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The Effect of the Explicit Instruction of Interactive Metadiscourse Markers on L2 Writing Performance

Hmoud Alotaibi

English Department, College of Sciences and Humanities, Shaqra University
Dawadmi, Saudi Arabia
halrwais@su.edu.sa
https://orcid.org/0000-0002-7191-5844

Ahmed Masrai

IRCS - Prince Sattam bin Abdulaziz Uinversity
Al-Kharj, Saudi Arabia
a.masraei@psau.edu.sa
http://orcid.org/0000-0002-6778-5952

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الملخص

تعد نظرية ما وراء الخطاب ممارسة مستنيرة في مهارات الكتابة. ولكن نلحظ ندرة في الأبحاث التي تطرقت إلى تأثير التدريس الصريح لعلامات ما وراء الخطاب على أداء الكتابة لمتعلمي اللغة الثانية. وبالتالي، تهدف هذه الدراسة إلى فحص العناصر (أي العلامات) الموجودة في نظرية ما وراء الخطاب، والتي لها تأثير كبير على أداء الكتابة. ركزت الدراسة على العلامات التفاعلية في نموذج هايلاند (2005) لمعرفة مدى تأثير التدريس الواضح لكيفية استخدام هذه العناصر في تطوير مهارات الكتابة لدى متعلمي اللغة الإنجليزية كلغة أجنبية، وكذلك لمعرفة مدى مساعدة عناصر محددة من هذه العلامات في التنبؤ ببعض التباينات في الأداء الكتابي لهؤلاء المتعلمين. طلب من 77 طالبا كتابة مجموعتين من المقالات. المجموعة الأولى كتبت قبل تعريف الطلاب بعلامات ما وراء الخطاب بينما كتبت المجموعة الثانية بعد التعريف. أوضحت النتائج أن الطلاب استخدموا علامات ما وراء الخطاب التفاعلي بشكل ملحوظ بعد تعريفهم بها. وأظهرت النتائج أيضًا أن جميع أنواع العلامات التفاعلية تم استخدامها بشكل ملحوظ في المقالة الثانية مقارنة بالمقالة الأولى، باستثناء علامات الإطار. علاوة على ذلك، أشارت نتائج تحليل الانحدار إلى أن العلامات التعبيرية أوضحت التباين الأكبر في أداء الكتابة، تليها علامات الإثبات، وعلامات الانتقال، وعلامات الإطار. وبشكل عام، أشارت النتائج إلى أن الإلمام بعلامات ما وراء الخطاب ساهم بصورة كبيرة في تطور أداء الكتابة لدى الطلاب، مما يدعم أهمية تضمين هذه العلامات والعناصر في تدريس الكتابة للطلاب. واوصت الدراسة في الختام بضرورة تدريس علامات ما وراء الخطاب.

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Abstract

Metadiscourse theory has long informed practices on writing skills. Less research, however, has looked at the effect of the explicit instruction of metadiscourse markers on L2 learners' writing performance. Thus, the aim of the present study was to specifically examine the elements (i.e., markers) in metadiscourse theory that have a greater influence on writing performance. The study focused on the interactive markers in Hyland's (2005) model to explore the extent to which the explicit instruction of these markers enhances L2 learners' writing performance, and also the extent to which certain markers predict variance in L2 learners' writing performance. Following a pre- and post-testing approach, 77 university students were asked to write two essays. The first essay was written before the intervention was applied, while the second essay was written after the intervention in which the students were introduced to metadiscourse markers. The results showed that the students used interactive metadiscourse markers significantly more after the intervention. The results also revealed that all types of interactive markers were used significantly more in the second essay compared to the first essay, except for frame markers. Furthermore, the results of regression analysis indicated that code glosses explained the largest variance in writing performance, followed by evidentials, transition markers, and frame markers. Overall, the findings suggested that knowledge of metadiscourse markers significantly contributed to the writing performance of the students, lending support to introducing these markers to learners in L2 writing courses. The study concludes with a recommendation in favor of the explicit teaching of metadiscourse markers.

Keywords: essay; interactive marker; metadiscourse; teaching; writing performance

Introduction

The writing performance of English as a foreign language (EFL) university students is of prime interest and concern to educators and teachers. Recently, research has shifted the focus from sentence-based grammar to the discourse level. In this regard, metadiscourse has proved to be a useful and influential theory in discourse studies as well as an effective tool for increasing readers' awareness of the text, as argued by Crismore (1985). Few studies, however, have investigated student writing in light of metadiscourse theory. Metadiscourse has been perceived as "the commentary on a text made by its producer in the course of speaking or writing" (Hyland, 2017, p. 16). The approach adopted by Hyland (2005) comprises two dimensions. The first dimension is labeled interactive metadiscourse (also known as textual) and serves to guide readers through the text. It consists of the following elements: transitions, frame markers, endophoric markers, evidentials, and code glosses.

As pointed out by Hyland (2005) "these features are used to organize propositional information in ways that a projected target audience is likely to find coherent and convincing" (p. 50). The second dimension is known as interactional metadiscourse (also known as interpersonal) and functions to engage writers with their readers. It comprises the following elements: hedges, boosters, attitude markers, engagement markers, and self-references. The present study focuses on the interactive category because of its evident connection with cohesion and coherence (Hyland, 2005). Cohesion and coherence are, in turn, considered significant attributes of writing performance. Furthermore, the rationale underpinning this study was the call for further research from previous investigations, such as El-Dakhs (2020), regarding the validity of teaching metadiscourse markers explicitly in the second language (L2) writing classroom.

Previous research that focused on metadiscourse to investigate student writing at the university level can be grouped into three categories. The first category examined metadiscourse in relation to language proficiency, the second examined the influence of academic discipline on the use of metadiscourse markers, and the third, which is relevant to the present study, examined the usefulness of teaching metadiscourse explicitly. The next subsection highlights the most salient findings in the three groups of studies.

Using Metadiscourse in Student Essays

As indicated earlier, three groups of studies investigated metadiscourse in essay writing, mostly L2 scripts, written by university students. The first group examined the correlation between the use of metadiscourse and language proficiency. Bax et al. (2019) examined the use of metadiscourse markers at different levels of L2 writing proficiency in 900 scripts. They found a significant difference in the total use of metadiscourse markers across proficiency levels. Unexpectedly, they found that more advanced L2 writers used a significantly fewer number of metadiscourse markers than writers at lower levels. Furthermore, fewer interpersonal markers were used at higher proficiency levels, while textual markers did not display any particular variation across levels.

Lee and Deakin (2016) examined interactional metadiscourse in successful and less-successful (i.e., A- and B-graded) argumentative essays written by Chinese learners of English as a second language (ESL) at the university level. In particular, the study analyzed 25 successful ESL essays, 25 less-successful ESL essays, and 25 successful first language (L1)

English essays. Contrary to the findings of Bax et al. (2019), this study found that successful essays, both L1 and L2, included significantly more hedging devices than less-successful essays. Yet, the results showed no significant variations in terms of using boosters and attitude markers. Similarly, Intaraprawat and Steffensen (1995) investigated 12 good and poor essays written by ESL university students. They found that good-rated essays displayed more uses of metadiscourse markers.

Other studies found different distributions of metadiscourse markers across different levels of language proficiency. For example, Carri´o-Pastor (2021) explored the assessment of metadiscourse devices in L2 essays at different levels of language proficiency. She found that varied metadiscourse markers were associated with different levels of language proficiency. She also provided a list of devices pertinent to each proficiency level arguing that "metadiscourse devices should be learnt depending on proficiency levels" (Carri´o-Pastor, 2021, p. 11). Similarly, El-Dakhs (2020) investigated metadiscourse markers in the argumentative essays written by native speakers of English (NSE), EFL learners, and ESL learners, and how they vary across different language proficiency levels and the learning context. The findings detected a similar pattern in the use of metadiscourse markers in the three groups. The study also showed some specific findings regarding the distribution of markers in the interactive and interactional categories. EFL learners significantly used more frame markers than NSE and ESL learners in the interactive category. As for the interactional category, the results showed variation across the use of markers. In terms of the influence of language proficiency on the use of metadiscourse markers, the study showed that B1 level learners used considerably more transitions, frame markers, and interactive markers than their B2 level counterparts.

The second group of studies that investigated metadiscourse markers in student essays focused on the influence of academic discipline on the use of metadiscourse markers. Yoon and Römer (2020), for example, used Hyland's model of interactional metadiscourse to investigate disciplinary variation in the use of metadiscourse in advanced-level student writing. They examined 16 disciplines and found different patterns of variation in the use of interactional metadiscourse across specific disciplines. For instance, student essays from soft disciplines (i.e., humanities and social sciences) displayed more frequent use of hedges, boosters, and attitude markers than those from hard disciplines (e.g., biology and physics). Li and Wharton (2012) examined the use of metadiscourse in Literary Criticism and Translation Studies. To the contrary, they found limited disciplinary variations.

The final group, which is more relevant to the present study's objectives, investigated the effectiveness of metadiscourse instruction. Cheng and Steffensen (1996) used Crismore et al.'s (1993) typology of metadiscourse, which includes both interactive and interactional elements, to investigate the effect of using metadiscourse on improving learners' writing skills. They found that students in the experimental group benefited from instruction on metadiscourse, as they performed significantly better in their post-test essays than those in the control group. The researchers further analyzed the essays qualitatively and found that most of the improvement in the essays was attributed to using metadiscourse markers. Specifically, they analyzed two pairs of essays, and found that essays in the experimental group showed more attributors and certainty markers, while those in the control group exhibited more hedges and attitude markers. Overall, the experimental group used more textual features and less

interpersonal markers, while the opposite was the case with the control group which focused more on interpersonal features than on textual features. The results of the study are interesting because they show that textual metadiscourse (viz interactive in Hyland's model) leads to better writing performance. On the other hand, the considerable use of interpersonal metadiscourse (viz interactional in Hyland's model) did not clearly appear to influence writing performance. It is important to note that the taxonomies of textual metadiscourse used by Crismore et al. (1993) are very similar to those adopted by Hyland (2005). For example, logical connectives are labeled transitions in Hyland's model, sequences correspond to frame markers, and, finally, reminders function as endophoric markers.

Additionally, most of the analysis in Cheng and Steffensen (1996) focused on the use of hedges, certainty markers, attributors, and attitude markers, which are elements in the interactional category. Therefore, the picture is still unclear concerning the influence of textual and interactive elements on L2 learners' writing performance. The present study aims to fill this gap.

Pertinent to the present study, three research papers examined the explicit teaching of metadiscourse to L2 learners in the Iranian context. The results of these studies were in favor of explicit exposure to metadiscourse markers. Asadi (2018) explored whether teaching metadiscourse is beneficial in improving students' writing skills. Thirty-eight EFL intermediate-level students from an English institute took part in the study. They were divided into control and experimental groups, and both groups attended a formal writing course on academic writing for two months. Yet, only the experimental group was taught how to use metadiscoursive elements from both interactive and interactional categories. The study revealed that the experimental group outperformed the control group in the post-test with considerably higher scores. Thus, the author concluded that the explicit teaching of metadiscourse markers had a positive effect on the improvement of the writing skills of EFL learners.

Likewise, Farahani and Pahlevansadegh (2019) detected a positive relationship between teaching metadiscourse markers and enhancing the writing performance of 40 Iranian EFL IELTS applicants. More specifically, they found that metadiscourse features from the interactional category had a more significant impact on the students' writing performance than those from the interactive category. Similarly, Dastjerdi and Shirzad (2010) examined the effect of teaching metadiscourse to EFL undergraduate students majoring in English literature at an Iranian university. The researchers divided the 94 subjects into three groups based on their level of English language proficiency into elementary, intermediate, and advanced. The findings showed that the intermediate learners had the highest improvement, while the advanced learners showed the least improvement.

The review above indicates the scarcity of studies examining the effect of teaching metadiscourse markers on L2 learners' writing performance. Therefore, there is a need for further research to address this matter, which is the aim of the present study.

Analytical Framework

Earlier investigations of metadiscourse features in writing were conducted by Williams (1981), Crismore (1983), and Kopple (1985). Recent studies, however, have adopted Hyland's (2005) taxonomy, which comprises five categories of interactive metadiscourse: transitions,

frame markers, endophoric markers, evidentials, and code glosses. These categories are outlined in Table 1 along with functions and examples of each category. Hyland (2010) argued that interactive features "allow the writer to manage the information flow to explicitly establish his or her preferred interpretations" (p. 129).

Table 1

A Model of Metadiscourse in Academic Texts

Category	Function	Examples
Interactive	Help to guide the reader through the text	Resources
Transitions	Expresses relations between main clauses	in addition; but; thus; and
Frame markers	Refer to discourse acts, sequences, or stages	finally; to conclude; my purpose is
Endophoric markers	Refer to information in other parts of the text	noted above; see Fig; in section 2
Evidentials	Refer to information from other texts	according to X; Z states
Code glosses	Elaborate propositional meanings	namely; e.g.; such as; in other words

Note. Table 1 is adapted from Hyland (2005).

The Present Study

Based on the review of the literature, previous studies provided some insights into the positive correlation between metadiscourse and the improvement of L2 students' writing performance. However, there are at least four reasons to conduct more research in this area. First, although previous studies (e.g., Asadi, 2018; Cheng & Steffensen, 1996; Dastjerdi & Shirzad, 2010; Farahani & Pahlevansadegh, 2019) have investigated metadiscourse elements from both interactive and interactional categories, they do not necessarily measure what particularly attributes to enhancing writing performance. In other words, metadiscourse theory is a broad approach that encompasses many aspects that could influence writing performance, such as cohesion, coherence, stance, and engagement. It would be too general to investigate all the elements in the model.

Thus, the present study focuses on the elements in the interactive category because of their rapport with cohesion and coherence as outlined above. Furthermore, teaching students all the features of both categories at once might distract them; hence, focusing on one category of the model would yield useful results. Second, some studies (e.g., Asadi, 2018; Farahani & Pahlevansadegh, 2019) had small corpora, which makes it difficult to generalize the findings. Third, most studies were conducted in the Iranian context; thus, it is intriguing to examine other EFL contexts. Fourth, methodologically speaking, previous studies (e.g., Asadi, 2018; Dastjerdi & Shirzad, 2010; Farahani & Pahlevansadegh, 2019) examined the effect of teaching metadiscourse generically without specifying which metadiscourse element (i.e., feature) had the most effect and which had the least effect on learners' writing performance. Based on this rationale, the present study investigated whether metadiscourse awareness influenced learners' writing abilities. Specifically, the study addressed the following three research questions:

RQ1. What are the differences (if any) between the use of interactive metadiscourse markers in L2 writing before and after the intervention?

RQ2. To what extent does the explicit teaching of interactive metadiscourse markers affect L2 writing performance?

RQ3. To what extent do different interactive devices explain variance in L2 writing performance?

Method

Participants

The participants were 77 undergraduate students randomly sampled from two classes in an English major course at a university in Saudi Arabia. They were at the eighth level of their study and have been studying English for about 11 years. The first class consisted of 18 male students, and the second consisted of 59 female students. All the participants were non-native English speakers, with Arabic as their L1. Both classes were taught by the first researcher in a summer semester. Participation was voluntary and the participants' consent was obtained prior to conducting the study.

Instruments

Essay writing was used as a tool to collect data for the study. One essay was written before the teaching of metadiscourse markers, and another after the treatment. To address the issue of the effect of text length on the analysis of the data, the students were asked to write a second essay (after treatment) that was similar in word count to the first essay (before treatment). To examine this matter, descriptive analysis was performed. The analysis showed a mean score of 319.77 words (tokens) for the first essay and 337.49 words (tokens) for the second. The paired-samples t-test revealed a non-significant difference between the two mean scores ($t(76) = -1.25$, $p = .22$, $d = -.14$).

Materials and Procedures

This study employed a quasi-experimental design with a pre- and post-test method to examine the students' writing performance, with the metadiscourse markers as the predictive variable. In the pre-treatment stage, students were asked to write an essay about their experience with Covid-19. Specifically, they were given the following prompt:

> *Covid-19 has impacted countries as well as individuals all over the world. Write a well-organized and coherent essay with a minimum of 250 words about your experience of Covid-19. Explain how the pandemic has affected your life in terms or studying, working, traveling, socializing, etc.*

After the pre-test essays were collected, a one-hour workshop on how to employ metadiscourse in writing was scheduled for the students. They were explicitly familiarized with metadiscourse categories and examples. Hyland's (2005) taxonomy was shown as a model. At the end of the workshop, the students were asked to write another essay on the previously given prompt, i.e., their experience with Covid-19, as a post-test measure. Two raters were asked to evaluate the performance of the participants by scoring the essays with a score ranging from 0-9, following the rubric of the IELTS Task 2-Writing band descriptor (public version).

The rubric included four criteria, yet the raters were asked to focus on the "coherence and cohesion" category. The raters were assistant professors of English in the English department at the same university. They did not have any information about the nature of the study, its procedures, or its aims. After obtaining the scores from the raters, data were prepared for quantitative analyses by the second researcher and crosschecked by the first researcher to maintain accuracy. Initial analysis of the data included inter-rater reliability of scoring the first and second essays. For this purpose, the intraclass correlation coefficient (ICC) was used. The results showed an acceptable level of reliability between the two raters for both pre-test (α = .77) and post-test (α = .74) (Taber, 2018). The level of agreement was at 96% and 97%, respectively.

Results

Descriptive statistics of the scores produced by the two raters for the essays written before and after the teaching of metadiscourse markers are presented in Table 2. In this part of the results, we seek to explore the level of agreement between the two raters' scores on the pre-test and post-test. To examine the difference in scoring, the paired-samples t-test was performed. The results revealed no significant difference between raters 1 and 2 in both pre-test ($t(76) = -1.40$, $p = .17$, $d = -.16$) and post-test ($t(76) = -1.09$, $p = .28$, $d = -.13$). As the difference between the raters was statistically non-significant, the scores of one of the raters (i.e., Rater 1) were used to address the second and third research questions.

Table 2

Descriptive Statistics of Essay Scores by the Two Raters (N = 77)

	Min.	Max.	M	SD
Rater 1 – Pre-test	2.00	7.00	4.36	1.07
Rater 2 – Pre-test	2.00	7.00	4.53	1.34
Rater 1 – Post-test	3.00	8.00	5.04	1.20
Rater 2 – Post-test	3.00	7.50	5.18	1.32

Research Question One

The first research question addressed the differences between the use of metadiscourse markers in L2 writing before and after the intervention. To answer this research question, descriptive and paired-samples t-test analyses were conducted. First, we examined the total number of interactive metadiscourse markers used in the first and second written essays. The results indicated that students, on average, used 10 markers in the first essay and 16 in the second. The paired-samples t-test showed a statistically significant difference between the two ($t(76) = -8.23$, $p < .001$, $d = .94$), with a large effect size. Second, the use of each interactive metadiscourse marker was compared across the first and second essay. The results showed that the students, on average, used more markers in their second written essay than the first (see Table 3). The pairwise t-test comparisons indicated that the students used each type of marker

significantly more in their second essay compared to the first, except in the case of frame markers. The pairwise comparisons are reported in Table 4.

Table 3

Descriptive Statistics of Interactive Metadiscourse Markers in the Pre-Test and Post-Test Essays

	Min.	Max.	M	SD
Trans_Pre	1	23	8.10	4.51
Trans_Post	1	37	11.56	6.05
FM_Pre	0	6	1.29	1.54
FM_Post	0	6	1.53	1.41
EM_Pre	0	0	0	0
EM_Post	0	2	.32	.57
Evi_Pre	0	1	.05	.22
Evi_Post	0	7	.83	1.38
CG_Pre	0	10	.91	1.62
CG_Post	0	11	1.94	2.20
Pre_total	1	25	10.35	4.90
Post_total	2	39	16.18	6.59

Table 4

Paired-Samples T-Tests of the Differences Between Interactive Metadiscourse Marker use in the Pre-Test and Post-Test

					95% CI				
		M	*SD*	*SEM*	Lower	Upper	*t*	*df*	*p*-value
Pair 1	Trans Pre -Post	-3.45	5.70	.65	-4.75	-2.16	-5.32	76	< .001
Pair 2	FM Pre -Post	-.25	1.20	.14	-.52	.03	-1.80	76	.08
Pair 3	EM Pre -Post	-0.32	.57	.07	-.45	-.19	-4.98	76	< .001
Pair 4	Evi Pre -Post	-0.78	1.31	0.15	-1.08	-0.48	-5.20	76	< .001
Pair 5	CG Pre -Post	-1.03	2.26	0.26	-1.54	-0.51	-3.98	76	< .001

Research Question Two

The second research question examined the extent to which explicit teaching of metadiscourse markers affects L2 writing performance. To answer this research question, we compared the students' scores on the first and second essays by employing the pre-test and post-test method. The results showed an improvement in the students' writing performance after explicitly introducing them to the interactive markers category of metadiscourse markers (pre-test, M = 4.36; post-test, M= 5.04). The paired-samples t-test indicated that the students' writing had significantly improved after the treatment ($t(76) = -4.45$, $p < .001$, $d = .51$), with a medium effect size, suggesting the efficacy of incorporating interactive metadiscourse markers in essay writing.

The following is an extract from a student's essay written after the intervention. It shows considerable employment of code glosses. Specifically, the student used code glosses as acronyms to explain the full names and meanings of the SARS virus.

> *COVID-19, or coronavirus disease 2019, is a disease caused by a new (or emerging) type of coronavirus that was first discovered when there was an outbreak in December 2019. Coronaviruses are a large family of viruses that can cause illness ranging from mild illnesses, such as the common cold, to more severe diseases, such as severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS). And because the emerging corona virus is related to the SARS-CoV virus (SARS-CoV),*
> *It has been called severe acute respiratory syndrome coronavirus 2 (2-SARS-CoV).*

Research Question Three

The third research question examined the contribution of specific interactive devices to L2 writing performance. To address this question, hierarchical regression analysis was performed. The results suggest that code glosses explain the largest variance in L2 writing performance, about 10%, followed by evidentials, which added about 3% to the model, transition markers (about 2%), and frame markers (about 2%). The predictive value of these markers combined is about 16.4%. Endophoric markers, however, were not found to contribute to the writing model. A summary of the model is presented in Table 5.

Table 5

Summary of Hierarchical Regression Analysis

Model	R	R^2	Adjusted R^2	SEE	R^2 Change
1	.32a	0.10	.09	1.14	.10
2	.36b	.13	.11	1.13	.03
3	.38c	.15	.11	1.13	.02
4	.40d	.16	.12	1.12	.02
5	.40e	.16	.11	1.13	.00

Discussion and Conclusion

Using Hyland's (2005) model, the present study aimed at examining the relationship between the use of metadiscourse markers and writing performance, and the extent to which certain markers predict variance in L2 learners writing performance. The findings revealed that awareness of markers in the interactive category (i.e., transitions, frame markers, endophoric markers, evidential markers, and code glosses) significantly increased after introducing them to the students through explicit teaching, except frame markers. This result suggests that metadiscourse markers may not be picked up incidentally in a writing skills course, but that intentional teaching might be required to develop learners' awareness of these important markers and their usefulness in enhancing their writing skills. This conclusion corroborates the conclusions of earlier studies (e.g., Asadi, 2018; Dastjerdi & Shirzad, 2010; Farahani & Pahlevansadegh, 2019) that teaching metadiscourse markers is a valuable approach to support L2 learners writing skills.

The study further explored the use of each marker in the interactive category in the students' essays. The finding showed that transition markers were the most used markers. This is consistent with the results of some previous studies, but also contradicts others. For example, the results accord with those of Bax et al. (2019), Carri´o-Pastor (2021), and Li and Wharton (2012) who noticed an abundant use of transition markers in student essays. More importantly, Bax et al. (2019) found that students almost equally used transition markers, regardless of their proficiency levels. El-Dakhs (2020), however, found that learners of lower proficiency levels used significantly more transitions than those who are more proficient. In fact, the finding of using transitions abundantly in this study is not surprising because transitions mostly comprise connectives that "assist readers in recovering how the writer links the argument" (Hyland, 2010, p. 132). Hence, using transitions seems to be very crucial to writing in general.

The second most used marker was code glosses. When comparing this result with previous studies, El-Dakhs (2020) found a somewhat high use of code glosses, while on the contrary, Carri´o-Pastor (2021) observed very limited use of code glosses in student essays. Bax et al. (2019) did not find a significant difference across different levels of proficiency. However, Intaraprawat and Steffensen (1995) found that good essays included more types and varieties of code glosses than poor essays. Unlike transitions, code glosses are normally insignificant in academic writing because they are used to discern the ideational meaning, and this tendency may not be available to all learners, especially those with lower proficiency. The finding of the present study supports this argument because the results of regression analysis showed that code glosses explained the largest variance in writing performance.

As for frame markers, they ranked third in terms of use in this study. Previous studies revealed inconsistent findings about the use of frame markers in student essays. Carri´o-Pastor (2021) noticed extensive use of frame markers in student essays, while in El-Dakhs's (2020) study, less proficient learners used significantly more frame markers than their more proficient counterparts. However, the picture was different in Bax et al. (2019), as they found no significant difference across levels in terms of the two functions of frame markers: announcing goals and sequencing, whereas advanced levels scarcely used two functions: label stages and topic shifts. Frame markers are essential in academic writing because they refer to text boundaries and stages. Therefore, students should be exposed to these markers from the early

stages of learning writing. This might explain why the present study revealed no significant variations in the two groups of essays.

The analysis of endophoric markers did not reveal significant contributions to writing performance. This result is not in line with that of Bax et al. (2019) who found that endophoric markers were used more by advanced level learners than lower level learners. Finally, the investigation of evidentials revealed that these markers were the second largest variance in L2 writing performance. This result is similar to that of Bax et al. (2019) who found that evidentials were used more by advanced level learners than lower level learners. This finding is not surprising because evidentials are references to sources from other texts. Hence, using them requires a deep understanding of the topic being discussed as well as knowledge of other sources. This overtly requires higher language proficiency.

In conclusion, the overall result shows a significant effect of using metadiscourse markers on students' writing performance. This was evident in the students' essays after they were exposed to metadiscourse markers and explicitly taught how to use them. The students' tendency to employ interactive markers, particularly after the intervention, could be viewed as a good indication of development in textual cohesion and coherence as well as improvement of their overall writing performance.

The post-test result shows a reasonable number of interactive markers in the students' essays, including transitions, evidentials, and endophoric markers. This may indicate that the students' awareness of metadiscourse has improved after they were taught these features and the linguistic items pertinent to them. Prior to the intervention, the students appeared to use a limited number of interactive markers. The lack of knowledge of most metadiscourse markers before the intervention may indicate that students follow the strategy of avoidance, and this may be due to a number of factors. First, the students might be oblivious of the linguistic rules of using interactive markers in different textual contexts.

Second, as novice writers, they might be uncertain of the meanings of metadiscourse features or unaware of the importance and contribution of these features to the construction of written texts. Therefore, they are expected to be hesitant or inattentive of using the markers because they fear making mistakes. However, the results of the present study show considerable improvement in using interactive markers in the students' essays written after the intervention. In fact, interactive features are not enough to manage metadiscourse utilization in written texts, let alone, the overall writing process since they represent one category of the metadiscourse theory proposed by Hyland (2005). Interactional metadiscourse is another metadiscourse category which needs to be investigated in further research studies, besides other intra-and inter-textual factors prerequisite for the improvement of writing performance.

As far as the aim of this study, it could be concluded that exposing students to interactive markers may improve their insights into metadiscourse features. Familiarizing undergraduate EFL learners with the meanings and uses of these features certainly helps them manipulate the markers in relation to other textual elements, such as cohesion and coherence, hence improving their writing performance, particularly at textual level. Exploring the number of metadiscourse markers used by the students and their relation to cohesion and coherence may be considered a good indication of writing performance improvement and an important step to good writing performance. Yet, it may not be sufficient for overall writing performance

as the latter necessarily requires other factors. Therefore, further comprehensive studies are recommended where both quantitative and qualitative analyses can be adopted to examine writing performance.

The most important contribution of this paper is the exploration of the relationship between clear and detailed exposure to different metadiscourse markers, through teaching, and the degree of raising students' awareness and developing their performance in writing. This relationship could inevitably call for particular writing instructions where metadiscourse parameters are considered. The significance of this research study also lies in categorizing and analyzing metadiscourse features within the analytical framework proposed by Hyland (2005), which may help students understand linguistic markers and their meanings. In fact, it is the interplay and manipulation of these linguistic markers that hold different text patterns tightly together in a cohesive and coherent manner.

This study can hopefully offer some pedagogical implications for novice writers, EFL writers, writers of academic writing materials, and instructors. Focusing on metadiscourse markers provides novice writers with strategies to write more coherently and effectively. This may also help writing instructors extend their focus of teaching grammar rules in isolation to include other language aspects that are required to raise students' awareness of creating texture, thus developing their abilities in making use of the different linguistic markers available to them to bring parts of a text together. Teaching linguistic resources, bearing metadiscourse meanings and values, to novice writers may help them use different metadiscourse categories appropriately.

It should, however, be noted that the present investigation focused on essays written by students chosen from one academic field (English language) and one university. Therefore, the findings cannot be generalized to other fields or other university students. The analysis was also based on one domain (i.e., textual) of the metadiscourse framework (Hyland, 2005). For more comprehensives results, further studies should include the other domain (i.e., interpersonal) and broaden the area of investigation to cover other universities and include samples of written essays by students of different academic fields.

Bio

Prof. Hmoud Alotaibi works as a head and full professor of linguistics at Shaqra University, Saudi Arabia. His research interests are genre analysis, academic wiring, and English for specific and academic purposes.

Ahmed Masrai is an Associate Professor of Applied Linguistics at Prince Sattam bin Abdulaziz University, Saudi Arabia. His research and teaching interest include second language acquisition, lexical studies, and vocabulary testing. This interest has led to publication in a number of prestigious journals and contribution to edited volumes.

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