

A move analysis of the discussion sections in English as a second language learners' quantitative theses

Mary Joy V. Herediano, Riziel E. Secretario, Arnold M. Sumpo, Ivy F. Amante, Rovy M. Banguis,
Gay Emelyn L. Lariosa, Norhanie D. Macarao

Department of English, College of Arts and Sciences, Mindanao State University-Buug, Buug, Philippines

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ABSTRACT

Discussion section of research papers is one of the most essential sections because the authors demonstrate the knowledge contribution of their research findings to the existing literature. In this study, 16 quantitative theses analytical components written by the English language learners were gathered and analyzed. By utilizing qualitative research design focusing on move analysis, the researchers found out that Move 1 (background information), Move 2 (reporting results), Move 3 (summarizing the result), and Move 4 (commenting on the results) were identified as obligatory moves since they serve as the primary objectives of this explanatory segment. Move 6 (evaluating methodology) was recognized as a traditional move. Move 5 (summarizing the study) and Move 7 (deductions from the research) were noted as optional moves. Distinct linguistic characteristics and verbal signals were observed in the various moves, with the patterns of these steps identified as a structured arrangement in the results discussion. The results aim to help student writers recognize the rhetorical frameworks that should be included in the interpretive sections of quantitative theses.

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Corresponding Author:

Mary Joy V. Herediano

Department of English, College of Arts and Sciences, Mindanao State University-Buug

Datu Panas, Buug, Zamboanga Sibugay, Philippines

Email: maryjoyherediano02@gmail.com

1. INTRODUCTION

Academic texts can be systematically represented as a series of rhetorical “moves”. Swales [1] defined a move as a rhetorical or discoursal unit that serves a specific communicative purpose within both spoken and written discourse. In his later work, it reflects on the evolving nature of discourse communities and emphasizes that rhetorical structures such as moves are shaped by shifting academic practices and community expectations [1]. This perspective underscores the adaptability of genre conventions and highlights how rhetorical moves function as strategic tools for organizing and presenting academic arguments. In this study, moves are employed to analyze how student writers structure their discussion sections and convey the significance of their findings.

Discussion section of research papers is important part because it is here that authors presented their key findings and discuss significant contribution they offer to the existing literature. It is the “backbone” of the article and the most difficult section to write. It is also the section which also can validate the author’s understanding of the topic and skill of writing [2]. Discussion sections occupy a significant role when researchers reflect their empirical, theoretical, methodological and practical contributions [3]. However, it has been shown that the results commentary presents the most significant challenge in research papers, theses, and dissertations for both native and multilingual English users [1].

In shaping the overall impact of the research, it is important for student writers to follow a clear and logical structure, using appropriate academic conventions to guide how they present and interpret their findings. As a major academic requirement, writing a thesis supports students not only in meeting program outcomes but also in building their analytical and critical thinking abilities [4]. This study centers on the rhetorical moves found in the discussion sections of quantitative theses written by learners of English as a second language (ESL). In this analysis, the discourse strategies found in the interpretive segments were classified as obligatory, conventional, or optional based on their frequency of occurrence within the corpus. This classification is grounded in the criteria established by Amnuai and Wannaruk [5]. Obligatory steps are those that appeared in 100% of the analysis portions, indicating their essential role in achieving the communicative purpose of the genre. Conventional elements were present in 60% to 99% of the texts, reflecting common academic expectations, though not universally required. Optional units, found in less than 60% of the corpus, suggest discretionary usage depending on the writer's stylistic choices, awareness of genre conventions, or perceived relevance to the study. Applying this framework enables a more precise and empirically supported analysis of rhetorical structure, providing insight into how student writers negotiate the conventions of academic discourse. Although similar studies have investigated academic writing structures, few have focused on how undergraduate English language learners develop the analytical sections of quantitative theses, particularly in the Philippine context. By looking closely at how these students organize their ideas, this research adds a localized and learner-specific perspective to the broader conversation on academic discourse and writing instruction.

Although similar studies have examined academic writing structures, few have specifically focused on how undergraduate ESL students construct the discussion sections of quantitative theses-particularly within the Philippine context. By analyzing how these students organize and articulate their ideas, this research contributes a localized, learner-specific perspective to the broader discourse on academic writing instruction. While the present study is limited to one institution and discipline, future research may benefit from comparative analyses across academic fields (science, technology, engineering, and mathematics or STEM vs humanities) or between native and non-native English writers. Such comparisons could further illuminate disciplinary conventions and linguistic challenges, thereby enhancing the generalizability and pedagogical relevance of move-based genre analysis.

The discussion section is where one explores the significance, value, and pertinence of the findings. It should aim to clarify and assess the discoveries, illustrating how they connect to the literature review and the overall topic of the paper or dissertation while also making a case in support of the main conclusion. Since the discussion section largely allows for the expression of personal viewpoints, a writing style that enables authors to share their opinions openly is essential. The discussion section aims to interpret the findings. Even though this section appears at the end of the paper, it must be considered what will be included from the very beginning of the study's planning [6].

This paper presents a thorough review of the discussion sections of research articles spanning 36 years, highlighting that the discussion "constitutes a crucial component of the research article writing process," necessitating authors to organize the section with clearly defined rhetorical strategies to interpret and contextualize findings [7]. This qualitative study of high-impact Indonesian journals reveals that authors routinely use crucial rhetorical strategies, including the presentation of results and their interpretation in relation to prior research, underscoring the discussion section's vital function in academic discourse [8]. This section may also encompass numerous rhetorical elements, including limitations, recommendations, and the study's implications [9]. Luo and Ji [10], observed that a move operates as a unified entity, directing the reader towards the author's intended message, whereas steps offer specific ways that clarify or execute the motion. This analytical paradigm has been particularly important in analyzing the rhetorical structure of research articles, a genre essential for academic discourse. Moreover, Rahayu *et al.* [11] noted that discussion sections are structured into specific motions and repetitive cycles, enabling authors to methodically accomplish their communicative objectives.

Numerous scholars have employed move analysis as a technique for exploring the organization of information in different contexts, registers, and genres, including scholarly writing [12]. Constructing discussion sections in research papers that appear in English-language journals can be quite difficult, particularly for individuals whose primary language is not English [13]. Employing move analysis to identify the elements of research articles provides benefits and options for inexperienced writers, as grasping these 'moves' can improve the clarity and trustworthiness of their writing. They can establish the field or topic, identify a problem, and delineate the scope of the issue by focusing on the key aspects that need to be addressed. Moves can vary in length, but typically include at least one proposition. Some types of moves are more commonly found in a particular genre and can be considered conventional, while others that appear less frequently may be deemed optional. Moves can involve multiple elements that, when combined or used in different ways, complete the move. These components are called "steps" [1] or "strategies" [14]. The stages

involved in a move mainly aim to achieve the goal of that particular move [1], [15]. In conclusion, moves reflect the meaning and practical components of the text that possess distinct communicative purposes.

Hilmi *et al.* [16] examined the diverse motions and stages present in the discussion portions of quantitative and qualitative research publications, as well as the rhetorical structure patterns within these conversations. The results indicated that every action inside the framework was employed to analyze both qualitative and quantitative research articles. The prevalence of each argument type differed between the discussion sections of these two distinct research methodologies. Moreover, the discussion styles identified in qualitative and quantitative research publications displayed no significant differences. Two primary kinds of patterns arose from the discussions on qualitative and quantitative research: repeating patterns and structured patterns, although some distinctions were present within each category. Study by Sithlaothavorn and Trakulkasemsuk [17] discovered that the frequency of moves in the discussion sections of both Thai and international research articles is comparable. In contrast to other sections with clearly recognizable move patterns, this research concludes that the discussion portion lacks a specific move pattern.

Swales [1] articulated a comparable viewpoint concerning the composition of the discussion part in research articles. “Specialized/written text/monologue/discussion/exploring+recommending” pertains to text typology patterns, emphasizing the exploration component, while Move 2 entails the presentation of discoveries or outcomes that typically relate to public ideals or hypotheses. This generally entails assessing multiple alternatives and consulting prior research. The study by Thanajirawat and Chuea-Nongthorn [18] sought to analyze the patterns and structures present in the discussion section of research papers to improve the clarity and efficiency of authoring this segment. The research focused on a sample of 30 academic papers obtained from the Scopus database, published from 2004 to 2018 and classified within Quartiles 1-3. All chosen articles related to the humanities and social sciences, covering three principal categories: language, linguistics, and language education; business, management, accounting, economics, marketing, and finance; as well as additional domains within the humanities and social sciences. The findings indicated that the rhetorical structure of the discussion sections in research publications from the Scopus database (Quartiles 1-3) pertaining to humanities and social sciences consisted of seven move types within the discussion segment.

Al-Shujairi and Al-Manaseer [19] assert that the discussion part is crucial in the composition of a research article (RA). They noted that authors often struggle to articulate a compelling discussion of their findings, potentially due to a lack of comprehension regarding the diverse motion functions that define this section. Geng *et al.* [20] highlighted the rhetorical conventions and the importance of strategies and actions in both standard non-Scopus journals and esteemed Scopus journals, offering a framework for authors to produce meticulously constructed research and achieve successful publication in Scopus journals. Finally, Hlaing study [21] analyzing the moves in the theses of Ph.D. candidates focusing on English in Myanmar identified significant differences in the structure of their ‘discussion sections’, highlighting the essential moves and steps present in theses pertaining to applied linguistics and English literature. The research also sought to examine the distribution of ‘obligatory’, ‘conventional’, and ‘optional’ actions and steps. With the previous statement, the present study poses to answer the following queries:

- What are the rhetorical patterns used in the quantitative thesis discussion sections written by ESL learners?
- How are these rhetorical patterns used?
- What is the key linguistic features of the quantitative thesis discussion section?

This study focuses on exploring how ESL students construct the discussion sections of their quantitative theses through the use of rhetorical moves. Although discussions play a vital role in presenting interpretations and linking findings to existing knowledge, this section has received limited attention in the analysis of student writing, particularly within the field of language studies. To address this gap, the research examines how moves are organized, with each move referring to a part of the text that serves a specific communicative role. The study draws on the model applied by Ulya [8], which was adapted from Yang and Allison’s framework, to analyze how rhetorical structures function in discussion sections. Ulya [8] demonstrated the usefulness of this model across different contexts, showing that both common and optional moves appear consistently in academic writing. The insights gained from this investigation are expected to support student writers by enhancing their understanding of rhetorical organization and guiding them toward more effective construction of thesis discussion sections.

2. METHOD

2.1. Research design

The study utilizes a qualitative discourse analytic method to examine the rhetorical framework of discussion sections of undergraduate quantitative theses. Strategies were utilized to delineate the rhetorical structures within discussion sections. This study aimed to demonstrate move analysis through the perspectives of research.

2.2. Data corpus and data analysis

A total of 16 quantitative thesis discussion sections written by the ESL learners from year 2017 to 2023 were gathered. The corpus for this study was constrained by the availability of resources in the library, resulting in a smaller-than-ideal dataset. These thesis discussion sections were subjected to move analysis, an approach that help in determining the rhetorical patterns or moves and steps that have been used. Quantitative thesis discussion sections were carefully and comprehensively read and analyzed by determining the rhetorical patterns and moves to find out what rhetorical patterns were used and how rhetorical patterns and moves were presented. The subsequent moves consist of Move 1 (background information), Move 2 (reporting result), Move 3 (summarizing the results), Move 4 (commenting on the results), Move 5 (summarizing the study), Move 6 (evaluating the study), and Move 7 (deductions from the research).

While the sample size comprises only 16 thesis documents, it is important to clarify that the nature of the study is not statistical generalization but qualitative pattern identification through move analysis—a method firmly rooted in genre analysis traditions, particularly those established by Swales [1]. In genre and discourse studies, researchers often rely on small, carefully selected corpora to uncover detailed rhetorical patterns. For example, Kaneston and Singh [22] analyzed a corpus of 60 argumentative essays to map move structures, highlighting how even modest datasets can yield substantial insights into genre conventions. The goal of this study is not to generalize findings across all ESL thesis writers statistically, but to reveal emergent rhetorical patterns and pedagogical implications relevant to the genre of thesis writing among ESL learners. Moreover, recent peer-reviewed studies in move analysis and academic discourse have demonstrated that small or moderately sized corpora remain methodologically sound for uncovering genre-specific writing practices and rhetorical challenges. For instance, Gray *et al.* [23] conducted a detailed analysis of thirty research articles across disciplines-achieving meaningful insights despite limited sample size. Similarly, the present study draws on a focused corpus of theses selected from a specific academic program within an ESL context.

The corpus was purposively selected from a specific academic program within an ESL context to ensure thematic relevance and provide sufficient depth for qualitative analysis. Although the sample size was limited to 16 thesis discussion sections, data saturation was achieved when additional documents no longer yielded new rhetorical moves or patterns beyond those already identified. This point of redundancy—where emerging themes and structural features consistently recurred across the samples—indicated that the dataset was adequate for capturing the full range of rhetorical strategies used by the student writers. Moreover, to ensure inter-rater reliability, the move analysis was independently coded by two raters trained in genre analysis. Coding discrepancies were discussed and resolved through consensus, and a high degree of agreement was achieved, thus reinforcing the methodological rigor and consistency of the move classification process.

2.3. Ethical standards

The researchers made sure that a permission letter was sent to the librarian prior to data collection to inform them about the study. The identities of the ESL learners who authored the thesis were kept confidential. The findings will not be shared elsewhere but will be used solely for educational purposes, particularly for research endeavors. Therefore, several ethical principles of research ethics were meticulously adhered to, including integrity, honesty, caution, respect, transparency, and accountability in actions taken.

3. RESULTS AND DISCUSSION

A rhetorical move typically denotes a role performed by a particular segment of a text. Swales [1] characterize a motion as a rhetorical or discourse unit with a consistent communicative objective, relevant in both written and spoken contexts. The framework identifies seven rhetorical strategies employed by ESL learners in the discussion sections of their theses. These include background information, reporting results, summarizing results, commenting on results, summarizing the study, evaluating the study, and deduction from research.

3.1. Rhetorical moves

Move 1 (background information) serves to educate readers and share insights about the research, including the study's aims and objectives, methodologies, research questions, and theories typically utilized by the author. In all 16 quantitative thesis paper discussion sections examined, Move 1 is consistently present, which corresponds with findings from previous study [24]. They explain how Move 1 outlines the theoretical background, research aims, purposes, or hypotheses, as well as details preceding the presentation of results and methodology. Similarly, Suherdi *et al.* [25] who investigated undergraduate theses authored by EFL students, found that writers enhance the introduction by supplying background knowledge.

In Move 2 (reporting results), the discussion sections begin by outlining the study's objectives and the rationale behind conducting it. This move indicates the start of the discussion parts where the author

introduces the background of the research. Furthermore, it serves to present and elaborate on the study's findings. The results are illustrated with supporting evidence, including examples, graphs, charts, and tables. Move 3 (summarizing the results) is employed to encapsulate the findings of the research. Move 3 is seen in all the discussion sections. Move 4 (commenting on the results) enables authors to offer insights that assist in understanding the implications of results and interpreting the study's findings. It provides comprehensive details of the entire discussion section, suggesting that the writer should offer further explanations and interpretations to persuade readers about the study's conclusions. This essential aspect of Move 4 is supported by Hlaing study [21], which emphasizes that all moves and steps should be obligatory to enhance the study's value. Move 5 (summarizing the study) is utilized to present a summary of the entire study-not merely a recap of the results defined in Move 3, but an overview of the overall findings. In employing this move, the author incorporates various phrases that signify a conclusion. Move 6 (evaluating the study) is utilized by authors to examine their research in terms of significance, limitations, delimitations, generalizability, strengths, and weaknesses. This move also allows authors to highlight the generalizations derived from the study. Move 7 (deduction from the research) is employed to present recommendations for future research opportunities or solutions to particular challenges. The authors offer suggestions for further actions that might be pursued.

Based on the analysis of all 16 quantitative thesis discussion sections, Table 1 shows that every move was utilized; however, not every move appeared in each discussion section. The moves that were frequently observed include Move 1 (background information), Move 2 (reporting results), Move 3 (summarizing the results), and Move 4 (commenting on results). This pattern may arise from the requirement for discussion sections to contain comprehensive details regarding the study's focus and primary findings. The next move, appearing a total of 10 times across 16 quantitative theses, is Move 6 (evaluating methodology). This move was employed to present and address the methodology, the significance of the study, as well as its limitations and delimitations. Additionally, it was noted that Move 1 (background information), Move 2 (reporting results), Move 3 (summarizing results), and Move 4 (commenting on results) were deemed obligatory, as they were present in all of the discussion section texts. These obligatory moves suggest that researchers in this field prioritize providing context, presenting findings, summarizing key points, and interpreting results. Also, they reflect the field's emphasis on contextualizing research, transparent reporting, and thoughtful interpretation of results. It becomes necessary for all the moves to be present in every text within a corpus. The results of the current study align with Tikhonova *et al.* [26] which identified Move 2 (reporting results) and Move 4 (commenting results) as essential moves and that they are present mostly in the discussion sections of medical articles. This make sense because the study's main findings are part of the research that is discussed in the discussion section. It also answers the problems of the research making it the most important and relevant.

Table 1. Frequency of rhetorical moves in ESL learners' thesis discussion sections

Moves/steps	Frequency	Percentage of move occurrence (%)
Move 1: background information	16	100
Move 2: reporting results	16	100
Move 3: summarizing the results	16	100
Move 4: commenting on the results	16	100
Move 5: summarizing the study	5	31.25
Move 6: evaluating methodology	10	62.5
Move 7: deduction from the research	4	25

On the other hand, the optionality of Move 5 (summarizing the study) and Move 7 (deduction from the research) might imply the flexibility in reporting style of the researchers who may choose to summarize or deduce based on their audience, purpose, or study complexity. Secondly, these authors might assume readers are familiar with the research context, making summaries or deductions less necessary. Also, by prioritizing novelty over recap, authors may Omit summaries or deductions so they could focus more on presenting new findings or insights. Optional moves might be omitted due to word limits or page constraints in academic publications. Their optionality could also reflect disciplinary norms, where certain moves are deemed less critical or are implicitly expected.

3.2. Linguistic features

Alongside the movement patterns, the research uncovered significant linguistic characteristics of the quantitative thesis discussion sections authored by ESL learners. In terms of linguistic characteristics, occurrences of both active and passive voice, along with modal verbs, were observed. The dominant use of

active voice in this study aligns with existing research, which shows that active constructions enhance clarity, readability, and reader comprehension in discussion sections [27].

Move 1: to achieve this move, both active and passive voices were employed, and using the present and past simple tenses. The study conducted by Thanajirawat and Chuea-Nongthon [18] found that research articles mainly use both present and past tenses in their discussion sections. The present simple tense is utilized to convey the findings or articulate the researcher's views or thoughts. In addition, this tense signifies truths that correspond with theories, frameworks, or prior research. Example of how this was realized include the following:

"This chapter deals with the presentation, analysis and interpretation of data. Furthermore, this provides answers to the statement of the problem consisting of extent of language vitality of Subanen in terms of Social Dominance Pattern and Cohesiveness, frequency of student errors in pronouncing words with basic IPA vowel sounds, and the summary of student errors in pronouncing words with basic IPA vowel sounds." (Thesis 10)

Move 2 was illustrated through different usage of linguistic features. This encompasses the application of verbal signals and expressions associated with numerical information. Additionally, the existence of verbs and phrases that present forthcoming results like graphs, diagrams, examples, and tables is observed.

"Table 1 reveals the languages used at home by the kindergarten pupils." (Thesis 5)

"The table above presents the participants level of vocabulary." (Thesis 7)

Move 3 was identified through linguistic clues that introduces explanation of the summary. It includes summarizing verbs, nouns, and phrases. Some of their examples are "to sum up", "to summarize", "in summary", and "in brief". Evidences of this move include:

"Generally, based on the statistical computation of the table above, the extent use of gadgets of Grade-11 senior high school students obtained its weighted mean of 2.58 and its overall interpreted as "High"." (Thesis 15)

Move 4: the writers preferred using terms that convey certainty or uncertainty in interpreting the findings, such as "seem", "suggest", "indicate", "appear", and modal verbs like "may", "might", "would", "could", and "likely to". These verbal signals can be utilized in either the active or passive voice in their current form. In active voice, the focus is on the person performing the action, while in passive voice, the attention is directed toward the process rather than the one who initiates it [28]. Regarding modals, the present results largely align with those of earlier studies [29], where 'may' was commonly used in this research to indicate 'probability' in the segments intended to encourage the exploration of gaps in the literature, as well as in discussing and assessing study outcomes. Examples of this move are as:

"This means that the level of the academic performance of the pupils in their Mother Tongue subject is within the category of "satisfactory"." (Thesis 1)

"This indicates that the Grade 3 pupils if Milagrosa Elementary School can easily read the text and can correctly comprehend the selection written in Mother Tongue or in their first language." (Thesis 2)

Move 5 employs keywords similar to those in Move 3. The usage of "in sum" and "in conclusion" are evident in the excerpts. Nonetheless, a significant distinction is that expressions in Move 5 are generally succeeded by comments on the study's overall findings, whereas Move 3 usually comes before detailed results. Examples of this move are as:

"Therefore, it can be concluded from the results that there was no significant relationship between the students' habit in watching English movies and their level of vocabulary competence." (Thesis 14)

"Therefore, all indicators prove a significant difference in the responses of the respondents." (Thesis 5)

Move 6 is characterized by the use of both present and past simple tenses. The present simple tense is used to emphasize the importance of the research. Terms such as 'value', 'benefit', 'advantage', and 'essential' are commonly used. Example of this move includes the following:

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“Moreover, this presents the idea that even though students are having high habits of reading but it does not assist the students in getting better academic performance.” (Thesis 4)

To achieve Move 7, present and future simple tenses are dominantly seen, along with them are the use of modal verbs which were often applied. This stage involved making claims about the relevance of the findings to educational contexts. Example of this move includes:

“The use of Tone Analyzer is also a good help as it somewhat validates the pre-analysis made by the researcher as to the top frequent words and phrases showing the dominating idea of hatred or anger as an emotion and gives further the language style used.” (Thesis 11)

These linguistic features in quantitative thesis discussion sections authored by ESL learners lies in understanding how these features impact the clarity, coherence, and overall effectiveness of the research presentation. ESL learners’ use of these linguistic features could reflect their proficiency level, cultural background, and familiarity with academic writing conventions. Understanding these variations is crucial for clear presentation of research findings, mastery of genre-specific conventions, and accurate interpretation of research results.

3.3. Rhetorical patterns

The discussion sections written by ESL learners developed a description of move patterns. An examination of the rhetorical move patterns reveals that the discussion segments of quantitative theses demonstrate a systematic organization. Furthermore, the majority of the patterns employed typically consist of only four to six moves.

According to Table 2, several variations in the rhetorical moves have been identified in the analysis of the discussion sections of 16 quantitative theses. Consequently, the rhetorical patterns M1+M2+M3+M4 are the most commonly utilized, accounting for a significant 31.25% of the total. This result, however, conflicts with the findings of Gao and Pramoolsook [30] and Hendrawan *et al.* [31], whose studies on discussion sections presented a newly suggested framework comprising 3 moves and 12 steps, with all three moves deemed essential. Furthermore, regarding the order of the move steps, only a few transitions between the moves were noted.

Table 2. Frequency of the rhetorical move patterns in the discussion sections

Rhetorical move patterns	Frequency	Percentage (%)
M1+M2+M3+M4	5	31.25
M1+M2+M3+M4+M5+M6	4	25
M1+M2+M3+M4+M6	3	18.74
M1+M2+M3+M4+M6+M7	2	12.5
M1+M2+M3+M4+M5+M6+M7	1	6.25
M1+M2+M3+M4+M7	1	6.25
Total	16	100

The prevalence of the M1+M2+M3+M4 pattern in ESL learners’ discussion sections might be due to instructional influence. This pattern may be emphasized in academic writing courses or guidelines, leading ESL learners to adopt it as a standard structure. Another factor is logical coherence. This arrangement presents information in a straightforward and coherent manner, facilitating readers’ understanding of the discussion. The conventional norms of the pattern M1+M2+M3+M4 might also reflect the widely accepted norms in academic writing, particularly in quantitative research, where clarity and concision are valued. This pattern suggests that ESL learners’ discussion sections tend to prioritize a clear presentation: By providing background information, reporting results, and summarizing key points, ESL learners aim to present their research clearly. Lastly, it shows interpretation and analysis by commenting on results, M4 indicates an attempt to engage with the findings, analyze implications, and demonstrate understanding.

The results shown in the table correspond with the study carried out by Soleimani and Soleimani [32], which analyzed the generic structure of thesis discussions composed by Iranian Master of Arts (MA) students in teaching English as a foreign language (TEFL) and chemistry, indicating that moves one and two were crucial for both sets of writers. Similarly, Hlaing [21], who investigated theses in applied linguistics and English literature, found move two to be vital. By comparing the relative frequency of the moves in theses, dissertations, and articles in the research carried out by Oj and Siyyari [33], it was observed that a similar pattern emerged, with Moves 4, 2, and 1 being the most commonly used in that order, while the remaining

moves were less frequently employed with slight variations in order. Moreover, Table 2 clearly illustrates that the majority of patterns comprise only four to six moves. It also reveals that there is just one discussion section authored by ESL learners that includes a complete set of moves, but not every step is present in the corpus. Interestingly, this type of move is recognized as a structured pattern that aligns with the established framework. In this format, it appears that every thesis discussion section begins by offering readers insight into its significance, including background information that outlines the study's aim and the methods used. This is succeeded by a presentation of the findings and a short summary, wrapping up with a succinct evaluation of the study.

The findings of this study have several practical implications for teaching academic writing to English language learners. First, instructors can use model analysis and guided peer review by providing students with annotated examples of discussion sections and facilitating activities that help them identify and evaluate rhetorical moves. Peer review sessions can be designed to focus specifically on the clarity, appropriateness, and completeness of each move in student drafts, encouraging collaborative reflection on structure and content. Second, for optional rhetorical elements-such as Move 5 (summarizing the study) and Move 7 (deductions from the research)-teachers can initiate classroom discussions on when and why to use these moves. Emphasizing the flexibility of genre conventions helps students understand that while some structures are expected, others may be contextually appropriate depending on research scope or disciplinary norms. Third, instructors can offer targeted feedback that addresses both rhetorical organization and linguistic accuracy. Highlighting not just what is written, but how it is framed (through reporting verbs, modal expressions, or transition markers) allows students to enhance the coherence and clarity of their writing. In light of recent technological developments, the integration of AI-assisted writing tools-such as genre-aware platforms, move-highlighting applications, or large language models (LLMs) like ChatGPT-could further support student writers. These tools can be used to model academic writing conventions, generate example moves, or provide automated feedback on rhetorical flow. Incorporating such digital resources into writing instruction may enhance move awareness and provide scaffolding for independent revision. Finally, the findings may inform institutional policies on academic literacy by contributing to the development of thesis writing guidelines that explicitly outline expected rhetorical structures in discussion sections. Writing centers and academic support programs may also use these insights to design workshops and resources that promote genre awareness and effective communication in undergraduate research writing.

4. CONCLUSION

This study's findings indicate that ESL learners utilized the rhetorical methods specified in the accepted framework with differing levels of consistency in the discussion parts of their quantitative theses. Actions including supplying background information, reporting and summarizing results, and commenting on those results were identified as essential, as they directly facilitate the objective of the discussion section-to elucidate and interpret the research findings. In contrast, the evaluation of methods was regularly deemed customary, whereas the summarization of the study and the formulation of conclusions were noticed less frequently, indicating that these actions are optional for many student writers.

The way these moves were arranged also points to the students' efforts to produce a logical and reader-friendly flow in their discussions. However, the optional nature of some moves may also reflect gaps in the students' understanding of what makes a discussion section comprehensive and academically complete. This highlights the need for more explicit instruction in research writing courses, particularly for guiding students on how to structure their discussions effectively.

This study concentrated solely on the discussion portion; however, subsequent research could enhance understanding by examining additional sections of the thesis, like the introduction, conclusion, or suggestions, to offer a more comprehensive perspective on students' academic writing processes. Comparative studies between quantitative and qualitative theses or between native and non-native English writers may also uncover deeper insights into disciplinary and linguistic influences on writing. Additionally, expanding the corpus to include more samples from different institutions and disciplines would strengthen the applicability of the findings. Given the current study's limitation of only 16 theses, future work would benefit from broader access to student research outputs, allowing for more robust exploration of rhetorical patterns.

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This journal uses the Contributor Roles Taxonomy (CRediT) to recognize individual author contributions, reduce authorship disputes, and facilitate collaboration.

Name of Author	C	M	So	Va	Fo	I	R	D	O	E	Vi	Su	P	Fu
Mary Joy V. Herediano		✓			✓	✓		✓	✓	✓				
Riziel E. Secretario		✓			✓	✓		✓	✓	✓				
Arnold M. Sumpo		✓			✓	✓		✓	✓	✓				
Ivy F. Amante	✓	✓		✓		✓	✓	✓		✓	✓	✓		
Rovy M. Banguis				✓	✓	✓	✓	✓	✓	✓			✓	
Gay Emelyn L. Lariosa				✓		✓	✓	✓	✓	✓	✓			
Norhanie D. Macarao	✓				✓		✓	✓	✓	✓	✓			

C : Conceptualization

M : Methodology

So : Software

Va : Validation

Fo : Formal analysis

I : Investigation

R : Resources

D : Data Curation

O : Writing - Original Draft

E : Writing - Review & Editing

Vi : Visualization

Su : Supervision

P : Project administration

Fu : Funding acquisition

CONFLICT OF INTEREST STATEMENT

The authors state that they do not have any recognized financial conflicts of interest or personal relationships that may have impacted the results presented in this paper.

DATA AVAILABILITY

The information that backs the conclusions of this research can be obtained by contacting the corresponding author, [MJVH]. This data includes details that may jeopardize the confidentiality of the research subjects, which is why it is not accessible to the public because of specific limitations.




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BIOGRAPHIES OF AUTHORS






Mary Joy V. Herediano    is a dedicated student of Bachelor of Arts in English Language Studies at Mindanao State University-Buug, Buug, Zamboanga Sibugay. Her research interests include genre analysis and move analysis. She can be contacted at email: maryjoyherediano02@gmail.com.






Riziel E. Secretario    is a dedicated student of Bachelor of Arts in English Language Studies at Mindanao State University-Buug, Buug, Zamboanga Sibugay. Her research interests include genre analysis and move analysis. She can be contacted at email: secretarioriziel12@gmail.com.






Arnold M. Sumpo    is a dedicated student of Bachelor of Arts in English Language Studies at Mindanao State University-Buug, Buug, Zamboanga Sibugay. His research interests include genre analysis and move analysis. He can be contacted at email: arnolsumpo@msubuug.edu.ph.






Ivy F. Amante    is an associate professor of the Department of English, College of Arts and Sciences at Mindanao State University-Buug, Buug, Zamboanga Sibugay, Philippines. Her research interests include corpus analysis, genre analysis, move analysis, speech act analysis, and language teaching. She is currently designated as the Department Chairperson of the English Department. She can be contacted at email: ivy.amante@msubuug.edu.ph.






Rovy M. Banguis    is a professor of the Department of English, College of Arts and Sciences at Mindanao State University-Buug, Buug, Zamboanga Sibugay, Philippines. Her research interests include discourse analysis, genre analysis, move analysis, speech act analysis, and language teaching. She is currently designated as the vice chancellor for Research and Extension. She can be contacted at email: rovym.banguis@msubuug.edu.ph.



Gay Emelyn L. Lariosa    is an assistant professor of the Department of English, College of Arts and Sciences at Mindanao State University-Buug, Buug, Zamboanga Sibugay, Philippines. Her research interests include semiotic analysis, genre analysis, move analysis, speech act analysis, and language teaching. She is currently designated as the secretary of the office of the vice chancellor for administration and finance. She can be contacted at email: gayemelyn.lariosa@msubuug.edu.ph.



Norhanie D. Macarao    is an associate professor of the Department of English, College of Arts and Sciences at Mindanao State University-Buug, Buug, Zamboanga Sibugay, Philippines. Her research interests include discourse analysis, genre analysis, move analysis, speech act analysis, and language teaching. She can be contacted at email: norhanie.macarao@msubuug.edu.ph.