



Investigating the Impact of Oral and Written Corrective Feedback on the Utilization of Discourse Markers in Iranian EFL Learners' Academic Writing

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ABSTRACT

Discourse markers are linguistic elements that organize written or spoken communication, guiding the flow of ideas. In academic writing, their effective use enhances clarity and coherence, making it a crucial skill for learners. Corrective feedback, both oral and written, is a key strategy for improving writing by addressing errors and guiding learners toward proficiency. This study investigates the impact of oral and written corrective feedback on the use of discourse markers in academic writing among Iranian learners of English as a foreign language (EFL). Seventy learners, aged 19-27, enrolled at Pardis Language Institute in Hamedan, Iran, were initially selected through convenience sampling. To ensure proficiency homogeneity, the Oxford Placement Test (OPT) was administered, and 50 upper-intermediate learners were chosen. These participants, all Persian speakers, were randomly assigned to two experimental groups of 25, with balanced gender representation. A pretest involving three academic writing tasks—a persuasive essay, a comparison essay, and a narrative task—was used to assess discourse marker usage. Over eight sessions, one group received oral corrective feedback, and the other written corrective feedback. A posttest, similar to the pretest, was conducted to evaluate progress. Data were analyzed using a scoring rubric adapted from Hamp-Lyons (1992), with inter-rater reliability calculated to ensure consistency. Results revealed that both forms of feedback significantly enhanced the use of discourse markers, with written feedback yielding more pronounced improvements. These findings highlight the essential role of corrective feedback in advancing EFL learners' writing proficiency, offering practical insights for educators and material developers.

KEYWORDS: Oral corrective feedback; Written corrective feedback; Discourse markers; Academic writing; Iranian EFL learners; Language proficiency

1. Introduction

In the field of English as a Foreign Language (EFL) education, writing skills have often been overshadowed by the emphasis on developing reading, listening, and speaking abilities (Brown, 2018; Johnson, 2020; Smith, 2019). This imbalance has led to a marginalization of writing instruction in many EFL contexts, leaving students with insufficient support for developing their writing proficiency. Writing, however, plays a pivotal role in academic success, professional development, and effective communication, as it is essential for conveying complex ideas clearly and persuasively (Smith, 2020). Proficient writing is closely

linked to critical thinking and the ability to contribute to knowledge dissemination, making it an indispensable skill for EFL learners, particularly in academic settings (Johnson, 2019).

Nonetheless, writing is increasingly regarded as a basic and essential skill; it plays a crucial role in academic performance, career development, and communication generally (Smith, 2020; Johnson, 2024). For EFL learners, the ability to write not just constitutes an ability in a foreign language; it is an important gate to further education and participating in a global academic community. It is also important in encouraging critical thinking and analytical reasoning because it requires learners to synthesize complex ideas, develop logical arguments, and discuss with their respective academic fields and community (Loyens, 2023; Raj, 2022). This is especially relevant for Iranian EFL students who want to engage in graduate studies or continue disseminating research in a global context, as being able to explain complex ideas in a cohesive, coherent, and precise manner is not negotiable (Hanesová & Theodoulides, 2022; Robinson-Pant & Singal, 2020). Despite its importance, writing in English is often claimed to be the most difficult skill for non-native speakers, particularly in regard to the necessary rhetorical and organizational features that satisfy the demanding expectations of academic discourse in Western contexts. This suggests the need for targeted pedagogical interventions intended to develop academic writing skills in these contexts.

One of the fundamental components of academic writing is the use of discourse markers, which are linguistic tools that help organize texts, improve coherence, and guide readers through complex arguments (Schiffrin, 1987). Effective use of discourse markers is critical for producing well-structured academic writing, as they signal relationships between ideas and contribute to the clarity of scholarly work (Hyland, 2005). Chen and Lee (2018) emphasize the need for explicit instruction in the use of discourse markers to help students enhance the organization and logical flow of their academic writing. For Iranian EFL learners, mastering discourse markers is essential for effectively conveying complex ideas and engaging with readers in academic contexts.

Another crucial element in writing instruction is corrective feedback, which aims to improve both the accuracy and fluency of learners' writing (Ellis, 2009). Corrective feedback can be delivered orally or in written form, each offering distinct advantages and challenges (Lyster & Ranta, 2013). Research has demonstrated the effectiveness of corrective feedback in fostering language development by drawing attention to errors and raising learners' language awareness (Lyster & Ranta, 2013). However, the impact of corrective feedback on specific aspects of writing, such as the use of discourse markers, remains an area requiring further investigation.

In the context of Iranian EFL learners, where academic writing skills are a priority, exploring the effects of oral and written corrective feedback on the use of discourse markers holds significant pedagogical value (Bitchener & Knoch, 2008). Despite the growing body of research on corrective feedback, few studies have examined its impact on discourse markers in academic writing, particularly in the Iranian EFL context. This study, therefore, aims to fill this gap by investigating the comparative effects of oral and written corrective feedback on the use of discourse markers in academic writing among Iranian EFL learners.

2. Literature review

2.1. Theoretical background

2.1.1. Corrective feedback

Corrective feedback is a key component of second language acquisition (SLA), aimed at helping learners improve their linguistic accuracy and proficiency by addressing their language errors (Ellis, 2009; Lyster & Ranta, 1997). It can take various forms, such as explicit correction, recasts, prompts, and metalinguistic feedback, each influencing learners' development differently. The value of corrective feedback lies in its ability to draw learners' attention to their mistakes, promote self-correction, and foster improvement in language use (Ellis, 2009). Broadly, corrective feedback is divided into two main categories: written corrective feedback (WCF) and oral corrective feedback (OCF).

WCF provides learners with written comments on their work, encouraging them to reflect on errors and improve accuracy in their written language. Studies like Ferris (2006) and Bitchener and Ferris (2012) highlight its effectiveness in enhancing grammatical precision, especially when feedback is specific and focused. Truscott (2007) supports this by arguing that direct correction is more beneficial than indirect feedback, as it offers clearer guidance for improvement. WCF aligns with Vygotsky's (1978) sociocultural theory, which emphasizes the role of feedback in scaffolding learners' cognitive growth.

In contrast, OCF takes place in real-time during spoken interactions, facilitating immediate correction and language improvement (Lyster & Saito, 2010). It includes strategies like explicit correction, clarification requests, and repetition, which provide learners with opportunities to self-correct and reinforce correct language use (Russell & Spada, 2006). Mackey and Goo (2007) stress the importance of timely OCF during communicative tasks, while Long (1996) highlights the role of negotiating meaning in enhancing language understanding and fluency. Through these interactive conversations, OCF offers immediate guidance, promoting active learning and fluency (Swain, 1985).

2.1.2. Discourse markers

Discourse markers, also referred to as discourse connectives or particles, play a crucial role in both spoken and written communication by signaling relationships between different parts of a text or conversation. Schiffrin (1987) defines discourse markers as linguistic elements that help organize discourse by indicating shifts in topics, speaker stance, or the relationship between ideas. These markers can enhance the overall coherence of a text or conversation, signaling emphasis, contrast, or transitions. Fraser (1999) further elaborates that discourse markers serve pragmatic functions, organizing information flow and facilitating smooth communication by guiding listeners or readers through the structure of the discourse.

Discourse markers are characterized by their multifunctionality and flexibility in usage. As Halliday and Hasan (1976) argue, they act as cohesive devices that link ideas, contributing to textual coherence. Additionally, Blakemore (2002) emphasizes that discourse markers convey speaker attitudes and intentions, playing a pragmatic role in effective communication. According to Schourup (1999), discourse markers also signal discourse structure by introducing new topics, summarizing information, or marking transitions between ideas, ensuring the logical flow of thoughts.

In the context of writing, discourse markers are particularly significant as they contribute to the organization, coherence, and overall readability of texts. Hyland (2005) highlights how discourse markers such as "however," "therefore," and "in conclusion" help guide readers through complex arguments, clarifying the logical relationships between ideas. The strategic use of discourse markers not only enhances the clarity of written texts but also makes the narrative more engaging and easier to follow for readers (Swales, 1990). Bardovi-Harlig (2001) emphasizes that learners' appropriate use of discourse markers is crucial for improving communicative competence in both written and spoken discourse, enabling them to engage in more meaningful and coherent communication.

2.1.3. Theoretical framework

This study is based upon two primary theoretical viewpoints. The first view is Vygotsky's Sociocultural Theory (SCT) (Vygotsky, 1978), which offers an auxiliary lens for looking at how written corrective feedback (WCF) functions. As part of SCT, WCF is described as an external mediating tool (or scaffolding) that assists learners in progressing from their current level of development to a higher level of development, situated in the learner's Zone of Proximal Development (ZPD). Given the fact that WCF is written, it is a tool that students can return to repeatedly, which affords them a deeper level of cognitive processing and reflection to work through one or more complex rhetorical features (e.g. discourse markers). The second theoretical lens that most appropriately explains the work of oral corrective feedback (OCF) is Long's Interaction Hypothesis (Long, 1996). The hypothesis posits that comprehensible input obtained through negotiated meaning and interactional adjustment supports the acquisition of a second language, including oral corrective feedback (OCF). OCF offers immediate feedback to learners, creating a moment of modified output, which allows them to immediately correct errors while also raising their metalinguistic awareness about their use of discourse markers.

2.1.4. Academic writing

Academic writing is a structured and formal genre designed to communicate complex ideas and arguments within scholarly discourse. Swales and Feak (2012) define it as a form of writing that adheres to specific conventions, such as organizing information cohesively, maintaining formality, and incorporating evidence to support claims. This type of writing is characterized by its analytical nature and clear, logical structure, aimed at conveying ideas effectively to readers within academic communities (Swales, 2004). Hyland (2004) also highlights that academic writing emphasizes the precise use of formal language to engage readers with clarity and depth.

A central aspect of academic writing is the construction of coherent arguments that engage with existing research. Flower and Hayes (1981) describe writing as a recursive process, involving cycles of planning, drafting, and revising to refine ideas and ensure clarity. Writers must synthesize information from various sources, critically evaluate perspectives, and develop well-supported arguments. This iterative nature allows for the continual enhancement of ideas, contributing to a more persuasive and coherent text (Flower & Hayes, 1980).

Swales and Feak (2012) emphasize the importance of rhetorical moves in academic writing. These moves are strategic language patterns used to introduce, develop, and conclude arguments effectively, guiding the reader through a logical progression of ideas. By employing these rhetorical strategies, writers can structure their work coherently and persuasively, ensuring that their arguments are easily followed by the academic audience.

Another key feature of academic writing is the establishment of voice and stance. According to Hyland (2002), successful academic writers must not only present evidence but also demonstrate authority and credibility through tone, style, and engagement with relevant literature. Writers must adopt an authoritative voice and position themselves within the scholarly conversation, thereby contributing to ongoing academic debates and advancing knowledge in their field (Hyland, 2005). By doing so, they establish their expertise and influence within the academic community.

2.2. Previous studies

Studies exploring the effectiveness of CF approaches have revealed mixed results for many years. Earlier studies were often in favor of oral feedback due to its timeliness (e.g. Lyster & Ranta, 1997). However, an increasing body of recent research indicates significant advantages in favor of written feedback (WCF), in particular for teaching and learning higher order linguistic and rhetorical features.

For example, contrasting the two approaches often leads to WCF groups retaining knowledge for longer periods of time. In a meta-analysis of WCF in the Iranian context, Withana (2025) reported that WCF provides the time and space for learners to cognitively engage and ultimately self-correct errors, while Srivastava and Payer (2021) noted similar findings when teaching complex grammatical structures. These findings are very important in that WCF provides students and learners an ability to further engage and internalize rules, versus only correcting errors (Truscott, 2007).

On the other hand, other recent studies have shown that OCF is more effective when considering first-time use and immediacy of communication. Pham et al. (2024) found that the immediate use of common connectors in students' first drafts, with the OCF being delivered in a non-intrusive way during revision, subsequently improved fluency and led to students attending more immediately to the form.

Nevertheless, the evidence base for DMs still represents a considerable gap. One study completed by Grabe and Zhang (2016) identified a strong relationship between DM use and academic writing quality, but few studies had investigated whether CF has some role in students' use of DMs. Leow (2022) is one of the rare studies that demonstrated that WCF explicitly targeted a specific DM could be highly effective in L2 students' appropriate use of conjunctive adverbs as an example, and it was highly focused. This research collectively provides justification for our study to directly compare the effectiveness of OCF and WCF specifically for DMs, especially as there are varying findings overall across the different target features.

Even though corrective feedback has been shown to be important, a significant gap remains in the literature. Most studies have primarily addressed the effects of CF regarding low-level linguistic features such as grammar and vocabulary (e.g., Van Beuningen et al., 2012; Truscott, 2007). Studies that specifically focus on the effects of OCF and WCF on higher-level rhetorical features such as the correct and appropriate use of Discourse Markers (DM)—which are essential for organizational coherence, argumentation, and establishing an academic voice (Wu & Li, 2019)—remain limited. This is especially true in the Iranian EFL context. Additionally, empirical research is lacking that has directly compared the effectiveness of the two types of feedback (oral versus written) for a more complex rhetorical feature such as DMs. Therefore, this study seeks to fill this important gap by providing empirical evidence regarding the effectiveness of oral CF and written CF on the use of DMs in the academic writing of Iranian EFL learners, which can be useful, context-specific evidence for curriculum design and teaching practice.

2.3. Research questions

In this study, the following questions were developed:

1. Does the use of oral corrective feedback have any statistically significant effect on Iranian EFL learners' use of discourse markers in academic writing?
2. Does the use of written corrective feedback have any statistically significant effect on Iranian EFL learners' use of discourse markers in academic writing?
3. Is there any statistically significant difference between the effects of using oral vs. written corrective feedback on Iranian EFL learners' use of discourse markers in academic writing?

2.4. Research hypotheses

With regard to the above-mentioned questions, the following null hypotheses were proposed:

H01: The use of oral corrective feedback does not have any statistically significant effect on Iranian EFL learners' use of discourse markers in academic writing.

H02: The use of written corrective feedback does not have any statistically significant effect on Iranian EFL learners' use of discourse markers in academic writing?

H03: There is not any statistically significant difference between the effect of using oral vs. written corrective feedback on Iranian EFL learners' use of discourse markers in academic writing.

3. Methodology

3.1. Participants

The participants for this study initially included 70 pre-intermediate male and female English learners from Pardis Language Institute in Hamedan, selected through convenience sampling. These learners had at least one year of experience in language

education. A short background questionnaire revealed that nearly all of the participants had been provided with corrective feedback in their previous English courses, mainly in the form of oral correction and reformulating their erroneous utterances. However, none of the participants reported having explicit or systematic instruction in corrective feedback prior to participation in this study. From this group, 50 participants were selected based on their scores on the Oxford Placement Test (OPT), ensuring homogeneity in proficiency levels, all of whom were classified as upper-intermediate. The participants, aged 19 to 27, were native Persian speakers. The 50 selected learners were then randomly divided into two equal experimental groups of 25 participants, with a balanced number of male and female learners. One group received oral corrective feedback, while the other group received written corrective feedback on their use of discourse markers in academic writing.

3.2. Instrumentation

3.2.1. Oxford Placement Test (OPT)

To ensure participants were at a similar proficiency level, the Oxford Placement Test (OPT) was administered. This test quickly assesses learners' knowledge of English grammar, vocabulary, and reading. Participants were given 60 minutes to complete two sections with a total of 60 multiple-choice and cloze test items. The first section contained 40 questions, while the second had 20. No penalty was applied for incorrect answers. The OPT is widely regarded for its validity and reliability in language proficiency assessment, making it a trusted tool in various educational contexts (Geranpayeh, 2003; Kunnan & Grabowski, 2019; Weir, 2005).

3.2.2. Writing pretest and posttest

The writing pretest and posttest, designed by the researcher, were used to evaluate the use of discourse markers in academic writing through three tasks: argumentative, compare-and-contrast, and narrative writing. The pretest included tasks such as writing an argumentative essay, a comparison essay, and a narrative task, with time limits of 30, 40, and 25 minutes, respectively. After eight instructional sessions, the posttest featured similar tasks, with extended time limits of 35, 45, and 30 minutes. Both tests assessed participants' use of discourse markers, focusing on coherence, cohesion, and overall organization.

To ensure consistent and objective assessment, a scoring rubric adapted from Hamp-Lyons (1992) was used, evaluating criteria such as coherence, cohesion, and the accurate use of discourse markers. Two proficient raters, unaware of the study's objectives and the participants' group allocation, independently evaluated 25 essays in a pilot study using the above-mentioned rubric. Then, in order to find whether there was agreement between the two raters the inter-rater reliability was determined by computing the inter-rater reliability coefficient (IRR) as shown in Table 1 below.

Table 1.

The Inter-Rater Reliability for the Two Raters in a Pilot Study

Title	N of Raters	N of Participants	R
Writing	2	25	.845

Table 1 above shows the result of the inter-rater reliability between the two raters and 25 participants in a pilot study. As can be seen, there was a perfect agreement, based on Landis and Koch's (1977) classification, between the two raters of the research, $R = .84$.

In a bid to establish the content validity of the researcher-designed writing tasks, both the pretest and posttest measures were presented to two Subject Matter Experts (SMEs)—PhD level holders in TEFL with experience instruction academic writing, for a review of the writing tasks to examine whether the prompts (persuasive, comparison and narrative essays) demanded appropriate discourse markers for the academic genre and that was suitable for the proficiency level of the learners. Suggestions were incorporated after feedback was examined from the SMEs to create the final version of the pretest and posttest task instruments.

3.3. Materials

The materials for teaching academic writing, with a focus on discourse markers, were carefully selected to offer targeted instruction and practice. Teacher-made worksheets, containing exercises and examples, were designed to help participants identify and use discourse markers in persuasive, comparative, and narrative writing. Sample texts demonstrating effective discourse marker usage in academic writing were also provided for analysis and practice. Additionally, books such as Paragraph Development (Blanton & Martin, 2016) and Composing with Confidence: Writing Effective Paragraphs and Essays (Meyers, 2018) offered theoretical insights and sample paragraphs for further practice. Interactive activities like group discussions and peer review sessions further engaged participants in applying discourse markers through collaboration and feedback.

3.4. Procedure

To ensure reliable research findings, a step-by-step procedure was followed. Initially, 70 learners from Pardis Language Institute in Hamedan were selected based on convenience sampling. All participants had a similar educational background with at least one year of English learning experience. After the administration of the Oxford Placement Test (OPT), 50 upper-intermediate learners, both male and female, were identified as the final sample. The selected participants were then randomly divided into two equal experimental groups of 25 learners each, maintaining a gender balance with 13 males and 12 females in each group.

The first group received written corrective feedback on their academic writing samples, while the second group was given oral corrective feedback. The written feedback included direct corrections and short comments on sentence structure and discourse marker, which was delivered immediately after each writing task. In terms of oral feedback, this was also immediate and included verbal correction while the task was completed, for example, through sentence reformulation or repetition tasks to reinforce their correct use of discourse markers. Each session of feedback lasted about 90 minutes and was delivered consistently over the eight sessions.

This feedback focused on the learners’ use of discourse markers. The participants' progress was measured through writing tasks designed to assess their ability to effectively incorporate discourse markers in different genres of academic writing.

The complete scope of the research study, which included a pretest, the intervention period, and a posttest, was completed over eight weeks during the Fall semester of the year 2024. The intervention consisted of eight feedback sessions, each 90 minutes in length, dedicated to each experimental group (1 session per week).

4. Results

4.1. Answering the first research question

The first question of this study investigated whether the use of oral corrective feedback could have any statistically significant effect on Iranian EFL learners' use of discourse markers in academic writing. Since the normality of data using Kolmogorov-Smirnov test was not confirmed, the nonparametric Wilcoxon-Singed Rank test was used for the mean comparison. Table 2 shows the descriptive statistics.

Table 2.
The Descriptive Statistics for the Pretest/Posttest of the Discourse Markers

	N	Minimum	Maximum	Mean	Std. Deviation
Oral_Pre	25	2.00	3.50	2.66	.45
Oral_Post	25	2.50	4.00	3.36	.44
Valid N (listwise)	25				

The above table shows that the mean of the posttest is more than the mean score of the pretest (3.36> 2.66). The next table shows the result of the Wilcoxon-Singed Rank test.

Table 3.
The Result of the Wilcoxon-Singed Rank Test for the Discourse Markers Scores

	Oral_Post - Oral_Pre
Z	-4.417 ^b
Asymp. Sig. (2-tailed)	.000

The Wilcoxon signed-rank test showed that there was a statistically significant difference between the pretest and posttest of the discourse markers (Z = -4.41, p < .05) with a large effect size, r = 0.88, suggesting a strong effect. Therefore, the first null hypothesis was rejected, meaning that the use of oral corrective feedback had a statistically significant effect on Iranian EFL learners' use of discourse markers in academic writing.

4.2. Answering the second research question

The second question of this study investigated whether the use of written corrective feedback could have any statistically significant effect on Iranian EFL learners' use of discourse markers in academic writing. Like the previous question, because the normality of data distribution was not confirmed, the nonparametric Wilcoxon-Singed Rank test was used for the mean comparison. Table 4 shows the descriptive statistics.

Table 4.*The Descriptive Statistics for the Pretest/Posttest of the Discourse Markers*

	N	Minimum	Maximum	Mean	Std. Deviation
Written_Pre	25	2.00	3.50	2.70	.45
Written_Post	25	3.00	4.00	3.60	.35
Valid N (listwise)	25				

The above table shows that the mean of the posttest is more than the mean score of the pretest ($3.60 > 2.70$). The next table shows the result of the Wilcoxon-Signed Rank test.

Table 5.*Result of the Wilcoxon-Signed Rank Test for the Discourse Markers of the Written Group*

	Written_Post - Written_Pre
Z	-4.484 ^b
Asymp. Sig. (2-tailed)	.000

The Wilcoxon signed-rank test showed that there was a statistically significant difference between the pretest and posttest of the reading scores ($Z = -4.48$, $p < .05$) with a large effect size, $r = 0.89$, indicating a strong effect. Therefore, the second null hypothesis was rejected, meaning that the use of written corrective feedback had a statistically significant effect on Iranian EFL learners' use of discourse markers in academic writing.

4.3. Answering the third research question

The third research question of this study investigated whether there was any statistically significant difference between the effects of oral vs. written corrective feedback on Iranian EFL learners' use of discourse markers in academic writing.

Since the design of the study was quasi-experimental with pretest and posttest, the pretest scores of the participants were taken as the covariate, and naturally analysis of covariance (ANCOVA) should be used. However, before running ANCOVA, certain assumptions should be checked. The result of Kolmogorov-Smirnov test of normality showed that the data are not normally distributed ($p < .05$). Therefore, ANCOVA cannot be used, and the gain score comparison should be used instead. The gain score comparison, which is the difference between the posttest and the pretest, was taken into account. The descriptive statistics of the gain score of the two groups is shown below.

Table 6.*The Descriptive Statistics for the Gain Scores of the Oral and Written Groups*

	N	Minimum	Maximum	Mean	Std. Deviation
Gain Oral	25	.00	1.50	.70	.32
Gain Written	25	.50	1.50	.90	.32
Valid N (listwise)	25				

The mean and standard deviation of the oral and the written groups are .70, .32 and .90, .32, respectively. The appropriate test for the mean comparison would be the Mann-Whitney U test. The result of the inferential test is shown below.

Table 7.*The Result of the Mann-Whitney U test for the Comparison of the Discourse Markers of the Oral and Written Groups*

	Gain Scores
Mann-Whitney U	214.50
Z	-2.10
Asymp. Sig. (2-tailed)	.035

Based on Table 7 above, there was a significant difference between the mean scores of the two groups, $U = 214.50$, $p < .05$, with an effect size of $r = 0.30$, indicating a small to medium effect. Therefore, the researcher safely rejects the null hypothesis,

meaning that there was a statistically significant difference between the effects of using oral vs. written corrective feedback on Iranian EFL learners' use of discourse markers in academic writing. The written group proved to be better than the oral one.

5. Discussion

This study aimed to examine the effects of oral and written corrective feedback on Iranian EFL learners' use of discourse markers in academic writing, addressing three research questions.

The first research question explored whether oral corrective feedback could significantly impact discourse marker usage. Results showed a statistically significant improvement following oral feedback, indicating its effectiveness in helping learners incorporate discourse markers correctly. This supports the idea that interactive, immediate verbal corrections enable better understanding and retention, as learners can ask clarifying questions (Lyster & Ranta, 1997; Ellis, 2009). Similar studies, such as Lyster and Ranta (1997) and Ellis (2009), highlight the value of oral feedback in promoting linguistic accuracy. However, Sheen (2006) argued that oral feedback's transient nature might reduce retention over time. Despite these opposing views, the present findings affirm the positive role of oral feedback in improving learners' use of discourse markers.

The second research question examined whether written corrective feedback could similarly enhance discourse marker usage. The findings indicated significant improvements, suggesting that written feedback allows learners to reflect at their own pace, leading to better retention and accuracy in discourse marker use (Bitchener & Knoch, 2010; Ferris, 2006). Written feedback's lasting nature provides a tangible record of corrections, making it an effective method for academic writing improvement. Previous studies, such as Bitchener and Knoch (2010) and Ferris (2006), have similarly emphasized the long-term benefits of written feedback. While some research, including Ferris and Roberts (2001), has suggested that the effectiveness of feedback may vary depending on learner proficiency and context, the current study supports written feedback's efficacy in fostering discourse marker accuracy.

The third research question compared the effectiveness of oral and written feedback. Results revealed that written feedback was significantly more effective than oral feedback in enhancing discourse marker use. The permanence and detailed nature of written feedback likely facilitated deeper engagement and better retention of corrections (Truscott, 1996; Bitchener, 2008). These findings align with research by Truscott (1996) and Bitchener (2008), who emphasized the advantages of written feedback in promoting long-term accuracy. However, some studies, such as Ferris and Roberts (2001), found little difference between the two feedback types, suggesting that context and learner factors may influence outcomes. Nonetheless, the current study strongly supports written feedback's superiority in improving discourse marker usage.

In conclusion, both oral and written corrective feedback play important roles in enhancing learners' use of discourse markers in academic writing. However, written feedback appears more effective, particularly for fostering accuracy and retention, suggesting that it should be prioritized in language teaching contexts.

Apart from the statistics obtained in this study, the results can be accounted for and supported through various second language acquisition models and theories. In terms of Schmidt's (1990) Noticing Hypothesis, for example, corrective feedback is meant to draw students' attention to their errors and as a result, increases their awareness of linguistic forms. The large amount of change with discourse markers within both groups may be interpreted as learners increasing their noticing, when using, avoiding, or omitting discourse markers in their writing.

Seen through a lens of Sociocultural Theory (Vygotsky, 1978), whether oral or written, corrective feedback performs as scaffolding and mediates learners' cognitive development. In particular, written feedback serves as a permanent scaffold that affords learners to reflect on their learning at their own deliberation, which may enable internalization of the correct forms due to the ability to revisit the required information. Clearly, it was identified that written feedback was more effective than oral feedback in achieving the learning outcomes of this study.

The research also aligns with Swain's Output Hypothesis (1985), which advocates for language production and modifying output as a result of feedback. Participants in the group receiving corrective feedback were required to revise their writing, which supported their awareness of discourse markers of a given genre. Long's (1996) Interaction Hypothesis, on the other hand, speaks of the negotiation of meaning during language acquisition. While oral feedback promoted immediate negotiation and clarification, the transient nature of oral feedback did not lead to permanence of L2 discourse markers like written feedback does.

These results suggest actionable ramifications for Iranian EFL classrooms. Teachers may wish to employ structured written feedback to emphasize accuracy and long-term retention of knowledge, and to utilize oral feedback opportunities for in vivo interactive correction or immediate clarification. Cultural issues surrounding students' respect for teacher authority and concern for face value may also moderate how students respond to either type of feedback. It would seem then that using context-relevant varieties of feedback which consider learners' cultural backgrounds while balancing both written and oral methods, would best support effective and impactful learning for students engaged in EFL instruction in Iran.

In summation, these theories explain why written corrective feedback was important, along with the corrective feedback itself, in increasing the use of discourse markers. They also show how written feedback, engages cognitive processes and care for linguistic accuracy, especially in academic writing.

6. Conclusion and implications

6.1. Conclusion

To sum up, this study verified the effects of Oral Corrective Feedback (OCF) and Written Corrective Feedback (WCF) on Iranian EFL learners' use of discourse markers in academic writing. Importantly, the study found that WCF was more effective than OCF in terms of statistical and significance levels. This result aligns with Vygotsky's Sociocultural Theory, which suggested that more reflective and sustained feedback is important for the learning of higher-order rhetorical skills used for coherence.

6.2. Pedagogical implications

The results have several significant implications for EFL writing teaching, particularly in Iran. The findings suggest that WCF is more effective, therefore it is advisable for teachers to focus on written, targeted corrective feedback as the instructional focus is to improve complex rhetorical features (e.g., discourse markers). Similarly, we advocate that the instructor uses WCF, the feedback is provided using coded symbols or marginal indicators rather than correcting the learner's writing. This particular feedback encourages learners to self-correct and revise to target the problem. Furthermore, using WCF creates a permanent learner corpus for students to observe their patterns of error and progress over time, which encourages learner autonomy.

6.3. Limitations and future research avenues

Though this research made a meaningful contribution to the understanding of the effects of written corrective feedback (WCF) on students' use of discourse markers, it also has a number of methodological limitations, which in turn suggest several possible directions for future studies. First, the relatively short duration of the intervention (8 weeks) may not capture the long-term, sustained effects of CF on the retention of discourse markers and short-term use. The study also relied on convenience sampling and was limited to a single proficiency level (upper-intermediate). We recommend future research address these methodological weaknesses by the following:

1. Longitudinal studies to examine the long-term retention and sustained use of discourse markers after WCF.
2. Replicating this study with learners of differing proficiency levels (e.g., beginner vs. advanced) to examine whether the effectiveness of WCF is proficiency-dependent.
3. Analyzing the effects of CF applied to various functional categories of discourse markers (e.g., contrastive vs. additive) in order to provide more specific and useful pedagogical implications.

Moreover, the present study does face a few more key limitations. First, the sample size was relatively limited, and all participants were from one institution, which may limit the ability to generalize the findings across different institutions. Future studies could examine larger and more varied populations or use longitudinal designs to effectively assess the long-term impacts of oral feedback and written feedback.

7. References

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