

## RHETORICAL STRUCTURE OF THE DISCUSSION AND CONCLUSION SECTIONS IN MASTER'S THESES WRITTEN BY ENGLISH L1 AND L2 STUDENTS

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**Abstract.** *In writing a master's thesis students are expected to demonstrate both disciplinary knowledge and mastery of genre-specific writing conventions, which is particularly challenging for English L2 students writing in English. The present study deals with the analysis of the rhetorical structure of the Discussion and Conclusion sections in the corpus of master's theses (N=40) written by students majoring in applied linguistics at Croatian, UK- and US-based universities. Broadly based on the move-step models of the rhetorical structure of Discussions and Conclusions in research articles, the study explored the distribution of the rhetorical moves and steps across two sections in English L1 and L2 writing. The analysis showed overall higher frequencies of rhetorical moves in L1 thesis sections, indicating that English L1 writers structure the content of the Discussion and Conclusion sections in a rhetorically more elaborate manner than English L2 writers. The findings are discussed in light of their implications for informed genre-based academic writing instruction, particularly in non-Anglophone academic contexts.*

**Key words:** *English L1 students, English L2 students, master's thesis, rhetorical move structure*

### 1. INTRODUCTION

Master's thesis represents the most comprehensive academic assignment students must complete to pursue their master's degree and qualified participation in the disciplinary community of practice (Swales, 2004). Requirements placed on students to accomplish this task may be viewed at least from two converging perspectives. Students are expected to demonstrate substantial content knowledge and competencies in comprehending, researching, analyzing, and discussing a particular scientific topic (Thomson, 2013). At the same time, they need to demonstrate ability in structuring lengthy academic text by obeying genre-specific writing conventions and using the target disciplinary discourse (Biggs, Lai, Tang & Lavelle, 1999; Yakut, Yuvayapan & Bada, 2021). Exhibiting an advanced academic literacy level is a particularly daunting task for L2 majors writing theses in English (Biggs et al., 1999; Braine, 2002; Paltridge & Starfield, 2007). Previous research has reported on difficulties concerning English L2 students' overall language competence, e.g., grammatical accuracy or appropriate

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vocabulary use (Bitchener & Basturkman, 2006), rhetorical functions of citations (Petrić, 2007), etc. However, one of the central issues in L2 student academic writing concerns a lack of awareness of content organization across different thesis sections (Paltridge, 2002; Bitchener & Basturkman, 2006). These issues notwithstanding, studies on the organizational structure of the thesis, particularly by L2 students, are fewer in number compared to extensive research on research articles (RA) (Paltridge, 2002). As Swales (1990) notes, along with the lengthy text size, limited research interest may be due to its less prominent status than the RA and the impact of research whose authors are mainly inexperienced novice writers. Nevertheless, in light of the increasing global trends of English-medium instruction, more pedagogically oriented research on L2 graduate writing seems more than justified. This is particularly relevant in academic settings with a noticeable lack of tradition of explicit genre-based academic writing instruction in the mainstream curriculum. To fill this gap, the present study aims to explore how students majoring in English applied linguistics at a Croatian university structure the Discussion and Conclusion (D/C) sections and to compare it to the way it is achieved by their UK- and US-based peers. Findings are discussed in light of possibilities for designing genre-based L2 writing instruction considering the specifics of the local and similar university settings.

## 2. GENRE ANALYSIS AND ACADEMIC WRITING

The study of the underlying organizational layout of content in academic genres has been closely tied to genre analysis, particularly Swales' (1990) model of the rhetorical move structure (Paltridge, 2013). The rhetorical structure is described as a set of segments or moves that refer to stretches of text performing a distinctive communicative purpose that may consist of further sub-segments or steps (Biber, Connor & Upton, 2007). The typical move-step analysis includes identifying and labeling rhetorical move types across a text, which, in turn, provides the overall organizational structure of the text (Biber et al., 2007). The move-step analysis has been the dominant analytical framework in cross-disciplinary linguistic research on academic genres (Kanoksilapatham, 2007a). The following section outlines the genre of the master's thesis within the framework of genre-based research.

### 2.1. The rhetorical structure of the master's thesis

A master's thesis can be defined as an original empirically-based research study written by a university graduate (Bui, 2019). Similarly to Ph.D. dissertations, it is written for assessment purposes and is evaluated by committee members (Thomson, 2013). Both genres entail following prescribed requirements regarding word limit, content organization across obligatory sections, appropriate language use, writing style, formatting, etc. (Thomson, 2013). These and similar features are commonly addressed in hands-on guides and handbooks that may facilitate novice writers' writing process. However, as Paltridge (2002) reports, the scope of generic-type manuals is limited in providing students with insights and knowledge resulting from a deeper level of rhetorical analysis. Since the textual structure represents "a central issue in text processing and production" (Johns 1995: 185), understanding how the content is typically structured remains a prerequisite for successful thesis writing, which makes

pedagogically-driven research on its underlying organizational structure all the more important.

Empirically-based accounts of the rhetorical structure of thesis sections have mainly followed the analytical move-step models of a congruent rhetorical structure of RAs (Samraj, 2008; Chen & Kuo, 2012, Ankomah & Afful, 2019). Chen & Kuo's (2012) analysis of the rhetorical structure of applied linguistic theses showed the traditional Introduction- Literature Review- Method- Results- Discussions- Conclusions pattern to be the most frequent type of thesis macrostructure. Though less elaborated, the structure of the sections showed similarities with those of RAs and PhD theses in terms of types and sequencing of moves. Nguyen and Pramoolsook (2016) compared the rhetorical structure of theses written by Vietnamese MA students majoring in TESOL and their international peers. Their findings showed overlaps in the overall thesis organization yet variations in the move-step structure of individual sections. For instance, in both corpora, there were no moves indicating a critical stance to previous research, which the authors assumed to be a characteristic of student writing overall. By contrast, deviations from the typical rhetorical structure, such as indicating research hypotheses in abstracts, were considered to be signs of students' insufficient genre knowledge. Samraj's (2008) examination of the rhetorical structure of thesis Introductions from a cross-disciplinary perspective revealed disciplinary variations in the content structure in that some disciplines broadly followed the traditional IMRD model while others showed greater structural variability. The semi-structured interviews with thesis supervisors revealed both disciplinary agreements on the preferred structure of Introductions and variations in supervisors' attitudes and expectations, even within the same discipline. These insights underscore the complexities in providing unitary accounts of the thesis structure but also promote the importance of analyzing its characteristic disciplinary patterns.

## **2.2. Discussion and Conclusion sections of the master's thesis**

While there is a common understanding that thesis writing is a serious endeavor, writing the Discussion section seems to be particularly challenging (Bitchener & Basturkman, 2006). In Bitchener and Basturkman's (2006) study, student interviewees reported having a limited understanding of the overall function of the Discussion. For instance, they failed to recognize some of its core rhetorical functions, such as summarizing and interpreting results. While inadequate preparation and instruction might have impacted the results in the given academic context, students' difficulties in structuring the content in Discussions may not be surprising. By accounting for the nature of their results, writers need to provide new knowledge claims, which, in contrast to the descriptive functions of the Methods and to a certain degree Results sections demands deeper engagement with the subject matter and consequently more cognitive effort (Swales & Feak, 1994; Bitchener & Basturkman, 2006). The complexities in writing the Discussion are reflected in its multiple rhetorical functions. In applied linguistics, these broadly refer to providing background information, reporting, summarizing, and commenting on results. The latter involves multiple perspectives, such as accounting for, evaluating, and establishing relations between one's results and those obtained in similar research. Besides references to results, writers also summarize and evaluate the main aspects of the study, often followed by drawing deductions, such as providing implications and recommendations for further research (Chen & Kuo, 2012).

In some disciplines, the Discussion may be coalesced with the Conclusion, or the two may be written as stand-alone chapters, with the Conclusion being considerably shorter (Paltridge & Starfield, 2007). Previous studies have identified overlapping moves in the D/C sections, which include summarizing and evaluating the study and providing deductions from research. While the Discussion exhibits a cyclical move sequence, the Conclusion follows a linear sequencing of moves (Yang & Allison, 2003; Chen & Kuo, 2012). Despite similarities, the two sections perform different overarching rhetorical purposes. As Chen and Kuo (2012) note, the purpose of the Conclusion is to condense and underscore the main findings and evaluate the study, rather than provide any further commentaries on the results. As the Conclusion is the final “takeaway” section, how thesis writers summarize and structure its content merits research attention.

### 3. PRESENT STUDY

The present study aims to illuminate the patterns of similarities and differences in the rhetorical organization of the D/C sections in the master’s theses by English L2 students majoring in applied linguistics in Croatia and their L1 peers across UK- and USA-based universities. The specific research questions addressed are the following:

1. What is the distribution of the rhetorical moves and steps in the D/C sections in the English L1 vs. English L2 thesis sub-corpus?
2. Which moves and steps have an obligatory and optional status in each sub-corpus?

The comparison of the move-step structure of D/C sections in both sub-corpora allows us to examine how the two writer groups organized the content in the concluding thesis sections. We are particularly interested in exploring how L2 student writing conforms to the L1 preferred rhetorical organization of thesis content. By determining the obligatory vs. optional status of the moves and steps in each sub-corpus, the analysis will shed light on the prototypical features of the organizational structure of the given sections in the L1 and L2 thesis writing under study.

### 4. METHOD

#### 4.1. Description of corpus data

The present corpus consists of two sub-corpora, each comprising 20 D/C sections. The total corpus size is nearly 100,000 words, with statistically significant differences found in the size of the two sub-corpora and the size of the Discussion sections (see Table 1). As the institutional guidelines of L1 theses were unavailable to us, the observed differences in word counts could not be accounted for. The corpus was extracted from the Croatian sub-part of the corpus of MA theses in (applied) linguistics written in English by English L2 and L1 students, previously compiled for a large-scale project on metadiscourse in academic writing (Varga et al., 2020). The original L2 sub-corpus was retrieved from the personal folders of students’ supervisors. As the overall research aim was to explore L2 students’ rhetorical choices before supervisors’ interventions, the L2 sub-corpus is based on unrevised theses drafts. By contrast, the L1 sub-corpus comprises texts extracted from submitted and defended MA theses. Open-access institutional repositories across British and American universities were used to compile the L1 sub-

corpus. All theses were submitted between 2009 and 2019, and all shared applied linguistics as the common subject domain. All L2 theses had the explicit section headings Discussion and Conclusion mainly written as single texts, without subsections. In most English theses, the D/C sections had conventional section headings. Almost half of the L2 Discussions (n=9) had sub-sections with content headings, while most Conclusions were written as complete texts. It is worth noting that the rhetorical structure of the L1 thesis was not assumed to be a normative standard against which the comparable analysis was conducted but was regarded as an instance of academic writing reflecting the specific L1 genre requirements, the mastery of which is broadly expected to be demonstrated in L2 thesis writing.

As our study is based on the comparison between L1 written English and the L2 learner variety (Ädel, 2006), it is important to address how the notion of English L1 and L2 writing is treated in the present analysis (for more details on the L1 vs. L2 terminological qualifications, see Varga et al., 2020). Our L1 sub-corpus comprises the theses submitted by students majoring in the Anglophone academic setting. Though the status of students' L1 background is unknown to us, we use the term "English L1 student (writer)" to denote writers whose language competence is institutionally acknowledged based on having their theses defended at a university in an English-speaking country. Along the same lines, "English L2 student (writer)" refers to master-level students majoring in EFL who submitted their theses at a Croatian University.

Table 1 Word count in the English L1 and L2 sub-corpora

	English L2 sub-corpus			English L1 sub-corpus			t	p
	number of words	mean per section	SD	number of words	mean per section	SD		
Discussion	19309	965.45	580.51	56740	2837	1298.23	-5.89	<.001
Conclusion	9166	458.3	169.46	13182	659.1	561.43	-1.53	.13
Total	28475	1423.75	601.17	69922	3496.1	1574.84	-5.49	<.001

#### 4.2. Data analysis

To investigate the rhetorical structure of the target sections, we adopted Yang and Allison's (2003) move-step analytical framework drawing upon the rhetorical analysis of D/C sections of RAs in applied linguistics (see Figure 1). The framework was also utilized in previous analyses of the thesis' rhetorical structure (e.g., Chen & Kuo, 2012). The framework consists of 10 moves in total, seven in the Discussion and three in the Conclusion section. Three moves in the Discussion (M4, M6, and M7) and two moves in the Conclusion (M2, M3) are realized through several steps. Based on the shared communicative functions, the moves in the Discussion can be grouped into results-oriented (M1-M4) and study-oriented (M5-M7). The Conclusion moves are solely study-oriented and partly overlap with the congruent moves in the Discussion, with some slight differences in the communicative functions of steps. Following Pho (2013), our analysis is based on a top-down approach, meaning that the moves were identified based on the content of the textual segment.

<p><b>Moves and steps in Discussion</b></p> <p>Move 1—Providing background information</p> <p>Move 2—Reporting results</p> <p>Move 3—Summarizing results</p> <p>Move 4—Commenting on results</p> <p style="padding-left: 20px;">S4.1 Interpreting results</p> <p style="padding-left: 20px;">S4.2 Comparing results with the literature</p> <p style="padding-left: 20px;">S4.3 Accounting for results</p> <p style="padding-left: 20px;">S4.4 Evaluating results</p> <p>Move 5—Summarizing the study</p> <p>Move 6—Evaluating the study</p> <p style="padding-left: 20px;">S6.1 Indicating limitations</p> <p style="padding-left: 20px;">S6.2 Indicating significance/advantage</p> <p style="padding-left: 20px;">S6.3 Evaluating methodology</p> <p>Move 7—Deductions from the research</p> <p style="padding-left: 20px;">S7.1 Making suggestions</p> <p style="padding-left: 20px;">S7.2 Recommending further research</p> <p style="padding-left: 20px;">S7.3 Drawing pedagogic implications</p> <p><b>Moves and steps in Conclusion</b></p> <p>Move 1— Summarizing the study</p> <p>Move 2— Evaluating the Study</p> <p style="padding-left: 20px;">S2.1 Indicating significance/advantage</p> <p style="padding-left: 20px;">S2.2 Indicating limitations</p> <p style="padding-left: 20px;">S2.3 Evaluating methodology</p> <p>Move 3— Deductions from the research</p> <p style="padding-left: 20px;">S3.1 Recommending further research</p> <p style="padding-left: 20px;">S3.2 Drawing pedagogic implications</p>
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Fig. 1 Move/step structure in Discussion and Conclusion thesis sections  
(based on Yang and Allison, 2003)

The coding scheme was first piloted on a small corpus of D/C sections. After each author identified moves, we compared the analyses and revealed occasional mismatches in move coding, which resulted in establishing firmer coding criteria. As suggested in previous research (Pho, 2013), this involved deciding on some typical content questions to allow the distinction between similar steps comprising each move. For example, the questions ‘What do the results mean?’ and ‘Why were the results the way they were?’ were used to differentiate between S4.1 *Interpreting results* and S4.2 *Accounting for results*, respectively. In identifying move types, we also looked for lexical and metadiscoursal signals that can indicate a distinct rhetorical function (Yang & Allison, 2003). For instance, the extraposed *it*-clause and hedge ‘seem’ in ‘*It thus seems that when participants are able to interact...*’ can be considered a sign of the writer’s cautious intention to provide a tentative interpretation of the results.

Despite the abovementioned strategies, our move categorization was occasionally fraught with obstacles due to fuzzy boundaries between similar move types, as well as the possibility for a text segment to perform more than one rhetorical function. As a

consequence, we were challenged by subjectivity in assigning a particular rhetorical function to a text segment, which has been recognized as one of the major methodological stumbling blocks inherent in the rhetorical move analysis (Pho, 2013; Kanoksilapatham, 2007b). To ensure maximum reliability of the analysis, we broadly followed in the methodological footsteps of previous research in which the same texts were analyzed by multiple raters and measured in terms of interrater agreement or reliability rates (Kanoksilapatham, 2007a; Chen & Kuo, 2012). Our approach was based on individual manual move coding of L1 and L2 sections and followed by a comparison of the results. In case of discrepancies in assigning a move type, we reached a consensus by opting for a stronger argumentation. All moves were coded using the move-step framework outlined above. Raw frequencies of each move type were calculated for both sections in each sub-corpus. Bonferroni corrected Mann-Whitney U test was used to test the differences in the frequencies of move types in the sub-corpora. To establish the obligatory vs. optional status of moves, we followed the methodological procedure proposed by Kanoksilapatham (2007b). The cut-off point of 60% of move occurrences in a sub-corpus was used to mark its status as obligatory. If the frequency of a move was less than 60%, it was considered optional. The statistical analysis included repeated measures ANOVA with within-subjects factor and Greenhouse-Geisser correction due to violated sphericity. Moves in Discussion and Conclusion were used as dependent variables. Due to multiple comparisons, Bonferroni corrections were applied to diminish the probability of making a Type I error.

## 5. RESULTS

The frequency analysis identified the presence of all moves and almost all steps in the corpus. Table 2 outlines the overall frequency of moves in the D/C sections across the sub-corpora, as well as the mean frequency of moves per section and Table 3 shows the distribution of moves and steps across two sub-corpora.

Results showed that, in total, L1 students used more moves than their L2 peers. The mean frequency of moves in L2 Discussion was 20.9 (SD = 10.79), ranging from 5 to 42 moves, while it was almost triple in L1 Discussions (M = 58.35, SD = 29.35) where it ranged from 18 to as many as 123 (see Table 2).

Table 2 Overall frequency of moves in Discussion and Conclusion sections across sub-corpora

	English L2 sub-corpus		range	English L1 sub-corpus		range
	total frequency	mean per section (SD)		total frequency	mean per section (SD)	
Discussion	418	20.9 (10.79)	5-42	1167	58.35 (29.35)	18-123
Conclusion	84	4.2 (1.61)	2-7	146	7.3 (8.06)	1-30
Total moves	502	25.1 (10.28)	11-44	1313	65.65	27-145

Table 3 Distribution of moves and steps across two sub-corpora

Moves	Steps	English L2 corpus				English L1 corpus				<i>P</i> <sub>bonf</sub>
		appears in % of texts	<i>f</i>	% ( <i>n</i> =418)	mean /section (SD) ( <i>n</i> =20)	appears in % of texts	<i>f</i>	% ( <i>n</i> =1167)	mean/ section (SD) ( <i>n</i> =20)	
<i>Discussion</i>										
M1	Providing background information	90	54	12.92	2.7 (1.72)	100	233	19.97	11.65 (6.88)	<.001
M2	Reporting results	100	98	23.44	4.9 (3.09)	100	187	16.02	9.35 (6.23)	.003
M3	Summarizing results	50	27	6.46	1.35 (2.01)	90	110	9.43	5.5 (4.86)	.011
M4	Commenting on results									
	S4.1 Interpreting results	75	49	11.72	2.45 (2.26)	85	75	6.43	3.75 (3.37)	1.00
	S4.2 Comparing results with the literature	65	46	11	2.3 (2.68)	90	78	6.68	3.9 (3.62)	1.00
	S4.3 Accounting for results	75	48	11.48	2.4 (2.72)	95	151	12.94	7.55 (6.08)	<.001
	S4.4 Evaluating results	70	31	7.42	1.55 (1.64)	70	59	5.06	2.95 (3.36)	1.00
M5	Summarizing the study	60	22	5.26	1.1 (1.21)	85	79	6.77	3.95 (3.44)	1.00
M6	Evaluating the study									
	S6.1 Indicating limitations	35	13	3.11	.65 (1.04)	55	41	3.51	2.05 (2.61)	1.00
	S6.2 Indicating significance/ advantage	10	2	0.48	.1 (.31)	40	12	1.03	.6 (.82)	1.00
	S6.3 Evaluating methodology	20	5	1.2	.25 (.55)	65	46	3.94	2.3 (2.68)	1.00
M7	Deductions from the research									
	S7.1 Making suggestions	15	3	0.72	.15 (.37)	65	24	2.06	1.2 (1.11)	1.00
	S7.2 Recommend ing further research	15	7	1.67	.35 (.87)	75	58	4.97	2.9 (-3.27)	1.00
	S7.3 Drawing pedagogic implications	40	13	3.11	.65 (.93)	25	14	1.2	.7 (1.84)	1.00



Conclusion										
M1	Summarizing the study	100	30	35.71	1.5 (.69)	100	52	35.62	2.6 (2.54)	.813
M2	Evaluating the study	25	6	0.12	.3 (.57)	55	21	14.39	1.05 (1.57)	1.00
	S2.1 Indicating significance/ advantage									
	S2.2 Indicating limitations	50	10	11.9	5 (.51)	25	15	10.27	.75 (1.45)	1.00
	S2.3 Evaluating methodology	0	0	0	0	30	9	6.16	.45 (.94)	-
M3	Deductions from the research	65	17	20.24	.85 (.75)	55	35	23.97	1.75 (2.61)	1.00
	S3.1 Recommending further research									
	S3.2 Drawing pedagogic implications	80	21	25	1.05 (.69)	40	14	9.59	.7 (1.03)	1.00

The results of the repeated measures ANOVA showed that there was a significant statistical difference in the distribution of moves in the Discussion section ( $F(5.39, 204.78) = 25.96, p < .01; \omega^2 = .32$ ), as well as in Conclusion ( $F(2.96, 112.48) = 11.509, p < .001; \omega^2 = .11$ ). The interaction between the two corpora and the distribution of moves in the Discussion and Conclusion, respectively, was significant.

Overall, the results point to the generally congruent distribution of moves in Discussion by two groups of writers (see Figure 2). In the Discussion, both L1 and L2 writers mostly commented on the results of their research. The high frequency of M4 *Commenting on results* in both sub-corpora is aligned with the overall rhetorical purpose of the section (Basturkmen, 2009). The most frequent move in L1 Discussions was M1 *Providing background information*, followed by M2 *Reporting results* and M3 *Summarizing results*. The analysis of the L2 sub-corpus showed a similar distribution of the first three moves, the only difference being the reversed order of the first and second most frequent move. The use of three remaining study-related moves (M5, M6, and M7) was similar in both sub-corpora in that their frequencies are considerably lower than the results-oriented moves (M1-M4).

We also calculated the occurrences of steps realizing distinct moves. The comparison of the results revealed higher frequencies of occurrences of all steps in the L1 sub-corpus. However, pairwise comparisons with Bonferroni adjustment showed that the differences were statistically significant in only four moves and steps in Discussion: M1 *Providing background information*, M2 *Reporting results*, M3 *Summarizing results* and the step *Accounting for results* in M4, as indicated in Figure 2.

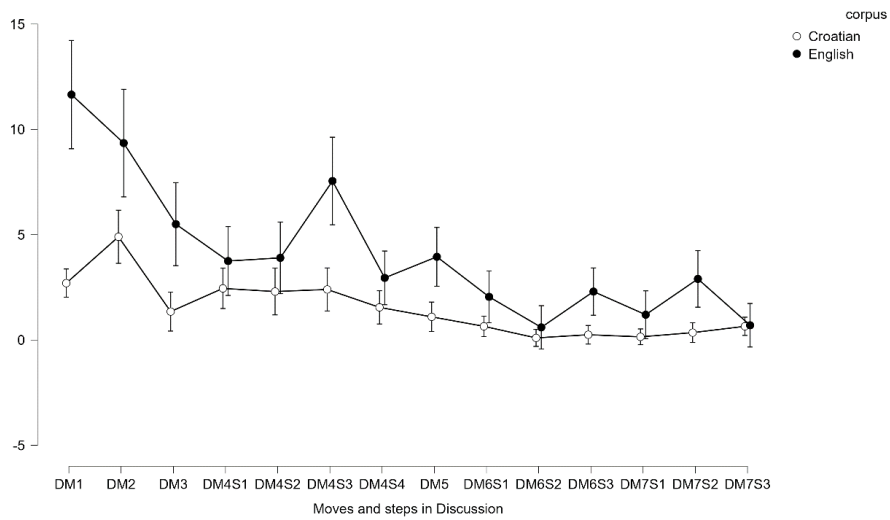


Fig. 2 Pairwise comparisons of mean frequency of moves and steps in Discussion across sub-corpora

The frequency analysis in the Conclusion sections shows the dominance of M1 *Summarizing the study* in both sub-corpora (see Figure 3). Yet, the frequency counts of the remaining moves indicate a different focus by the two writer groups. Unlike L2 writers, L1 writers were more interested in indicating the significance of their studies (S2.1) and evaluating methodology (S2.3). No occurrences of the latter in L2 Conclusions suggest that L2 English students did not find it important to evaluate the methodological aspects of their studies in this section at all. Instead, they paid considerably more attention to drawing pedagogic implications (S3.2) than L1 writers. However, pairwise comparisons with Bonferroni adjustment showed that the differences between moves and steps in Conclusion were not statistically significant (see Table 3).

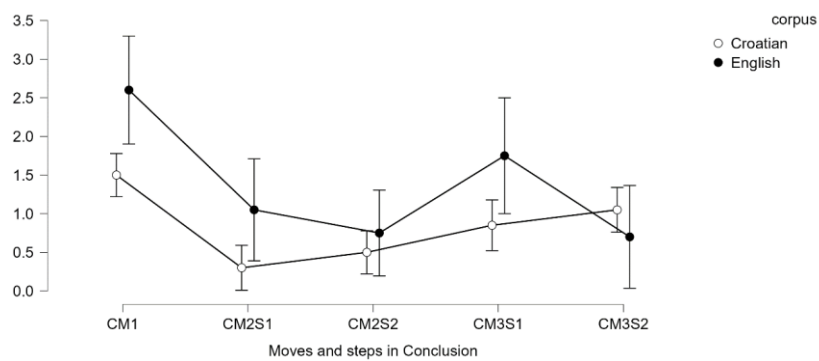


Fig. 3 Pairwise comparisons of frequency of moves and steps in Conclusion across sub-corpora

To determine the obligatory vs. optional status of moves and steps, we also calculated the frequency (%) of move occurrences in individual texts in both sub-corpora (see Table 3). The findings indicate a greater range of obligatory moves and steps in L1 Discussions. Based on the cut-off point outlined above, all seven moves, including at least one obligatory step in the multi-step moves, were obligatory in L1 Discussions, while four moves had the same status in L2 Discussions. Seven of ten steps were obligatory in L1 while four were in L2 Discussions. The optional steps were used at a higher frequency in L1 Discussions, except for *S7.2 Drawing pedagogic implication*, which occurred in 40% of L2 Discussions and 25% of L1 sections. In both sub-corpora, *M2 Reporting results* occurred in 100% of Discussions under study, underscoring its centrality. *M1 Providing background information* was also used in all L1 Discussions, showing a high frequency of occurrences in L2 sections (90%). The most striking difference was observed in the frequencies of *M3 Summarizing results*, which was used in 90% of L1 Discussions and 50% of L2 Discussions.

The frequency analysis in the Conclusion showed that *M1 Summarizing the study* was used in all L1 and L2 texts. Though *M2* was optional in both sub-corpora, variations in distributions revealed different writers' perspectives. Thus, while *S2.1. Indicating significance/advantage* was used at the rate of 55% in L1, it showed a frequency of 25% in L2 Conclusions. By contrast, *S2.2 Indicating limitations* was identified in 50% of L2 Conclusions, while it occurred in 25% of L1 Conclusions. *S2.3 Evaluating methodology* was reported in 30% of L1 Conclusions but it was not identified in any of L2 Conclusions, thus being the only step with no occurrences in the corpus as a whole. The frequencies of both steps realizing *M3 Deductions from the research* marked the obligatory status in L2 texts, yet it was optional in L1 Conclusions.

## 6. DISCUSSION

### 6.1. Rhetorical structure of the L1 and L2 Discussion sections

The comparison of the obtained results shows that L2 writers generally use more moves to structure their Discussion, as reflected in a statistically significant difference with a large effect size. Despite this overall distinction, L1 and L2 texts share certain rhetorical similarities. In other words, both L1 and L2 writers tend to focus primarily on reporting and discussing the obtained findings, while they are less concerned with evaluating their studies and making deductions based on them. This finding generally corroborates the results of Chen and Kuo's (2012) analysis of the overall rhetorical purposes of the Discussion in MA theses. It also corresponds to the underlying rhetorical structure of Discussions in RAs in applied linguistics (Yang & Allison, 2003). A closer look at the distribution of moves shows that all L1 and most L2 writers found it necessary to contextualize the discussion of the results against the background of information relevant to their research. This usually involved referring to the literature-based data concerning the underlying theoretical background, restating major research hypotheses, objectives, or other theoretical and methodological issues pertinent to the discussion. In both sub-corpora, *M1 Providing background information* was recycled throughout the section. However, it was often employed as the opening move, followed by *M2 Reporting results*. The sequence of two moves is illustrated as follows:

(1) *The aim of this experiment was to capture the presence of inter-linguistic links using a translation recognition task... In the critical incorrect (“no”) trials, participants saw cognate and noncognate French words followed by... [M1 Providing background information] ... The results for these trials show that there was no difference in RT or accuracy interference... [M2 Reporting results] [ENG2]*

Though both writer groups frequently used M1, the statistically significant difference between the frequency counts shows (see Table 3) that L1 writers were more concerned with contextualizing the discussion of the results against the background data. This suggests that L1 writers were more likely to conform to the preferred rhetorical organization of the Discussion, which, among others, entails interweaving references to the background literature data and one’s research with the discussion of the obtained findings (Bitchener & Starfield, 2007).

As previously indicated, M2 *Reporting results* was the only move that was used in all L1 and L2 Discussions, which is aligned with prior research on the main rhetorical functions of the thesis (Chen & Kuo, 2012), but not the RA (Yang & Allison, 2003). The saliency of this move is expected, given that providing meaning to findings and discussing their significance can hardly be achieved without reporting them (Swales & Feak, 2004; Bitchener, 2010). M2 was typically signaled by references to qualitative or statistical data, examples, tables, graphs, etc., as demonstrated below:

(2) *The error analysis of learners’ word order errors shows that learners generally make errors in the placement of adverbials (46.19%). [HR8]*

As noted above, while reporting findings in the Discussion, a writer naturally comments on them. Hence, in the rhetorical moves’ terms, the M2-M4 pair can be considered the most logical move pair. A sequence of M2 and two steps comprising M4 is illustrated in example (3). The writer starts with a synthesized report of the selected results, followed by the interpretation of the findings whose validity is supported by referring to the relevant theoretical model.

(3) *Without the ability to bootstrap knowledge, participants were scoring under 50% on the recognition tests. [M2 Reporting results] These results suggest that co-occurrence frequency, syntactic framework, and prior knowledge were all helping the participants learn the novel words, ... [S4.1 Interpreting results] The results corroborate the emergentist coalition model of word learning, which states that word learning... (Hirsh-Pasek et al., 2000). [S4.2 Comparing results with the literature] [ENG4]*

When the frequency counts of M2 occurrences are compared to those of M4 steps, the findings uncovered different rhetorical choices by two writer groups. In L1 Discussions, the frequencies of M2 and *S4.3 Accounting for results* are relatively close (see Table 3). Though at lower rates, most other M4 steps were recorded in more than 85% of texts, indicating that most L1 writers achieved the focal communicative function of the Discussion. By contrast, in L2 Discussions, the commentary-related M4 steps occurred in 65% to 75% of texts, compared to M2, which was reported in all texts. Additionally, the comparison of the move ratios showed that *S4.3 Accounting for results* occurred at the frequency of 11.5% as compared to 23% of M2, marking the highest frequency rate in the L2 sub-corpus. This finding suggests that in structuring the content of the Discussion

section, L2 writers were more concerned with reporting rather than explaining their findings. The comparison of frequency counts between the sub-corpora showed that the given step was used in 75% of L2 Discussions, whereas it was used in 90% of L1 discussions. As noted above, the difference in frequencies of *S4.3 Accounting for results* was statistically significant, which indicates that, compared to L2 writers, L1 writers were more successful in aligning their texts with the central rhetorical purpose of the Discussion. While it is hard to precisely account for the reasons underlying L2 students' choices in placing more emphasis on reporting rather than accounting for the results, it can be assumed that some students found it difficult to go beyond a mere description of the obtained findings. For this reason, they may have avoided taking risks to engage in a deeper discussion of their findings. Alternatively, as Bitchener and Basturkmen (2006) also report, students may have been uncertain of the main rhetorical purpose of the Discussion, which may have resulted in the restatement of the findings already presented in the Results. In doing so, however, some of them failed to completely comply with the rhetorical requirements of this section.

A further distinction in the rhetorical preferences of L1 and L2 writers concerns the use of M3 *Summarizing results*. It indicates the synthesis of results from which a follow-up discussion may ensue (Yang & Alison, 2012). At the lexical level, M3 is typically signaled by the use of discourse markers, such as *in general*, *in conclusion*, *to sum up*, etc., as shown in example (4):

(4) *In general terms, the results showed high percentage value, regarding classroom implementation, teacher practice...* [ENG9]

Close frequencies of M2 and M3 in L1 Discussions indicate that most L1 writers prefer to summarize previously reported results in writing this section. This contrasts with the findings reported in L2 Discussions, which point to the optional status of M3. When the frequencies of M3 are compared with the frequencies of somewhat congruent M5 *Summarizing the study*, it is noticeable that each group of writers showed similar tendencies in their usage. *Summarizing the study* represents a move that indicates a synthesized account of the key aspects of the conducted research (Yang & Alison, 2012). High frequencies of occurrences of M3 (90%) and M5 (85%) in L1 Discussions lead to the conclusion that most L1 writers found it equally important to sum up both the results and the study overall. For L1 writers, summarization therefore seems to be a subsequent step of a previous discussion. L2 writers, on the other hand, used the given moves substantially less frequently (M3=50%, M5=60%). The statistically significant difference between the frequency counts of M3 *Summarizing results* (see Table 3) indicates that, unlike in L1 Discussions, summarization is not one of the central rhetorical purposes in L2 sections. Swales and Feak (2004) suggested that *Summarizing* and *Reporting* key results are obligatory moves of both D/C sections. It may be the case that some L2 writers in our study were unaware of the former, which concurs with students' perceptions reported in Bitchener and Basturkmen's (2006) study. Additionally, they may have avoided dealing with summarization due to the inherent complexity of summary writing in general. Thus, they decided to summarize the study only in the Conclusions where this rhetorical function could hardly be avoided.

Differences in the frequencies of almost all steps comprising M6 and M7 in L1 and L2 Discussions indicate that, unlike L2 writers, L1 writers were more oriented toward evaluating different aspects of their studies as well as drawing deductions from them (e.g., recommending further research). In other words, compared to L2 writers, they more often expressed their authorial voice concerning the research conducted. For instance, in example (5), the writer takes a rather critical stance toward the research instrument by pointing to its shortcomings yet providing recommendations on how these might be remedied in future studies.

(5) *All in all, while some information could be discerned from the screen-captures, a questionnaire about the participants' interactions may have been more suited researching the way in which the participants engaged with the blogs and video blogs. [S6.3. Evaluating the methodology]. Alternatively, this research question could be addressed in more detail in future self-report studies, like those conducted by... [S7.2 Recommending further research] [ENG3]*

## 6.2. Rhetorical structure of the L1 and L2 Conclusion sections

Lower frequencies of the congruent moves in the L1 Conclusions indicate that though present in both sections, the rhetorical purposes of Evaluating the study and Drawing deductions from research are more prominent features of L1 Discussions than Conclusions. By comparison, frequency analysis of the congruent moves in L2 D/C sections shows the reverse rhetorical patterns. While the frequencies of steps comprising M6 and M7 point to their optionality in Discussions, relatively higher frequencies of most of their rhetorical counterparts in the Conclusion show that L2 writers preferred to evaluate their study in the final thesis section. This is particularly evident in the frequency counts of S3.1 *Recommending further research* and S3.2 *Drawing pedagogic implications* which are obligatory steps in the Conclusions but optional in Discussions. It is reasonable to suggest that the obtained distribution is related to the scope of L2 theses that more often dealt with classroom research than L1 theses. Also, a high frequency of the given step is likely due to the requirements of L2 thesis guidelines in which a reference to practical teaching implications was a required thesis component. As for the remaining move structure, differences were noted in the frequencies of S2.1 and S2.3 across the sub-corpora, indicating that compared to L2 writers, L1 writers were more concerned with emphasizing the advantages of their studies and evaluating various methodological issues. This finding supports the distribution of the congruent steps in the Discussion, underscoring the importance that L1 writers assign to these aspects of their theses. By way of illustration, the writer in the example below provided a positive evaluation of the obtained findings, which were confidently characterized as fundamentally encouraging, expressing thus a strong commitment to the importance of the conducted case study.

(6) *The fundamentally encouraging findings in this small-scale exploratory case study provide evidence that SL appears to be an effective language learning platform... [S2.1 Indicating significance/advantage] [ENG10]*

## 7. GENERAL DISCUSSION AND IMPLICATIONS

At the general level, the findings show that most English L1 and L2 student writers organized the content in the final thesis sections in line with the preferred rhetorical requirements. The frequency of the obligatory moves performing the core communicative functions suggests students' overall familiarity with the broad schematic structure of D/C sections. However, a deeper insight into the results revealed that English L1 students wrote rhetorically denser and more complex concluding sections. This is reflected not only in the higher frequencies of obligatory moves and the distribution of single moves and steps but also in the mean frequency of moves per section, which generally showed higher rates in L1 texts. Overall, both cohorts of writers were more concerned with reporting and commenting on their findings rather than with providing evaluations. However, this cannot be considered a major rhetorical weakness given their status as student writers and the purpose of the graduate-level writing under study (Basturkmen, 2009). Nevertheless, compared to L2 writers, L1 students demonstrated more willingness to express their critical voice and elaborate on multiple aspects of their research. This indicates their stronger commitment to discussing issues and generally deeper engagement with the thesis content.

Despite the lack of concrete data on L1 writers' previous experiences with academic writing, it is our general assumption that the present findings may reflect distinct culturally-driven teaching paradigms that focus more or less on the development of writing skills. Anglophone (tertiary) education seems to be more inclined toward skill-based teaching approaches than many non-Anglophone academic contexts, such as Croatian in which traditional frontal instruction still prevails. It is, therefore, likely that L1 students had been provided with more academic writing instruction, which had equipped them with a higher degree of rhetorical knowledge and writing skills required for thesis writing.

By contrast, in the Croatian academic setting under study, apart from essays, occasional seminar papers, and small-scale research report writing, genre-based writing instruction has not been a fully established component of the graduate English Studies programs. In other words, despite some emerging initiatives, stand-alone courses on academic writing are still in the infant stages. The lack of sufficient training and expertise in academic writing and the complexity of thesis writing may have left some L2 students ill-equipped with the necessary disciplinary rhetorical knowledge and skills to structure the content in a rhetorically more elaborate manner. For this reason, we argue that the provision of genre-based writing courses adapted to the nature of English L2 academic settings should be oriented primarily at raising students' awareness of the rhetorical and linguistic features of the target academic genres. This could be achieved through direct instruction on the rhetorical organization of the content and supplemented with appropriate writing practice. Indeed, L2 students reported didactic writing instruction as the most effective approach to developing rhetorical knowledge for L2 graduate writing (Biggs et al., 1999).

As previously mentioned, the institutional guidelines for thesis writing in English, along with the commercial handbooks and other resources on thesis writing, may be insufficiently instructive for meeting English L2 students' disciplinary writing needs, particularly concerning content organization (Bithchener, 2010). Therefore, tailor-made authentic teaching materials arising from disciplinary writing, such as the one analyzed here, may prove particularly useful for developing students' rhetorical awareness. Though successful writing does not involve only knowledge about the structural layout of the content (Paltridge, 2002), instruction in strategies to identify and explore the rhetorical patterns of

genres important for students' academic needs along with writing practice may facilitate stronger development of academic literacy (Tardy, 2023). Admittedly, genre-based writing instruction may require thesis supervisors to possess some knowledge of the rhetorical structure of academic genres. One of the solutions might be the provision of collaborative teaching between EAP instructors and subject-specific course instructors. Designing courses, workshops, or alternative teaching programs based on integrating disciplinary content and the target language skills might be particularly beneficial.

Although the results of the repeated measures ANOVA showed that there was a significant statistical difference in the distribution of moves in the Discussion and Conclusion, as well as the interaction between the subcorpora and the moves distribution in the two sections was significant, most pairwise comparisons failed to reach statistical significance. This may be a consequence of the corrections applied due to multiple comparisons. However, despite the limited scope and the relatively small corpus size, the study has provided us with some understanding of the rhetorical preferences of English L2 and L1 student writers in writing the final sections of their master's thesis. A congruent rhetorical analysis of the remaining thesis sections would provide a more comprehensive picture of the rhetorical practices of L1 and L2 student writers. The scope of the present study may be extended by the content analysis of the rhetorical moves, which might provide a more fine-grained insight into the specifics of move realization. For instance, a single move may only be formally present, indicating a particular communicative function yet lacking substance in the propositional content. To illustrate, if the claim in example (7) is not substantiated by further arguments, the communicative function of Drawing pedagogic implications may only be declared but not completely achieved.

*(7) In order to support the improvement of learners' pragmatic comprehension, the appropriate changes in the curriculum of English in Croatian high schools become a necessity. [HR18]*

Another important research strand may be the analysis of the typical word clusters used to signal moves, as it is commonly acknowledged that the rhetorical move structure is associated with formulaic language use (Lu, Yoon & Kisselev, 2021). English L2 student writing may be examined regarding the frequency, diversity, and complexity of lexical bundles used to achieve various rhetorical purposes and compared to English L1 writing or even expert writing. Such analysis may provide writing instructors with useful data to expand English L2 students' knowledge of conventional phraseology used in thesis writing.

## 8. CONCLUSION

The present study aimed to examine how Croatian students majoring in applied linguistics and English-speaking peers from Anglophone academic settings structure the content of the D/C sections of their master's theses. The comparative move-step analysis showed a higher frequency of rhetorical moves in L1 student writing. This is reflected in a more scrutinized discussion and evaluation of their research projects, resulting in higher-level academic writing. By contrast, though generally familiar with the schematic structure of D/C sections, L2 students demonstrated less engagement with the content, as reflected in a lower frequency of rhetorical moves, particularly those concerned with



more argumentative rhetorical purposes. We believe that the variations in the rhetorical choices between the two writer groups may be related to students' educational backgrounds, with L2 students being less exposed to genre-based pedagogy and consequently exhibiting less proficient academic writing skills.

The current research may encourage stronger implementation of genre-based writing instruction in Croatian and similar English L2 academic settings where it has not been sufficiently integrated into the leading educational paradigms. In light of the growing trends in the internationalization of higher education and the status of English as the world's dominant academic language, the demands for genre-based teaching in university study programs in English have become increasingly important.

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