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Discourse features of methodology sections of research articles in high-impact and non-high-impact applied linguistics journals

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Abstract

There is burgeoning interest in investigating targeted sub-genres of research articles apart from employing Swales' (1994) CARS model, considered as a generalized model that apparently captures all research articles across disciplines. This study investigates the discourse features of methodology sections of research articles by employing Peacock's (2011) framework. It is hoped that the established discourse features in this study may somehow serve as rhetorical guidelines in writing the methodology section attributable to ISI or high-impact journals and be adopted by non-ISI or non-high-impact academic writers in order to meet the standard criteria and writing-convention practices required by high-impact applied linguistics journals. Thirty (30) research articles extracted from high-impact and non-high-impact applied linguistics journals were comprehensively analyzed in terms of physical characteristics, rhetorical moves, and cyclicity of moves. The findings revealed that high-impact academic writers were more prolix with respect to the number of words and paragraphs in writing their methodology than non-high-impact academic writers. Moreover, it was found that there was one obligatory move (Move 1 *Subjects/Materials*) that both sets of academic writers employed. As the data suggested, Moves 3, *Procedure,* and 4, *Data Analysis,* seemed to be obligatory moves in non-high-impact journals. Conversely, the same moves seemed optional for some high-impact academic writers. Rhetorical variability was the probable reason for a number of cyclicity of moves found in the research article methodology sections produced by both sets of academic writers. Based on the results, several pedagogical implications and future research directions were provided.

Keywords: Research article methodology, discourse features, obligatory moves, cyclicity of moves, rhetorical variability, high-impact journals

1. Introduction

The sophistication of research article (henceforth RA) writing, "the central genre of knowledge production" (Yang & Allison, 2003, p. 365), has led to a number of researchers investigating the RA's parts and functions. In fact, the academic recognition that the Swalesian paradigm (1990, 2004) has received made the said model widely used in examining RAs written by ESL (English as a Second Language) and EFL (English as a Foreign Language) academic writers (Anthony, 1999; Hirano, 2009; Ozturk, 2007; Samraj, 2002; Sheldon, 2011) as an effective "analytical tool for the analysis of the structural organizations of the RA introductions" (Hirano, 2009, p. 242).

Dudley-Evans (2000) describes the CARS model as a leading key to enter a particular discourse community that requires its members to be informed with the writing conventions. These rhetorical requirements impose the discourse community members to justify their research contributions by hopefully filling up the vacuum of knowledge in a particular discipline. According to Dudley-Evans (2000), Swales' and Feak's (1994) CARS schema is considered a generalized model that captures all RAs in all academic disciplines. Its comprehensiveness is demonstrated by three major moves with corresponding obligatory and optional sub-moves as shown in Table 1.

Table 1
Swales and Feak's (1994) CARS model

Move 1 *Establishing a research territory*	a.	by showing that the general research area is important, central, interesting, problematic, or relevant in some way. (optional)
	b.	by introducing and reviewing items of previous research in the area. (obligatory)
Move 2 *Establishing a niche*	a.	by indicating a gap in the previous research, raising a question about it, or extending previous knowledge in some way. (obligatory)
Move 3 *Occupying the niche*	a.	by outlining purposes or stating the nature of the present research. (obligatory)
	b.	by announcing principal findings. (optional)
	c.	by indicating the structure of the RA. (optional)

Recently, there has been growing interest in linguistically investigating specific sections or sub-genres of an RA. In particular, Peacock (2011) conducted one interesting study that dealt with the RA methodology (henceforth RAM) section. Peacock's framework was derived from 288 RAMs across disciplines including Physics, Biology, Chemistry, and Environmental Science; Business; Language and Linguistics; Law; and Public and Social Administration. As a result, a seven-move scheme rhetorical organization was established as seen in Table 2.

Table 2
Peacock's (2011) move structure of method sections

Move	Function
1	Subjects/Materials
2	Location
3	Procedure
4	Data Analysis
5	Limitations
6	Research aims/questions/hypotheses
7	Overview

According to Swales and Feak (1994), the research article method section is the easiest part to write, for it is the section that researchers write first. This could probably be the reason why a number of academic writers prioritize it in accomplishing the research design of their RAs. Thus, once the research design has been accomplished, the academic writers are ready to initiate the actual research work. Holmes (1997) claims that this fact may be attributed to the straightforward characteristic of writing this section. Musa, Khamis, and Zanariah (2015) elaborate that RAM "describes the procedures and experiments taken for obtaining findings for a study" (p. 74). More importantly, "it constitutes the key section in research papers because it serves to convince the readers on the validity of the procedures employed" (Kellet, 2004; Lim, 2006, as cited in Musa, Khamis, & Zanariah, p. 74). One important assumption of RAM was underscored by Swales and Feak (1990) positing that it is "enigmatic, swift, presumptive of language knowledge, not designed for replication, with little statement of rationale or discussion of the choices made" (p. 170). Furthermore, RAM's primary aim is "to give the work plan of research" (Rajasekar, Philominathan, & Chinnathambi, 2013, p. 5).

Musa, Khamis, and Zanariah (2015) presented an overview of RAM's moves and steps from previous studies. Table 3 indicates three different RAM frameworks including the disciplines in which a particular schema was developed.

Table 3
Proposed method moves from previous studies (Musa, Khamis, & Zanariah, 2015, p. 75)

Author	Discipline	Move	Step
Kanoksilapatham, 2012	Biomedical Engineering	Move 1: Describing research procedures	
			Step 1: *Announcing objectives*
			Step 2: *Specifying protocolised procedures*
			Step 3: *Detailing methodological procedures*
			Step 4: *Providing background of procedures*
			Step 5: *Justifying a procedural decision*
			Step 6: *Declaring ethical statements*
		Move 2: Featuring methodological issues	
			Step 1: *Describing participants, instruments, materials*
			Step 2: *Setting apparatus*
			Step 3: *Identifying data sources*
		Move 3: Reporting and consolidating findings	
			Step 1: *Announcing findings*
			Step 2: *Interpreting findings*
			Step 3: *Comparing findings*
			Step 4: *Explaining findings*

Table 3 continued…

Author	Discipline	Move	Step
Nwogu, 1997	Medical Engineering	Move 1: Describing data-collection procedure	
		Move 2: Describing experimental procedure	
		Move 3: Describing data-analysis procedure	
Huang, 2014	Medical Engineering	Move 1: Describe study materials	
			Step 1: *Describing type of data collection*
			Step 2: *Describing the source for data collection*
		Move 2: Provide inclusion criteria	
			Step 1: *Describing the sample*
			Step 2: *Describing the characteristics*
		Move 3: Describe procedures	
			Step 1: *Taking the measurements*
			Step 2: *Justifying the procedures*
		Move 4: Present the analysis of the experiment	
			Step 1: *Statistical test techniques*

Among the RAM frameworks, Peacock's was the only model obtained from a large corpus of 288 RAMs across eight disciplines. This may imply that Peacock's schema is more reliable in terms of providing an account for variations prevalent in the structures of RAMs across disciplines. Therefore, this study adopted the said framework to achieve its research objectives.

More recently, Musa, Khamis, and Zanariah (2015) investigated 60 RAMs in the fields of medical and biomedical engineering retrieved from Scopus websites. The said study attempted to analyze the rhetorical structures and the most frequent verbs found in RAMs. It was found that the compulsory moves, *Describing the preliminary actions* and *Referring to previous studies*, were achieved by biomedical engineering corpus, whereas *Describing*

procedures was found to be an obligatory move under the medical discipline. The findings of the former suggested that referring to previous studies was a more important referential antecedent for biomedical engineers than the medical engineers, whereas the findings of the latter suggested that describing procedures was apparently a significant communicative purpose to achieve than other moves in the RAM. With regard to the most frequent verbs found in RAMs in particular, the study revealed that the structures of these verbs were in past tense and passive construction. This may mean that the rhetorical intent of RAMs was achieved.

Analyzing how textual metadiscourse was employed in the research article introduction (henceforth RAI) and RAM, Jalilifar and Kabezadeh (2012) investigated 65 RAs retrieved from a number of international journals on applied linguistics. As far as instrumentation of the said study is concerned, Hyland's (2004) schema on textual metadiscourse was employed, thus, aiming to shed light on the rhetorical activity using textual metadiscourse whose "meaning and use are relevant to a particular socio-rhetorical situation" (p. 24). The study revealed that the frequent use of transitional devices was evident and represented internal connections in the discourse, thereby, establishing an essential feature of academic argument. Likewise, both RAI and RAM employed cohesive arguments, which helped build the assumptions created by readers themselves.

Kanoksilapatham (2011) developed a proposed model for biomedical engineering RAMs. The said schema involves three major moves with a number of steps under each move. Apparently, it was found that Move 1, *Stating procedures,* was an obligatory move for it occurred 100% in the study corpus; whereas Moves 2 and 3, *Describing materials/ apparatus/participants* and *Stating results,* respectively, were considered optional moves with less than 51% of occurrences in the RAM corpus. Conversely, there were obligatory and conventional steps under the said optional moves: the former was regarded as an obligatory step with 100% occurrence, *Announcing results,* while the latter was referred as a conventional step with less than 82% occurrence, *Itemized materials.* Kanoksilapatham emphasized the role of applied linguistics in understanding scientific discourse. She went on to mention that pedagogically, "rhetorical consciousness-raising should be instilled in learners" (p. 145) in the teaching of English for Specific Purposes (ESP).

In another study, Pramoolsook, Li, and Wang (2015) compared the rhetorical variations of RAMs between the academic sub-fields of business such as management and marketing and explored the differences of the said sub-disciplines in terms of disciplinary concepts and practices. After analyzing 10 RAMs extracted from two prestigious journal articles in the field of management and marketing, Pramoolsook et al. claimed that Lim's (2006, as cited in Pramoolsok, et al., 2015) framework used in their study failed to offer sufficient elaboration for the rhetorical organization of RAMs found in the research corpus. The problematic results may be attributed to the diversity of rhetorical patterns of RAMs in the corpus albeit Lim's framework was yielded from the management corpus. Pedagogically, the researchers highly recommended the explicit instruction of the writing conventions of the method section for sub-discipline-specific kind of writing.

In her earlier study, Kanoksilapatham (2005) investigated the rhetorical structures of 60 RAs extracted from the field of biochemistry. In particular, a four-scheme model of RAM was formulated: Move 1, *Describing materials,* with three corresponding Steps, namely, (1) *Listing materials,* (2) *Detailing the source of the materials,* and (3) *Providing the background of the materials*; Move 2, *Describing experimental procedures,* with three corresponding Steps, which include (1) *Documenting established procedures*, (2) *Detailing procedures*, and (3) *Providing the background of the procedures*; Move 3*, Detailing equipment*; and Move 4, *Describing statistical procedures*. The results revealed that Moves 1 and 2, with their respective steps, were considered obligatory, whereas Moves 3 and 4 were optional. Kanoksilapatham emphasized that literature as regards the investigation of RAMs is wanting because of the relatively little attention it receives from scholars across disciplines.

Using the genre of medical RAs, Huang (2014) attempted to identify the rhetorical moves prevalent in the four sections of a medical RA: introduction, methodology, results, and discussion. Specifically, Huang found four typical rhetorical moves medical researchers employed in RAMs: Move 1, *Describe study materials;* Move 2*, Provide inclusion criteria*; Move 3*, Describe procedures*; and Move 4, *Present the analysis of the experiment*. Moreover, three among the four major moves were deemed as obligatory moves with 100% frequency, while Move 2 with 80% of frequency was considered as an optional move. The study recommended that future research should utilize larger corpus in order to further establish the proposed RAM framework.

Using Nwogu's (1997) framework for RAMs, Mozaheb, Saeidi, and Ahangari (2015) analyzed RAs from Iranian and English medical journals indexed under ISI to compare and contrast the rhetorical moves and steps of RAMs employed by nonnative Iranian speakers of English and native speakers of English. The results of the quantitative data yielded no significant difference between the two sets of samples in terms of moves and steps in the RAMs. Accordingly, the researchers prompted future researchers who are interested to publish their research outcomes in ISI journals to gain genre awareness.

While a number of investigations on the organizational and rhetorical moves of RAMs have been explored, less attention has been paid to conduct studies on RAM in the context of high-impact journals (henceforth HIJ) and non-high-impact journals (henceforth NHIJ). It would seem, therefore, that further investigations are needed in order to fully characterize the apparently less-explored RAM, specifically the organizational and rhetorical moves used in the said contexts. This study aimed to comprehensively analyze the discourse features of some selected RAMs written by HIJ and NHIJ academic writers. Specifically, the present study sought answers to the following research questions:

1. How are the sampled RAMs structured in terms of word- and paragraph-level?
2. What major rhetorical moves and cyclicity of moves are evident in HIJ and NHIJ RAMs?

2. Method

2.1 Research Corpus

A total of 90 empirical RAs were extracted from seven HIJs, consisting of 35 RAs, and ten NHIJs, with 55 RAs. Fifteen (15) RAs from each journal category were randomly selected as suggested by the researcher's dissertation panelists. Table 4 presents the distribution of RAs in HIJs and NHIJs.

Table 4
Distribution of RAs from HIJs and NHIJs

High-Impact Journals	No. of RAs	Non-High-Impact Journals	No. of RAs
TESOL Quarterly	7	Reading in a Foreign Language	3
The Asia-Pacific Education Researcher	2	i-manager's Journal of English Language Teaching	1
High Educ	2	The Asian ESP Journal Spring Edition	2
PLOS One	1	Teaching English as a Second or Foreign Language Journal	1
European Journal of English Studies	1	Asian EFL Journal	2
Assessment & Evaluation in Higher Education	1	3L: The Southeast Asian Journal of English Language Studies	1
Journal of English for Academic Purposes	1	Journal of Language Studies	1
		TESL Canada Journal	1
		Philippine ESL Journal	2
		International Journal of English Language & Translation Studies	1
Total	**15**	**Total**	**15**

As a result, a total of 30 RAMs was analyzed in the study: 15 RAMs were extracted from HIJ and another 15 from NHIJ. Adopting Moreno's (2008) criteria of comparability of data under similar contextual conditions, all empirical RAs were singly written and were all taken from the field of applied linguistics. Moreover, these RAs were published from 2011 to 2015. The RAMs from the two journals have the total of 37,927 words.

2.2 Data Gathering

Thirty (30) empirical RAs were retrievable or accessible online. Fifteen RAs were extracted from ISI Applied Linguistics journals representing HIJ. Moreover, journal impact factors were employed as a parameter in assessing if an ISI journal RA belongs to HIJ, e.g., *TESOL Quarterly*. Conversely, 15 RAs were extracted from non-ISI Applied Linguistics journals representing NHIJ, e.g., *Philippine ESL Journal*.

2.3 Framework for Analysis

Peacock's (2011) framework, Move Structure of Methods Sections, was employed. The organizational and rhetorical moves of RAMs were analytically explored to determine the overall structures of RAM sections of HIJ and NHIJ RAs under study.

2.4 Data Analysis and Level of Analysis

The physical structures (Simpson, 2000) of RAM sections were subjected to manual word and paragraph counting by the researcher. The level of analysis in determining the major moves in RAMs was the sentence level. Hence, "sentence-level analysis means looking at individual sentences and to be aware that a single sentence can constitute one move" (Peacock, 2011, p. 485). It should be noted that if there are two moves or steps in a sentence, the researcher should assign the schematic unit to the move or step that appears to be more salient. As far as elaborating the descriptions of obligatory, optional, and conventional moves utilized by the HIJ and NHIJ academic writers, Kanoksilapatham's (2011) proposal was adopted underscoring that a move is deemed obligatory if it achieves 100% of occurrence. Conversely, an optional move is achieved if it garners 60% to 99%. Likewise, a move is considered conventional if it occurs 59% and below. As far as cyclicity of move is concerned, a series of the same move is considered one move as employed in this study, e.g., 1+1+1+3+3+4 is deemed as 1+3+4.

2.5 Coding Scheme

Provided below is a sample extracted from NHIJ. Using Peacock's (2011) framework, any of the seven major moves are identified on the basis of their communicative purposes in each RAM from the two journal categories. Table 5 shows the seven major moves of the study's framework and their respective functions.

Table 5
Realized moves of a RAM extracted from NHIJ

Move	Function	Realized Move
1 *Subjects/ Materials/* (*M1M*)	To count as Move 1, the segment of the rhetorical feature states the participants/subjects and the instruments, tools, or materials used in the study.	(*M1M*) A total of 16 RAs were analyzed in this study: eight RAs were written by Filipino authors and another eight by Japanese authors. (*M1M*) The said RAs were all singly written in English language and extracted from the field of applied linguistics. (*M1M*) Moreover, the duration, within which the RAs have been published, were from the years 2005 to 2010. (*M1M*) All RAs were published in international journals.
2 *Location/* (*M2M*)	To count as Move 2, the segment of the rhetorical feature states where the research is conducted.	*
3 *Procedures/* (*M3M*)	To be counted as Move 3, the segment of the rhetorical feature demonstrates how data-collection is employed in the study and how the collected data is carefully prepared for interpretation and analysis.	(*M3M*) RAs' conclusion sections under study were subjected to word and paragraph counting to get the average length of RAs' conclusion sections.
4 *Data Analysis/* (*M4M*)	To count as Move 4, the segment of the text demonstrates how the collected data are analyzed by the researcher/s and how the collected data be presented in the results section of the RA. It also elaborates statistical treatment to measure the research variables in order to achieve the targeted data of the study.	(*M4M*) Furthermore, as part of the major contrastive analyses of all the RAs, rhetorical structures or organizational moves and their corresponding steps were analyzed to determine the overall structural components in the conclusion parts or sections of RAs under study, following Yang's and Allison's (2003) *Conclusion* model. (*M4M*) Moreover, the researcher asked two intercoders, who are English as a Second Language (ESL) teachers and have completed graduate education in English from reputable universities, to code the moves and steps in the conclusion sections of all the RAs. (*M4M*) Moreover, the intercoders were provided a hard copy of Yang's and Allison's (2003) *Conclusion* model for comprehensive directions and identification of the components found in the conclusion sections. (*M4M*) Trial sessions were done by the researcher with the intercoders before giving them two weeks to complete the task. (*M4M*) The researcher and the two intercoders met to analytically compare the coded moves and steps in the conclusion sections of RAs under study. (*M4M*) The preliminary intercoder agreement was 93% but reached 100% after listening to several justifications and settling some of the disagreements as regards the coded moves and steps found in the conclusion sections particularly written by Japanese authors under study.

Table 5 continued…

Move	Function	Realized Move
5 *Limitation/* (*M5M*)	To be counted as Move 5, the segment of the text shows the boundaries or constraints of the study.	(*M5M*) As a limitation of the study, the number of pages in which the conclusion parts were written were not considered because all RAs' conclusion sections did not seem to exceed to two pages.
6 *Research aims/ questions/ hypotheses/* (*M6M*)	To count as Move 6, the segment of the text displays the reiteration or delineation of the study's objectives, research questions, and hypotheses.	*
7 *Overview* (*M7M*)	To be counted as Move 7, the segment of the rethorical feature summarizes, presents, or reviews the methodology of the study.	*

***** *This rhetorical move had not been realized in the provided RAM sample.*

2.6 Limitation

As a limitation of the study, the analysis of the linguistic realization of the major moves found in the RAMs from the two journal categories was not employed. This means that although linguistic features would certainly assist the intercoders in distinguishing a particular move, explicit instructions as regards the functions of all the schematic units featured in the linguistic framework to be used in the study was done in advance.

2.7 Intercoding

To validate that a rhetorical move could be identified with a high degree of accuracy by trained coders, intercoder-reliability procedures were implemented by assigning two independent intercoders, who are both pursuing Ph.D. in Applied Linguistics degrees from reputable universities, to tag the major moves found in the RAM sections from 30% of the research corpus—such an approach was adopted from Kanoksilapatham's (2011) study. Furthermore, the intercoders were oriented and trained as regards the framework for coding and were provided clear instructions on how to identify and code the major moves and how to determine the typical cyclicity of moves in RAMs. Moreover, the researcher conducted trial sessions with the intercoders before giving them two weeks to complete the given tasks. Likewise, the researcher and the two intercoders met to analytically compare the coded moves and the typical cyclicity of moves in the RAM sections of RAs.

2.8 Intercoder Reliability

To set the high reliability of the coded moves, the intercoder agreement was 90%, but it reached 94% after presenting a number of justifications with regard to RAMs, particularly a number of RAs extracted from HIJs. The percentage of agreement among the intercoders was computed as shown in Table 6. The result reveals that there is a high consistency (94.2%) with respect to the application of the coding system between and among the intercoders. Thus, the devised coding system is a reliable tool for tagging the major moves in the employed framework.

Table 6
Intercoder reliability analysis in kappa value

Value of Kappa	Level of Agreement	Percentage Agreement (%)
0.942	Almost Perfect (High)	94.2

3. Results and Discussion

Table 7 shows the varied length of RAMs published in HIJs and NHIJs in terms of the number of words and paragraphs. As revealed in Table 5, HIJ academic writers produced more words and paragraphs with samples totaling to 20,194 and 149, respectively, as opposed to NHIJ writers with 17,733 and 9, respectively. Specifically, the longest RAMs among the RAs from the two journals were RA No.8 from an HIJ sample with 3,064 words and 21 paragraphs, and RA No.5 from an NHIJ sample with 2,711 words and 21 paragraphs. On the contrary, the shortest RAMs were found in RA #11 among the HIJs with 266 words and two paragraphs, and in RA #15 among the NHIJs with 329 words and one paragraph. It appears that the HIJ academic writers are more prolix in rhetorically producing their RAMs than the NHIJ writers.

The apparent prolixity that the HIJ academic writers have demonstrated in writing their RAMs could be attributed to the complexity of the research topics and problems of their RAs, and that could be the possible reason why the HIJ writers are more likely meticulous in presenting their research designs and methodological procedures. Thus, the more complex the research topics or problems are, the more likely the HIJ academic writers tend to describe comprehensively the research processes in their RAMs. These results further confirm Kellet (2004) and Lim's (2006) assumption highlighting that a RAM is a significant section in an RA where academic writers employ their rhetorical persuasion to convince their audience as regards the validity of the research processes utilized in order to achieve the targeted data.

Table 7
Number of words, sentences, and paragraphs in RAM sections from high-impact and non-high-impact journals

	HIJ RAM Sections		**NHIJ RAM Sections**	
	NW [a]	*NP* [b]		
1	1048	7	2136	14
2	2021	12	443	5
3	2437	24	634	3
4	1459	9	972	7
5	1141	12	2711	21
6	1913	17	2595	20
7	1011	6	1144	9
8	3064	21	427	3
9	432	4	841	5
10	920	7	2191	20
11	266	2	812	4
12	722	5	1450	10
13	1322	9	526	12
14	1887	10	522	6
15	551	4	329	1
	20,194	149	17,733	140
	MNW [c]	*MNP* [d]		
	1346	10	1182.2	9

NW [a], number of words
NP [b], number of paragraphs
MNW [c], mean of number of words
MNP [d], mean of number of paragraphs

Another probable reason why HIJ RAMs are longer than those in NHIJs is that a majority of the HIJ samples included different sections and subsections in their RAMs so that a large amount of details are apparently more organized and structured. This finding suggests that the inclusion of sections and subsections in writing HIJ RAMs could be a part of the publication guidelines provided by HIJs.

Table 8 summarizes the obtained averages with respect to the major rhetorical moves in RAMs from the two journals. As revealed in Table 6, not all major moves, in general, were realized in HIJs and NHIJs, specifically Move 2, *Location*. Moreover, Move 5, *Limitation,* and Move 6, *Research aims/questions/hypotheses*, were not utilized in HIJs and

NHIJs, respectively. It should be noted, however, that the size of corpus of the present study seemed limited, and these findings could be attributed to the concurrence of the corpus choice by the researcher.

Table 8
Average occurrence of major rhetorical moves of RAMs from high-impact and non-high-impact applied linguistics journals

Move	HIJ %[a]	NHIJ %[a]
Move 1 – *Subjects/materials*	100	100
Move 2 – *Location*	0	0
Move 3 – *Procedure*	93	100
Move 4 – *Data analysis*	87	100
Move 5 – *Limitations*	0	13
Move 6 – *Research aims/questions/hypotheses*	13	0
Move 7 – *Overview*	13	40

As regards the obligatory moves in RAMs, the HIJ and the NHIJ academic writers could have considered it important to employ Move 1, *Subjects/materials*. It appears that both sets of academic writers might have seen the need to realize the communicative purpose of Move 1 because they probably want their readers to know how subjects are carefully selected to take part in the study and to elaborate in detail how materials are carefully prepared for the study. Moreover, it appears that the HIJ and the NHIJ writers might have wanted the readers to identify how the *subjects* and *materials* are likely manipulated to answer the research questions, and how the research variables are measured to come up with empirical data for further analysis. These findings further substantiate Huang's (2014) and Kanoksilapatham's (2005) assumptions that the typically employed rhetorical moves in a RAM are concerned with the detailed descriptions of the materials, samples, or participants and the discussion of particulars on how the obtained data will be scrutinized or analyzed.

In addition, the data revealed that Move 3, *Procedure,* and Move 4, *Data Analysis*, seemed to be obligatory moves in NHIJs. On the other hand, the same moves seemed to be optional moves in HIJs with obtained means of 93% and 87%, respectively. It appears that *procedure* and *data analysis* are more important moves to employ in the framework for the NHIJ academic writers; however, the said moves are relatively less significant for the HIJ writers. These findings could be attributed to the rhetorical preferences of both HIJ and NHIJ writers because of the seemingly different research background and orientation. Also, it may be implied that the communicative purposes and functions of these moves should possibly be achieved among other major moves. Further, realizing Moves 1, 3, and 4 in Peacock's (2011) framework would likely help the HIJ and the NHIJ writers convince

their audience that their studies are of significance by showing them the clear and precise description of how the studies' data were analyzed and explored, and the rationale behind the employment of particular procedures and analyses. These findings confirm Swales and Feak's (1994) assertion that the RAM straightforwardly stipulates "in various degrees of detail, methodology, materials, and procedures" (p. 156). Likewise, these results validate Kanoksilapatham's (2011) assumption that stating procedures in a RAM is a compulsory move in the field of applied linguistics. The following extracts illustrate the realization of the obligatory moves, i.e., Moves 1, 3, and 4 in both journal categories:

> RA No.8 (HIJ)/Move 1 (*M1M*), *Subjects/materials*
>
> Modeling materials. (*M1M*) For the MG, three different video clips were created in which the researcher and the students' English teacher carried out (i.e., modeled) each task. (*M1M*) Each video clip lasted about 2 minutes, and the MG viewed it once during the planning time prior to carrying out each task (i.e., watching a different task modeling video each time designing for a particular task). (*M1M*) Video scripts were written by the researcher prior to the recording in order to ensure that each task model (a) provided examples of paying attention to linguistic codes (i.e., producing LREs involving questions) and (b) demonstrated collaborative pair work patterns, with both learners providing various feedback types, responding to questions, and sharing ideas.
>
> RA No.8 (NHIJ)/Move 1 (*M1M*), *Subjects/materials*
>
> (*M1M*) A total of 30 Filipino participants took part in this study, 15 male and 15 female advanced L2 learners, all of whom were among the top 15 students in the third year level from Parañaque Science High School. (*M1M*) The average age in both groups was 15.
>
> RA No.5 (HIJ)/Move 4 (*M4M*), *Data analysis*
>
> (*M4M*) Closed response items were analyzed by frequency and percentage, whereas content analysis was performed for the open questions, critical incident reports, and interview data. (*M4M*) An interpretive and naturalistic approach was taken to the qualitative data analysis, seeking to interpret the teachers' experiences from their insider's perspective (Gall, Borg, & Gall, 1996). Specifically, the constant comparative method (Bogdan & Biklen, 1998; Merriam, 2001) was used to identify themes. (*M4M*) After identifying and coding significant units of meaning derived from reading the teachers' responses, themes were constructed for grouping purposes. (*M4M*) The collected data was read repeatedly to clarify differences

between the derived themes, and after the units were categorized, three core categories were established. (*M4M*) Following data analysis, member checks were used to elicit feedback on the aptness of the interpretation (Lincoln & Guba, 1985).
RA No.1 (NHIJ) /Move 4 (*M4M*), *Data analysis*

(*M4M*) In this study, I analyzed the data in the following phases according to the specific mixed methods purpose described earlier. (*M4M*) In phase One, I calculated participants' scores on their content knowledge vocabulary assessments to assign the test passage and select 36 participants for the "familiar" and "unfamiliar" grouping. (*M4M*) After the think-aloud sessions were completed, I collected and coded the think-aloud protocols and interview responses from the participants qualitatively.

RA No.1 (HIJ)/Move 3 (*M3M*), *Procedure*

(*M3M*) The participants were randomly assigned to three equal groups of 50 students. The first group took Version 1, the second took Version 2, and the third took Version 3. All these versions were administered on computer. (*M3M*) After the VST, participants were required to finish the reading comprehension task (for distraction purposes). The meaning recall task, which participants were unaware of when they took the VST, followed the reading comprehension task. (*M3M*) Participants were allowed to take as much time as they needed to finish the recall task.

RA No.6 (NHIJ)/Move 3 (*M3M*), *Procedure*

(*M3M*) Before the experiment, participants were notified of how the personal data collected would be used. (*M3M*) Participants were tested individually in a single session. (*M3M*) After a participant completed the English reading proficiency test, within a 30-minute time limit, they were instructed on how to complete the semantic relatedness judgment task.

With respect to major Move 5, *Limitation,* NHIJs used it as a conventional move with 13% occurrence as compared with HIJs, which had zero occurrence. This result suggests that NHIJ academic writers more likely prefer to delineate the research restrictions and constraints of their studies. This delineation of limitation as far as research methodology is concerned may indicate that the NHIJ writers may have wanted their audience to refrain from spotting a loophole as regards the research design and processes they conceptualized. In this way, they apparently own their flaws by expressing the limitation of their RAMs. The following extracts exemplify the use of Move 5:

RA No.15 (NHIJ)/Move 5 (*M5M*), *Limitation*

> A total of 16 RAs was analyzed in this study: eight RAs were written by Filipino authors and another eight by Japanese authors. The said RAs were all singly written in English language and extracted from the field of applied linguistics. Moreover, the duration, within which the RAs have been published, were from the years 2005 to 2010. All RAs were published in international journals. RAs' conclusion sections under study were subjected to word and paragraph counting to get the average length of RAs' conclusion sections. (*M5M*) As a limitation of the study, the number of pages in which the conclusion parts were written were not considered because all RAs' conclusion sections did not seem to exceed to two pages.

Move 6, *Research aims/questions/hypotheses,* which was used by the HIJ academic writers who chose to delineate their research questions in their RAMs, obtained 13% occurrence; on the other hand, the NHIJ writers apparently decided to articulate the said move in the RAIs. It appears that the HIJ writers might have seen the need to outline their research questions or objectives in their RAMs, which is an optional move in Swales' (1994, 2004) framework for RAIs. The said optional move may have given the HIJ writers the choice to express their research questions or objectives in writing their RAMs. The realization of Move 6 is shown in this extract:

RA No.7 (HIJ)/Move 6 (*M6M*), *Research aims/questions/hypotheses*

> Research Questions
>
> Given the information available in the corpus, I conceptualized proficiency level using school level. Following Wolfe-Quintero et al. (1998), I assumed that if a measure progresses linearly in a way that is significantly related to school level, it is potentially a good candidate for a developmental index. With this conceptualization and assumption, I analyzed the syntactic complexity of the essays in the corpus using the 14 measures, with the aim to answer the following four research questions.
>
> 1. (*M6M*) What is the impact of sampling condition, including institution, genre, and timing condition, on the mean values of any given syntactic complexity measure?
> 2. (*M6M*) Which measures show significant between-proficiency differences? What is the magnitude at which between-proficiency differences in each measure reach statistical significance?
> 3. (*M6M*) What are the patterns of development for the measures that show significant between-proficiency differences?

4. (*M6M*) What is the strength of the relationship between different pairs of syntactic complexity measures?

As regards Move 7, *Overview,* NHIJs obtained a mean of 40% as compared with HIJs, which had a mean of 13%. These findings suggest that the NHIJ writers may have wanted their audience to be reminded of relevant details as far as the research processes are concerned, highlighting and retaining the outline of their RAMs. The following extracts illustrate Move 7:

RA No.5 (HIJ)/Move 7 (*M7M*), *Overview*

(*M7M*) Two effect sizes derived from the studies by Rezaee and Nourzadeh (2011) and Horst (2005) were based on the same samples. (*M7M*) Multiple effect sizes from the same sample distort the results of the meta-analysis; therefore, an adjustment was applied. (*M7M*) If a study produced two or more effect sizes from the same sample, the effect sizes were averaged. (*M7M*) For any studies providing multiple effect sizes from one control group with different experimental groups, an effect size that came from the largest sample size was chosen.
(*M7M*) Table 2 shows the aggregated effect sizes for group contrasts, and Table 3 for pre–post contrasts. (*M7M*) The 34 studies included 43 unique effect sizes (22 effect sizes for group contrasts and 21 effect sizes for pre–post contrasts) and a total sample size of 3,942 participants. (*M7M*) The sample sizes of group contrasts ranged from 10 to 96 (M = 42.32) for experimental groups and 10 to 139 (M = 38.95) for control groups; thus, these studies had a similar number of participants in each group. (*M7M*) The sample sizes of the pre–post contrasts ranged from 10 to 216 (M = 51.29); this amount of variance in the sample sizes indicates the ease of conducting research without control groups.
(*M7M*) After effect sizes for the two types of contrasts were calculated, they were entered into Comprehensive Meta-Analysis (Version 2.2).

RA No.7 (NHIJ)/Move 7 (*M7M*), *Overview*

(*M7M*) This intervention study involved a longitudinal diary study to track the learners over time in their naturalistic environment in order to capture any changes in their L2 motivation, resulting from the motivational strategy training. (*M7M*) Ushioda (2001) argued that a more qualitative research approach should be adopted to investigate the dynamic and temporal dimensions of L2 motivation. (*M7M*) Crookes and Schmidt (1991) suggested that longitudinal diary studies offer a better way to explore the dynamics of motivation and provide interesting insights from

the learners themselves. (*M7M*) In this study qualitative data collection and analysis methods were used. 10 Chinese EFL learners kept a diary of their English learning for a period of six months. (*M7M*) After keeping their diary for three months, they were randomly allocated to the two groups: five in the intervention group and five in the control group. (*M7M*) In order to test the effectiveness of motivational strategy training and the effect of the use of motivational strategies on students' motivation, I (as an independent researcher) provided the intervention group with motivational strategy training outside the classroom from the fourth month to the six month. (*M7M*) The control group did not receive any treatment. (*M7M*) Differences in the L2 motivation of the two groups were examined.

Table 9
Cyclicity of moves in RAMs from high-impact and non-high-impact applied linguistics journals

Cyclicity of Moves RAM	HIJ	Mean %	NHIJ	Mean %	Total Mean %
1+3+4	9	60.00	7	46.67	53.5
1+3	2	13.00			6.50
7+1+3+4			5	33.33	16.67

Table 9 demonstrates a number of cyclicity of moves in RAMs employed by HIJ and NHIJ academic writers. Based on the data in Table 7, three sequence patterns were employed by the two sets of writers. Both the HIJ and the NHIJ writers preferred the cyclicity of move 1+3+4 in the RAM sections. Specifically, the HIJ writers frequently used the said cyclicity of move with the obtained mean of 60%, while NHIJs garnered less than 47% in using the same move sequence. It appears that the three moves, *subjects/materials, procedure,* and *data analysis,* in the study's framework are possibly found more significant to be realized by both sets of academic writers probably because these moves are involved in the experimental manipulation of data in their studies. In doing so, without likely realizing other moves, research questions could possibly be answered, thus, achieving the objectives of their studies.

More so, HIJs seemed to favor the use of the cyclicity of move 1+3, for such was found in the two shortest RAMs among the samples from the HIJs, whereas NHIJs preferred to employ the cyclicity of move 7+1+3+4. It appears that the NHIJ academic writers may have wanted to prepare the readers for what to expect in their RAMs by realizing Move 7, *Overview,* first before moving on to the elaboration of research processes. Furthermore, the HIJ and the NHIJ writers utilized a variety of rhetorical patterns in their RAMs. In particular, HIJs used four different sequences of patterns apart from the two identified frequently employed cyclicity of moves. Conversely, NHIJs had three different sequences of patterns aside from the cyclicity of moves 1+3+4 and 7+1+3+4. These findings suggest that the variability of rhetorical preferences used by both sets of academic writers might have affected the choice

of cyclicity of moves in the RAMs. In addition, the results imply that the academic writers' research orientation and training from their respective discourse communities may play an important role in rhetorically shaping their RAMs. Furthermore, the rhetorical preferences of journal reviewers and scholars could have influenced the HIJ and the NHIJ academic writers to follow specific writing practices and conventions, and publication guidelines. It should be noted, however, that the size of the present research corpus was inadequate to determine the different sequences of patterns or cyclicity of moves preferred by both sets of academic writers.

4. Conclusion

In summary, the present study attempted to determine the organizational and rhetorical moves employed by HIJ and NHIJ academic writers and to identify which among the major rhetorical moves in Peacock's (2011) RAM framework were frequently used. Moreover, the study investigated the varied length of RAMs published in HIJs and NHIJs in terms of the number of words and paragraphs.

It was found that HIJ academic writers produced more words and paragraphs than NHIJ academic writers. These findings implied that HIJ writers had the tendency to provide greater elaboration in presenting the research processes or procedures in their RAMs as opposed to NHIJ writers. In addition, the seeming prolixity of HIJ writers could be attributed to the complexity of the research topic or problem of their studies. Hence, the more complex the RA is, the longer explanations are likely needed in presenting the research processes in RAMs.

The seven-move model proposed by Peacock (2011) perhaps proved to be a reliable rhetorical schema; however, Move 2, *Location*, was not employed by both sets of academic writers. Likewise, Move 5, *Limitation,* was not found in HIJs. These findings could be attributed to the limited size of the present study's corpus; thus, more studies tackling the same variables should be conducted to validate the said findings.

With respect to rhetorical preferences, one move, i.e., Move 1, *Subjects/materials,* seemed to be obligatory in both journals. Also, as the data suggested, Moves 3, *Procedure,* and 4, *Data Analysis,* seemed obligatory in NHIJs but were considered optional in HIJs. These findings suggest that the employment of the said moves likely convince the readers to judge the validity of the studies. Also, these results further substantiate Huang's (2014), Kanoksilapatham's (2005), and Swales and Feak's (1994) assumptions.

Variations were found as regards the use of cyclicity of moves in the two journals. This finding may be attributed to the varied research orientation and training undertaken by HIJ and NHIJ writers. Another probable reason is that both sets of academic writers might have been influenced by the rhetorical preferences of journal reviewers and the specific journal publication guidelines.

The findings of the study may be useful for ESL or EFL instructors who handle academic or research writing classes. ESL or EFL instructors may provide group-writing

activities on how to write the methodology section of a research paper. As averred by Swales and Feak (1994), the RAM is the easiest RA section to write because it requires a straightforward writing style and the use of the simple past tense. According to Swales and Feak (1994), the RAM is the RA section usually written first by a number of academic writers. Adopting this assumption, Rajasekar, Philominathan, and Chinnathambi (2013) recommended that by writing the RAM section first and foremost, academic writers could initiate the actual research work.

Furthermore, writing instructors may provide their students with explicit instructions on using the types of denotative reporting verbs corroborated by Hyland (1999), such as reporting verbs of research act (e.g., demonstrate, establish), cognition acts (e.g., understand, think), and discourse acts (e.g., account, suggest). In this way, the students would be able to carefully choose the appropriate verbs when writing a research paper, particularly the RAM section.

As for future research directions, academic writers may compare the RAMs written by NHIJ Filipino academic writers and HIJ non-Filipino academic writers to further prove the findings of this study.

Moreover, further studies can be undertaken to include some linguistic features such as nominalization, reporting verbs, and cohesive and hedging devices found in RAMs to provide more insights on the commonalities and differences between HIJ and NHIJ academic writers. A study employing Hyland's (2002) taxonomy of writer identity is likewise recommended using the research corpus extracted from HIJ and NHIJ RAMs. The power of pronouns in RAMs appears to have received less attention in the literature; thus, further investigations as regards pronouns using Hyland's model for writer identity might prove useful. Such an attempt could help explore more the rhetorical variations of RAMs between HIJs and NHIJs.

This study not only demonstrates how academic writers establish the discourse organization of RAMs but also emphasizes how moves analysis provides an insight into the textual shape of the RAM section. In addition, it is hoped that the rhetorical moves and the cyclicity of moves used by academic writers from two different rhetorical contexts, whose publication guidelines may likely be varied in terms of how the RAM design is presented, would serve as rhetorical guidelines in writing the RAM section, specifically for NHIJ academic writers who aspire to publish their papers in HIJs.

While the findings of the present study may still be inclusive as far as the rhetorical and the cyclicity of moves employed by HIJ and NHIJ academic writers are concerned, more studies with a larger corpus should be conducted to validate the rhetorical variability found in this study.

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