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Profiling the Use of Attitude Markers, Boosters and Hedges in Academic Written Production of International Student Mobility Participants

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ABSTRACT

Background: Motivated by the growing interest in the impact of study abroad programs on language development, the present research addresses a gap in the literature by examining the often-overlooked role of metadiscourse markers in writing.

Purpose: The study explores the impact of study abroad on the use of attitude markers, boosters, and hedges in the L2 English academic writing of international students.

Method: Using a pre-test post-test within-subject design, we analysed essays written by students before and after a semester abroad to map the characteristics of their interactional metadiscourse style and assess changes in their use of these markers.

Results: The findings show a significant increase in hedges post-study abroad, indicating a shift towards a more cautious and nuanced writing style. However, no statistically significant changes were observed for attitude markers and boosters. The overall range of interactional metadiscourse markers remained limited, occasionally making lexical choices more typical of informal language rather than academic written discourse.

Conclusion: While study abroad may enhance certain aspects of language use, targeted pedagogical interventions are needed to improve academic writing. Emphasizing interactional metadiscourse markers could help students develop a more sophisticated written style, better suited to academic contexts. This research contributes to both pragmatics and study abroad literature. In pragmatics, it expands existing knowledge on the writing styles of novice academic writers, particularly by identifying potential areas for improvement related to the use of metadiscourse markers. Simultaneously, it advances study abroad literature by introducing metadiscourse as a critical, yet previously underexplored indicator of writing quality. By highlighting the importance of these linguistic features, this study opens new avenues for both theoretical inquiry and practical applications in enhancing the academic writing skills of international students.

KEYWORDS

interactional metadiscourse, attitude markers, boosters, hedges, L2 writing development, study abroad, international student mobility

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INTRODUCTION

The turn of the millennium marked a significant rise in student mobility in higher education (Coleman, 2006). Surge in students studying abroad has spurred interest in research, highlighting benefits such as personal growth, cultural exposure, civic engagement, and improved foreign language skills (Kinginger, 2015; Pérez-Vidal, 2014). Study abroad (SA) con-

text has been commonly viewed as particularly beneficial to foreign language learning as the language is experienced in institutional and social settings, leading to natural acquisition. Unlike foreign language learning at home (AH) that primarily develops declarative knowledge, SA facilitates the practical use of the language, enhancing procedural knowledge and automation of language use (DeKeyser, 2010). The SA context is believed



to facilitate rapid and effortless language acquisition (Xu, 2019), supported by empirical evidence of measurable linguistic gains (e.g. Yang, 2016). However, SA experiences may not yield uniform benefits for all participants, as shown by studies reporting mixed results regarding different aspects of language development (Tseng et al., 2021; Varela, 2017; Xu, 2019). Even a cursory overview of previous research may indicate that the SA context provides a fertile ground for research on foreign language development, particularly some areas of which oral production has naturally been a major research topic (Borràs & Llanes, 2019). By contrast, examining the impact of the SA setting on L2 writing has remained a rather neglected research domain (Borràs & Llanes, 2019; Pérez-Vidal & Barquin, 2014) and has been mostly focused on measuring lexical and syntactic complexity, accuracy and fluency (Borràs, 2023; Pérez-Vidal & Barquin, 2014), pointing to generally positive impacts of the SA experience on writing proficiency, though not necessarily in all measures examined (Borràs & Llanes, 2019).

Despite these valuable research insights on L2 written development, the impact of the SA context on the use of metadiscourse in student academic writing has, to the best of the authors' knowledge, escaped the SA research focus. Metadiscourse is a cover term for linguistic resources used to organise the content or convey a writer's stance towards it and the audience (Hyland, 2004). Thus, metadiscourse is key to building argumentation as it allows writers to establish a position towards the content they are writing about and engage with readership in a rhetorically appropriate manner and has received considerable research attention, particularly from the L2 writers' perspective (Hyland, 2005). Nevertheless, knowledge regarding the use of metadiscourse in L2 academic writing within the SA setting remains limited. Therefore, this study aimed to investigate whether the SA context, specifically a one-semester sojourn abroad program in an English as a medium of instruction (EMI) context, influenced Croatian university students' use of interactional metadiscourse markers (hedges, boosters, and attitude markers) in their essay writing.

Specifically, our research aims to compare the use of hedges, boosters, and attitudinal markers in students' argumentative essays before and following a semester-long SA. The three metadiscoursal functions were selected given their saliency in the interactional dimension of metadiscourse, as attested by research on postgraduate student writing (Hyland, 2004) and research paper writing (Hyland, 1999). Additionally, they are broadly concerned with stance-taking which constitutes a crucial aspect of argumentative writing (Ädel, 2006). The purpose of the study is twofold. The comparison will allow us to explore the potential impact of the SA learning context on L2 written development concerning the features under study. The findings are expected to start filling the existing gap in research on the use of metadiscourse by L2 students participating in study abroad education and possibly initiate a rather underexplored strand

in metadiscourse literature. Against this background, our study is guided by the following research questions:

RQ#1: How do university non-language majors use attitude markers, boosters, and hedges in argumentative essays written in English as a foreign language (EFL) prior to their SA experience?

RQ#2: What changes, if any, occur in the use of attitude markers, boosters, and hedges in non-language majors' argumentative essays written in EFL after a semester of SA in the EMI environment?

Given the research scope, we first outline a broad overview of research on L2 written development in the SA learning context. This is followed by a more extensive account of the use of metadiscourse in L2 writing as the main target of the present research.

LITERATURE REVIEW

L2 Written Development in the SA Context

Considering that "student writing is at the centre of teaching and learning in higher education" (Hyland, 2013, p.55) and that writing proficiency is an important segment of overall L2 proficiency (Pérez-Vidal & Barquin, 2014), examining the impact of the SA setting on students' academic writing competences is of paramount importance which extends the scope of language courses. As noted above, one of the significant findings of SA research is that language skills improvements do not show uniform developmental trajectories. For instance, comparing SA students' development in oral and written production, Xu's (2019) meta-analysis documented that SA settings contribute more to oral proficiency gains. The findings indicated that SA had a greater effect on the development of oral complexity compared to written complexity. Additionally, study abroad had a more substantial impact on lexical complexity than on syntactic complexity, with both effect sizes being small. This is not surprising since research (Ortega, 2003) showed that significant improvements in the syntactic complexity of L2 writing require at least one year of college-level instruction. This has been confirmed by Serrano et al. (2012) who found that SA participants' oral production improved after one semester of SA while written production progressed more slowly with observable changes occurring only after the second semester.

Exposure to formal writing instruction in the SA setting has been reported as an additional factor contributing to L2 written development. For instance, Sasaki (2007) compared the changes in writing development between a SA group and an AH group of Japanese students and found that the SA group significantly increased their overall composition scores as well as writing fluency 1 year following the SA ex-

perience. SA students attributed noticeable improvements in their writing proficiency to participation in writing classes, more frequent written assignments at foreign institutions as well as increased speaking fluency. By contrast, composition scores and writing fluency of the AH group decreased over the same period. Students attributed their lower achievements to a decreased number of EFL classes and thus fewer opportunities to practice writing skills as well as to some context-related social activities they were engaged in.

Importance of writing instruction for SA students' proficiency changes has also been underscored by Borràs (2023) who set out to investigate whether the English as a lingua franca (ELFSA)¹ experience may be as beneficial as the traditional SA (in countries where the target language is the official language) for L2 written development. The study found that both contexts similarly enhanced students' writing skills. The findings suggest that both anglophone and non-anglophone settings can effectively improve students' language proficiency, provided they have institutional support and actively engage in language learning opportunities. Mere immersion in the SA context alone may not suffice for writing skill improvement. This was also documented by Storch (2009) who examined academic writing development of non-language majors after a semester-long SA. The lack of improvement in grammatical accuracy and complexity and in academic vocabulary use is attributed to the short duration of stay and assignments that focused more on content knowledge than on language accuracy.

Metadiscourse in Academic Writing

Contemporary approaches to academic discourse rest upon the notion that the academic text is primarily a persuasive instance of writing characterized as a form of social interaction between writers and readers (Hyland, 2005). This perspective has yielded a variety of explanatory frameworks aimed at exploring the interactive dimension of an academic text, e.g. evaluation (Hunston & Thomson, 2000); metadiscourse (Hyland, 2005); stance (Biber, 2006); stance and engagement (Hyland, 2005), etc. Metadiscourse has become one of the most prominent pragmatic constructs used to examine genre-specific discourse, as attested by the exponential research growth (Pearson, 2023). Based on the underlying idea that communication involves not only conveying information but also expressing our stance toward it, metadiscourse has been commonly conceptualized as an overarching term for a wide spectrum of linguistic devices used to organize a coherent stretch of discourse, engage the audience and evaluate the content from multiple perspectives (Hyland, 2005). This was operationalized in Hyland's (2005) interpersonal model of metadiscourse

which has been well-documented as one of the most influential frameworks in research on academic metadiscourse (for a systematic overview of major metadiscourse models, see Pearson, 2023).

The model is functionally based and it broadly draws on the distinction between interactive and interactional dimensions of interaction (Hyland, 2005). The interactive dimension deals with a writer's organization of the discourse with the ultimate aim of producing a coherent, meaningful, and persuasive text. It encompasses several functional categories, each including a set of lexico-grammatical devices performing distinct metadiscoursal functions. The interactional dimension, which is the focus of our study, signals the way writers evaluate or comment on the content, engaging readers to become implicit participants in the unfolding text. Several sub-categories realize the interactional strand, three of which are relevant to our study. Hedges indicate the level of certainty writers wish to attribute to their claims signalling that the claims are to be taken as opinions rather than facts (e.g. *may*, *perhaps*). Boosters are used to underscore writers' confidence in the claims they make (e.g. *certainly*, *undoubtedly*), while attitude markers express affective rather than epistemic stances toward the propositions and encompass devices that signal interest, surprise, (dis)agreement, etc. (e.g. *surprisingly*, *significant*).

Despite its well-established position in examining interaction in particularly academic writing, metadiscourse remains a fuzzy concept and hardly possible to fully account for (Hyland, 2017). One of the factors contributing to its fuzziness is possibly an infinite number of ways attitudinal or epistemic meaning can be expressed in a language, which makes it possibly an open-ended category. An additional problem is the multifunctionality of devices that may perform both metadiscoursal and propositional functions, the identification of which is rather context-dependent. This suggests that metadiscourse is not only a linguistic but also a rhetorical and pragmatic concept inseparable from the situational context in which it is used (Hyland, 2005). Research has revealed that the use of metadiscourse varies depending on the rhetorical purposes of distinct genres, distinct target audiences, and the way interactions are established and constrained by genre specifics (Hyland, 2005). While research paper writers need to present new knowledge claims cautiously, with varying degrees of commitment, university textbook writers are not particularly concerned with qualifying their statements as textbooks primarily deal with a transfer of factual disciplinary knowledge (Hyland, 2005). Linguistic choices in the use of metadiscourse may also be culturally variable, shaped by a wider sociocultural background (Vold, 2006). As a way of illustration, English ac-

¹ Köylü (2016, 2021) introduced the term 'English as a Lingua Franca in Study Abroad' (ELFSA) to differentiate between traditional study abroad programs, where students reside in a country where their target second language (L2) is the official language, and international student mobility experiences, where English is used as a lingua franca in the host country, and academic instruction is delivered in English as the medium of instruction.

ademic writing is characterized by a more prominent use of hedging strategies as compared to academic writing conventions in other languages (e.g. Varga, 2016; Šinkūnienė, 2011; Vold, 2006). The implication that L2 writing may be influenced by L1-specific ways of metadiscourse use is important for L2 writers as it underscores the significance of mastering the rhetorical conventions of academic English, particularly when they diverge from their L1.

As the present study addresses undergraduate writing, the section that follows focuses on previous research on the use of metadiscourse in student writing.

Research on Metadiscourse in L2 Student Writing

Writing successful academic texts largely depends on achieving textual coherence and cohesion as well as expressing stance in an academically appropriate manner (Yoon & Römer, 2020). However, understanding the role of metadiscourse functions in constructing argumentation may be particularly challenging for student and novice writers (Aull & Lancaster, 2014; Lee & Deakin, 2016), especially L2 writers who may struggle to reach native-like competence (Yoon, 2021). Therefore, in an attempt to provide meaningful corpus-based pedagogical instruction, researchers have focused on examining the use of metadiscourse in student writing, particularly the advanced-level one, which along with L1 writing, has been assumed to serve as a better target norm than professional, published writing (Pearson, 2023; Yoon & Römer, 2020).

Research on the use of metadiscourse in L1 and L2 student writing has shown that L2 writers are generally more likely to employ fewer metadiscourse devices as compared to their L1 peers (Vakanjac Ivezić, 2024; Yoon, 2021). For instance, Yoon (2021) explored the use of interactional metadiscourse in the essays written by East Asian EFL students with different L1 backgrounds and compared it with that of L1 students. Regardless of L1 background, L2 writers used fewer hedges than their L1 counterparts, which resulted in higher frequencies of assertive claims in their essays. Another distinct feature of L2 writing was the overuse of reader pronouns which may be indicative of L2 students' socio-cultural backgrounds. Distinct patterns of L1 and L2 use of metadiscourse could be related to educational contexts with L1 students likely being exposed to more writing instruction and practice, which enhanced their skills in the use of metadiscourse.

Students' L2 proficiency level has also been recognized as an important factor affecting the use of metadiscourse devices in academic writing. Despite a general assumption that the use of interactional metadiscourse significantly contributes to more successful student essays (Lee and Deakin, 2016), studies have shown mixed results (Yoon, 2021). Aull and Lancaster (2014) followed the developmental trajec-

ries of stance-taking patterns used at different educational stages. They examined the use of stance markers in argumentative essays of incoming first-year university students, advanced-level students and in those of professional academic writers. The findings showed that beginning students overused boosters and underused hedges as opposed to more advanced student writers and professional writers who preferred expressing stance with caution and tentativeness rather than assertiveness. Additionally, advanced-level student essays were characterized by a wider variety of hedges and boosters, which resembled expert-like writing. Lee and Deakin (2016) similarly found that L2 students who wrote higher-rated essays used interactional metadiscourse in a manner comparable to successful L1 students. In contrast, students with lower-rated essays often relied on unmitigated claims, which made their writing less convincing and effective, ultimately impacting the overall quality. Carrió-Pastor (2021) explored the use of metadiscourse in undergraduates' essays at different language proficiency levels and found a progressive use of metadiscourse devices which indicates that pragmatic competence increases with the increase of overall linguistic knowledge. However, Yoon's (2021) findings showed no significant differences in the occurrences of interactional metadiscourse markers depending on students' proficiency levels.

As previously noted, research on the impact of the SA learning context on the use of metadiscourse in written production has been rather scarce, with the exception of Herraiz-Martínez's study (2019). The author investigated the impact of EMI on students' development of hedges in writing motivational letters. The findings showed no significant improvement in students' use of hedges which might be related to the specifics of the EMI context, including the lack of explicit instruction on the use of hedging strategies. As for the pedagogical implications arising from this line of research, there is a general agreement that L2 students should be provided with more explicit instruction and more learning opportunities to expand their often limited use of metadiscourse devices, which may enhance their L2 pragmatic competence (Carrió-Pastor, 2021; Lee & Deakin, 2016; Yoon, 2021).

METHOD

Participants

The language samples for this study were collected from twenty-two Croatian students, both graduate and undergraduate, who were studying economics and business. These students spent a semester abroad through the Erasmus+ mobility program in one of the following countries: Austria, Bulgaria, Czechia, Italy, Poland, Portugal, Spain and Sweden, where they were exposed to EMI and ELFA environments. Although our study focuses on non-language majors and the ELFA setting, for the sake of brevity, we will

refer to it simply as SA in the remainder of the text. On average, students took between 2 to 7 content courses, with only one enrolled in English for academic purposes course, and none in any academic writing courses at their host universities. Most students reported primarily engaging in oral assignments, while written assignments were minimal.

At the time of the study, all participants were experienced language learners with at least 14 years of English learning and had passed their A-levels at a B2 proficiency level. They were no longer enrolled in formal English classes but had previously taken mandatory Business English courses during their first and second years of study. During that time they did not participate in any formal academic writing courses.

Materials and Instruments

The analysis of the use of the selected metadiscoursal devices was performed on a corpus of 44 argumentative essays. Argumentative essay involves conveying opinions and adopting a particular stance toward the content, essentially encompassed by the metadiscoursal functions under study (Ädel, 2006). It also represents one of the major genres in university-level writing and is one of the most frequent types of writing in international proficiency tests (Adel, 2006; Pérez-Vidal & Barquin, 2014). Given its significance in the academic setting and society in general (Ädel, 2006) justifies our decision to use it as the main focus of our study.

Samples of respondents' language production were collected before and after the study abroad period, which means that the corpus contains two sub-corpora, each made up of 22 essays (Table 1).

Table 1

Corpus Size

Corpus	No. of words	No. of essays	Average length
pre-SA corpus	10902	22	495.55 (SD = 97.50, min = 323, max = 774)
post-SA corpus	10516	22	478.00 (SD = 95.64, min = 320, max = 775)
Total	21418	44	

Note. "No. of words" refers to the total word count of all essays comprising each corpus. "Average essay length" is calculated by dividing the total word count by the number of essays per corpus.

The following two essay tasks were used to elicit written production:

- (1) pre-SA: Croatia has been a full member of the European Union since 2013. This membership has its advantages and disadvantages. Discuss and express your opinion;
- (2) post-SA: In 2016 the so-called Brexit referendum took place where the United Kingdom voted to leave the European Union. The UK is currently undergoing the Brexit negotiations. What are the potential consequences of the UK leaving the EU for the country itself (the UK) and what are the consequences for the EU? Discuss and express your opinion.

Although it is generally accepted that tasks should remain the same for comparability, researchers often choose different topics for convenience, adapting to the specific SA program and sample involved (e.g., Borràs et al., 2023). Our respondents' shared field of economics allowed us to design two matching essay tasks for the pre-test and post-test, both targeting the same semantic field. This approach aimed to mitigate the negative effects of task repetition and avoid the demotivating effect of writing on the same topic twice.

Procedure

This study employs a pre-test post-test within-group comparison design, which enhances reliability by minimizing the influence of individual differences (Xu, 2019).

On each of the two collection times (before and after SA), essay writing was completed within one hour (60 minutes) on a computer under test conditions, meaning no access to external sources was allowed. Participants were instructed to aim for an approximate word count of 500 words for their essays. The essays were subsequently coded by two raters for attitude markers, boosters, and hedges. In the absence of all-encompassing predefined lists of interactional devices and given the manageable size of the corpus, both raters coded all essays independently. As metadiscoursal functions can be context-dependent (Hyland, 2005), to increase the reliability of the coding analysis, analyses were compared and discussed until mutual agreement on each coded item was reached. The coded corpus was uploaded to the Sketch Engine², where the concordance tool was used to double-check the coding for consistency.

The essays were analysed both quantitatively and qualitatively. The quantitative analysis utilized the JASP statistical program³ to calculate the differences in the use of interactional devices between the two time periods, specifically before and after SA. Both raw occurrences and occurrences normalised to 1,000 tokens were generated. Normalisation was performed to facilitate a valid comparison between the two sub-corpora, which contained different token counts,

² Kilgarriff, A., Baisa, V., Bušta, J., Jakubíček, M., Kovář, V., Michelfeit, J., Rychlý, P., & Suchomel, V. (2014). The Sketch Engine: Ten years on. *Lexicography*, 1(1), 7–36. <https://doi.org/10.1007/s40607-014-0009-9>

³ JASP Team. (2023). JASP (Version 0.17.1) [Computer software]. <https://jasp-stats.org/>

and to allow comparison with prospective studies. Additionally, the relative frequency of occurrences per 100 tokens was calculated and employed in the statistical analysis to assess differences between the two sub-corpora. Given that the mean essay length was measured in hundreds rather than thousands of tokens, we believe this approach offers a more accessible and accurate representation of the actual number of discourse markers used by individual students. The qualitative analysis examined the specific use of interactional devices within the observed genre and population, yielding the list of all metadiscoursal devices used in our study (see Appendix).

Methodological Decisions

To obtain a broad overview of the items most frequently identified as representatives of hedges, boosters, and attitude markers in academic writing, we first consulted Hyland’s (2005) taxonomy of metadiscoursal devices, as one of the most cited ones, and compared it with the final lists emerging from the empirical research on student writing, e.g. Vakanjac (2024), Yoon and Römer (2020), Carrió-Pastor (2021). In assigning the metadiscoursal functions of the lexical verbs encountered in our students’ writing, we also used Biber et al.’s (1999) semantic classification of single-word verbs, particularly mental verbs (e.g. *doubt*, *mean*). None of the pre-existing taxonomies was strictly followed, though many items, particularly hedges and boosters, overlap with those taxonomized in previous studies. The final list of hedges, boosters, and attitude markers identified in the two sub-corpora is provided in the Appendix (Table 7).

In identifying the metadiscoursal functions, we faced some methodological challenges that have been repeatedly addressed in metadiscourse research (Hyland, 2005; Pearson, 2023). As previously noted, metadiscoursal functions do not depend on the form of linguistic devices but rather arise from the context in which they occur and the writer’s intention for their use. This means that a simple occurrence of an item potentially functioning as metadiscourse cannot be automatically assigned a function, without examining its role in a particular context (Hyland, 2005). Though space limitations preclude outlining all cases of the multifunctional nature of items encountered, the following examples may serve to illustrate the point:

- (a) *By entering labour market, Croatian citizens **can** easily trade goods.* (E1_17)⁴
- (b) *If UK leaves EU a lot of bad things **can** happen to UK economy.* (E2_2)

The modal verb *can* has two distinct meanings in the sentences above. In sentence (a) it is used to signal one’s ability to act in a certain manner (in this case, Croatian citizens to

easily trade goods), while in the second it denotes a writer’s evaluation of the possibility that “a lot of bad things can happen to the UK economy.” These examples illustrate the polysemous nature of *can*, i.e. its dynamic (a) and epistemic (b) meaning (Nuyts, 2001), of which only the latter can be viewed as performing a metadiscoursal function of hedging. As a consequence, only *can* in sentence (b) was included in our analysis.

In assigning the metadiscoursal functions to the nouns, we followed the syntactic criteria established by Schmid (2000) and adapted by Jiang and Hyland (2016) and Jiang and Hyland (2021). In other words, our analysis included only the nouns occurring in the following lexico-grammatical structures: N + post-nominal clause; This + N; N + be + complementing clause; This + be + N, as these have been recognized to be the most common syntactic patterns of nouns conveying interactional meanings in academic writing. Given this criterion, only *advantage* in sentence (c) was included in the analysis:

- (c) *Firstly, the main **advantage** is that Croatia is able to use the money of European Union for its infrastructure,...* (E1_17).
- (d) *Of course, as always, there are some **advantages** and disadvantages in this membership...I* (E1_2)

RESULTS

In this section, we first present the characteristics of students’ essays in terms of the use of attitude markers, boosters, and hedges. Table 2 presents the raw frequencies of these interactional devices and their normalised frequencies, calculated relative to the corpus length (per 1,000 tokens). Normalization allows for meaningful comparisons by accounting for differences in corpus size. The normalized frequency (NF) for each feature is determined using the following formula:

$$NF = \left(\frac{\text{raw frequency}}{\text{total number of tokens}} \right) \times 1000$$

For instance, the raw occurrence of attitude markers is 181, and with a total of 10,902 tokens in the corpus, the normalized frequency is calculated as follows:

$$NF_{AM} = \left(\frac{181}{10902} \right) = 16.60$$

This method ensures that the reported frequencies are proportional to the overall corpus size, enabling clearer comparisons across categories and datasets.

⁴ Examples are provided as they appeared in student essays.

As can be seen, results show distinct patterns of use between two time periods. In the pre-SA corpus, attitude markers were the most frequent metadiscoursal type, followed by hedges and boosters. The results also indicate that the differences in the use of the three types of metadiscourse were not striking, particularly concerning the frequencies of hedges and boosters which were quite close. The distribution of metadiscourse in the post-SA corpus showed different patterns of use, with hedges exceeding the use of attitude markers and boosters. Additionally, compared with the pre-SA essays, results of the post-SA analysis point to higher differences in the frequencies of the metadiscourse examined.

Mapping the Use of Attitude Markers, Boosters, and Hedges

The analysis of two sub-corpora showed that student essays contained 221 metadiscoursal items in total; attitude markers comprised 109, hedges 62, and boosters 50 items. To reveal patterns of preferred use of metadiscourse examined, we present instances of attitude markers, boosters, and hedges used with a frequency of 5 and above per sub-corpus (Table 3). Additionally, a Chi-Square test was conducted to determine whether the differences in the usage of these metadiscoursal items across the two sub-corpora were statistically significant (Table 4).

Distribution of the results points to distinctive tendencies in the use of the three types of metadiscourse. Concerning the use of attitude markers, the most frequent instances were adjectives, while adverbs, verbs, and nouns were used to a lesser extent. A comparison of frequencies shows that the most frequent instances were mainly clustered around 5 adjectives (*good, important, great, bad, and big*) and the verb *hope*, with the adjective *good* being by far the most prevalent attitude marker. The remaining items were used less frequently by comparison. The distribution of attitude markers also shows that even among the most frequent group of devices, some were present only in one sub-corpus, which, compared to the distribution of most frequent hedges and boosters, was shown to be a characteristic feature of only this sub-category. By comparison, the frequencies of boosters were more balanced, with a higher number of items showing similar frequencies and no single item being dominant. Adverbs (*only, even, really*) were by far the most

frequently used boosters, while other parts of speech were used minimally. Compared to attitude markers and boosters, instances of hedges showed the highest frequencies of items, with modal verbs (*would, could, can*) being the most prevalent hedges, followed by lexical bundles (*in my opinion, from x's point of view*), adverbs and verbs.

A final consideration at this point concerns the use of single occurrences across the three types of metadiscourse under study. The highest density of instances that were used only once in the corpus as a whole was observed in the attitude marker sub-category, amounting to 60% of all instances. This was particularly evident in the pre-SA corpus in which 41 instances occurred only once as compared to 23 single instances in the post-SA corpus. By contrast, less than 40% (19) of boosters (12 in the pre-SA, and 7 in the post-SA) and hedges (24) were used only once (9 in the pre-SA, and 15 in the post-SA).

A more nuanced analysis of particular items, notably those presented in Table 3, involved an estimate of the statistical difference in the usage of these items across the two corpora. This called for the application of a series of Chi-Square tests (Table 4). The results revealed significant differences in the usage of several items. Notable examples include "good" ($\chi^2 = 41.00, p < .001$) and "would" ($\chi^2 = 45.00, p < .001$), which exhibited highly significant shifts in frequency between the two corpora. Other items, such as "just" ($\chi^2 = 7.00, p = .008$) and "very" ($\chi^2 = 8.00, p = .005$), also displayed significant differences, albeit with smaller Chi-Square values. In some cases, no Chi-Square computation was performed due to the lack of variability between the two corpora. For example, "actually," "could," and "seem" had constant frequencies across both contexts, resulting in non-applicable (N/A) values for their statistical tests.

It is important to note that several items with zero values in one corpus did not show statistically significant differences. For instance, "consequence" ($\chi^2 = 0.00, p = 1.000$) and "unfortunately" ($\chi^2 = 0.00, p = 1.000$) exemplify cases where descriptive differences were insufficient to yield statistical significance. This outcome underscores the limitation of the Chi-Square test when applied to small frequencies, as low counts lead to reduced sensitivity in detecting meaningful variation.

Table 2

Frequencies of Attitude Markers, Boosters and Hedges in pre-SA and post-SA Corpora

Interactional devices	pre-SA corpus		post-SA corpus	
	Total raw occurrences	Normalised frequencies (1000)	Total raw occurrences	Normalised frequencies (1000)
attitude markers	181	16.60	149	14.17
boosters	140	12.84	115	10.94
hedges	147	13.48	223	21.21
total	468	42.92	487	46.32

Table 3

Attitude Markers, Boosters and Hedges Used with a Frequency of 5 and above in the Two Sub-Corpora

ATTITUDE MARKERS	TOTAL	Pre	Post	BOOSTERS	TOTAL	Pre	Post	HEDGES	TOTAL	Pre	Post
good	41	22	19	only	24	9	15	would	45	10	35
important	21	13	8	even	22	14	8	think	44	19	25
great	20	16	4	really	21	5	16	could	38	19	19
bad	18	3	15	so	21	14	7	can	32	13	19
big	13	7	6	especially	19	13	6	in my opinion	19	8	11
hope (v)	12	8	4	much	19	12	7	maybe	19	7	12
hard	7	0	7	need to	12	9	3	mostly	15	7	8
have to	7	2	5	of course	11	4	7	should	15	6	9
huge	7	2	5	always	10	6	4	almost	10	4	6
just	7	6	1	just	8	5	2	certain (particular but unspecified)	10	5	5
main	7	6	1	very	8	5	3	probably	10	1	9
mean (v)	7	2	5	actually	6	3	3	may	9	4	5
unfortunately	7	7	0	completely	6	1	5	seem	8	4	4
consequence	6	0	6	definitely	5	2	3	from x's point of view	6	2	4
high	6	0	6	fact	5	2	3	believe	5	2	3
advantage	5	5	0	far	5	4	1	personally	5	2	3
slowly	5	5	0	know	5	1	4	potential (adj)	5	1	4

Table 4

Results of Chi-square test for differences in metadiscoursal item usage across sub-corpora

ATTITUDE MARKERS	χ ²	p	BOOSTERS	χ ²	p	HEDGES	χ ²	p
good	41.00	<.001	only	24.00	<.001	would	45.00	<.001
important	21.00	<.001	even	22.00	<.001	think	44.00	<.001
great	20.00	<.001	really	21.00	<.001	could	N/A	N/A
bad	18.00	<.001	so	21.00	<.001	can	32.00	<.001
big	13.00	<.001	especially	19.00	<.001	in my opinion	19.00	<.001
hope (v)	12.00	.001	much	19.00	<.001	maybe	19.00	<.001
hard	0.00	1.000	need to	12.00	.001	mostly	15.00	<.001
have to	7.00	.008	of course	11.00	.001	should	15.00	<.001
huge	7.00	.008	always	10.00	.002	almost	10.00	.002
just	7.00	.008	just	7.00	.008	certain	N/A	N/A
main	0.00	1.000	very	8.00	.005	probably	10.00	.002
mean (v)	7.00	.008	actually	N/A	N/A	may	9.00	.003
unfortunately	0.00	1.000	completely	6.00	.014	seem	N/A	N/A
consequence	0.00	1.000	definitely	5.00	.025	from x's point of view	6.00	<.001
high	0.00	1.000	fact	5.00	.025	believe	5.00	<.001
advantage	0.00	1.000	far	5.00	.025	personally	5.00	N/A
slowly	0.00	1.000	know	5.00	.025	potential (adj)	5.00	<.001

Note. Chi-Square values (χ²) with p<.05 are considered statistically significant. "N/A" indicates that the Chi-Square test was not applicable because the word's frequency was constant across both corpora, resulting in no variability for statistical computation.

Differences Between the Pre- and Post-SA Corpora

The following paragraphs address the comparison of the amount of the three observed types of interactional devices in students' essays at two observation points. To assess the normality of the difference scores (post-pre) for attitude markers, boosters, and hedges, the Shapiro-Wilk test was conducted and QQ plots were visually inspected. The results indicated that the assumption of normality was met for all

variables: attitude markers ($W = 0.954, p = 0.381$), boosters ($W = 0.985, p = 0.971$), and hedges ($W = 0.972, p = 0.751$) so we proceeded with a paired-samples t-test to evaluate the differences in the use of attitude markers, boosters, and hedges.

The results (Table 5) indicated a statistically significant increase in the use of hedges, $t(21) = 4.54, p < .001$, with a large effect size ($d = 0.968$). On the other hand, the number of at-

titude markers ($t(21) = -1.25, p = .225, d = -0.267$) and boosters ($t(21) = -1.73, p = .098, d = -0.369$) decreased, but the differences were not statistically significant. Coefficients of variation ranging from 0.41 to 0.68 indicate a moderate to relatively high degree of variability in the use of interactional metadiscourse across the two sub-corpora. The variation suggests that some categories are more consistently used by students than others. A CV of 0.41 would imply that the usage is more consistent (less varied) compared to a CV of 0.68, which would indicate greater inconsistency in how students use that particular type of metadiscourse.

To enhance the clarity and interpretability of the data, raincloud difference plots⁵ (Table 6) were generated to provide a visual representation of the differences between the results before and after SA. They include a scatter plot, box plot, and density plot, offering a comprehensive view of the data's variability, central tendency, and distribution⁶.

DISCUSSION

Responding to our first research question, the analysis showed that pre-SA essays are characterized by a rather balanced distribution of the three types of metadiscourse under study, with attitude markers showing the highest frequencies, while boosters and hedges were used to a less-

er degree. The prevalence of attitude markers suggests that L2 student writers found it relatively more important to express their attitudinal stance rather than vary a level of commitment to their claims. In other words, they were particularly concerned with conveying personal opinions and evaluations of the issues they found important, right, wrong, undesirable, etc., as in:

1. **Unfortunately** (AM) for Croatia, we are not so organized and we are using only a low percentage of the funds that are at our disposal. (E1_1)

A high level of affective involvement manifested through the use of attitude markers might be accounted for by the essay topic itself which has a bearing on their personal lives and which may have invoked a range of feelings, including patriotic ones, as shown in the following example:

2. In my opinion, EU is **the best** (AM) thing that has happened to Croatia since the civil war. (E1_9)

Personal engagement with the topic was often evident in students' choices to intensify the meaning of attitude markers through the use of boosters, which was their frequent function in students' essays, as in:

Table 5

Paired-Samples T-Test for Attitude Markers, Boosters and Hedges in pre-SA and post-SA Corpora

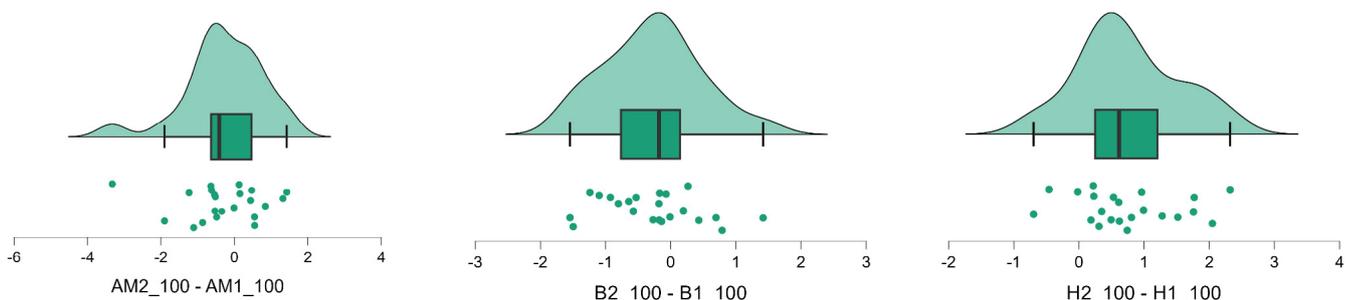
Interactional Devices	Pre SA			Post SA			t	p	Cohen's d
	M	SD	CV	M	SD	CV			
attitude markers	1.65	0.67	0.41	1.37	0.79	0.58	-1.25	0.225	-0.267
boosters	1.27	0.57	0.45	1.00	0.68	0.68	-1.73	0.098	-0.369
hedges	1.32	0.72	0.55	2.07	0.92	0.45	4.54	< .001	0.968

Note. CV = coefficient of variation (CV). The pre-SA result is subtracted from the post-SA result. Values are normalised to 100 tokens.

*p < .05. **p < .01. ***p < .001

Table 6

Raincloud Difference Plots for the Differences in the Use of Attitude Markers, Boosters and Hedges Before and After SA



⁵ Goss-Sampson, M. A. (2024). *Statistical analysis in JASP 0.18.3: A guide for students*. JASP.

⁶ The "cloud" (above) indicates the density distribution of the data, while the "rain" (below) represents the differences in the use of devices (attitude markers, boosters, hedges) before and after SA for each individual. The box plot in the center shows the central tendencies of the data, spread, and possible outliers.

3. This is **especially** (B) **important** (AM) for young people who want to explore life in a new country... (E1_6)

A need to establish firm positions and display a high degree of conviction in the claims offered (Hyland, 2005) is reflected in the high density of boosters, such as *really*, *so*, *much*, etc.:

4. Furthermore decisions about nature environment are **really** (B) **helpful** (AM) for all of us. (E1_10)

The use of hedges was characterized by a relatively high frequency of modal verbs which represent some of the typical exponents of hedges in academic writing (Hyland, 1998). Our findings show that students mostly used *would* and *can/could* to signal that the claim is of a speculative rather than categorical nature, as in:

5. *Without good preparation it could* (H) *cause a lot of trouble in Croatian economy.* (E1_6)

Modal verb *may*, on the other hand, which along with *might*, represents a core modal for expressing hedged statements in academic discourse (Hyland, 1998; Biber et al., 1999), was used sparingly, while *might* occurred only twice in the corpus as a whole. This may indicate L2 students' insufficient knowledge of the appropriate use of modal verbs to convey a hedged stance in academic writing.

Another common feature of the use of hedges concerns students' tendency to use personalized expressions, particularly reflected in the preferred use of 1st Person pronoun with the verb *think* and the expressions *In my opinion* and *personally*.

6. **I think** (H) that is something that we need to keep and cherish if nothing else as a reminder how one little country is strong actually. (E1_5)

These explicit signals of a writer's intrusion in the text and overt expressions of their standpoint, but particularly their frequencies, are indicative of an informal and conversational rather than academic style of writing (Hyland & Milton, 1997).

Regarding our second research question, the results show different uses of metadiscourse functions under study. The frequency of attitude markers and boosters decreased, but the difference was not statistically significant. By contrast, there was a statistically significant increase in the use of hedges which may be due to several factors. The essay topic, which was shown to contribute to writing production (Yoon, 2020), might have affected students' choices in the use of metadiscourse. More specifically, they likely felt more emotionally attached to the homeland topic which made their claims rhetorically stronger. Conversely, they might have been insufficiently informed about the Brexit topic or

not as much engaged with it as they were with the Croatian membership in the EU. This might have decreased the need to express their attitudinal evaluations and conversely increased the need to mitigate claims and express judgments in a more detached manner.

Another possibility of the increased frequency of hedges in the post-SA essays relates to the potential impact of the SA learning context on students' written production. Previous research on the use of metadiscourse both in written (e.g. research articles, textbooks, master's theses, etc.) and spoken academic discourse in English (e.g. university lectures, EAP lessons) has shown the dominance of hedges over other types of interactional metadiscourse, which points to their centrality in constructing academic argumentation with caution but also in creating classroom dynamics where politeness plays an important role (Hyland, 2005; Lee & Subtirelu, 2015). It might be assumed that due to the exposure to EMI and engagement with more disciplinary literature in English, students increased their awareness of the importance of qualifying statements in academic discourse, which resulted in a more successful alignment of their essays with L1 academic writing conventions.

Though a lack of congruent previous studies prevents direct comparisons of results, our findings may be broadly related to existing research on L2 student use of metadiscourse in academic writing. Previous research has shown that concerning the use of interactional metadiscourse both L1 and L2 student writing, particularly advanced-level L2 writing, is characterized by considerably more frequent use of hedges as compared to boosters and attitude markers (Hyland, 2004; Lee & Deakin, 2016; Vakanjac Ivezic, 2024), which corresponds to their use in research article writing (Hyland, 2005). This suggests students' awareness of the fact that despite addressing personal standpoints towards a topic, most notably in essay writing, there is a need to achieve objectivity in academic writing which is realized through the appropriate use of metadiscourse devices. Awareness of the importance of qualifying statements, and constructing plausible argumentation with tentativeness and caution rather than assertiveness or affective engagement can be indicative of a higher level of control and mastery of academic writing conventions (Lee & Deakin, 2016).

The present results suggest that L2 students in our study did not seem to have completely mastered the academic writing requirements concerning the use of metadiscourse examined. A high density of attitude markers in the pre-SA essays denotes that expressing attitudinal evaluations was prioritized over epistemic ones, which is not particularly aligned with academic-level argumentative writing. Additionally, close frequencies of boosters and hedges in pre-SA essays show that students may have found it difficult to establish a more appropriate balance between conveying assertiveness and tentativeness in argument construction. This reflects the findings obtained in some earlier research show-

ing that compared to L1 students, L2 students exhibited a higher degree of commitment to their claims due to the lack of linguistic knowledge but possibly also some sociocultural variables (Hyland & Milton, 1997). As previously mentioned, the overuse of overt personalized expressions in the present corpus also reflects some characteristic features of L2 writing, particularly at lower levels of proficiency (Hyland & Milton, 1997).

As the post-SA essays contained significantly higher frequencies of hedges, we might assume that students' competencies in the use of metadiscourse have shown some development. Nevertheless, it is noteworthy that student essays still exhibited features that do not mirror adequate academic writing style, or upper-level writing as its prerequisite.

For instance, concerning the use of hedges, though post-SA students' writing progressed in that respect, we noticed the lack of hedges in places where their use would avoid generalizations, e.g.:

7. *This type of negotiation is (*may be) bad for every party involved since it is creating (*it seems to be creating) hostile environment for everybody included.* (E2_18)

Besides the use of metadiscoursal functions or a lack thereof, another issue concerns the use of lexical devices to perform the intended functions. Thus, the analysis shows that a vast majority of devices are not typical of academic vocabulary that is expected to be used in university-level writing. Indeed, only three items from the table above (*important*, *consequence*, and *potential*) are included in the Academic Vocabulary List (Gardner & Davies, 2014), which though representative of professional rather than student-level writing, might be taken as a general reference point for academic vocabulary (Durrant, 2016). This in turn means that in choosing lexical devices used to perform metadiscoursal functions, students opted for more general and simple vocabulary that is more characteristic of spoken register, e.g. *really*, *so* instead of their more formal alternatives, e.g. *highly*, *strongly*, *entirely*, etc. (Biber et al., 1999).

Additional traces of spoken register can be found in peculiar language choices that only support the assumption that students' control of academic vocabulary as an inherent element of academic discourse seems not to be at an adequate level, as illustrated by the following examples:

8. *Furthermore, personally, I am not a big fan of the concept of the European Union and I really think that everything is fake.* (E2_1)
9. *Personally, I would describe Croatia's journey in the EU as sweet and sour – not to everyone's taste, but generally good and well-liked.* (E1_22)

Besides limitations in the repertoire of productive academic vocabulary, a lack of lexical diversity seems to be an additional feature of students' use of metadiscourse. In other words, students rely on a rather narrow range of vocabulary as evident in limited occurrences of synonymous high-frequency devices (e.g. *good*).

Our research aligns with the idea that writing development requires more time (Ortega, 2003) and focused instruction (Sasaki, 2007), rather than relying solely on immersion in the study abroad context. Limited progress in various aspects of writing is a frequent observation in SA research, which, besides the study's duration, may also be attributed to the tendency of sojourners to focus more on developing spoken language skills than on writing (Marinov Vranješ, 2023; Köylü & Tracy-Ventura, 2022).

CONCLUSION

This study provides insights into the evolving use of attitude markers, boosters, and hedges in the academic writing of students participating in international study abroad programs. By examining changes in metadiscourse marker usage before and after a one-semester study abroad experience, this research highlights the nuanced ways in which international education influences written language development. The significant increase in the use of hedges post-study abroad suggests a shift towards a more cautious and sophisticated academic writing style, reflecting students' growing awareness of academic discourse conventions. However, the persistence of a limited range of metadiscourse markers, often resembling those found in spoken rather than written academic discourse, underscores the need for more targeted pedagogical interventions.

Nonetheless, these findings should be interpreted with caution due to several limitations. The study's small and homogenous sample, drawn from a single institution and study major, limits the generalizability of the results. Future research should aim to include larger and more diverse samples from various educational contexts to enhance the broader applicability of the findings. Additionally, the lack of existing research on interactional metadiscourse markers in study abroad contexts highlights the necessity for further exploration in this area. Another methodological constraint concerns evaluation periods which included only two intervals, before and after the SA experience. The possible language gains of the SA might have been more accurately captured if student writing was evaluated during the SA, i.e. while students were still immersed in the L2 academic context. Therefore, future SA research might benefit from a more comprehensive longitudinal design to explore more profoundly the impact of the study abroad experience on students' language production.

Moreover, while the pre- and post-SA essays were based on closely related topics, the possibility remains that topic differences influenced the use of interactional devices, particularly hedges. Future research should consider using identical topics for pre- and post-tests to rule out this variable, despite potential challenges such as task repetition and reduced motivation in expressing one's opinion on a demanding topic twice. Pedagogically, this suggests that students should be made aware that their engagement with a topic may lead to greater assertiveness or affective involvement, which should be tempered with the strategic use of hedging to reflect the expected academic writing conventions.

Based on our insights into the choice of metadiscourse devices, a possible research avenue might address the relationship between the use of metadiscourse and various components of lexical competence such as lexical accuracy, lexical diversity and lexical sophistication. Investigating this relationship could clarify whether a more advanced lexical repertoire facilitates the strategic use of interactional metadiscourse or whether these two aspects develop independently. Additionally, future research could examine whether their development follows a parallel trajectory over time or whether improvements in one domain precede and influence gains in the other. A longitudinal approach would be particularly valuable in identifying patterns of interaction between lexical growth and metadiscourse use at different stages of L2 writing development. Such insights could contribute to a more comprehensive understanding of how lexical competence supports the development of argumentation in academic texts and inform pedagogical approaches

that integrate vocabulary development with metadiscourse awareness.

The study's findings have important implications for teaching academic writing at home institutions, especially in preparing students for study abroad experiences. Students could thus be encouraged to take advantage of academic writing courses at host institutions. Educators should emphasize the strategic use of metadiscourse markers, fostering an awareness of how hedging, attitude markers, and boosters can enhance the sophistication and appropriateness of academic discourse.

DECLARATION OF COMPETING INTEREST

None declared.

AUTHOR CONTRIBUTIONS

Sanja Marinov Vranješ: conceptualization; formal analysis; investigation; methodology; resources; validation; visualization; writing – original draft; writing - review and editing.

Mirna Varga: conceptualization; investigation; methodology; resources; validation; visualization; writing – original draft; writing - review and editing.

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APPENDIX

ALPHABETICAL LIST OF ATTITUDE MARKERS, BOOSTERS, AND HEDGES IN PRE-SA AND POST-SA CORPORA

Table 7

Attitude Markers, Boosters and Hedges in pre-SA and post-SA corpora

ATTITUDE MARKERS	independent	right	any	sure	mainly
advantage	inevitable	sad	certainly	for sure	may
amazing	infamous	safe	complete	surely	maybe
bad	innocent	see	completely	that (adv)	might
better off	interesting	serious	definitely	the thing is	more or less
big	inviting	severe	dire	too (<i>very</i>)	most (of)
closed	irony	severely	do	total	most likely
complex	irrational	significantly	downright	totally	mostly
concern (n)	just	slow	drastically	tremendous	nearly
consequence	lesson	slowly	especially	very	not sure if
correctly	like (v)	smart	even	HEDGES	often
damaging	logical	special	ever	almost	partially
destructive	look forward to	spectacular	evident	argue	perhaps
difficult	main	strict	exactly	around	personally
dire	major	strong	extremely	at least	possible
disadvantage	maximised	sweet and sour	fact	believe	possibly
doubt (v)	mean (v)	terrible	in fact	can	potential
ensure	negative	thing	far	cannot	potentially
fake	negatively	threatening	fully	certain	predict
fan (n)	neutral	toxic	have to	consider	pretty
fast	neutralised	true	highlight	could	probably
fear	nice	uncertain	highly	fairly	see
feel	normal	undeniable	just	feeling	seem
good	noticeably	unfair	know	from x's point of view	should
great	numerous	unfortunately	much	generally	some would say
happy	perfect	unique	need (n)	I can't say	sometimes
hard	pleased	unrealistic	need to	I don't know	suggest
harmful	plus (n)	unstable	never	imagine	suppose
have to	popular	useful	never ever	imply	tend
heavily	positive	valid	of course	in a way	think
helpful	prevalent	view (v)	only	in general	to some degree
high	pricy	well-liked	particularly	in most cases	under presumption
honestly	prime	worth mentioning	really	in my opinion	usually
hope	problem	would like	sheer	in some ways	wonder
huge	properly	wrong	should	in the global	would
important	rapidly	BOOSTERS	show	it is hard to say	
importantly	regressive	actually	so	just	
	remarkable	always	such	kind of	