Modern English Education

http://dx.doi.org/10.18095/meeso.2019.20.4.41

An Analysis of the Commenting on Results Move in Applied Linguistics Research Articles

Yoon-Hee Na

Chonnam National University

ARTICLE INFO

Received: 16 September 2019
Revised: 22 October 2019
Accepted: 8 November 2019

Examples in: English
Applicable Languages: English
Applicable Levels: Tertiary

KEYWORDS

genre analysis/
academic discourse/
move analysis/
sematic resources/
장르 분석/
학문적 담화/
무브 분석/
의미론적 자원

ABSTRACT

Na, Yoon-Hee. (2019). An analysis of the Commenting on Results move in applied linguistics research articles. *Modern English Education, 20*(4), 41-53.

The purpose of the study is to provide a fine-grained description of the rhetorical strategies, linguistic indicators, and semantic resources employed in the Commenting on Results move in the Discussion section of research articles (RAs). 30 RAs in the field of Applied Linguistics were used as the data of the study. All the Result-Comment Sequences were extracted from the data and analyzed for the identification of the steps and sub-steps embedded in the Commenting on Results move. The analysis of the data reveals that comments in the Result-Comment Sequences were enacted to realize five broad rhetorical strategies of interpretation, explanation, comparison, evaluation, and suggestion. Typical linguistic indicators used for realizing the rhetorical purposes were also identified in the study. The analysis of the sub-steps which primarily concerns semantic resources used to make knowledge claims in each rhetorical step indicates that various combinations of semantic resources (literature, observation of the data, design features of the study, the author's own logical inference, etc.) were utilized for each step and those resources were found to contribute to the construction of the knowledge claims made in the Commenting on Results move. The findings of the study have pedagogical implications for English for Academic Purposes instruction.

I. INTRODUCTION

For the last few decades, research articles (RAs) have been increasingly recognized as an important academic genre that serves as a venue in which writers make new knowledge claims based on their findings (Parkinson, 2011; Sheldon, 2019). With the awareness that in order for their knowledge claims to be endorsed by their discourse community members, writers should present their research in a way that corresponds to their readers' expectations in terms of language use, several linguistic features of the RA genre have been investigated, including modality (Salager-Meyer, 1994), hedges and boosters (Hyland, 1998; E. Shim, 2017), and reporting verbs (Thompson & Ye, 1991). These studies have emphasized the importance and prevalence of such linguistic or textual features by showing that they are widely used in RAs and thus they may reflect the discourse function of the RA genre. In addition to the studies that analyzed dominant linguistic features of RAs, there is also a growing body of genre-based studies on RAs which have examined the rhetorical structure with a focus on how the writer organizes his or her text to communicate its purpose.

Among the studies on the rhetorical structure of RAs, Swales (1981, 1990, 2004), in his seminal works on "Create a Research Space" (CARS) model of the RA Introduction, proposed important characteristics of the organization structure that consists of moves and steps. A move is a broad "rhetorical unit that performs a coherent communicative function in written or spoken discourse" (Swales, 2004, p. 228). As constituent elements of a move, steps are

Na, Yoon-Hee (Professor)
Department of English Language and Literature, Chonnam National University, 77 Yongbong-ro, Buk-gu, Gwangju, 61186, Korea
Tel: (062) 530-3168 / E-mail: yhna04@jnu.ac.kr

specific rhetorical strategies of realizing the function of a move, namely, a set of rhetorical choices that RA writers can make to realize a certain communicative purpose.

Following the framework of Swales, other researchers investigated the rhetorical structure of different sections of RAs. In regard to the rhetorical structure of the Discussion section in particular, a two-level move/step analysis has been vigorously adopted (Basturkmen 2009; Peacock, 2002; Yang & Allison, 2003). For example, Yang and Allison (2003), in their investigation of the rhetorical structure of closing sections of empirical RAs in Applied Linguistics, expanded Swales's model of genre analysis and identified seven moves as well as possible constituent steps under each move in the Discussion section. Although most of these studies identified communicative functions of the rhetorical structure, they did not attempt to explore linguistic features associated with the rhetorical organization. From a pedagogical perspective, it is paramount to address what linguistic expressions or indicators are used in accomplishing a particular rhetorical purpose in a move or a step (Le & Harrington, 2015). The present study has arisen from an understanding that communicative functions are accomplished by a series of interlocking rhetorical strategies realized not only communicatively but also linguistically.

The need for undertaking the analysis of a Discussion section of RAs is motivated by two reasons. Firstly, it is related to the acknowledgment of the increasing importance of the Discussion section of RAs over time. Hopkins and Dudley-Evans (1988) noted that there has been "a marked shift away from unevaluated reporting to lengthy and explicit writer comment in research articles" (p. 119). A Discussion section is now acclaimed as an important section in establishing the importance of research works in that writers present and argue their own points of view about their findings in this section. Besides, it is the section that student or novice writers find the most problematic to write (Bitchener & Bastrukmen, 2006). Students had a very limited understanding of the function of a Discussion section and thus expressed their uncertainty about what content should be included in the Discussion section and about how it should be organized. Hood (2004) also noted that while published writers employed rhetorical strategies for interpreting, explaining, and evaluating their findings, student writers often presented their personal feelings and subjective opinions about their findings. This could be ascribed to an inadequate EAP approach in preparing students to make new knowledge claims in presenting their work (Chang & Schleppegrell, 2011).

In this regard, one important area that should be extended further in the analysis of the Discussion section of RAs is related to the nature of knowledge claims, namely, how and with what semantic resources knowledge claims are made. Hood (2004) and Chang and Schleppegrell (2011) argued that rhetorical strategies are closely related to the presentation of an author's knowledge claims. In making knowledge claims, writers need to persuade the discipline of the soundness of their claims by presenting them in a way that conforms to the reader's expectations. Concerning the importance of knowledge claims in a Discussion section, Patridge and Starfield (2007) argued that a good Discussion section needs to address not only "what the study has done," but also "what does it mean" (p. 154). Swales and Feak (1994) also posited that an effective Discussion section consists of "points" which are interpretive and argumentative rather than "facts" which are objective and descriptive, highlighting the importance of transforming the factual results into valid knowledge claims. They further suggested that making knowledge claims may be a key communicative purpose in the Discussion section of RAs. The Commenting on Results move in the Discussion section of RAs is therefore crucial as "a means by which writers make new knowledge claims" (Basturkmen, 2009, p. 243) because, through this move, writers can assert that their findings are valid and offer new insights. Although there is a small, but growing body of recent research that provides a detailed analysis of the rhetorical steps and linguistic features that were used in the Commenting on Results move, the critical issue of with what semantic resources an author's knowledge claims are made in each constituent step within the Commenting on Results move has rarely been investigated in the previous literature.

To fill this void, this study attempts to examine how rhetorical strategies, linguistic indicators, and semantic resources co-articulate with each other to construct the writer's knowledge claims in the Commenting on Results move in a Discussion section of RAs. In a Discussion section, the overall communicative purpose of commenting on results can be accomplished by a set of rhetorical strategies (e.g., interpreting, explaining, evaluating results) in the form of steps and each rhetorical strategy can be indicated by certain linguistic devices (e.g., *may be due to, may lie in, may be explained by* for the rhetorical strategy of explanation), and be realized by a set of semantic resources (e.g., by referring to literature, design features, observations, or contexts for the rhetorical strategy of explanation) in the form of sub-steps employed to make knowledge claims.

By using a three-level move/step/sub-step framework in which a sub-step dimension is added to the existing two-level move/step schemes (e.g., Swales, 1990; Yang & Allison, 2003) to investigate the semantic resources with which knowledge claims are made, this study hopes to extend the previous genre-based literature by looking into not only the rhetorical and linguistic options but also semantic resources that are employed in the Commenting on Results move. The following research questions guide the study:

1) How frequently do RA writers use the Commenting on Results move in a Discussion section?
2) What rhetorical strategies are employed by RA writers to make knowledge claims in the Commenting on Results move?
3) What linguistic indicators and semantic resources do RA writers use to make knowledge claims

in the Commenting on Results move?

II. GENRE-BASED STUDIES ON A DISCUSSION SECTION

A genre analysis (Swales, 1981, 1990) has been applied in a number of studies to identify the rhetorical organization of RAs across many disciplines. Since this study is concerned with the Commenting on Results move embedded in a Discussion section of RAs, empirical studies on genre-based analyses of Discussion sections of RAs will be presented.

Regarding the rhetorical structure of the Discussion section, some earlier studies presented the Discussion section as a mirror image of the Introduction. Berkenkotter and Huckin (1995), for example, set out to identify moves in a Discussion section of RAs that reverse the typical three-move sequence presented in Swales's (1990) CARS model of the Introduction of RAs. They found that in the Discussion section, RA writers firstly made a statement of major findings (Occupying the Niche) and then compare their results to related findings or claims made by other researchers (Re-establishing the Niche), followed by some commentaries about the implications of the study or directions for future research (Establishing Additional Territory). Their proposal, although insightful, did not attempt to further specify potential steps for each move, but only showed the overall communicative functions of the Discussion section. Other follow-up studies of Swales's move scheme include Hopkins and Dudley-Evans (1998) which provided a detailed move analysis of the Discussion sections of both theses and published RAs in the field of Agriculture, and Holmes (1997) and Posteguillo (1999) which presented the results of the general move analyses of RA Discussion sections in social science and computer science, respectively. Typical move sequences proposed by these researchers mostly included the following: Information move, Statement of Result move, Result move, (Un) expected Outcome move, Reference to Previous Research move, Explanation move, Claim move, Limitation move, and Recommendation move. The one-level form of move analysis that the earlier studies mostly adopted, however, failed to adequately capture the various rhetorical strategies of the section, especially with regard to constituent steps, move cycles, or move-step sequences.

More recently, in an attempt to give a more fine-grained description of the rhetorical structure of a Discussion section, a two-level move/step framework has been adopted. Yang and Allison (2003), for example, examined the rhetorical structure of Results sections and subsequent closing sections (Results and Discussion, Discussion, Conclusion, Pedagogical Implications) in 20 empirical RAs from Applied Linguistics, using a two-level move/step analysis scheme. They found that seven moves (Background Information, Reporting Results, Summarizing Results, Commenting on Results, Summarizing the Study, Evaluating the Study, Deductions from the Study) were employed across all closing parts of RAs, and that the Commenting on Results move occurred more frequently in the Discussion section than the other sections. Four Steps were identified as rhetorical strategies for realizing the Commenting on Results move including Interpreting Results, Comparing Results with Literature, Accounting for Results, and Evaluating Results. Out of the four steps, Interpreting Results and Accounting for Results were more frequently used than Comparing Results with Literature and Evaluating Results. Even though the authors did not analyze linguistic features associated with this move and its constituent steps, they paved a way for conducting a two-level move/step analysis in identifying the rhetorical structure of Discussion sections. Another distinctive feature in their analysis of the Discussion section is the sequence of the closely interrelated two moves of Reporting Results and Commenting on Results (hereafter, Result-Comment Sequence) and its potentially repeated occurrences across the Discussion section, forming a cycle of Result-Comment Sequences.

Drawing on Yang and Alison's (2003) two-level move/step framework, Basturkmen (2009) narrowly focused on the Commenting on Results move in 10 empirical RAs and 10 dissertations from the field of Language Teaching. She set out to examine how arguments or knowledge claims are constructed through Result-Comment Sequences in a Discussion section and provided a very detailed account of how similarly or differently RA writers and student writers comment on their results. She identified three steps embedded in the Commenting on Results move including Explaining Results, Comparing Results, and Evaluating Results. In her scheme, the Interpreting Results step identified by Yang and Allison was omitted on the ground that interpreting results and accounting for results can be merged into a single step called Explaining Results. In line with Yang and Allison's findings, her study also revealed the cyclical nature of Result-Comment Sequences in the Discussion section. Out of 10 RAs, 26 Result-Comment Sequences were observed in the Discussion section, with an average of 2.6 sequences per RA. The analysis of the Result-Comment Sequences also revealed that the RA writers variously selected from the three possible steps to make knowledge claims based on their results. She also found that although student writers drew on the same moves and steps as those of RA writers, they tended to provide more details about their results rather than moving into generalizations. Although insightful, her rhetorical analysis of the steps embedded in the Commenting on Results move fell short of providing a systematic understanding of the link between the rhetorical structure and linguistic resources employed to realized the communicative purposes within the Commenting on Results move.

The connection between linguistic features and the rhetorical structure has been recently established in a few studies. Lim (2010), drawing on Swales's (2004) move/step analysis, attempted to not only identify the extent to which disciplinary differences (Applied Linguistics versus Education) have an effect on the frequency of comments

but also uncover the primary linguistic mechanisms that may work differently according to different types of comments. He firstly identified constituent steps embedded in the Commenting on Results move in 15 Applied Linguistics RAs and 15 Education RAs, and then analyzed salient linguistic choices employed to perform the rhetorical functions of these steps. He found a total of 97 segments of comments which were classified into four steps including Explaining Results, Evaluating Results, Comparing Results with Literature, and Making Recommendations for Future Research. The analysis of the data revealed a disciplinary difference in the use of commentary steps. More than 80% of comments were found in the corpus of Applied Linguistics whereas Education corpus rarely included comments. The data also showed that while there was a significant disciplinary difference, differences in research methods (quantitative, mixed, qualitative methods) did not significantly affect the writers' choices of incorporating or excluding comments in both disciplines. The analysis of the data further revealed the typical linguistic features that are distinctive to each step. For example, the Explaining Results step was characterized by reason adverbials (e.g., *since, because*) while the prominent feature of the Evaluating Results step was the use of gradable adjectives (e.g., *useful, unusual, limiting*).

More recently, focusing on phraseology, Le and Harrington (2015) investigated word clusters used to comment on results in a Discussion section of RAs in Applied Linguistics. While earlier studies examined rather discrete grammatical items, this study focused on which word combinations (three to eight items in a cluster) are frequently used in a specific move or step. Mapping the identified clusters onto the three rhetorical strategies including Interpreting Results, Comparing Results with Literature, and Accounting for Results, they showed that each step was realized by different clusters. For example, the phraseology around explanation (e.g., *one possible explanation for, as a result of, due to the fact that*) did not occur in other steps. Based on the results, they argue that a link between phraseology and a rhetorical strategy can be established.

Although the previous studies reviewed above have contributed to our understanding of rhetorical strategies in the Commenting on Results move and typical linguistic features or phraseology used to realize the primary functions of the move and steps, one important area of the inquiry in genre-based research which has been neglected is the issue of with what semantic resources (e.g., via previous literature, through the author's own logical inference from the finding, or through the observation of the data, or with the reference of the design features of the study, etc.) knowledge claims are made in a Discussion section. Cheng and Unsworth (2016) argued that little empirical study on RA rhetorical structure has examined the ways in which RA writers transform empirical findings to potential knowledge claims in a Discussion section, thus pointing to much-needed areas of study that address the relationship between knowledge claims and sematic resources used to make such knowledge claims. By extending the existing move/step scheme into a three-level move/step/sub-step hierarchical structure that incorporates the analysis of the use of semantic resources, this study hopes to fill the gap in the genre-based literature on RAs.

III. METHOD

1. Data Collection

A total of 30 quantitative RAs published during the period of 2014-2019 in the field of Applied Linguistics comprise the corpus of the study. Since one of the main purposes of the study is to provide a framework for novice writers about how to comment on their results, the RAs were chosen from internationally referred journals based on the ranking and impact factors in the Journal Citation Reports (2018). The selected journals (*Applied Linguistics, Studies in Second Language Acquisition, TESOL Quarterly, The Modern Language Journal*) are all ranked 5th, 6th, 10th, and 4th, respectively among 184 journals in the field of Linguistics and their impact factors are 3.041, 2.718, 2.612, and 3.762, respectively. Although the four journals have different purposes and preferred areas of inquiry, they represent the broad field of Applied Linguistics. The four journals publish all types of articles including quantitative, qualitative, and mixed-method studies, only quantitatively-oriented RAs were chosen for the data of the study. The quantitative RAs should meet the following criteria of the separate Discussion sections: (1) they are placed immediately after the Results section, (2) they include the heading of Discussion or Discussions (any hybrid forms such as Discussion and Implications, Discussion and Conclusion are excluded), and (3) they are followed by the Conclusion section. Out of all the Discussion sections that met the criteria, 30 RAs were randomly chosen for the analysis of the data.

As suggested by McEnery, Xiao, and Tono (2006), the size, balance, representativeness or sampling of the corpus data can be determined by the research questions the study addresses and the focus of the analysis. For this study, a small, specialized corpus was appropriate for the "contextually informed analyses" (Flowerdew, 2004, p. 18) which form the basis of the corpus analysis of the study. Because texts in the corpus were coded manually at a clause level and across clauses and sentences, or even across several paragraphs with instances of a knowledge claim being highlighted and categorized via an interpretive process, this process of analysis was recursive and labor intensive, requiring sensitive consideration of co-texts and meanings in contexts. Therefore a relatively small corpus was essential for this study.

2. Data Analysis Procedures

The present study attempts to analyze the rhetorical structure as well as semantic resources used by RA writers

to make knowledge claims in the Commenting on Results move embedded in a Discussion section of RAs. The study has firstly drawn on Swales's (1990, 2004) two-level move/step analysis that examines texts using a contextual procedure that emphasizes communicative functions. In his method of analysis, a genre is seen as consisting of distinct functional units in a hierarchically structured framework in which a particular section is divided into several rhetorical moves that are then subsequently divided into constituent steps. Since the study focuses on a Discussion section, Yang and Allison's (2003), Basturkmen's (2009) and Lim's (2010) descriptions of moves and steps in the final sections of RAs in Applied Linguistics were then used as a framework for the rhetorical analysis of the present study.

For the analysis of the data, all 30 RAs were firstly read by the researcher in their entirety before the Discussion sections were scrutinized. After ensuring that a holistic understanding of the RAs was gained, the analysis of the rhetorical structure of the Discussion sections was conducted, extracting all the Result-Comment Sequences from the data. Since the Commenting on Results move always occurred in conjunction with the preceding Reporting Results move, the present study focused intensively on what Yang and Allison (2003) termed Result-Comment Sequence in which RA writers present their empirical findings (Reporting Results move) prior to making comments on them (Commenting on Results move). In each Result-Comment Sequence of the text, any segment that involves a presentation of a finding was firstly underlined and marked as the Reporting Results move and any related comments made on that particular finding were marked as the Commenting on Results move.

Looking into the internal structure of Result-Comment Sequences, each occurrence of all types of commentary steps embedded in the Commenting on Results move was then annotated in each text so that its frequency can be identified. The number of occurrence of each step was calculated in accordance with the number of times it occurs without being interrupted by any other step. Hence, a step constituting a segment may consist of a clause or several sentences or even the whole paragraph as long as its occurrence was not interrupted by any other rhetorical step. The categorization of the steps embedded in the Commenting on Results move with their linguistic indicators was made based upon Yang and Allison's (2003), Basturkmen's (2009), Lim's (2010), and Le and Harrington's (2015) descriptions of the rhetorical purposes and linguistic indicators.

The analysis of the present study took one step further to identify the semantic resources used to realize rhetorical purposes in each commentary step, by adding a sub-step into the existing move/step framework and ultimately forming a three-level move/step/sub-step framework. Each step was then broken down into several sub-steps according to the semantic resources that were deployed to make knowledge claims in each step.

The diagram presented in Figure 1 includes a sub-step component (semantic resources), which was not a part of the original move/step framework. This is a category which emerged from the present corpus investigation, and it is proposed that it may be specific to the Discussion section of RAs. Since there were no pre-determined categories of semantic resources presented in the previous literature, the analysis of the semantic resources was conducted inductively by paying close attention to the contexts where they were used. To realize the rhetorical strategy of explaining results, for example, several types of semantic resources were identified including (1) referring to design features (e.g., *Lack of further evidence, however, was partly due to deficiencies in the instruments used to examine these factors*), (2) referring to observations of the data (e.g., *This may be due to the low number of obstacles that were increased in the MT.*), (3) referring to contexts (e.g., *Furthermore, the Asian contexts considered may have played a role*), and (4) linking to literature (e.g., *They might neither have exercised goal-directed top-down control over the allocation of their attention to this feature of the input (Shiffrin, 1988; Styles, 2006)*). Although only 30 RAs were examined, a great deal of in-depth data was obtained since the manual analysis of context-based sematic resources was very detailed, and entailed careful examination of every sentence and across sentences, and even across paragraphs.

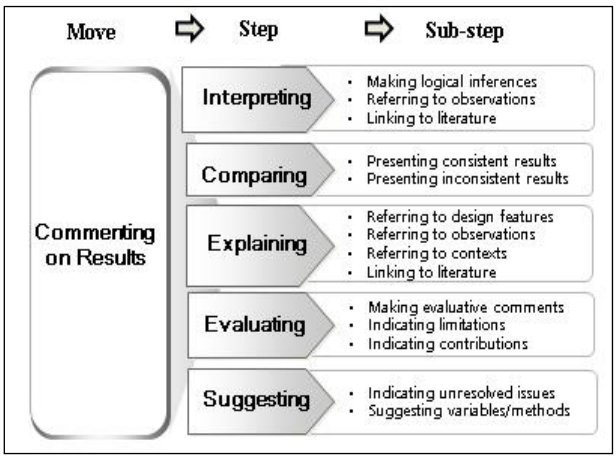

FIGURE 1 A Three-level Move/Step/Sub-step Framework

To ensure reliability of the analysis of the data, a second coder who has an expertise in genre analysis, was invited to conduct 20% of the analysis of the data independently by specifying the labels for the steps and sub-steps within the Commenting on Results move, using the detailed guidelines and examples provided by the researcher. An inter-coder agreement was 91%. To assess intra-coder agreement, the researcher re-classified the entire corpus one month after the initial classification. The result of the intra-coder reliability was 97%.

IV. RESULTS

1. Frequency of Result-Comment Sequences and Types of Steps

The analysis of the corpus showed that Result-Comment Sequences were present in all 30 RAs. A total of 108 Result-Comment Sequences were found in the entire corpus. Each RA included 1 to 9 sequences with an average of 3.6 sequences per article. This finding is consistent with Basturkmen's (2009) observation, which showed that the bulk of the Discussion section comprised sequences of an initiating move of Reporting Results followed by a subsequent move of Commenting on Results, and this sequence can be repeated for as many results as the RA writers wished to discuss. In the majority of the RAs, results were reported in relation to the research questions that were poised in the Introduction or Methods sections of the RAs. This pervasive pattern of Result-Comment Sequences which occurred across all 30 RAs confirmed Yang and Allison's (2003) and Posteguillo's (1999) assertion that the Reporting Results move and the Commenting on Results move not only formed a cycle, but also constituted obligatory elements in a Discussion section. From this perspective, it appears that transitions from specific findings to general commentaries were made repeatedly across the Discussion section, probably because the writers wanted to address various aspects of the study particularly in relation to research questions rather than presenting their commentaries in a single overall development of an argument.

A further analysis of the Commenting on Results move embedded in the 108 Result-Comment Sequences revealed that the corpus included a total of 245 steps with an average of 2.27 steps employed to discuss a particular result. The number of the steps employed within the Commenting on Results move ranged from one step to as many as five steps. While in some cases the writers used only one of these steps to discuss a specific finding, in a majority of cases they used two or three steps to state their comments on a single finding.

With regard to the types of steps embedded in the Commenting on Results move, five types of steps were identified in the corpus, including (1) Interpreting Results, (2) Comparing Results with Literature. (3) Explaining Results, (4) Evaluating Results, and (5) Suggesting Future Research. The analysis of the data further showed that the writers selected from the five possible steps in various combinations to realize the move of Commenting on Results. Therefore, it was often the case that several steps were staked around one particular finding, resulting in an elaborate architecture like Result–Comment (Step 1–Step 2–Step 4) or Result-Comment (Step 2-Step 3-Step 1) Sequences, as can be seen in the following excerpt:

> Excerpt 1 (Studies in Second Language Acquisition):
> The attentional processing of the participants in the enhanced-only condition did not seem to differ considerably from that of the participants in the unenhanced condition **[Presenting Results]**. These findings align with those of Issa et al. (2015), but are different from the results obtained by Winke (2013) and Simard and Foucambert (2013) **[Step 2]**. The reason for this difference might lie in the nature of the enhancement **[Step 3]**…..It can thus be hypothesized that the participants in the TE condition did not consider the visually enhanced constructions essential for comprehension of the text, and consequently did not engage in subsequent active attentional processing **[Step 1]**.

In this segment of Result-Comment Sequence, the writer presented the finding that the attention processing of the participants in two conditions did not differ in the first sentence. In commenting on the finding, the writer compared the result with results reported in the literature (Step 2), explained why this phenomenon occurs (Step 3), and interpreted the finding (Step 1) by proposing a hypothesis.

Regarding the overall frequency of each step in the corpus, as can be seen in Table 1, Interpreting, Comparing, and Accounting for Results were found to be the most frequently used rhetorical strategies in making knowledge claims in a Discussion section, each accounting for 35%, 23%, 22% of the corpus, respectively. Evaluating Results and Suggesting Future Research were relatively less employed compared to the other three.

TABLE 1
Overall Frequency of the Steps in the Commenting on Results Move

Steps (Rhetorical strategies)	Overall frequency (n = 245)	Percentage (100%)
Step 1: Interpreting Results	85	34.69
Step 2: Comparing Results With Literature	56	22.86
Step 3: Explaining Results	54	22.04
Step 4: Evaluating Results	35	14.29
Step 5: Suggesting Future Research	15	6.12

The higher frequency of interpretation, comparison, and explanation strategies was in line with the findings reported in other studies (Basturkmen, 2009; Yang & Allison, 2003). While Le and Harrington (2015) noted a very low frequency of occurrence of the evaluation strategy, however, this study showed a much higher frequency of this rhetorical strategy, accounting for almost 15 % of the corpus.

2. Analysis of Rhetorical Strategies, Linguistic Indicators, and Semantic Resources

Since the focus of the study is to provide a three-level move/step/sub-step analysis of the Commenting on Results move, this section will illustrate what rhetorical strategies are employed with what linguistic indicators to discuss their findings by the RA writers in each commentary step, and more importantly, what semantic resources (categorized as a sub-step) are utilized to make knowledge claims in each step.

1) Knowledge Claim Through Interpretation

The rhetorical strategy of interpretation was most frequently used in the corpus in making knowledge claims in a Discussion section. Through interpretation, RA writers made a speculation about what the results imply or provided their own understandings and perspectives to make sense of the results. It is not surprising that the RA writers most intensively focused on interpreting their results whenever they provided a comment. Typical linguistic indicators of interpretation included the epistemic verbs such as *suggest* (27 cases), *indicate* (18 cases), *imply* (15 cases), etc. The frequent use of the verb *suggest* to express cautious and hedged assertions was also reported in Le and Harrington's (2015) study which found that the verb *suggest* was the most salient feature in Applied Linguistics RA discussion. The dominant use of the epistemic verbs found in this corpus seems to reflect the writer's tendency to offer cautious or tentative interpretations of their results, allowing for a room for alternative interpretations or inviting potential rebukes.

In this type of interpretation commentary, three different sub-steps were found based on the semantic resources that the writers utilize in interpreting their results. As can be seen in Table 2, out of 85 occurrences of this interpretation commentary, almost 70% of the occurrences belong to the sub-step A in which the writer's interpretation of the finding is made via the writer' own logical inferences from the specific finding that was presented in the preceding Reporting Results move. More than 20% of the interpretations were made via referring to literature (sub-step C) and almost 10% of the interpretations were made via the writer's observations of the data (sub-step B)

TABLE 2
Sematic Resources Used in Step 1 (Interpretation)

Sub-steps (Semantic resources)	Overall frequency (n = 85)	Percentage (100%)
A: By making logical inferences	59	69.41
B: By referring to observations	8	9.41
C: By linking to literature	18	21.18

Note that linguistic indicators are italicized and semantic resources are underlined in the excerpts that will be presented throughout the paper.

Excerpt 2 (Studies in Second Language Acquisition):
With regard to the role of musical ability in L2 learning of Mandarin tones, this study found a positive relationship of musical tonal ability with posttraining perceptive identification accuracy rates and production accuracy in terms of pronunciation nativelikeness. *These findings suggest that* musical ability plays a facilitative role in learning to perceive and produce L2 Mandarin tones and in learning to comprehend and produce tone-words.

In the first sentence of Excerpt 2, the author presented an empirical finding in the form of the result of a statistical analysis (*a positive relationship*) and then initiated a commentary move with the interpretation indicator (*these findings suggest that*) followed by his own logical inference (*musical ability plays a facilitative role*) drawn from the preceding result. By using his own reasoning drawn from the objective description of the empirical finding to make a rather generalized statement, the author seems to go beyond the "objective" description and provide an interpretation which gave "meaning to the raw data" (Struwing & Stead, 2007, p. 172).

Interpretations of the result can also be made via the semantic resources of the writers' own observations of their study or the data as can be seen in Excerpt 3.

Excerpt 3 (TESOL Quarterly):
The fact that many of the learners produce more pauses at Time 2, at either clause-internal or clause-external locations, *implies that* pausing is a more tenacious construct, perhaps an inherent cognitive or articulatory characteristic of the language production process.

In this excerpt, we can see that the author's interpretation itself (*pausing as a more tenacious construct*) was assisted by his or her observation of the study or the data (e.g., *many of the learners produce more pauses at Time 2*). Although not very frequently used, this sub-step was usually employed in conjunction with the other interpretation tactics as a tool for further interpretation of the same result.

The data shows that interpretations can also be made by using some external resources as well. 18 occurrences were found to include the literature in this corpus. The non-integral citations as semantic resources were mostly used in cases where writers opted to interpret their findings without leaving out any acknowledgment of past researchers' contributions as illustrated below.

Excerpt 4 (TESOL Quarterly):
This implies that pausing opportunities are linked with the monitoring processes of speech production (Kormos, 2006; Tavakoli, 2011); that is, pausing provides an opportunity for monitoring online speech production, possibly in an attempt to produce more accurate language, rather than building up more fluent language.

In this excerpt, non-integral citations were used probably because the writer preferred to cite other researchers' names only in parentheses after relating their results with previous researchers' interpretations. This strategy may imply the RA writer's wish to provide an interpretation that is supported by the previous literature, thus sharing the authorial responsibility with previous researchers in order to make his or her claims sound more warrantable.

2) Knowledge Claim Through Comparison

The analysis of the data showed that the second most frequent strategy of making knowledge claims was comparison. The writers used this step of Comparing Results with Literature to show consistency or inconsistency of

their findings with those of previous researchers. The most obvious function of this step is then to "use the source text to provide a comparison with the current results being reported" (Samraj, 2013, p. 304). Authors made references to other studies to indicate either support for their findings or a lack of alignment of their findings with earlier research. Most of the corpus incorporated this rhetorical strategy of a comparison and as many as 56 occurrences of this function were identified. The high occurrence of this step may be attributed to the applied linguists' preference to use previous researchers' views and statements to support their new findings or highlight the difference between their new findings and others' findings. As can be seen in Table 3, consistent results reported in the previous literature were used more frequently than inconsistent results as the source of knowledge claims the writers made with regard to their results.

TABLE 3
Sematic Resources Used in Step 2 (Comparison)

Sub-steps (Semantic resources)	Overall frequency (n = 56)	Percentage (100%)
A: By presenting consistent results from literature	39	69.64
B: By presenting inconsistent results from literature	17	30.36

Almost 70% of the comparison was made by using the source texts that include similar findings while only 30 % of the comparison was made via citing the literature that contains contradictory findings. Typical consistency indicators were expressions such as be *in line with, be consistent with, be in agreement with, concur with, align with, corroborate.* These consistency indicators were generally preceded by noun phrases denoting results (e.g., *this finding, these findings*) and ensued by noun phrases showing other researchers' assertions, observations, or statements in previous publications.

Excerpt 5 (TESOL Quarterly):
This finding is consistent with previous studies (Dörnyei, 2007; Dörnyei & Murphey, 2003; Peng & Woodrow, 2010) that have shown the effect of different classroom environment variables on motivation.

Excerpt 5 illustrates that non-integral citations were used as the sources of knowledge claims to compare similar results in the corpus. Non-integral citations were often accompanied by multiple references, probably due to the writers' desire to show that their findings are generally accepted in the field.

Another important, but less frequent way to use source materials in a comparison rhetorical strategy is to indicate inconsistency. Inconsistency indicators included such expressions as *this result contrasts with previous research, contradicts previous research, is different from the results, is inconsistent with those of studies, runs counter to previous research.* Excerpt 6 illustrates the use of an integral citation as a way to further the writer's argument.

Excerpt 6 (Studies in Second Language Acquisition):
These findings are slightly different from those of Révész et al. (2014) and Révész et al. (2015). In their studies, accuracy rates decreased when participants performed the complex task versions, but no significant difference was found for reaction time. They concluded that accuracy is a more sensitive measure of cognitive load than reaction time for dual-task methods using screen color changes. In contrast, the present study found stronger effects for reaction time than accuracy. A possible explanation may lie in the difference in the way participants responded to color changes….

The rhetorical strategy of pinpointing the inconsistent findings appears to open up the research space for the writer's new knowledge claim. Through this strategy, the writer tactfully manipulated his arguments to indicate how the reported result can move the discipline forward (Hunston, 1993). It was often the case that although writers indicated the discrepancies between their own findings and others' findings, the opposed literature was rarely dismissed by explicitly invalidating its status, but was generally juxtaposed along with one's findings, as can be seen in Excerpt 6. As such, the comparison between their own findings and the opposing ones was often followed by explaining where the inconsistency lies and often adding positive value to their work, thereby conferring legitimation on their new findings. This finding is in line with Hyland (2004) who reported that blunt criticism of others' findings or overt assertion of one's novelty claims are generally avoided.

The different use of source materials in comparing consistent versus inconsistent results may point to the writers' different motives for using the previous literature. Writers are inclined to endorse a prior study with similar findings without further elaborations on how similar they are. It is probably due to the details of concurring literature were addressed in the Introduction or Literature Review sections. Simply acknowledging the correspondence of findings was enough in most cases. In contrast, when conflicting results are compared, writers show a tendency to employ more expansive strategies to realize this act of comparison by providing the details about the differences between their findings and others' findings and also providing the possible reasons why the discrepancy existed, which was also observed in Salager-Meyer (1999).

3) Knowledge Claim Through Explanation

In this corpus, the third most frequently used strategy of knowledge claims was explanation, accounting for 22% of the whole Commenting on Results move. The analysis of the data revealed that results were often supported by explaining why a certain pattern or phenomenon has occurred. Since the data used in this study were all empirical research, it is not surprising to find that the RA writers focused intensively on explaining results. Since the purpose of quantitative research is to examine relationships among variables, or determine causality among variables, one of

the main jobs of quantitative researchers may be to determine whether there is a relationship or causality among variables. If the result is not what is expected or is different from that of other researchers in this type of research, an explanation for why should follow.

Typical linguistic indicators of this step were the noun phrases as a subject of the sentence that denotes reasons, causes, factors or explanations (*The reason for this finding, another reason for the difference, one likely cause of this divergence, one of the key factors, an additional factor, one possible explanation, a possible explanation for this finding*), and the verb phrases that indicates the sources of the reason why the phenomenon has occurred (*may have been due to the fact that, was partly due to, may relate to the fact that, would most likely be related to, may/might lie in, could be ascribed to, can be explained by, can also be explained through, may be due to, may be that*).

This rhetorical strategy of explanation was realized through several semantic resources, as can be seen in Table 4. The most common way of explaining results was by referring to design features of the study (30 cases). The following excerpt illustrates the semantic resources of the design features the writer draws on with a focus on the nature of the tasks employed in his study.

Excerpt 7 (Modern Language Journal):
Another reason for the weak predictive power of lexical frequency *could be ascribed to* the nature of the task (i.e., describing a picture sequence).

TABLE 4
Sematic Resources Used in Step 3 (Explanation)

Sub-steps (Semantic resources)	Overall frequency (*n* = 54)	Percentage (100%)
A: By referring to design features	30	55.56
B: By referring to observations	8	14.81
C: By referring to contexts	4	7.41
D: By linking to literature	12	22.22

A second mostly used source for the explanation was previous literature (12 cases). References to literature were extensively used in accounting for a particularly interesting result. By referring to theories, concepts, or findings provided in other studies, the writers tended to explain an interesting phenomenon, or an unexpected result, as the following excerpt shows.

Excerpt 8 (Applied Linguistics):
This interesting phenomenon *can also be explained through* the language mode theory proposed by Grosjean (1997, 2001, 2013).

In providing alternative explanations or reasons for a particular result, the writers resorted to other semantic resources as well. Explanations were offered based on their own observations of the data (8 cases) or by referring to general contexts like EFL and ESL contexts (4 cases). Excerpts 9 and 10 illustrate the use of these two types of semantic resources.

Excerpt 9 (Applied Linguistics):
A possible explanation is that participants perceived the most complex task versions to be so complex that they short-circuited the task and simplified it, either intentionally ignoring the added elements or unintentionally not being able to notice them.

Excerpt 10 (TESOL Quarterly):
The reason for this finding is that, in EFL contexts like Iran where students do not need to speak English to meet their everyday life needs, learning English for communicative purposes did not seem very important.

4) Knowledge Claim Through Evaluation

The rhetorical strategy of evaluation took a form of evaluative comments about the findings in light of the literature or the writers' personal judgments about limitations or contributions of their findings. This step was less commonly employed in the Commenting on Results move compared to other rhetorical strategies, accounting for less than 15% of the corpus. Table 5 shows three types of semantic resources used in evaluation.

TABLE 5
Sematic Resources Used in Step 4 (Evaluation)

Sub-steps (Semantic resources)	Overall frequency (*n* = 35)	Percentage (100%)
A: By making evaluative comments	17	48.57
B: By indicating limitations	10	28.57
C: By indicating contributions	8	22.86

In line with Lim's (2010) findings, writers often provided evaluative comments by using gradable adjectives indicating varying degrees of importance and expected/unexpectedness (e.g., important, surprising, not surprising, expected) to evaluate the reported finding. Semantic resources that were utilized in this sub-step were previous literature on which the evaluation is based as the following excerpt illustrates.

Excerpt 11 (Modern Language Journal):
The significant effects shown for recasts are *important* in light of the theoretical debates regarding the role of recasts in the literature (e.g., Lyster & Ranta, 2013; Mackey & Goo, 2013)

The writer used the evaluative adjective *important* when evaluating the research finding and we can see that the author's judgment of the importance of the finding is based on the literature because the new finding may provide empirical evidence on the theoretical debates about the role of recasts.

Evaluations can also be made by acknowledging limitations in explaining or interpreting their findings. In some of the RAs, especially after explaining possible causes for or interpretations of the finding whose meaning cannot be easily made clear, writers expressed the limitations of their interpretation or explanation by acknowledging their

inability to provide an adequate answer. Through this sub-step, writers attempted to make the reader aware of the conditions under which the research was conducted and therefore make them accept that the issue which remained unresolved is beyond the scope of the study. The unresolved issue was mostly presented with an *whether*-clause (*whether this improvement is the result of teaching, Whether awareness-raising activities provide, whether the limited fluency changes were due to*) and then the author acknowledged that the issue may not be explained under the current conditions by using phrases denoting impossibility (*is beyond the scope of the current study, is beyond the scope of this article, it is difficult to comment within the context*). Excerpt 12 illustrates the use of this sub-step.

Excerpt 12 (TESOL Quarterly):
Explaining whether this improvement is the result of teaching and learning provided on all components of the course, the learners' need to communicate with other L2 speakers inside and outside the classroom, being immersed in the L2 during their stay, or a combination of these factors *is beyond the scope of the current study.*

Contributions of the finding can also be singled out as semantic resources with which writers make an evaluation. The writer in the following excerpt evaluates the finding by mentioning the contributions of the finding to the field of study.

Excerpt 13 (Applied Linguistics):
The findings extend L2 reading research by further illuminating the role played by PK in single-text reading comprehension, which has been supported by inconclusive evidence and mixed research findings.

We can see that the author sells the findings of the study by indicating their contribution to the area being studied. Although evaluation was less preferred knowledge claim strategy compared to the other three presented, its rhetorical function was nevertheless important in some RAs, especially when the authors presented a result that has a special selling point.

5) Knowledge Claim Through Suggestion

The rhetorical strategy of suggestion was made on the basis of the inadequacy demonstrated in the preceding step of evaluating results in the form of acknowledging limitations. Writers may give a reason for not analyzing interpreting, or explaining certain phenomena before recommending that the uncertainty should be resolved in future research. It is the least commonly used rhetorical strategy, given that only 5 out of the 30 RAs incorporate this strategy. This low frequency may be partly ascribed to applied linguists' preference to make such recommendations only in the final section pertaining conclusions and future research directions. Some applied linguists, however, might have felt it necessary to raise the possibility of doing related future research in relation to a particular finding in the Commenting on Results move.

As for the sematic resources for suggestion, an unresolved issue that was already presented in the preceding sentences or clauses was predominantly used while more desirable variables or methods were less frequently used in suggesting future research, as can be seen in Table 6.

TABLE 6
Sematic Resources Used in Step 5 (Suggestion)

Sub-steps (Semantic resources)	Overall frequency (n = 15)	Percentage (100%)
A: By indicating unresolved issues	11	73.33
B: By suggesting variables/methods	4	26.67

The unresolved issue was presented mostly in the form of the *whether*-clause as an object of future research. This sub-step was also characterized by the use of (1) noun phrases denoting future research (e.g., *further research, future research, further investigation, future studies*), (2) verb phrases denoting prospective needs (e.g., *is needed, is necessary, is going to be necessary*) and (3) purposive to-infinitive clauses (to investigate, to examine, to determine, to explore) that indicate the purpose of the future research. Excerpt 14 illustrates the use of an unresolved issue as semantic resources.

Excerpt 14 (Studies in Second Language Acquisition):
Further investigation is necessary to determine whether the provision of exposure (input) or production (output) opportunities is a significant determiner of learning.

Even though the occurrence was very low, suggestions were also made by using sematic resources of more desirable research methods or variables. To better interpret the finding or explain the variables that might have affected the result other than the one that was included in the study, writers tended to suggest a very specific means of improving the methodology. In the following excerpt, to resolve the complexity of the finding, both macro and micro constructs were suggested as potential variables to be included in future research designs.

Excerpt 15 (Modern Language Journal):
Accordingly, future studies may examine both macro (e.g., morphological accuracy, lexical appropriateness) and micro constructs (e.g., verb conjugations, counters) to reveal the complex picture of comprehensibility development and its relationship with initial proficiency level.

V. DISCUSSION

The current study integrates previous research on the move/step rhetorical schemes typically used in RA discussion sections with a new sub-step component that primarily concerns semantic resources utilized for making knowledge claims. Important findings that glean from the three-level move/step/sub-step analysis will be discussed.

One of the most important findings regarding the rhetorical structure is that RA writers discussed their findings primarily through a series of Result-Comment Sequences. This finding corroborates previous studies that indicate the cyclical nature of Result-Comment elements in the Discussion section of RAs (Bastrukmen, 2009; Hopkins & Dudley-Evans, 1988; Yang & Allison, 2003). It appears that RA writers prefer to use the cyclical patterns because the repeated use of presenting salient research outcomes and immediately making pertinent comments on them across the Discussion section rather than summarizing the overall results as a whole will better help them to establish the contribution of their findings to the field of the study.

In relation to the types and frequencies of steps embedded in the Commenting on Results move, the analysis of the data showed that out of the five commentary steps (Interpreting Results, Comparing Results with Literature, Explaining Results, Evaluating Results, and Suggesting Future Research) identified in the study, the first three were particularly prevalent in the corpus, with considerable efforts made by RA writers to interpret what the factual data implies, compare their results with those of other previous researchers, and to explain why the results were obtained as such. The prevalence of these three steps in the Discussion section corroborates the results reported by Yang and Allison (2003) and Bastrukmen (2009). It is not surprising that interpretation was the most preferred strategy in making knowledge claims, because it is through the interpretation that the writers can provide the reader "with reasonable insights that were not obvious at first glance" (Struwing & Stead, 2007, p. 172). Given that the corpus of the study has included quantitative RAs, the high occurrence of explanation was expected. It was also found that the writers afforded a lot of efforts to discussion of the factors or that could explain why the result under discussion was obtained as such. The high occurrence may be ascribed to the nature of the quantitative research that comprises the corpus of the data and thus this focus of explanation would be less pronounced in other types of research like qualitative research. It may also be the case that explanations of a result contribute to what Andrews (2005) referred to as "soundness for a claim" (p. 126). The writers might have the perception that if a result is explained, it can be credible, but this may not be the case if a result cannot be explained. Comparing results with literature was also a key strategy that RA writers employed to comment on their results. The frequent occurrence of this step might be explained in light of Hopkins and Dudley-Evans's (1998) observation that good discussion of results depends "less on the actual results presented" than on "the way the writer relates them to previous work in the field" (p. 119).

The analysis of the data also uncovered typical linguistic indicators that signal the deployment of a particular rhetorical strategy within the Commenting on Results move. A set of linguistic indicators employed to realize different rhetorical strategies in the present corpus are in a similar vein to the overt markers of interpretation, comparison, and explanation described in most of the previous research (Le & Harrington, 2015; Lim 2010; Samraj, 2013). Not much addressed in the previous studies, but nevertheless found in this study were the indicators of evaluation and suggestion. In particular, the finding that evaluation markers indicating limitations and suggestion markers indicating areas or directions of future research all incorporated *whether*-clauses to specify exactly what the unresolved issue is and what needs to be addressed in future studies with regard to a particular finding is worth noting because these features may be exclusively specific to the Commenting on Results move.

The analysis of the sub-step, namely, the use of semantic resources, revealed the various sources with which RA writers establish and advance knowledge claims. The transformation of findings into knowledge claims was made through combinations of various resources such as the author's logical inference, reference to literature, observation of the data, design features, etc. This finding corroborates Sheldon's (2019) observation that the RAs writers presented their results and changed them into knowledge claims such as "deduction, speculation, possibility, and hypothesis that allowed them to emphasize the uniqueness of their contributions" (p. 6).

It is worth noting that the most salient sematic resources were different from one rhetorical strategy to another. For example, when interpreting results, RA authors heavily resorted on logical inference moving from a concrete finding to a general statement or claim while when explaining results, the design features of the study were most heavily mobilized as sematic resources in making their knowledge claims. Another important finding is that previous literature was found to be commonly utilized in realizing several rhetorical strategies including interpretation, explanation, comparison, and evaluation. Writers not only devised their own interpretations or explanations of their findings by tactfully forging links to those found in the literature, but also used results of the previous literature to indicate consistency or inconsistency of findings. In addition, they used the semantic resources of theories, models, or findings of previous literature when evaluating their finding especially with regard to the importance or expectedness/unexpectedness of it. This pervasive use of citations across many different rhetorical strategies seems to highlight the important role of the literature or citations as the crucial semantic means for realizing different purposes of argumentation in an RA genre (Samraj, 2013).

VI. CONCLUSION

The employment of semantic resources as a source for knowledge claims is underrepresented in studies of RAs, which implies that the findings of this study could have important pedagogical implications for the teaching of English for Academic Purposes (EAP). The model of rhetorical strategies, linguistic indicators, and sources for knowledge claims identified through a three-level move/

step/sub-step analysis in the present study could, therefore, be used to devise discipline-specific EAP teaching materials and classroom activities for students preparing to enter their discourse community, and familiarize prospective researchers with the rhetorical behavior and semantic resources they can draw on in making knowledge claims in their discourse community. To help student writers develop such rhetorical strategies, EAP instructors can employ an explicit teaching method in which a genre-based meta-language serves as a framework for raising the students' awareness of the types of comments that are valued in this discourse context (e.g., interpreting, comparing, and explaining results) as well as various semantic resources (e.g., through the writer's own inferences from the finding, or observation of the study, via the literature or by indicating design features) associated with each rhetorical strategy. Through an explicit teaching of such knowledge claim strategies by presenting and discussing the framework presented in Figure 1, students can benefit from a rich, meaning-based meta-language for connecting specific rhetorical moves and steps with their linguistic uses and semantic resources in the discourse.

The results of this genre-based study can also enable EAP instructors to further establish a reading-writing interface that helps their students develop the practical skills needed to comprehend the knowledge claims of the Discussion section that professional writers make and advance their own knowledge claims based on their findings in a way that is acceptable in their discourse community. In reading instruction, the schemata about a move and a step can encourage students to "create an appropriate rhetorical context in which to present their ideas" (Hudson, 2007, p. 205). Using exercises and materials that familiarize students with the rhetorical structure, language options, and choices of semantic resources in the Discussion section as illustrated in this paper may also equip students with the ability to comprehend RA texts that will in turn help them to gain insights into when and how comments are made and what linguistic indicators and sematic resources are generally utilized. Since this corpus of this study is small, more studies on the rhetorical strategies, linguistic indicators, and semantic resources that are used to make knowledge claims in RAs from the field of Applied Linguistics and other disciplines could help validate the findings of this study.

REFERENCES

Andrews, R. (2005). Models of argument in educational discourse. *Text, 25*(1), 107-127.

Basturkmen, H. (2009). Commenting on results in published research articles and masters dissertations in Language Teaching. *Journal of English for Academic Purposes, 8*(4), 241-251.

Berkenkotter, C., & Huckin, T. (1995). *Genre knowledge in disciplinary communication.* Hillsdale, NJ: Lawrence Erlbaum.

Bitchener, J., & Basturkmen, H. (2006). Perceptions of the difficulties of postgraduate L2 thesis students writing the discussion section. *Journal of English for Academic Purposes, 5*(1), 4-18.

Chang, P., & Schleppegrell, M. (2011). Taking an effective authorial stance in academic writing: Making the linguistic resources explicit for L2 writers in the social sciences. *Journal of English for Academic Purposes, 10*(3), 140-151.

Cheng, F., & Unsworth, L. (2016). Stance-taking as negotiating academic conflict in applied linguistics research article discussion sections. *Journal of English for Academic Purposes, 24*, 43-57.

Flowerdew, L. (2004). The argument for using English specialized corpora to understand academic and professional language. In U. Connor & T. Upton (Eds.), *Discourse in the professions: Perspectives from corpus linguistics* (pp. 11-36). Amsterdam: John Benjamins.

Holmes, R. (1997). Genre analysis and the social sciences: An investigation of the structure of research article discussion sections in three disciplines. *English for Specific Purposes, 16*(4), 321-337.

Hood, S. (2004). *Appraising research: Taking a stance in academic writing.* Sydney, Australia: University of Technology.

Hopkins, A., & Dudley-Evans, T. (1998). A genre-based investigation of the discussion sections in articles and dissertations. *English for Specific Purposes, 7*(2), 113-121.

Hudson, T. (2007). *Teaching second language writing.* Oxford: Oxford University Press.

Hunston, S. (1993). Professional conflict: Disagreement in academic discourse. In M. Baker, G. Francis, & E. Tognini-Bonell (Eds.), *Text & technology: In honor of John Sinclair* (pp. 115-133). Amsterdam: John Benjamins.

Hyland, K. (1998). *Hedging in scientific research articles.* Amsterdam: John Benjamins.

Hyland, K. (2004). *Disciplinary discourse: Social interactions in academic writing.* Ann Arbor: University of Michigan Press.

Le, T. N. P., & Harrington, M. (2015). Phraseology used to comment on results in the Discussion section of applied linguistics quantitative research articles. *English for Specific Purposes, 39*, 45-61.

Lim, J. M. H. (2010). Commenting on research results in applied linguistics and education: A comparative genre-based investigation. *Journal of English for Academic Purposes, 9*(4), 280-294.

McEnery, T., Xiao, R., & Tono, Y. (2006). *Corpus-based language studies: An advanced resource book.* New York: Routledge.

Parkinson, J. (2011). The discussion section as argument: The language used to prove knowledge claims. *English for Specific Purposes, 30*(3), 164-175.

Patridge, B., & Starfield, S. (2007). *Thesis and dissertation writing in a second language: A handbook for*

supervisors. New York: Routledge.
Peacock, M. (2002). Communicative moves in the discussion section of RAs. *System, 30*(4), 479-497.
Posteguillo, S. (1999). Schematic structure of computer science research articles. *English for Specific Purposes, 18*(2), 139-160.
Salager-Meyer, F. (1994). Hedges and textual communicative function in medical English written discourse. *English for Specific Purposes, 13*(2), 149-170.
Salager-Meyer, F. (1999). Referential behavior in scientific writing. *English for Specific Purposes, 18*(3), 279-305.
Samraj, B. (2013). Form and function of citations in discussion sections of mater's theses and research articles. *Journal of English for Academic Purposes, 12*(4), 299-310.
Sheldon, E. (2019). Knowledge construction of discussion/conclusion sections of research articles written by English L1 and L2 and Castilian Spanish L1 writers. *Journal of English for Academic Purposes, 37*, 1-10.
Shim, Eunsook. (2017). Hedges and boosters in academic writing. *Modern English Education, 18*(3), 71-90.
Struwing, F. W., & Stead, G. B. (2007). *Planning, designing, and reporting research.* South Africa: Pearson Education.
Swales, J. M. (1981). *Aspects of article introductions.* Birmingham: University of Aston Language Studies Unit.
Swales, J. M. (1990). *Genre analysis: English in academic and research settings.* Cambridge & Melbourne: Cambridge University Press.
Swales, J. M. (2004). *Research genres: Exploration and applications.* Cambridge: Cambridge University Press.
Thompson, G., & Ye, Y. (1991). Evaluation in the reporting verbs used in academic papers. *Applied Linguistics, 12*(4), 365-382.
Yang, R., & Allison, D. (2003). Research articles in applied linguistics: Moving from results to conclusions. *English for Specific Purposes, 22*(4), 365-385.