WCF combined with metalinguistic explanations, according to the results, as shown in Table 9.

5. Discussion

Yet it is unknown if some error kinds are more sensitive to WCF than others, despite the fact that there is a growing body of studies that continue to investigate these intricacies and niches in the application of WCF and sufficient empirical data to support them [9, 11, 35]. Thus, the main purpose of this study was to assess the effects of teacher-written corrective

feedback on Ethiopian first-year university students' writing achievement and to compare the effectiveness of direct and indirect WCF on enhancing learners' writing achievement. The first purpose was theoretically initiated since it is unclear if the improvement in new writing resulting from WCF is due to this feedback's impact on students' language skills. To this end, Polio [60] noted that a research agenda on the effects of written error feedback on learners' acquisition of linguistic knowledge is necessary. Therefore, this study was intended to take a step toward this goal. The second goal had a pedagogical motivation. The researchers wanted to examine the effects of different types of feedback (direct feedback combined with metalinguistic explanation and indirect WCF) on learners' writing success because there is not enough information to determine which type of WCF is helpful.

The first research question aimed to address whether there is any significant relationship between teachers' WCF and first-year university students' writing achievements in the Ethiopian context. The findings showed that there was a significant improvement in the learners' writing achievement scores (i.e., both direct and indirect groups showed an increment in their writing performance in both posttests when compared to the results obtained from the pretest and the comparison group). Because of this, it can be inferred from the study's findings that teachers' WCF had a meaningful effect on first-year university students from Ethiopia who excelled at writing. Thus, this study's result agrees with the results of studies in the past, substantiating that WCF is a key pedagogical technique that enhances foreign language students' performance in writing [12, 35, 43, 61].

In regard to the second research question designed to address the effectiveness of either direct accompanied with metalinguistic explanation WCF or indirect WCF alone on learners' writing achievement, the results of the current study revealed that a statistically significant difference between the direct and indirect WCF groups were found. Moreover, the results of this study indicates that learners in the direct group outperformed their counterparts in the indirect group. From this, it can be concluded that in the Ethiopian context, providing that WCF plays a vital role in the progress of learners' L2 writing and improves their writing achievement. The result is also indicative that in the context where learners lack the linguistic resources to react to other types of WCF than direct forms like Ethiopia the context of the current study; they can benefit from direct WCF accompanied by a metalinguistic explanation. The rationale for direct feedback's increased efficacy is attributed to it provides unambiguous, instant

information to the corrected language structures, thereby allowing learners to detect the gap between their current performance and the desired language features more quickly [23]. In line with this, it was stated that direct WCF provision underscores two aspects: (1) accommodating L2 learners' urgent needs based on their written texts and (2) providing "meaningful, timely, constant, and manageable writing tasks and feedback" [62, p. 87]. This statement was also in line with this study's findings, meaning that learners must be provided with an explicit form of WCF if the ultimate goal of WCF is to aid learners in improving their writing achievements.

6. Conclusions and Implications

Truscott [18] was an immediate scholar in rejecting any role of CF in learners' language learning by emphasizing learners' grammar accuracy in his series of published articles; this scholar encountered intense debate from several scholars who admitted that WCF is an essential instructional tool that helps learners to identify and notice the linguistic gaps that they have and enables them to improve their writing skills based on the provided input [9, 12, 13, 44, 45, 63]. This study's finding is in line with the scholars advocating the role of WCF in EFL writing classrooms since, after completing the data analysis and obtaining the final results, the researchers discovered that the experimental groups who had received direct and indirect forms of WCF instructions outperformed both their pretest test scores as well as those of their counterparts peers' results in the comparison group. According to the study's findings, the WCF significantly impacted the writing achievement of Ethiopian first-year EFL university students. Thus, the researchers concluded that learners in the experimental groups could further improve their writing skills until their writing became error free if they received continuous WCF in their L2 writing sessions.

Therefore, the present study's results are consistent with Bitchener's findings that claimed in a context where learners have relatively restricted linguistic backgrounds benefit more from direct CF [9]. In line with this, Chandler [20] also noted that offering direct WCF to EFL students who lack the linguistic ability to recognize, detect, and correct their L2 errors increases their cognitive processing time and helps them internalize complex language structures. From which the following conclusions were drawn:

- (1) The result of the study validates that WCF is a viable approach that may be utilized in Ethiopian EFL writing lessons, but its efficiency would be maximized if it is offered directly and accompanied by a metalinguistic explanation.
- (2) In the context of EFL writing classrooms, providing comprehensive/unfocused direct WCF—i.e., providing the correct forms for all—is the most effective method over giving only unfocused indirect WCF.

Since this study employed a second immediate posttest to make sure that the observed changes during the first posttest were due to treatment or associated with various confounding variables, it may be trustworthy that this study would then

bring some insightful evidence that helps to resolve ongoing controversies over the effectiveness of a particular type of WCF. As the populations for this study were selected from learners with various L1 backgrounds, diverse learning environments would be a valuable addition to the generalizability of the findings of the present study. In this study, learner variables (e.g., working memory, learners' preference for WCF) and contextual and methodological variables were not included; thus, future studies are needed to investigate giving insight into the overlooked aspects of the area, and the studies might benefit more from exploring their mediating role [63].

In terms of the implication of the current study, especially in the field of education, it is better to start with the importance of writing skill in schools. Therefore, the current study's role in the field of education commences from the role of writing in education. Writing is a skill that plays a crucial role in educational settings as a means of communication between teachers and students next to oral communication. It is also evident that writing is a versatile skill to learn new ideas, persuade others, record information, create imaginary worlds, express feelings, entertain others, heal psychological wounds, record experiences, and explore the meaning of events and situations [64]. In school, students write about the materials read or presented in class to enhance their understanding [65, 66]. Writing as a mode of learning is used as an alternative method to learn and develop current information in school curriculums [67], and constructs new information on previous information [68], ensures that scientific knowledge is permanent [69], and makes it easier to understand concepts that are generally difficult to grasp [70]. In addition, it is a skill that encourages and promotes the cognitive learning strategy [65]; writing is a process that requires a mental effort at the heart of learning [71]. Writing in this process also assures the application of cognitive processes that can facilitate learning either implicitly or overtly [72]. Thus, it is essential to employ several modes of learning to write since writing is a cyclical process made up of various subprocesses, such as planning, outlining, and organizing [73], so it is necessary to use different ways of thinking [74]; these play a role in enhancing learners' thinking ability. Therefore, these situations put writing at the heart of learning and for what has already been learned, what is being experienced, and what is being planned for the future [75]. In other words, writing is the learning process when we reflect on what we already know or learn and review our experiences [76].

Although writing is a talent with immense value in our lives, it is also a sophisticated language skill that calls for specific cognitive capabilities of the writers. Therefore, making students impactful writers is undoubtedly crucial, although it is not such a task that can be completed overnight or with minimal effort; instead, it requires a set of steps and procedures to be carried out. To make this happen, the researchers in this study designed several WCF types and made them available to learners to assist them in becoming good writers who can use this skill in a variety of contexts and situations in their lives. Thus, this study ultimately aimed to determine the best way to provide WCF to help learners enhance their writing ability. Since WCF is one of the components essential in assisting students in improving their writing abilities, its importance is also

recognized in numerous SLA and language education theories. For instance, both behaviorist and cognitive theories of L2 learning consider feedback as a factor in language acquisition. Similar to how, feedback is seen as a way to encourage learners' motivation in communicative and structural approaches to language teaching.

Therefore, from the findings of this study, it is possible to state that this study has the following implications. First, providing WCF in all EFL classes in the teaching and learning process can significantly affect students' L2 writing improvement, which also has considerable influence on other language learning skills, so this can positively influence learners' academic success. Second, the results could also produce several instructional implications for students, EFL lecturers, and syllabus and curriculum designers to establish a platform for the teachers to provide WCF, when to provide it, and where to provide it. Third, these results suggest that this study has significant implications for the field of education in the country at large. Hence, it might be noted that acquiring a second or a foreign language is not restricted to mastering its simple grammatical accuracy in writing. Still, it also has effects in an all-encompassing field of education since if learners have a strong command of writing skills and can write well, they can convey a concise message for the intended purpose. Thus, it can be concluded that improving students' writing abilities will raise the standard of education since the English language is a medium of instruction in Ethiopia, so without having a good command of writing, learners cannot convey their ideas clearly and effectively. As a result, creating a supportive learning environment to produce fruitful outcomes and empower students to be efficient and effective writers is undeniably essential.

Data Availability

The data supporting this study's findings are available from the corresponding author upon reasonable request.

Ethical Approval

The studies involving human participants were reviewed and approved by the Ethical Clearance Committee Board of Debre Tabor University (reference no. SSH/06/2014). Written informed consent to participate in this study was provided by the participants.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

Authors' Contributions

The corresponding author, Baymot Mekuriaw Wondim (BMW) conceived the idea, collected data, analyzed and prepared the manuscript. The co-authors Kassie Shifere Bishaw (KSB) and Yinager Teklesellassie Zeleke (YTZ) had contributed for the inception of the idea, and guided the preparation of the manuscript. All authors read and approved the final manuscript.

Acknowledgments

We would like to thank all those who supported us in preparing this article.

References

- [1] P. Deane, "The challenges of writing in school: conceptualizing writing development within a sociocognitive framework," *Educational Psychologist*, vol. 53, no. 4, pp. 280–300, 2018.
- [2] M. Fareed, A. Ashraf, and M. Bilal, "ESL learners' writing skills: problems, factors and suggestions," *Journal of Education & Social Sciences*, vol. 4, no. 2, pp. 81–92, 2016.
- [3] J. Cole and J. Feng, "Effective strategies for improving writing skills of elementary English language learners," ERIC, p. 25, Online Submission, 2015.
- [4] J. Myles, "Second language writing and research: the writing process and error analysis in student texts," *Teaching English as a Second or Foreign Language*, vol. 6, no. 2, pp. 1–20, 2002.
- [5] K. M. Mitchell, "Constructing writing practices in nursing," *Journal of Nursing Education*, vol. 57, no. 7, pp. 399–407, 2018.
- [6] J. Williams, "The potential role(s) of writing in second language development," *Journal of Second Language Writing*, vol. 21, no. 4, pp. 321–331, 2012.
- [7] J. C. Richards, "Second language teacher education today," *RELC Journal*, vol. 39, no. 2, pp. 158–177, 2008.
- [8] G. M. Negari, "A study on strategy instruction EFL learners' writing skill," *International Journal of English Linguistics*, vol. 1, no. 2, pp. 299–307, 2011.
- [9] J. Bitchener and D. R. Ferris, *Written Corrective Feedback in Second Language Acquisition and Writing*, Routledge, 2012.
- [10] J. Bitchener and U. Knoch, "The value of written corrective feedback for migrant and international students," *Language Teaching Research*, vol. 12, no. 3, pp. 409–431, 2008.
- [11] R. Ellis, S. Loewen, and R. Erlam, "Implicit and explicit corrective feedback and the acquisition of L2 grammar," *Studies in Second Language Acquisition*, vol. 28, no. 2, pp. 339–368, 2006.
- [12] D. Ferris, "The case for grammar correction in L2 writing classes: a response to Truscott (1996)," *Journal of Second Language Writing*, vol. 8, no. 1, pp. 1–11, 1999.
- [13] D. Ferris, "Does error feedback help, student writers? New evidence on the short- and long-term effects of written error correction," in *Feedback in Second Language Writing: Contexts and Issues*, K. Hyland and F. Hyland, Eds., pp. 81–104, Cambridge University Press, Cambridge, 2006.
- [14] J. Bitchener, "A reflection on 'the language learning potential' of written CF," *Journal of Second Language Writing*, vol. 21, no. 4, pp. 348–363, 2012.
- [15] D. R. Ferris, H. Liu, A. Sinha, and M. Senna, "Written corrective feedback for individual L2 writers," *Journal of Second Language Writing*, vol. 22, no. 3, pp. 307–329, 2013.
- [16] D. R. Ferris, "Second language writing research and written corrective feedback in SLA: intersections and practical applications," *Studies in Second Language Acquisition*, vol. 32, no. 2, pp. 181–201, 2010.
- [17] L. Yang and S. Gao, "Beliefs and practices of Chinese university teachers in EFL writing instruction," *Language, Culture and Curriculum*, vol. 26, no. 2, pp. 128–145, 2013.
- [18] J. Truscott, "The case against grammar correction in L2 writing classes," *Language Learning*, vol. 46, no. 2, pp. 327–369, 1996.
- [19] J. Bitchener and U. Knoch, "The contribution of written corrective feedback to language development: a ten month investigation," *Applied Linguistics*, vol. 31, no. 2, pp. 193–214, 2010.

- [20] J. Chandler, "The efficacy of various kinds of error feedback for improvement in the accuracy and fluency of L2 student writing," *Journal of Second Language Writing*, vol. 12, no. 3, pp. 267–296, 2003.
- [21] C. G. Van Beuningen, N. H. De Jong, and F. Kuiken, "Evidence on the effectiveness of comprehensive error correction in second language writing," *Language Learning*, vol. 62, no. 1, pp. 1–41, 2012.
- [22] A. Westmacott, "Direct vs. indirect written corrective feedback: student perceptions," *Íkala, Revista de Lenguaje y Cultura*, vol. 22, no. 1, pp. 17–40, 2017.
- [23] J. Bitchener and U. Knoch, "Raising the linguistic accuracy level of advanced L2 writers with written corrective feedback," *Journal of Second Language Writing*, vol. 19, no. 4, pp. 207–217, 2010.
- [24] S. Benson and R. DeKeyser, "Effects of written corrective feedback and language aptitude on verb tense accuracy," *Language Teaching Research*, vol. 23, no. 6, pp. 702–726, 2019.
- [25] M. Hosseiny, "The role of direct and indirect written corrective feedback in improving Iranian EFL students' writing skill," *Procedia - Social and Behavioral Sciences*, vol. 98, pp. 668–674, 2014.
- [26] N. Shintani, R. Ellis, and W. Suzuki, "Effects of written feedback and revision on learners' accuracy in using two English grammatical structures," *Language Learning*, vol. 64, no. 1, pp. 103–131, 2014.
- [27] D. R. Ferris, "The 'grammar correction' debate in L2 writing: where are we, and where do we go from here? (and what do we do in the meantime...?)," *Journal of Second Language Writing*, vol. 13, no. 1, pp. 49–62, 2004.
- [28] D. Guénette, "Is feedback pedagogically correct?: Research design issues in studies of feedback on writing," *Journal of Second Language Writing*, vol. 16, no. 1, pp. 40–53, 2007.
- [29] J. Bitchener and N. Storch, *Written Corrective Feedback for L2 Development*, Multilingual Matters, 2016.
- [30] E. Y. Kang and Z. Han, "The efficacy of written corrective feedback in improving L2 written accuracy: a meta-analysis," *The Modern Language Journal*, vol. 99, no. 1, pp. 1–18, 2015.
- [31] W. Suzuki, H. Nassaji, and K. Sato, "The effects of feedback explicitness and type of target structure on accuracy in revision and new pieces of writing," *System*, vol. 81, pp. 135–145, 2019.
- [32] Y. Nurie, "Graduate students' perceived needs and preferences for supervisor written feedback for thesis writing," *Journal of Language and Education*, vol. 6, no. 4, pp. 153–170, 2020.
- [33] M. A. Semie, "Beliefs and practices of EFL instructors and students' preferences regarding written corrective feedback: the case of English as foreign language students in Debre Markos University, Ethiopia," Unpublished doctoral dissertation, 2020.
- [34] M. M. Marjoka, "The effects of teacher versus guided self-correction on the grammatical accuracy of student-written text: university EFL students in focus," *International Journal of Current Research and Academic Review*, vol. 8, no. 7, pp. 18–27, 2020.
- [35] J. Bitchener, "Evidence in support of written corrective feedback," *Journal of Second Language Writing*, vol. 17, no. 2, pp. 102–118, 2008.
- [36] N. Storch, "Critical feedback on written corrective feedback research," *International Journal of English Studies*, vol. 10, no. 2, pp. 29–46, 2010.
- [37] I. Lee, "Revisiting teacher feedback in EFL writing from socio-cultural perspectives," *TESOL Quarterly*, vol. 48, no. 1, pp. 201–213, 2014.
- [38] S. D. Krashen, *Principles and Practice in Second Language Acquisition*, Pergamon Press, Oxford, 1982.
- [39] C. G. Kepner, "An experiment in the relationship of types of written feedback to the development of second-language writing skills," *The Modern Language Journal*, vol. 75, no. 3, pp. 305–313, 1991.
- [40] K. Sheppard, "Two feedback types: do they make a difference?" *RELC Journal*, vol. 23, no. 1, pp. 103–110, 1992.
- [41] J. Truscott, "Evidence and conjecture on the effects of correction: a response to Chandler," *Journal of Second Language Writing*, vol. 13, no. 4, pp. 337–343, 2004.
- [42] J. Truscott, "The effect of error correction on learners' ability to write accurately," *Journal of Second Language Writing*, vol. 16, no. 4, pp. 255–272, 2007.
- [43] J. Bitchener and U. Knoch, "The relative effectiveness of different types of direct written corrective feedback," *System*, vol. 37, no. 2, pp. 322–329, 2009.
- [44] R. Ellis, Y. Sheen, M. Murakami, and H. Takashima, "The effects of focused and unfocused written corrective feedback in an English as a foreign language context," *System*, vol. 36, no. 3, pp. 353–371, 2008.
- [45] S. Liu and A. Jhaveri, "Improving grammatical accuracy through written corrective feedback (WCF)," in *University of Hong Kong HKCPD Symposium*, 2019.
- [46] Y. Sheen, "The effect of focused written corrective feedback and language aptitude on ESL learners' acquisition of articles," *TESOL Quarterly*, vol. 41, no. 2, pp. 255–283, 2007.
- [47] Y. Sheen, D. Wright, and A. Moldawa, "Differential effects of focused and unfocused written correction on the accurate use of grammatical forms by adult ESL learners," *System*, vol. 37, no. 4, pp. 556–569, 2009.
- [48] Y.-F. Yang, "Students' reflection on online self-correction and peer review to improve writing," *Computers & Education*, vol. 55, no. 3, pp. 1202–1210, 2010.
- [49] D. Ferris and B. Roberts, "Error feedback in the L2 writing classes: how explicit does it need to be?" *Journal of Second Language Writing*, vol. 10, no. 3, pp. 161–184, 2001.
- [50] K. Hyland and F. Hyland, *Feedback in Second Language Writing: Contexts and Issues*, Cambridge University Press, Cambridge, 2006.
- [51] C. Van Beuningen, "Corrective feedback in L2 writing: theoretical perspectives, empirical insights, and future directions," *International Journal of English Studies*, vol. 10, no. 2, pp. 1–27, 2010.
- [52] D. R. Ferris, "Student reactions to teacher response in multiple-draft composition classrooms," *TESOL Quarterly*, vol. 29, no. 1, pp. 33–53, 1995.
- [53] D. R. Ferris, "The influence of teacher commentary on student revision," *TESOL Quarterly*, vol. 31, no. 2, pp. 315–339, 1997.
- [54] J. F. Lalande, "Reducing composition errors: an experiment," *The Modern Language Journal*, vol. 66, no. 2, pp. 140–149, 1982.
- [55] T. Ashwell, "Patterns of teacher response to student writing in a multiple-draft composition classroom: is content feedback followed by form feedback the best method?" *Journal of Second Language Writing*, vol. 9, no. 3, pp. 227–257, 2000.
- [56] R. Ellis, "Corrective feedback and teacher development," *L2 Journal*, vol. 1, no. 1, pp. 3–18, 2009.
- [57] I. Lee, "Student reactions to teacher feedback in two Hong Kong secondary classrooms," *Journal of Second Language Writing*, vol. 17, no. 3, pp. 144–164, 2008.
- [58] K. A. Hallgren, "Computing inter-rater reliability for observational data: an overview and tutorial," *Tutorials in Quantitative Methods for Psychology*, vol. 8, no. 1, pp. 23–34, 2012.

- [59] J. Cohen, *Statistical Power Analysis for the Behavioral Sciences*, Lawrence Erlbaum Associates, Hillsdale, NJ, 2nd edition, 1988.
- [60] C. Polio, "The relevance of second language acquisition theory to the written error correction debate," *Journal of Second Language Writing*, vol. 21, no. 4, pp. 375–389, 2012.
- [61] D. R. Ferris, *Treatment of Error in Second Language Student Writing, Second Edition*, The University of Michigan Press, 2002.
- [62] N. W. Evans, K. J. Hartshorn, R. M. McCollum, and M. Wolfersberger, "Contextualizing corrective feedback in second language writing pedagogy," *Language Teaching Research*, vol. 14, no. 4, pp. 445–463, 2010.
- [63] S. Li and S. Roshan, "The associations between working memory and the effects of four different types of written corrective feedback," *Journal of Second Language Writing*, vol. 45, pp. 1–15, 2019.
- [64] S. Graham, "A revised writer(s)-within-community model of writing," *Educational Psychologist*, vol. 53, no. 4, pp. 258–279, 2018.
- [65] R. L. Bangert-Drowns, M. M. Hurley, and B. Wilkinson, "The effects of school-based writing-to-learn interventions on academic achievement: a meta-analysis," *Review of Educational Research*, vol. 74, no. 1, pp. 29–58, 2004.
- [66] S. Graham and M. Herbert, "Writing to read: a meta-analysis of the impact of writing and writing instruction on reading," *Harvard Educational Review*, vol. 81, no. 4, pp. 710–744, 2011.
- [67] C. Bazerman, J. Little, L. Bethel, T. Chavkin, D. Fouquette, and J. Garufis, *Reference Guides to Writing Across the Curriculum*, Parlor Press/The WAC Clearinghouse, West Lafayette, 2005.
- [68] A. Putti, "High school students' attitudes and beliefs on using the science writing heuristic in an advanced placement chemistry class," *Journal of Chemical Education*, vol. 88, no. 4, pp. 516–521, 2011.
- [69] L. P. Rivard and S. B. Straw, "The effect of talk and writing on learning science: an exploratory study," *Science Education*, vol. 84, no. 5, pp. 566–593, 2000.
- [70] F. Alharbi, "Writing for learning to improve students' comprehension at the college level," *English Language Teaching*, vol. 8, no. 5, pp. 222–234, 2015.
- [71] P. Boscolo and L. Mason, "Writing to learn, writing to transfer," in *Writing as a Learning Tool*, P. Tynjälä, L. Mason, and K. Lonka, Eds., vol. 7 of *Studies in Writing*, pp. 83–104, Springer, Dordrecht, 2001.
- [72] S. Graham, S. A. Kiuahara, and M. MacKay, "The effects of writing on learning in science, social studies, and mathematics: a meta-analysis," *Review of Educational Research*, vol. 90, no. 2, pp. 179–226, 2020.
- [73] A. N. Applebee, "Writing and reasoning," *Review of Educational Research*, vol. 54, no. 4, pp. 577–596, 1984.
- [74] L. M. Hohenshell and B. Hand, "Writing-to-learn strategies in secondary school cell biology: a mixed method study," *International Journal of Science Education*, vol. 28, no. 2-3, pp. 261–289, 2006.
- [75] J. Emig, "Writing as a mode of learning," *College Composition and Communication*, vol. 28, no. 2, pp. 122–128, 1977.
- [76] S. Graham, "Research on writing development, practice, instruction, and assessment," *Reading and Writing*, vol. 21, pp. 1–2, 2008.