

A genre analysis of research article ‘findings and discussion’ sections written by Indonesian undergraduate EFL students

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ABSTRACT

The quality of findings and discussion (F&D) section in a research article is crucial to elucidate the results of a particular inquiry and to situate the significance of the results in the body of knowledge through publications in scientific journals. Previous academic genre analysis has generated several models to help novice writers develop the rhetorical moves of the F&D sections across disciplines. However, the study on the quality of the rhetorical moves in the undergraduate EFL students’ research articles is still scarce. Hence, this study seeks to examine the manifestation of rhetorical moves in the findings and discussion sections written by Indonesian undergraduate EFL students. A total of 113 unpublished ELT research articles from a state educational university in Bandung was selected as the target corpus. AntMover 1.10 was employed as the analysis tool. The top-down approach was carried out to obtain the existing rhetorical structure using Ruiying and Allison’s (2003) framework as the guideline. The bottom-up approach was used to scrutinize the linguistic realizations of the rhetorical moves. The findings demonstrated that, in the move level, most of the students’ F&D sections had manifested the four moves, i.e., providing background information, reporting results, summarizing results, and commenting on results. However, in the step level, a number of F&D sections did not provide detailed information regarding the sequence of the findings presentation, the analysis procedure to obtain the findings, the explanation for the findings, and the highlight of the significance of the findings. The randomized rhetorical patterns were also dominant. It can downgrade the clarity and rigor of the F&D sections. Despite that, the linguistic realizations of the moves, particularly the tense and sentence voice, mostly conformed to the norms. The findings may serve as a reference to develop the teaching materials of English for research publication purposes (ERPP).

Keywords: English for research publication purposes; findings and discussion section; genre analysis; rhetorical moves; undergraduate EFL students

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INTRODUCTION

The increasing demand to possess the abilities to write research articles (hereafter RAs) for international publication purposes is apparent. The abilities enable the writers to elevate the publication productivity rate as one of the indicators of

highlighting individual and institutional reputations. The use of English as the medium of international scientific communication (Ferguson et al., 2011; Hamel, 2007; Tardy, 2004) is definitive in recent years. Consequently, the successful dissemination of academic knowledge worldwide through

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international publications depends on the English quality and standards manifested in the RAs. Most countries, either Anglophone or non-Anglophone, regard international publications as the benchmark of measuring the academic writing quality of their scientists and academics in this ‘publish or perish’ era (Garfield, 2000). It is not surprising that international journals become the paramount place of knowledge circulation where the excellent command of English academic writing becomes the obligatory requisite. Consequently, the genre studies to delineate the good model of research article writing keep being the center of attention within many contemporary scholarly investigations (Tankó, 2017).

However, understanding the typical conventions of RAs writing is still perceived as a daunting task by many non-native English speakers (hereafter NNS), or novice writers since every section has its writing norms (Kurniawan et al., 2019). Of all RA sections, the findings and discussion (hereafter F&D) sections tend to be the most complex and flexible (Ruiying & Allison, 2003). The complexity of writing F&D sections causes some challenges, which have been well-documented by previous scholars (Mišak et al., 2006). First, the nature of the disciplines and the typical practice of organizing ideas in the target journals generate variations of the discourse norms (Amnuai, 2017; Swales & Feak, 2004). The variations of the discourse norms might confuse the NNS novice writers to interpret the eligible writing of F&D section during their preparation to submit the articles to the international journals. Second, the discourse norms comprise certain rules in organizing the information and in realizing the linguistic features in order to perform persuasion and argumentation (Lim, 2010) so that the RAs can appeal to the international readers’ attention to read the articles. The way the persuasion and argumentation are manifested in the F&D sections might differ between the writers’ capacities and the demands from the global discourse communities upon which the differing first-language

(L1) background puts great influence. Consequently, the less eligible F&D sections may cause rejection if the writers aim to publish the articles in international journals.

Therefore, genre analysis helps understand the concept of rhetorical organization of a research article. Since Swales’ (1990) seminal work on the Creating a Research Space (CARS) model, rhetorical organization is conceptualized as a set of communicative functions (moves) and sub-communicative functions (steps) to effectively convey the intended information. In this case, it helps the writers express their argumentation of the findings to appeal to the readers’ attention. Ruiying and Allison (2003) assert that moves function as the general discourse units, which are derived from the primary purpose of the texts, while steps are the specific means to realize the moves functions coherently.

The typologies of research article findings and discussion sections

The findings and discussion section plays an important role in a research article. This section serves as the place not only to present the findings but also to develop arguments to convince the essence of the findings by highlighting the similarities and differences from the previous research (Amnuai, 2017; Basturkmen, 2012; Lim, 2010). Specifically, the F&D section comprises four main rhetorical moves: (1) providing background information, (2) reporting results, (3) summarizing results, and (4) commenting on results. The manifestation of standard conventions of the F&D section involves certain competencies to present the findings clearly and to comment on or give arguments to the findings critically.

According to Stoller and Robinson (2013), there are three common typologies or generic structures of the findings and discussion section of a research article. Table 1 displays the typologies.

Table 1
Typologies of Research Article Findings and Discussion Section

Type	Description (flow of information)
Blocked	[Findings 1, Findings 2] [Discussion 1, Discussion 2]
Iterative	[Findings 1, Discussion 1] [Findings 2, Discussion 2]
Integrated	Not orderly organized

Each typology determines the rhetorical organization. Blocked typology presents the detailed description and explanation of the findings as to the first exposure for the readers, followed by the discussion section regarding the writers’ interpretations of the findings, the comparison of the findings to the previous works, and the reasoning of the (un)expected findings. Meanwhile, the iterative typology exhibits the blended flow of the findings and the discussion. It requires the writers’ abilities to not only present the findings but also discuss it

critically after the findings are presented. As the most randomized type of F&D section, the integrated typology seems more challenging to understand the boundaries of the findings and discussion parts of each other. This study focuses on the iterative typology because it fits the current type of data set.

Previous research of genre analysis on RA findings and discussion sections

Genre analysis through the move analysis method is employed to scrutinize the findings and discussion

section from its move-level to step-level quality. There are two fundamental foci of the genre analysis, i.e., the salience of the moves and steps and the patterns of the rhetorical organization exhibited in the analyzed texts. Regarding the salience of the moves, similarities are well-documented. Amnuai and Wannaruk (2013) found that background information and summary moves were optional in Thai and international journals. This was confirmed by Sabet and Kazempouri (2015), analyzing 60 RAs from Iranian and international journals (30 RAs, respectively). They argued that stating the research purpose as the introductory information was manifested below 25% in both cohorts.

Meanwhile, some differences were identified. Joseph and Lim (2018) examined the rhetorical moves of 60 Discussion sections of Forestry research articles from several Scopus-indexed Q1 journals. The findings demonstrated that the providing background information move was obligatory. The move featured in 95% of the discussion sections. Amnuai and Wannaruk (2013) compared the manifestation of rhetorical moves in between 30 discussion sections from Thai journals and 30 discussion sections from international journals. They found that while the reporting results were conventional in both groups of journals, the commenting on results move was obligatory in the international journals. On the other hand, Sabet and Kazempouri (2015) revealed that the reporting results move was obligatory in the 60 discussion sections of articles published in Iranian local and international ESP journals. The differences indicate that different discipline and journal indexation may influence the varieties of rhetorical moves in the findings and discussion sections.

The next checkpoint pertains to the manifestation of the rhetorical organization of F&D section. From the comparative analysis perspective (i.e., the approach to compare the texts with different attributes, such as disciplines, proficiency level of the writers, or types of journals), previous research (Arsyad, 2013; Kim et al., 2016; Nodoushan & Khakbaz, 2011) demonstrated that the rhetorical organization was sequential from the provision of background information, the statement of findings, the summary, and the comments of the findings in the social science and humanities articles. The recurring pattern comprised findings followed by reference to previous research and (un)expected outcomes followed by explanation. From the contrastive analysis perspective (i.e., the approach to compare the texts written in two contrasting language, such as between English and a local language), previous research contrasting Persian and English RAs (Amirian et al., 2008), Malay and English RAs (Kim et al., 2016) or Indonesian and English RAs (Farley, 2018; Mirahayuni, 2002) conforms to the consensus as mentioned earlier. However, Loi et al (2015) found that findings move was possibly followed by a

deduction or the other way around. Also, the Malay RAs tended to perform an evaluation-introductory-conclusion pattern. Farley (2018) disclosed another case in the Indonesian RAs. When the Indonesian writers are discussing the differing results between their research and previous research, most of them do not provide any explanation for such differences. He further explains that the Indonesian writers hardly support the explanations, when present, with citations from the previous research.

Despite the comprehensive description of the conformities and non-conformities in manifesting the rhetorical moves previously discussed, previous research mentioned above extensively searches for the ideal framework of the rhetorical organization through the comparison between RAs from local journals and those from international journals. The manifestation of the rhetorical moves in the students' works has still received little attention.

This study discovers three studies concerned with Master theses in ELT (Nodoushan & Khakbaz, 2011), ESL Master's dissertations between soft and hard sciences (Dastjerdi et al., 2017), and Master theses in Applied Linguistics (Warsito et al., 2017). The findings generally exhibited conformities with the expert writers' RAs in which background information and summary became either optional or conventional, while findings and comments were obligatory. However, those studies only focus on graduate students' works, causing a scarcity of information regarding how undergraduate students organize the rhetorical moves of their findings and discussion sections. The preference for examining graduate students' works was also justified by Guo (2014). In Asian milieu, the call for an in-depth move analysis follows the government policy on the requirement of international publication for the students to obtain a degree in most countries, including Indonesia. This educational gap between undergraduate and graduate (e.g. Master or Doctoral) degrees might generate different findings. Moreover, the undergraduate thesis is defined as a scientific description of a study, according to the Ministry of Research and Higher Education (MRHE, 2012, p. 8) of Indonesia. Such a definition might influence the rhetorical organization of the students' research article F&D sections formulated from their theses.

Hence, the exploration of the rhetorical organization in the iterative findings and discussion sections of NNS undergraduate students becomes a crucial continuum to be taken into account. The reason behind the selection of iterative typology of F&D section is that this study attempts to examine the students' rhetorical repertoire in elaborating on the findings and their comments simultaneously. Such a typology represents a complex combination of clarity and criticality upon the findings, which might result in varying degrees of manifestation among the students. Therefore, to obtain sufficient information,

the following research questions guide the present study.

1. How do the Indonesian undergraduate EFL students manifest the rhetorical moves in their iterative findings and discussion sections?
2. How do the students project the configurations of the move-step patterns?

METHOD

The corpus

This study was designed as a genre-approach move analysis (Hyland, 2009) because it suits the objective of the present study to scrutinize the manifestation of rhetorical moves in a along with their linguistic realizations. This study was the more comprehensive

study than the two previous research by using the same corpus (Kurniawan & Lubis, In Press; Lubis, 2019). However, the foci differed from one another (Kurniawan & Lubis, In Press, on the comparative move analysis between qualitative and quantitative F&D sections; Lubis, 2019, on the argumentation structure of the comments move). A corpus of 113 of 138 RAs unpublished research articles from a state university in Bandung in the field of English education was the data source. Twenty-five RAs were discarded since they applied other typologies, which might generate different rhetorical structures. In total, the corpus consists of 104.789 words, with the average number of words per article is 927 words. The articles are the in-brief version of the students' undergraduate theses (hereafter *skripsi*). Table 2 depicts the whole demography of the corpus.

Table 2
Description of the Corpus

Publication year	Number of 'findings and discussion' sections	Types of the research method				Range of the number of words
		Qualitative (N)	Quantitative (N)	Qualitative and Quantitative (N)	Mixed Methods (N)	
2013	32	19	10	3	-	219-1218
2014	20	16	3	-	1	505-2229
2015	15	11	4	-	-	256-2016
2016	22	19	3	-	-	256-1935
2017	24	11	10	1	2	356-1541
Total	113	76	30	4	3	

Four research methods were identified based on the verbatim statement by the students. Since the purpose of this study only examines the general rhetorical strategies used by the NNS Indonesian undergraduate students in constructing their iterative F&D sections, the equal number of RAs for each research design is not prioritized.

The top-down approach to analyze the rhetorical organization

The sentences were the units of analysis. This study first examined the rhetorical moves of the small corpus to define and set the boundaries among the moves and steps. Then, one external rater whose expertise is on discourse analysis was invited to re-examine the obtained description of the rhetorical moves jointly. The obtained rhetorical structure was compared to three widely used models, i.e., Dudley-Evans (1994), Swales (1990), and Ruiying and Allison (2003). Ruiying and Allison's (2003) model was selected as the analysis guideline because the analysis results conformed to it. It also divided the moves and their constituent steps. Table 3 shows that the typical rhetorical convention for each presented finding in the 'Findings/Results and Discussion' section comprises four moves. Moreover, only Move 3 Summarizing results do not have any constituting steps since the meaning conveyed has been specific (e.g., either the general point of the qualitative

findings or the concluding remark of the quantitative analysis).

AntMover 1.10 (Anthony, 2016) was utilized to analyze the texts because it is designed for rhetorical moves analysis. Figure 1 exhibits the sample display of the tool. The 'Move,' 'Outline,' and 'Add to training' tools were employed. The 'Add to training' tool enabled us to capture new steps from the target corpus. The main corpus was then converted into .txt format. First, after inputting the analysis results of the training data, the corpus of unpublished students' RAs was inputted into the software to generate the transparencies of steps for the sentences of each text. Second, the steps were classified into moves based on the model. Third, the occurrences of the moves and steps were counted based on the displayed results in the 'Outline' tool. Fourth, the results were translated into a configuration representing the move-step patterns.

The bottom-up approach to scrutinize the linguistic realizations

The bottom-up approach focused on the analysis of tense, sentence voice, and formulaic phrases of the moves as the most commonly questioned linguistic features in the previous research. Both features are beneficial to comprehend the students' linguistic repertoire in realizing the rhetorical moves compared to the published research articles. The linguistic realizations were analyzed manually. Although

automated tools have been available to ease the analysis process, this study considered the hand-coding strategy more beneficial to generate more fine-grained results (Ansarifar et al., 2018).

Data credibility

Data triangulation method was employed by elaborating the statistical results and excerpts from

the corpus to address the two research questions. Also, inter- and intra-coder reliability tests were conducted to decrease the subjectivity level upon the analysis results. By statistics, Cohen’s kappa (k) value became the benchmark. The rationale is that it represents the chance-corrected agreement as well in the realm of move analysis (Kanoksilapatham, 2005; Moreno & Swales, 2018).

Table 3

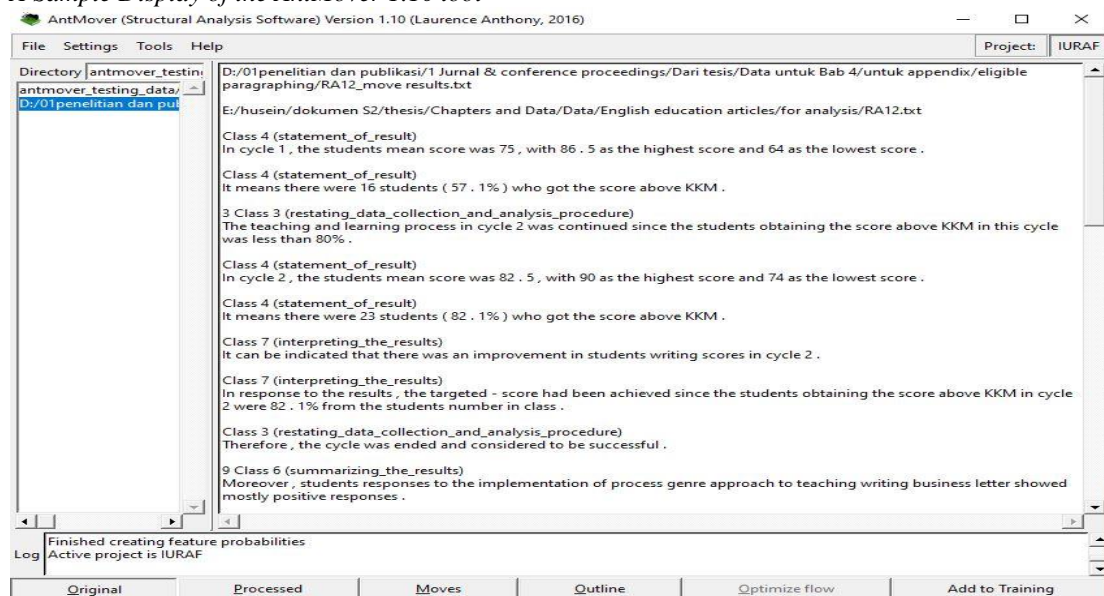
The current version of move analysis guideline in the iterative F&D section

Label	Purpose
Move 1	Providing background information
Step 1	Stating the context (background theory and/or research aims)
Step 2	Preparing the sequence of the presentation
Step 3	Restating data collection and analysis procedure
Move 2	Reporting results
Step 1	Statement of result (either numerical value or reference to a graph or table)
Step 2	Finding (without a reference to a graph or table)
Move 3	Summarizing results
Move 4	Commenting on results
Step 1	Interpreting results
Step 2	Comparing results with literature
Step 3	Accounting for results
Step 4*	Evaluating results (significance, limitation, implication, and/or recommendation for future work)

*Should not necessarily include the four derivatives because ‘limitation’ and ‘recommendation for future work’ parts become obligatory in IMRAD version only

Figure 1

A Sample Display of the AntMover 1.10 tool



The rhetorical moves of some research articles were independently coded by the same rater as in the process of defining the moves and steps. The selection of the same rater aimed to examine the consistency of agreement between the rater and the researchers in the main analysis process. First, one month after the first and second analysis, 25% RAs

of the whole corpus (Kanoksilapatham, 2005) were selected randomly for inter-coder reliability. One-session discussion with the coder was conducted to get acquainted with the coding system by giving the printed guideline of the model with several examples. Then, the coder independently coded the 28 F&D sections. Simultaneously, an intra-coder reliability

test was performed to examine the consistency of the researchers' coding results. Another 25% RAs were selected randomly. Some identified disagreements were discussed three times with the inter-coder. Afterward, Cohen Kappa's (k) value was calculated by using Excel.

The researchers adopted Moreno and Swales' (2018) table to display the Kappa value. Meanwhile, the scaling system of Kappa value interpretation was adopted from Orwin (1994). Tables 4 and 5 showed that the average Kappa value for the inter- and intra-coder reliability was excellent, i.e., 0.92 and 0.98, respectively.

Table 4
Inter-Coder Reliability Results

*Comm. Function	Average Kappa	Agreement (%)	A and B (%)	Not A and not B (%)	Disagreement (%)	A and not B (%)	B and not A (%)
PBI (M1)	0.94	98.56	12.01	86.55	1.44	0.19	1.25
STC (S1)	0.96	99.81	2.69	97.12	0.19	0.19	0.00
PSP (S2)	0.69	98.75	1.44	97.31	1.25	0.00	1.25
RDCAP (S3)	0.97	99.62	6.44	93.18	0.38	0.19	0.19
RR (M2)	0.93	96.54	51.20	45.34	3.46	0.77	2.69
SS (S1)	0.92	97.79	15.08	82.71	2.21	2.02	0.19
FD (S2)	0.91	95.68	34.29	61.38	4.32	0.00	4.32
SR (M3)	0.89	97.98	9.61	88.38	2.02	2.02	0.00
CR (M4)	0.93	97.41	21.81	75.60	2.59	2.02	0.58
IR (S1)	0.90	98.27	9.03	89.24	1.73	1.54	0.19
CRL (S2)	0.96	99.14	10.76	88.38	0.86	0.10	0.77
AR (S3)	0.77	99.33	1.15	98.17	0.67	0.67	0.00
ER (S4)	0.80	99.81	0.38	99.42	0.19	0.19	0.00
Average**	0.92	98.00	24.00	74.00	2.00	1.00	1.00

*PBI=Providing Background Information; STC=Stating the Context; PSP=Preparing the Sequence of the Presentation; RDCAP=Restating Data Collection and Analysis Procedure; RR=Reporting Results; SS=Statement of Result; FD=Finding; SR=Summarizing Results; CR=Commenting on Results; IR=Interpreting Results; CRL=Comparing Results with Literature; AR=Accounting for Results; ER=Evaluating Results

**The average value of the four moves

Table 5
Intra-Coder Reliability Results

Comm. Function	Average Kappa	Agreement (%)	A and B (%)	Not A and not B (%)	Disagreement (%)	A and not B (%)	B and not A (%)
PBI (M1)	0.99	99.70%	12.32%	87.39%	0.30%	0.00%	0.30%
STC (S1)	0.99	99.90%	4.93%	94.98%	0.10%	0.00%	0.10%
PSP (S2)	1.00	100.00%	1.38%	98.62%	0.00%	0.00%	0.00%
RDCAP (S3)	1.00	100.00%	5.52%	94.48%	0.00%	0.00%	0.00%
RR (M2)	0.98	98.82%	41.18%	57.64%	1.18%	0.49%	0.69%
SS (S1)	0.99	99.80%	11.13%	88.67%	0.20%	0.00%	0.20%
FD (S2)	0.99	99.41%	28.87%	70.54%	0.59%	0.39%	0.20%
SR (M3)	0.96	99.11%	13.10%	86.01%	0.89%	0.69%	0.20%
CR (M4)	0.99	99.51%	31.82%	67.68%	0.49%	0.20%	0.30%
IR (S1)	0.98	99.61%	11.13%	88.47%	0.39%	0.20%	0.20%
CRL (S2)	0.99	99.90%	9.46%	90.44%	0.10%	0.00%	0.10%
AR (S3)	0.96	99.31%	8.08%	90.44%	0.10%	0.00%	0.10%
ER (S4)	1.00	100.00%	1.28%	98.72%	0.00%	0.00%	0.00%
Average*	0.98	99.29%	24.61%	74.68%	0.71%	0.34%	0.37%

*The average value of the four moves

FINDINGS AND DISCUSSION

The rhetorical moves in the students' iterative findings and discussion sections

This sub-section elucidates the manifestation of rhetorical moves in the corpus to address the first research question. This study defines 'occurrence' as the number of moves and steps featured in the corpus, while 'salience' as the number of RAs featuring the

moves and steps. The discussion encompasses the occurrences, the salience of the moves and steps, and the linguistic realizations of each move. This study employed the benchmark of determining the salience status of the moves and steps proposed by Kanoksilapatham (2005) in which they are classified as obligatory (if the moves or steps appear in 100% of the entire corpus), conventional (if the moves or

steps appear in 66% to 99% of the entire corpus), or optional (if the moves or steps appear in less than 66% of the entire corpus).

In total, there were 4839 moves identified in the corpus. Figure 2 depicts the moves occurrences and

salience, respectively. Table 6 provides the detailed quantitative results of each step. The students spent much text space for reporting the results, followed by commenting on the results, providing background information, and summarizing the results.

Figure 2

The Pie Chart of the Moves Occurrences and the Bar Chart of the Moves Salience

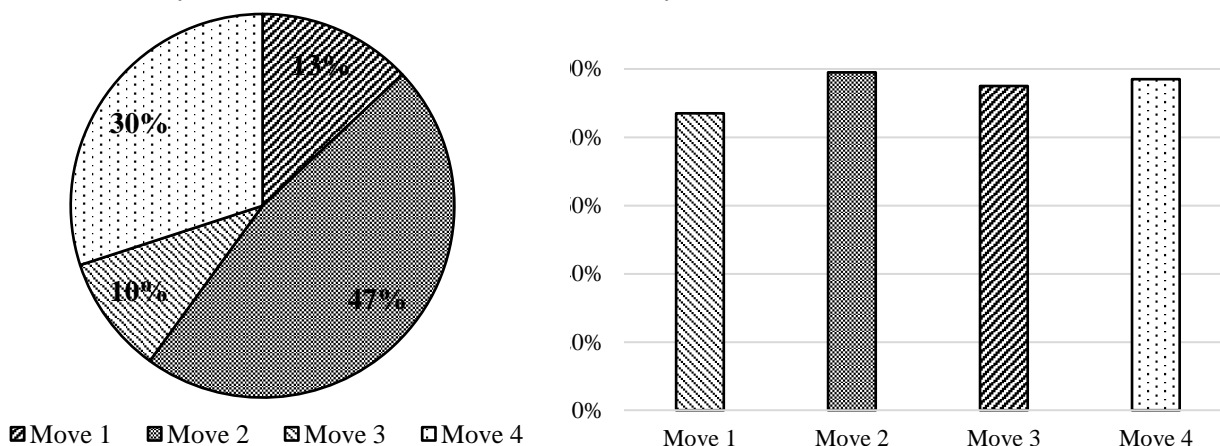


Table 6

The Occurrences and Salience of the Steps of the Moves

Move	Step	F	\bar{X}	Salience (%)
Move 1 Providing background information	Step 1 Stating the context	286	2	61
	Step 2 Preparing the sequence of the presentation	90	0.8	42
	Step 3 Restating data collection and analysis procedure	269	2	59
Move 2 Reporting results	Step 1 Statement of result	750	7	78
	Step 2 Finding	1526	13	93
Move 3 Summarizing results	-	478	4	95
Move 4 Commenting on results	Step 1 Interpreting results	625	5	88
	Step 2 Comparing results with literature	532	4.7	73
	Step 3 Accounting for results	191	1.7	59
	Step 4 Evaluating results	92	0.8	30

Move 1 Providing background information

This move reached conventional status (87% featuring RAs). Concerning the comparison between the NNS student cohorts and the expert writer cohorts, the conventional status of Move 1 in the present study was in line with the previous research across soft sciences, such as Applied Linguistics (Amirian et al., 2008), Language Teaching (Loi et al., 2016), Law (Tessuto, 2015), and Accounting

(Amnuai, 2017). The background information move was also considered conventional. Interestingly, compared to the hard sciences, such as ESP disciplines involving Medicine, Agriculture, and Biotechnology (Sabet & Kazempouri, 2015), Chemical Engineering (Jin, 2017), and Forestry (Joseph & Lim, 2018), this study underscored the similar percentage of RAs featuring Move 1 in the ESP corpus. In other words, although the discipline

is different from the present study, background information seems not pivotal to be manifested. Moreover, all steps in this introductory move were conventional (i.e., Step 1 61%, Step 2 42%, and Step 3 59%). The low number of RAs manifesting Step 2 is because the students used sub-headings to indicate specific sub-section to be presented.

The categorizations of competitive and cooperative games above are based on Hadfield's (2001) theory about kinds of games. (RA45, QL, S4, Step 1)

The first findings are related to the first research question that is about the students' perceptions of technology integrated in language learning. (RA95, QL+QT, S1, Step 2)

Questionnaire was addressed to teachers and students which was held before and after the implementation of LEA. (RA7, QL, S1, Step 3)

The students realized the three steps by using specific nouns or noun phrases as the subjects as exemplified by the above excerpts. Present simple tense in passive form was preferably employed for Step 1 and 2, while past simple tense in passive form for Step 3. Some others prefer the use of future simple tense or present simple tense in an active form using the transitive verbs (e.g., examine, elaborate, discuss).

This section will discuss various types and strategies of feedback applied by the teacher to the students' descriptive texts observed in this research. (RA4, QL, S1, Step 2)

Joseph and Lim (2018) also noted the investigative verbs manifested in stating the objectives or the sequence of the presentation in their corpus of 60 RA discussion sections from Q1 journals. Meanwhile, Amirian et al. (2008) discovered different patterns of language use in which past simple tense is preferred in realizing Step 1. Even, second-person pronouns as the subjects are identified in their corpus. This contrasts the present findings, which do not exemplify such a language use. This study argues that the difference does not pertain to the linguistic repertoire of the writers considering the top-tier journals in applied linguistics like ESP, MLJ, and AL as the source of the corpus. Instead, the flexibility and no rigid standard of the typical linguistic features to be realized in this move can be the underlying factor.

Move 2 Reporting results

Move 2 was interestingly conventional, reaching about 99% of the RAs featuring the move. One RA did not provide the findings as to the fundamental purpose of the F&D section in a research article. This conventional status of Move 2 contradicted most previous research. From the students' perspectives, the Master students from Indonesia (Warsito et al., 2017), Iran (Nodoushan & Khakbaz, 2011), and Malaysia (Dastjerdi et al., 2017) feature both crucial moves. From its constituent steps, Step 1 referring to

specific tables or figures followed by Step 2 describing the data. The latter step was manifested more than the former step (93% and 78%, respectively). It implies that the detailed description must follow the reference to a table, graph, or detailed numerical calculation. This study does not regard this as a distinguished point since the corpus is composed of more qualitative RAs than the quantitative ones or the combination of both designs. The following excerpt may represent the manifestation of this move.

The table 4.1 shows that most of the student (83,9%) agree that the use of technology makes the learning English more interesting and a few students strongly agree (5,7%), while a small number disagree with it. (RA95, QL+QT, S19, Step 1)

Linguistically, the students employed present simple tense in active form with reporting verbs followed by that-clause sometimes to realize Step 1, while past simple tense with similar verbs and clause type was preferred to realize Step 2.

The following tables show the result of five observations on the teacher's techniques in presenting the meaning and form of vocabulary. (RA2, QL, S2, Step 1)

The third and the fourth frequently used strategies were cognitive strategies (M=3,11) and social strategies (M=2,98). (RA34, MMs, S14, Step 1)

The excerpts mentioned above showed that the use of reporting verbs directly followed by the objects occurred in the corpus. Some students intended to state the function of the referred tables or figures. In addition, past simple tense was typically used when dealing with numerical findings. The findings echo Amnuai's (2017) study, that also identified linguistic patterns.

Move 3 Summarizing results

This move was manifested in the 95% of the whole RAs to state the general points from one particular instrument, to ascertain the final result of the hypothesis testing, or to summarize the results from all instruments of a specific finding. Likewise, previous research regarded Move 3 as conventional. These similarities show that the nature of writing the findings and discussion section underscores a more detailed presentation of the findings justified by further argumentation upon the findings.

From the data above, it can be concluded that dictogloss storytelling is effective to improve students' writing ability. (RA55, QT, S49)

From all instruments, it is shown that the use of children's short stories improved the ability of students to understand the text better as well as to know more vocabulary. (RA18, QL+QT, S2)

The linguistic realization of Move 3 is more rigid than the other three moves. When present, this move was realized by employing anticipatory *it*

followed by the typical formulaic sequence for indicating a summary like *can be concluded* extended by that-clause. Some of the students also preferred the sequence *is shown that* to realize this move. Meanwhile, Amnuai and Wannaruk (2013) discovered another pattern of language use. Phrases like *to sum up*, *to summarize*, *in summary*, and *in brief* in their corpus were not identified in the present study. The students tended to start the sentence with prepositional phrases involving the micro-level words, as exemplified in the above excerpts. Likewise, the active voice did not occur in any RAs of the present study. This indicates the differing norms in realizing the linguistic patterns of Move 3. Again, this study emphasizes the cognitive capacity of the students in dealing with writing the F&D section, which might be influenced by the academic reading range encountered by the students during their *skripsi* completion period.

Move 4 Commenting on results

Around 3% of the whole RAs did not provide further argumentation to convince the readers about the findings. The conventional status of Move 4 did not echo with the previous research (Dastjerdi et al., 2017; Nodoushan & Khakbaz, 2011; Warsito et al., 2017). From the students' perspectives, the Master students from Indonesia, Iran, and Malaysia feature the comments move. One important reason is that the Master students have undergone intensive academic writing courses from their undergraduate study to their thesis writing completion period. Similar evidence from the corpus of expert writers' writing from international journals (Amirian et al., 2008; Amnuai, 2017), other soft sciences (Loi et al., 2015; Tessuto, 2015), and the hard sciences (Jin, 2017; Joseph & Lim, 2018; Sabet & Kazempouri, 2015) corroborates the consensus. It is because published research articles have been reviewed by expert scholars in their fields so that the rhetorical organization has possibly conformed to the typical conventions shared among the discourse communities.

Furthermore, Table 6 exhibited the optional status of Step 3 (59%) and Step 4 (30%), although around 73% of the students have strengthened their findings with previous research through Step 2. This indicates that some students are not concerned with enough reasoning or profound argumentation for the (un)expected findings, echoing the practice of Indonesian journal article writers in Farley's (2018) study regarding the provision of explanation for the contradictory findings with the previous research. This study posits that the cognitive level might influence the awareness to produce Step 3 and 4 of Move 4. The lessons they obtain from their lecturers when enrolling in an academic writing course considerably determine their capacity to manifest both steps. In addition, this study found no Step 4 in the form of significance or limitations of the results

in the students' F&D sections, only recommendations for future research or EAL teachers. These non-conformities are also acknowledged by previous research (Sabet & Kazempouri, 2015; Shi & Wannaruk, 2014) that both sub-communicative units only reached below 30% of occurrence. The absence of both units may be explained by the typology of F&D section itself in which the iterative typology tends to leave both units in the conclusion section.

In other words, the storytelling technique increased the students' score in general, but six sessions of treatment still cannot make the storytelling technique significantly improve cerebral palsy students' ability in English vocabulary. (RA64, QT, S13, Step 7)

This finding is in line with Mompean (2005) that this technique is less essential for young learners. (RA4, QL, S7, Step 8)

The dominance of teacher talk proportion in each meeting happened since the teacher mainly explained grammatical rules and gave instructions on writing tasks. (RA23, QL, S5, Step 9)

It is suggested to use the technology more often to enhance the students' skill in learning English. (RA95, QL+QT, S75, Step 10)

Regarding the linguistic realizations, all steps of Move 4 displayed specific signalling words, i.e. the use of hedges in Step 7. The combination of copular verbs and adjective phrases was identified in Step 8. The dominant appearance of causal conjunctions occurred in Step 9. The frequent uses of suggestive modals like *should*, *must*, *have/has to* or suggestive verbs like *suggest*, *need*, *recommend* in passive forms were noticed in the corpus. These linguistic patterns are in line with previous research (Amnuai & Wannaruk, 2013).

The manifestation of rhetorical moves configurations

The data were obtained by classifying the steps into the moves (e.g., stating the context into Move 1). The classification results were moved to Excel, representing the rhetorical sequence of the text from the beginning to the ending part. The sequences were translated into codes representing the recurring and randomized patterns. Meanwhile, the entire configurations of the findings and discussion sections were classified into three main configurations, i.e. two-move, three-move, and four-move configurations. The move-step configurations were examined further to obtain the students' preferences in manifesting the steps in Move 1, Move 2, and Move 4.

Table 7 displays the rhetorical moves configurations, and Table 8 displays the identified recurring and randomized patterns. Based on Table 7, the students had a propensity to manifest four-move configuration (78.76%=89 RAs), while the other

students preferred three-move (17.69%=20 RAs) and two-move (2.65%=3 RAs) configurations. It implies that three RAs featuring two-move configuration can

cause vagueness of information for the international readers.

Table 7
The Observed Rhetorical Configurations

Entire configuration	Number of RAs (f)	Move-step configuration		Number of RAs (f)
		Move	Configuration	
Two-move	3	Move 1	One-step	38
Three-move	20	Providing background information	Two-step	34
Four-move	89	Move 2	Three-step	26
		Reporting results	One-step	31
		Move 4	Two-step	81
		Commenting on results	One-step	16
			Two-step	36
			Three-step	37
			Four-step	21

Table 8
The Observed Recurring and Randomized Patterns

Codes (Recurring patterns)	Number of RAs (f)	Codes (Randomized patterns)	Number of RAs (f)
Move 1-Move 2	4	Move 1-Move 2-Move 4 (Random)	2
Move 1-Move 3	3	Move 1-Move 2-Move 3 (Random)	1
Move 2-Move 3	4	Move 2-Move 3-Move 4 (Random)	1
Move 2-Move 4	27	Move 1-Move 2-Move 3-Move 4 (Random)	73
Move 3-Move 4	3		
Move 1-Move 2-Move 4	1		
Move 2-Move 3-Move 4	1		

Regarding the move-step configuration, Move 3 Summarizing results was not analyzed because the move has no constituent step. Table 7 further demonstrated that, in conveying Move 1 Providing background information, as many as 72 students did not include the three steps; either one-step (N=38) or two-step (N=34). Only 26 students were identified employing three-step configuration. In conveying Move 2 Reporting results, the majority of the students (N=81) presented the findings by the integration of tables and numerical results and excerpts and explanation. Only 31 students still preferred to either provide the numerical results or the qualitative evidence. In conveying Move 4 Commenting on results, around 66% of the students featuring Move 4 employed more than one step, albeit not all steps included (N=36 two-step; N=37 three-step). The number of students employing the all four steps was not significantly higher than that employing one step only.

The findings demonstrate that the students' awareness to provide clear background information regarding the findings and deep argumentation of the findings is still questionable. Moreover, the students' preference to employ one-step configuration in conveying Move 2 is possibly influenced by the specific research design that the students employ. For example, a correlational study or experimental study obviously results in the numerical evidence of a relationship between two or more variables or a distinctive effect of a treatment on certain groups of people.

Excerpt 1 is about the students' perceptions of the use of pictures to mediate the process of learning descriptive text. Regardless of the grammatical errors, the conveyed message is descriptive, without any interpretation or self-claim from the author about that particular finding.

Furthermore, the RAs featuring three-move configuration projected similarities and differences. The former highlighted the recurring pattern of reporting results and commenting on results, i.e. (2-4)n, which is also confirmed by the previous research (Dujcik, 2013). The latter was on the manifestation of reversed sequence like Move 3-Move 2, as depicted in Excerpt 3. Such a reversed sequence refutes Arsyad (2013) where his findings suggest a linear rhetorical organization from background information to comments on the results. It is no surprise considering the cognitive capacity of undergraduate students compared to the iterative F&D sections of Indonesian scholars in Arsyad's (2013) study. The issue of the cognitive ability of the students results in the manifestation of 2-3-4 (random), 1-2-4 (random), and 1-2-3 (random) patterns.

There were ten questions given to the Students [Move 1], and the result of the analysis are 35% of students who are strongly agreed and 61% students agreed that pictures are useful for students in writing descriptive texts, and also make them more interested with learning activities. [Move 2]. (Excerpt 1, QT, S24-27, Two-move configuration)

Based on the table above, the score of pre-test and post-test of the control class showed the highest score

on the pre-test was 7.4 and the lowest score was 5.6 with average 6.3. And then, the highest score on post-test was 9.2 and the lowest score was 6.5 with average 8.4. [Move 2] (Paragraph 1, S1-S2) It can be concluded that students' response is excellent. Most of the students feel more motivated and enthusiastic about it. [Move 3] It could be seen on how they focus on the film during the learning session. At that moment, the students kept on watching, repeating the words and expression that happened from the film. [Move 2] (Paragraph 3, S6-9) (Excerpt 2, QT, Three-move configuration)

Based on the observation done before and after PBL implementation in the classroom, this study found that PBL improves the students speaking skill [Move 3]. In preliminary observation, most of the students speak in L1 when the teacher asked, greeted, or instructed them in English [...]. After given PBL treatments for 8 meetings, the students are able to respond and speak in English [Move 2, Step 2]. (Paragraph 1, S1-4). The students' speaking skill improvement is indicated by the increase of the number of the students in the highest criteria of speaking aspects (comprehension, vocabulary, grammar, fluency, and pronunciation) [Move 3]. Each aspect is scaled from one until five. The lowest criterion is one and the highest one is five (to know the meaning of each criterion, see Page 6) [Move 1]. The following table summarizes the increase of the student number from low criteria of speaking aspects to the higher ones [Move 2]. (Paragraph 2, S5-8) (Excerpt 3, QL, Four-move configuration)

The manifestation of the four-move configuration is more complicated. The 2-4 pattern or the reversed one was also frequent. One (1) RA directly reported the results. Wasito et al. (2017) and Amirian et al. (2008) also noted both patterns. This study argues that such a pattern is still acceptable since providing background information is not regarded as the conventional or obligatory move in most previous cases discussed in the earlier sub-section.

Meanwhile, it is worth noting that about nine (9) of 89 RAs started the F&D section with a summary move. Even 82% of the RAs (73) performed the randomized four-move configuration, i.e., 1-2-3-4 (random). This study considers them as non-conformities since they contrast to most previous research involving the published RAs from international journals. Warsito et al. (2017) revealed that the summary move is manifested after results or comments. It conforms to Ruiying and Allison's (2003) and Basturkmen's (2012) findings that although the Move 3-Move 2 and Move 2-Move 3 patterns were identified in their corpora, the Move 1-Move 3 one was dominant.

Likewise, the randomized pattern is seldom found in the previous research. Excerpt 3, paragraph one, demonstrates that the student attempts to elaborate on the main findings from the quantitative analysis on the improvement of students' speaking

skills through problem-based learning with the secondary findings from the classroom observation. However, the flow of information seems random because she starts explaining the findings from the observation data with a summary statement. The findings from the quantitative data are also started with a summary (see Paragraph 2, S5-8 in Excerpt 3), but suddenly the student goes back to mention the background information of the calculation criteria. This can cause incoherent meaning-making, which might constraint the cognitive process of international readers in understanding the big picture of that particular finding that the author attempts to convey.

These findings reinforce the influential role of the students' critical thinking. The students' critical thinking level might be determined by the nature of the instructional style and the sociocultural factor. First, the teacher-centered learning approach applied in the academic writing course can decrease the occurrence of dialogues and arguments as the manifestations of the students' critical thinking. Second, the Asian students, who are often considered as passive learners, may perform a descriptive thinking style, instead of critical and logical one (Altinmakas & Bayyurt, 2019). This can refrain them to manifest deep argumentation in providing comments after the findings are presented. Hence, the students' critical thinking can be developed through the involvement of critical academic reading practice before the academic writing practice. In particular, the coverage in the learning materials provided in the course might shape and influence their critical thinking level in realizing the moves (Vallis, 2010).

CONCLUSION

This study has addressed two research questions regarding the manifestation of rhetorical moves along with their constituent steps and the manifestation of the rhetorical organization in the corpus of unpublished RA iterative findings and discussion sections written by NNS undergraduate students in Indonesia. The findings reach two concluding remarks. First, most of the students have projected a considerably limited awareness of giving deep argumentation as a crucial element of the F&D section. Second, the non-conformities in organizing the rhetorical moves (e.g., randomized patterns or incomplete steps) have caused another problem; that is the lack of clarity as another important element of the F&D section. It possibly causes logical coherence because each sub-finding does not equally provide a similar pattern of relevant information. The findings may benefit the literacy brokers in the field of ERPP in EAL milieu to enrich their repertoire of the complexity of the rhetorical organization manifested by undergraduate students.

Given the circumstances, it is worth reckoning the corpus-driven genre pedagogy to mediate the

learning of academic writing oriented to international publication or ERPP in general. This pedagogy involves the incorporation of data-driven learning by using the corpus (a massive collection of the actual language use and patterns) within the framework of genre pedagogy. The corpus becomes the primary learning resource to understand the target genre. Some contemporary research has highlighted its benefits for the development of university students' rhetorical and linguistic repertoire (Cai, 2016; Cargill et al., 2018; Quinn, 2014). However, such a pedagogy may not be effectively working in the classrooms where the learning resources are from the expert writing corpus or the students' writing corpus only. It requires the combination of both corpora to highlight the conformities and non-conformities of the rhetorical structures along with the linguistic realizations. Moreover, the present study must be viewed with caution since the findings cannot be generalized to other contexts. The exploration of the relationship between the rhetorical moves and their lexical density level in the NNS undergraduate students' F&D sections from different disciplines might also be an insightful continuum.

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