



The Rhetorical Structure and Research Gap Strategies of Journal Article Abstracts in Language-Related Fields Published in High-impact International Journals

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<p>Received 03/02/2022</p> <p>Received in revised form 29/03/2022</p> <p>Accepted 26/01/2023</p>	<p style="text-align: center;">ABSTRACT</p> <p>Authors should attract readers to read their articles from the very beginning of the article; this is important because readers will stop reading an article if they are not sure that they will obtain new, interesting and important information from the article. This study aims to investigate the rhetorical moves found in a research article abstract (henceforth RAA) published in high-impact international journals and how authors employ a research gap strategy (henceforth RGS) in their article abstracts. One hundred abstracts were chosen from ten high-impact international journals in language-related fields (henceforth LRF) for this study. The results showed that the RAAs have at least 4 moves (Moves 2, 3, 4, and 5) while only 55 or 55% of them have an RGS in the abstracts. The most frequent RGS used by the authors was Strategy 2 and the least employed strategies were Strategy 1 and Strategy 4. This implies that, although publishing in high-impact international journals, authors in LRF tend not to use Strategy 1 (nonexistence or absence of research on a particular topic or aspect) and Strategy 4 (contrasting or conflicting previous research findings) in their RAAs but they may address these strategies in their article introductions.</p> <p>Keywords: journal article, abstract, research gap strategy, language-related fields, high-impact journals</p>
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Introduction

Rhetorically, an abstract can consist of up to 5 moves: situating the research/introduction or Move-1, presenting the research purpose or Move-2, describing the methodology/method or Move-3, indicating the results and the argument or Move-4 and stating points to applications or wider implications and interpreting the scope of the paper or Move-5 (Hakim et al., 2021; Hyland, 2007; Swales & Feak, 2009). Particularly, Move-1, or establishing the study or introduction is probably the most important part of the abstract because this is the first sentence to be read by readers and this is also the first opportunity for the author/s to encourage people to read the entire abstract and article. According to Hyland (2007), ‘One way that writers claimed significance was by opening their abstracts with a promotional statement. (p. 75). Therefore, this sentence must be as attractive and convincing as possible. In other words, authors must convincingly promote their article to readers starting from the first sentence in their abstract by stating the rationale for the study.

Another way of promoting an article is by addressing an RGS in the abstracts to show readers the newness or novelty of their research topic or title (Arianto, et al., 2021), particularly in Move-1 (situating the research/introduction) of the abstract. According to these authors, the novelty of research addressed in the abstracts is when authors present their RGS to capture the interest of readers and motivate them to go on reading the remaining parts. According to Martin & Perez (2014), authors should use the right rhetorical devices to show the value of their research and secure interest among readers of the particular discourse community. This is a way authors could promote their work. However, Miles (2017) claims, ‘...the idea of finding gaps in the research has been troubling for most researchers. For a considerable period, there were no formal or established frameworks for identifying or characterizing research gaps’ (p. 3). Thus, what is considered a research gap by some researchers may not be considered a research gap by other researchers.

Literature Review

Studies of Rhetorical Structure of Abstracts

Numerous studies on RAAs have focused on the rhetorical structure; these studies usually used a particular model for the analysis, such as models from Arsyad (2014), Hyland (2007), Pho (2008), and Swales & Feak (2009). Authors of these studies commonly compare English abstracts by native and non-native speakers of English in one or several different disciplines, or those written by two or more groups of authors from the same language and cultural background but of different levels of expertise. These studies mainly have found that abstracts by English native speakers differ from those by non-native speakers of English in their rhetorical style. Also, abstracts written by authors from different fields of disciplines are often rhetorically different. The findings of these studies have shed light on how a particular group of writers might write an abstract for journal publication from the discourse and linguistic points of view.

Arsyad (2014) examined 30 RAAs written in English by Indonesian authors in social sciences and humanities published in Indonesian university journals. He found that the majority of the abstracts had only 3 moves (Moves 2 or purposes, 3 or methods, and 4 or results). According to Arsyad, the nonexistence of Move 1 (introduction) and Move 5 (conclusion) may reflect the Indonesian rhetorical style of abstracts in social sciences and humanities. Zhang, et al. (2012) suggested that an abstract without Move 1 and Move 5 would be ineffective in persuading readers to read the article. This is why, according to Zhang, et al. authors should include Move 1 (introduction or

background) to justify their research topic and project and Move 5 (discussion/conclusion/significance) to tell readers the immediate practical benefits of the research results.

The Linguistic Features of Research Article Abstracts

Besides rhetorical structure analysis, linguistic realizations of abstracts, such as tense, voice, that-complement, and interpersonal devices have been examined by Amnuai (2019), Arsyad (2014), and Wang & Tu (2014), and rhetorical verbs by Barghamadi (2021). These linguistic features have been found important because they provide greater insight into the written genre. Present tense was often used to express three moves (i.e., background, aim, and conclusion) but past tense was used to discuss Method and Results (Tseng, 2011; Zhang, et al., 2012). Zang, et al. found that an active voice was used twice as much as an active voice in their abstract samples. According to Swales and Feak (2009), abstract authors used the present perfect tense, past simple, and present simple for different purposes.

Studies have also found similarities and differences in the use of metadiscourse markers in RAAs written in English by native or non-native speakers of English. Ashofteh, et al. (2020) found that Applied Linguistics authors who published articles in international journals (i.e., Applied Linguistics, Modern Language Journal, Studies in Second Language Acquisition, TESOL Quarterly, and Language Teaching Research) frequently used hedges in their RAAs to anticipate possible opposing claims from the readers. Similarly, Suntara & Chocktawikit (2018) found that international authors in Public Health frequently used attitude markers, self-mentions, hedges, and boosters in their RAAs. In a comparative study, Liu and Huang (2017) found that, like English native speakers, Chinese authors used hedges, boosters, and attitude markers frequently in their English RAAs. According to Liu and Huang, this is because of the intensive interaction and communication between Chinese and Anglo-American authors. Thus, compared to the rhetorical structure of RAAs the use of metadiscourse markers in RAAs is less affected by the discipline and language background of the authors.

Research Gap in the Research Article Abstracts

A recent study on RAAs written by international authors or authors from around the world in the English Language Teaching field was conducted by Arianto, et al. (2021). They examined how authors addressed their RGS in the abstracts and found that 12 out of 30 or 40% of them stated the various types of RGS in their abstracts, such as 'highlighting the complete absence of

research bearing a specific characteristic', 'stressing insufficient research on a specific aspect', 'revealing limitation(s) in previous research', 'contrasting conflicting previous research findings', and 'suggesting solution/s' (p. 31). However, Arianto, et al. did not declare how many abstracts were taken from each journal sample and therefore; therefore, it is hard to claim whether or not the articles taken from the international journals have equally represented international journals with high impact factor scores. In addition, some international journals from which the abstracts were taken, such as the Asian ESP Journal and the Asian EFL Journal are not considered high-impact journals with a low Scimago journal ranking score and are already discontinued and no longer indexed by the Scopus indexing organization (Scimago Journal and Country Rank, 2020).

Although there have been numerous studies on the rhetorical structure and linguistic realizations of abstracts, studies on how authors promote and address the novelty of their study in their abstracts published in high-impact international journals seem to have been neglected. Authors need to attract readers' attention to read their article starting from the very first sentence in their abstracts so that they are willing to continue reading the abstracts and the entire article. This can be done by addressing one or more strategies of RGS (Arianto, et al., 2021). Authors who have successfully published articles in high-impact international journals in LRF may have used these rhetorical strategies in their RAAs and therefore, it is important to know how they use the RGS in their RAAs. This is the rationale for the present study, i.e., to examine how authors who published articles in high-impact international journals in LRF advocate an RG in their abstracts. As guidelines, the following questions are addressed for this study:

- 1) What rhetorical moves are found in the research article abstracts published in high-impact international journals in Language Related Fields? and
- 2) How do authors publishing in high-impact international journals in Language Related Fields address the research gap strategy in their research article abstracts?

The answers to these questions are expected to shed more light on how authors in LRF publishing in high-impact international journals promote their articles to potential readers. Furthermore, the results of this study will be useful for new or novice writers to help them get their manuscripts accepted in high-impact journals.

Methodology

The Corpus of the Study

For this study, 100 RAAs were chosen from 10 different high-impact international journals; 1) ten abstracts from Modern Language Journals (MLJ), 2) ten abstracts from Language Teaching Research (LTR), 3) ten abstracts from Journal of Second Language Writing (SLW), 4) ten abstracts from Studies in Second Language Acquisition (SLA), 5) ten abstracts from English for Specific Purposes (ESP), 6) ten abstracts from English for Academic Purposes (EAP), 7) ten abstracts from Studies in Second Language Learning and Teaching, 8) ten abstracts from Language Learning, 9) ten abstracts from Applied Linguistics, and 10) ten abstracts from Brain and Language. The abstracts were from the recent issues of these journals to assure the current characteristics of the articles in the journals. The corpus of the study is presented in Table 1 below.

Table 1

The Corpus of the Study

No	Journals	Code	Quartile Value	No articles	SJR Score	Impact Factor
1.	Modern Language Journal	MLJ	Q1	10	3.49	3.538
2.	Language Teaching Research	LTR	Q1	10	1.66	3.899
3.	Journal of Second Language Writing	SLW	Q1	10	2.17	3.538
4.	Studies in Second Language Acquisition	SLA	Q1	10	2.21	2.838
5.	English for Specific Purposes	ESP	Q1	10	1.21	2.804
6.	English for Academic Purposes	EAP	Q1	10	1.20	2.171
7.	Studies in Second Language Learning and Teaching	SLT	Q1	10	1.30	3.340
8.	Language Learning	LGL	Q1	10	2.88	4.667
9.	Applied Linguistics	APL	Q1	10	3.94	5.374
10.	Brain and Language	BRL	Q1	10	1.16	2.381

These journals were chosen because of the following considerations: 1) the journals publish articles in Language Related Fields; 2) the articles use a standardized structure of introduction, methods, result, discussion, and

conclusion; 3) the articles are written from empirical research; articles consisting of reviews or reinterpretation of other studies were not chosen for this study, 4) the journals are high-impact international journals indexed by Scopus with a Quartile value (Q1) and with SJR score of 1.16 or above and impact factor score of 2.171 or above, and 5) the journals are mainstream journals and the articles published in the journals are often read and cited by scholars from the same fields (Scimago Journal & Country Rank, 2021). There was no particular reason for choosing only 10 articles from each journal. However, it was believed that ten articles taken from the recent issues of the journals could show the current characteristics of the journals in terms of the rhetorical style and linguistic features of their abstracts.

Data Collection Techniques

Following Abdi and Sadeghi (2018), both qualitative and quantitative or a mixed method approach was used in this study. According to Creswell (2009), mixed methods research is an integrating approach in which two forms of data using different designs that include different philosophical assumptions and theoretical frameworks are employed in the same study.

The initial investigation was on the possible moves in the abstracts. Swales and Feak (2009) suggest that an abstract can consist of up to five possible communicative units or moves; these are Move 1 (Background/Introduction/Situation), Move 2 (Present research/purposes), Move 3 (Methods/Materials/Subjects/Procedures), Move 4 (Results/Findings), and Move 5 (Discussion/Conclusion/Implications/Recommendations). However, in the current study, we followed the framework suggested by Hyland (2007). Hyland also suggested five possible rhetorical moves in an abstract: Move-1 (Establishes the context of the paper and motivates the study or discussion), Move-2 (Indicates purposes, thesis, or hypothesis, outlines the intention behind the paper), Move-3 (Provides information on design, procedures, assumptions, approach, data, etc.), Move-4 (Statement of main findings or results, the argument, or what was achieved) and Move-5 (Interprets or extends results beyond the scope of the paper, points to applications or wider implications). Hyland's framework was used in this research because it is more straightforward to understand and use. According to Hyland (2007), this model was adopted after analyzing 800 abstracts composed of 127.000 words covering eight different disciplines in science and social sciences (i.e., Cell Biology, Applied Linguistics, Sociology, Physics, Marketing, Philosophy, Mechanical Engineering, and Electronic Engineering) and information from specialist informants. Another reason for using Hyland's model is that it has been used by several genre analysts, such as Amnuai (2019), Darabad (2016),

Dogan-Ucar & Akbas (2022), Li & Pramoolsook (2015), Pho (2008), and Suntara & Usaha (2013). These researchers found that Hyland's framework was effective for capturing the rhetorical moves in RAAs in several different fields. The checklist instrument for rhetorical analysis in this study can be found in the appendix.

The second part of this study investigated the RGS used by the authors in their abstracts. This analysis focused on Move 1 (Establishing the context of the paper and motivating the study or discussion) in the RAAs because RGS is found not only in the introduction section of an article but also in the abstracts (Arianto, et al., 2021). Miles (2017) suggested seven possible research gap types based on two models previously introduced by Muller-Bloch & Kranz (2014) and Robinson, et al. (2011). These are 'evidence gap', 'knowledge gap', 'practical-knowledge gap', 'methodology gap', 'empirical gap', 'theoretical gap', and 'population gap' (p.3). However in this study, we used the framework suggested by Arianto, et al. (2021) with only five research gap strategies: 1) claiming no study on a particular topic, 2) claiming very few studies on a particular topic, 3) showing limitation/s in previous studies, 4) contrasting or conflicting results found in previous studies, and 5) following up the findings of previous studies. This is because this model is simpler and relatively easier to use and it has been proven effective in capturing the possible RGS appearing in RAAs in LRF as evidenced in the study of Arianto et al. (2021). Below are examples of the rhetorical work of each strategy.

Strategy 1: absence or claiming no study on specific characteristic as in the following example:

Teacher enthusiasm is attracting growing attention in educational and learner psychology research. ... However, the links – between teacher enthusiasm and student emotions, and between student emotions and engagement – remain underexplored in instructed second language acquisition. (LTR-8)

The above extract was taken from an article titled 'Teacher enthusiasm and students' social-behavioral learning engagement: The mediating role of student enjoyment and boredom in Chinese EFL classes' written by Jean-Mark Dewaele and Cenchen Li and published in *Language Teaching Research Journal*, 25(6) in 2021. As indicated in the above extract, the authors claim that the connection between teacher enthusiasm and student emotions and between student emotion and engagement have been ignored in second language acquisition research and therefore this statement is classified as RGS-1 (no study ever conducted on the topic).

Strategy 2: inadequate numbers of studies have been conducted on a particular aspect as in the following example:

Few existing studies have reported on how group dynamics relate to online peer feedback interactions and subsequent revisions in second/foreign language writing, ... (SLW-4)

The above extract was taken from an article titled ‘Transpacific telecollaboration and L2 writing: Influences of interpersonal dynamics on peer feedback and revision uptake’ written by Eunjeong Choi, Diane L. Schallert, Min Jung Jee & Jungmin Ko and published in the *Journal of Second Language Writing*, 54(December) in 2021. As identified in the extract, the authors claimed that few studies had been conducted on how group dynamics relate to online peer feedback interactions and subsequent revisions in second/foreign language writing and therefore the study was necessary to do.

Strategy 3: limitations or shortcomings in the previous studies as in the following example:

While phonological skills have been found to be correlated with reading across different writing systems, recent findings have shown that developmental dyslexia in Chinese individuals has multiple deficits, and no single factor has ever been identified as crucial for learning this writing system. ... (BRL-10)

The above extract was taken from an article titled ‘Is phonological deficit a necessary or sufficient condition for Chinese reading disability?’ written by Wai Ting Siok & Li Hai Tan and published in *Brain and Language*, 226(March) in 2022. As indicated in the above extract, the author claimed that there is no single factor has ever been identified as crucial for learning this writing system. This is the writers’ rationale to carry out this research.

Strategy 4: contrasting evidence or addressing contrasting or conflicting results found in the previous studies as in the following example:

Results of previous studies that compared the effects of the two learning directions are not consistent.... (SLA-5)

The above extract was taken from an article titled ‘Effects of Learning Direction in Retrieval Practice on EFL Vocabulary Learning’ written by Masato Terai, Junko Yamashita & Kelly E. Pasich and published in *Studies in Second Language Acquisition journal*, 43(5) in 2021. As indicated in the above extract, the authors claimed that the findings of previous research comparing the effects of the two learning directions are not consistent. This

is why this RGS is classified as strategy 4 (contrasting or conflicting previous research findings).

Strategy 5: Continuing previous studies or addressing the following up findings of previous studies

Willingness to communicate (WTC) reflects an intersection between instructed second language acquisition and learner psychology... The present study uses the pyramid model to interpret data from three focal participants, all English as a second language (ESL) learners and international students in Canada, with varying degrees of experience in an English-speaking context. (LTR-6)

The above extract was taken from an article titled ‘Willingness to communicate in the L2 about meaningful photos: Application of the pyramid model of WTC’ written by Peter D. MacIntyre & Lanxi Wang and published in *Language Teaching Research*, 25(6) in 2021. As indicated in the above example, the authors implicitly mention that their research continues the results of previous studies on the willingness to communicate using English by ESL learners.

The Procedures of Data Collection

Data collection procedures in this study went through the following steps. First, we collected a corpus of abstracts from the selected high-impact international journals, as can be seen in Table 1. Second, all possible moves were identified in the abstracts following Hyland’s (2007) framework. Then, every abstract was read again to identify and code all possible phrases and clauses which could be characterized as the rhetorical work for an RGS. Linguistic realizations such as specific vocabulary, discourse markers, and inference from the text were used in identifying the RGS. Then, the frequency and percentage of each RGS in the abstracts were calculated.

The occurrence of moves and strategies in the RAAs were classified into compulsory, regular, or elective based on their appearance frequency. According to Kanoksilapatham (2005), if a move or strategy is found in all RAAs (100%), it was classified as compulsory, if it is found from 60 to 99% in the RAAs, it is classified as regular, and if it is found below 60% of the RAAs, it is classified as elective. Kanoksilapatham suggests that the main aim of classifying the moves and strategies into three classifications is to determine which moves and strategies are more regular than the others.

Inter-coder Reliability Analysis

Cohen's Kappa coefficient analysis was implemented to evaluate the inter-coder reliability of the RGS found in the abstracts. The independent coder was a faculty member with a master's degree in Applied Linguistics. First, she was trained in how to determine and classify RGS types in the RA abstracts. Then, she was given 20% or 20 abstracts randomly chosen from the corpus of this research to analyze using the same research instruments. Finally, the analysis results from the researcher and the co-coder were compared. After comparing the analysis results from the researcher and the independent coder, the Kappa coefficient score was determined and the results are presented in a table. Following Kanoksilapathan (2005), Cohen's Kappa score is considered 'poor' if less than 0.40, 'fair' between 0.40–0.59, 'good' between 0.60–0.74, and 'excellent' 0.75 or above. After comparing the analysis results from the researcher and the independent coder, the Kappa coefficient score was determined and the Kappa score for the move analysis is 0.80 while the Kappa score for RGS analysis is 0.70. These results are presented in Table 2 below.

Table 2

Inter-coder reliability Results

No.	Types of Analysis	Cohen's Kappa Score
1.	Rhetorical move analyses	0.80
2.	Research gap strategy analysis	0.70
Mean		0.75

As can be seen in Table 2, the overall obtained Cohen's Kappa score is 0.75, an excellent total inter-coder reliability. The differences between the researcher and the independent coder in identifying and classifying the moves and strategies were resolved by several discussions until an agreement between the researcher and the independent coder was reached.

Results and Discussion

Move Analysis Results in the RA Abstracts

The move analysis results show that almost all abstracts included in this study have all five moves in their abstracts. The complete data are displayed in Table 3 below.

Table 3*The Distribution of Rhetorical Moves in the RA Abstracts*

Moves	MLJ 10	LTR 10	SLW 10	SLA 10	ESP 10	EAP 10	SLT 10	LGL 10	APL 10	BRL 10	Total 100/ %	Category
Move-1 (introduction/ background)	4	6	7	9	6	5	4	7	8	8	66 /66%	Regular
Move-2 (purposes)	10	8	10	9	9	8	8	7	8	8	85/ 85%	Regular
Move-3 (methods)	10	10	10	10	9	10	10	10	10	10	99/ 99%	Regular
Move-4 (results/ findings)	10	10	10	9	10	10	10	10	10	10	99/ 99%	Regular
Move-5 (conclusion/ suggestion/ implication)	7	9	10	6	9	8	10	6	10	9	84/ 84%	Regular

Table 3 shows that none of the five moves can be classified as compulsory in the RAAs; they are all categorized as regular. Also, the majority of the RAAs have a Move-2 (purposes), Move-3 (methods), Move-4 (results/findings) and Move-5 (conclusion/suggestion/ implication) while only some of them (66 or 66%) have a Move-1 (introduction/background). Below is an example of an abstract with all five moves from the data of this research.

Extract 1 (a complete move abstract)

(S1)Implicit causality (IC) is a well-known phenomenon whereby certain verbs appear to create biases to re-mention either their subject or object in a causal dependent clause. (S2)This study investigated to what extent Korean learners of English made use of IC information for predictive processing at a discourse level, and whether L2 proficiency played a modulating role in this process. (S3)Results from a visual-world eye-tracking experiment showed early use of IC information in both L1 and L2 listeners, yet the effect was weaker and emerged later in the L2 group. (S4)None of three independent and inter-correlated proficiency measures modulated L2 listeners' processing behavior. (S5)The findings suggest that L2 listeners are able to engage in prediction during real-time processing at a discourse level, although they did so to a more limited extent than native speakers in this study. (S6)We discuss these findings in light of similar evidence from other recent work. (SLA-7)

Extract 1 was taken from an article titled 'Predictive Processing of Implicit Causality in a Second Language: a. Visual-World Eye-Tracking Study' written

by Hyunwoo Kim & Hyunwoo Kim and published in the *Journal of Studies in Second Language Acquisition* journal, 43(1) in 2021. In the above extract, sentence 1 (S-1) is identified as a Move-1 (introduction/background), sentence 2 (S-2) is a Move 2 (purposes), sentence 3 (S-3) contains a Move 3 (methods) and a Move 4 (results/findings) while sentence 5 and 6 (S-5&6) are Move 5 (suggestion).

As mentioned above, some RAAs have only 4 moves without a Move-1. Below is an example of an RAA with only 4 moves.

Extract 2 (an abstract with only 4 moves)

(S1)This study investigated the impact of synchronous computer-mediated communication (SCMC) mode and familiarity with partners on learner engagement in second-language task-based interaction, and whether learner engagement is linked to subsequent joint-written-text quality. (S2)Ninety-eight Vietnamese learners of English were assigned into (\pm) familiar groups and performed a picture-sequencing task in 2 SCMC modes (i.e., video and text chat). (S3)Scores of 3 types of learner engagement (cognitive, social, and emotional) were compared across the conditions. (S4)Results showed that scores of all engagement types in the video chat were significantly higher than in the text chat. (S5)Familiar dyads also showed higher engagement than unfamiliar peers during the interaction. (S6)Learners reported different reasons for their preferences for video chat over text chat. (S7)Language-related episodes, semantically engaged talk, and mutual help as measures of learner engagement were predictive of the subsequent text quality. (S8)The results contribute to the general understanding of the characteristics of video and text chat and their impact on learner engagement and text quality. (MLJ-1)

Extract 2 was taken from an article titled ‘Learners’ Engagement in L2 Computer-Mediated Interaction: Chat Mode, Interlocutor Familiarity, and Text Quality’ written by Phuong Dao, Mai Xuan Nhat Chi Nguyen, Phuong–Thao Duong, Vu Tran–Thanh and published in *Modern Language Journal*, 105(4) in 2021. Sentence 1 (S1) in the above abstract is identified as Move-1, sentences 2-3 (S2-3) are Move-3, sentences 4-7 (S4-7) are Move 4, and sentence 8 (S8) is Move-5.

As discussed earlier in this article, an RAA should have 5 moves (Hyland, 2007; Pho, 2008; Swales & Feak, 2009), particularly with a Move-1 (introduction/background) in which authors can promote their abstracts and articles by addressing a centrality claim (Wang & Yang, 2015) and a research gap (Arianto, et al., 2021). However, as seen in Table 3, some authors although publishing in high-impact international journals in LRF do not include a Move-1 in their abstracts. This may be because of the limited number of words allowed for an abstract or the authors may have thought

that the centrality claim and an RGS can be advocated later in the introduction section of the article. This finding is similar to that of Pho (2008), Samraj (2002) and Suntara & Usaha (2013), and Saeew & Tangkiengsirisin (2014) who found that Move-1 was less frequently found in the corpus of their study.

In terms of the frequent occurrence of Move-5 (conclusion/suggestions/implication), this finding is in line with that of Hyland (2007) who also found a frequent occurrence of conclusion move or Move-5 in his RAAs. According to Hyland, the conclusion move is a regular one in applied disciplines because more scholars acknowledge its importance and are making greater efforts to promote their work. Thus, the finding of this study is consistent with the view that a conclusion move is important although not compulsory in RAAs in LRF published in high-impact journals.

There are several possible reasons for the absence or occurrence of particular rhetorical moves in journal article abstracts. First, the abstracts might be written from non-empirical studies; they are written from literature studies in the form of a review article. Second, the abstract rhetorical style depends on 'social dimensions, for instance, disciplinary practices and discourse conventions, the structure, and organization of texts are not hierarchically constructed' (Viera, 2019, p. 76). Third, the writing style of abstracts may differ from one discipline to another following the common writing practices adopted by the active members of a particular discourse community (Lorés, 2004). In other words, the academic convention applied in a particular field will affect authors in utilizing academic writing practices of a particular field including in writing their RAAs. This is why different fields have different preferred styles of journal article abstracts.

Research Gap Strategy in the RA Abstracts

The second investigation was on the occurrence of RGS in the RAAs. The results show that not all authors address an RGS in their abstracts,

particularly in their Move 1. The distribution of RGS in the abstracts analyzed in this study is shown in Table 4 below.

Table 4

The Distribution of Research Gap Strategy in the RA Abstracts

Research Gap Strategy	MLJ	LTR	SLW	SLA	ESP	EAP	SLT	LGL	APL	BRL	Total	Category
Strategy-1 (absence)	10	10	10	10	10	10	10	10	10	10	100/100%	Elective
Strategy-2 (inadequate)	-	1	-	-	-	-	-	1	2	1	5/23%	Elective
Strategy-3 (limitation)	1	2	3	2	4	2	2	2	4	1	23/23%	Elective
Strategy-4 (contrasting evidence)	1	-	2	2	2	-	2	-	-	2	11/11%	Elective
Strategy-5 (Continuing previous studies)	-	-	-	1	-	-	-	2	2	-	5/5%	Elective
	2	3	1	-	-	1	-	2	-	2	11/11%	Elective

As can be noticed in Table 3, only 55 or 55% of the RAAs included in this study have a type of RGS and none of them can be classified as compulsory and regular; all of them are classified as elective. Table 3 also shows that Strategy 2 (stressing inadequate research in a specific aspect) is the most frequent type of RGS used by the authors of the articles (23 or 23%) and followed by strategy 3 (revealing limitation(s) in previous research) and strategy 5 (following up the previous studies) which are found 11 times or 11% each in the RAAs while strategy 1 (the nonexistent of research) and 4 (contrasting/ conflicting evidence from previous research) are found only 5 times or 5% each in the RAAs. Below are examples of each of the three frequent strategies extracted from the corpus of this study.

Extract 3 (Strategy 2 or inadequate research)

Much research has been conducted on the effects of written corrective feedback (WCF) in L2 studies. Unfortunately, the effects of comprehensive WCF in Chinese EAP contexts have been insufficiently documented. (EAP-4)

Extract 4 (Strategy 3 or limitation in previous findings)

Writing is a function of cognitive and linguistic resources and the writing processes. However, links between cognitive and linguistic resources and the writing process in second language (L2) writing

are not well understood nor are their interactions with written products. (SLW-9)

Extract 5 (Strategy 5 or continuing previous studies)

The Production Effect (PE) is a memory phenomenon, referring to the memory advantage for produced items (read aloud) over non-produced items (read silently). ...The present study investigated the PE in L2 vocabulary learning and examined whether learning is durable over time. (LTR-4)

In extract 3, the authors state that the effects of comprehensive written corrective feedback (WCF) in Chinese English for academic purposes (EAP) contexts have been insufficiently researched; this shows that there are still very few studies conducted on this topic and therefore, this study is necessary. In extract 4, the authors claim that it is not clear yet how the thinking processes and language devices relate and how writing activities and the written products in a second language context interact. This shows that there is a limitation in the studies already previously conducted and therefore, this study is necessary. In extract 5, the authors mention that their research is to continue the suggestion from a previous study on the production effect (PE) of read-aloud and silent reading, and therefore, this study is important.

We also found that although an RAA has a Move 1 (introduction/background), it cannot be automatically classified as an RGS: it can be only a general statement from the writers about their research title or topic. Below is an example.

Extract 6: a Move 1 which cannot be classified as an RGS

Perinatal stroke affects a child's language development and can change language Lateralization. ... (BRL-3)

The above extract was taken from an article titled 'Language lateralization and outcome in perinatal stroke patients with different vascular types' written by Nigul Ilves, Mairi Mannamaa, Rael Laugesaar, Norman Ilves, Dagmar Loorits, Ulvi Vaher, Pille Kool, & Pilvi Ilves, published in *Brain & Language* journal, 228(March) in 2022. In this abstract, the authors state at the beginning of their abstract that a mother with a stroke disease will affect her child's language ability progress. Although this is identified as a Move 1, this statement cannot be classified as an RGS because it does not respond to or evaluate the results of any previous study on the same topic.

These findings show that only about half of the authors or 55% address a research gap in their RAAs although they published articles in high-

impact journals. This finding is slightly different from that of Arianto, et al. (2021) who found only 12 or 40% out of 30 RAAs in their corpus have an RGS. However, these two findings of RGS occurrence in the RAAs are categorized in the same classification (elective). This may imply that addressing a research gap in an abstract is not compulsory because it can be addressed in the introduction of the article. According to Arianto, et al., addressing a research gap in the abstract can provide a forceful effect on readers because they can establish the authors' position in the research being conducted. In addition, advocating for research gaps can help authors convince readers that their research topics have the potential to provide useful contributions (Samraj, 2002; Swales, 2004). Hyland (2007) also suggests that beginning an abstract with a 'promotional statement' is one way of persuading readers to read the abstract and article (p. 75). According to Amnuai (2019), to catch readers' interest writers should establish the gap in knowledge from the very beginning of the article.

The findings of this study also show that the majority of authors publishing in high-impact international journals in LRF tend to justify their research projects in their RAAs by referring to the lack of information or study results on a particular topic or to follow up on the research results or suggestion from previous studies. Arianto, et al. (2021) also found that Strategy 2 (stressing insufficient research in a specific area) was used frequently by international authors in their RAAs and introduction sections to justify their research project. According to Arianto, et al., this is aimed at filling the gap found in the previous studies. Similarly, Robinson, et al. (2011) suggest that the claim of insufficient research occurs because of the limited number of research studies related to a certain area, and the findings are too small to contribute to the body of knowledge. Chen and Li (2019) suggest that the strategy of claiming insufficient research on a particular aspect was used the most frequently by Chinese applied linguistics authors in the literature review section of their journal articles. This strategy seems to be popular among authors in the discipline of Applied Linguistics or English Language Teaching writing in English and publishing in international journals including high-impact journals.

The results also show that the international authors in LRF who published articles in high-impact journals tend to avoid claiming that previous studies on similar or related topics have some kind of contrasting or conflicting results. This is probably because negatively evaluating the results of previous relevant studies takes more words to address, and there is not enough space to do so in the RAAs. Therefore, they may use Strategy 4 in the introduction section of their article in which they can write more than in the abstracts. Thus, for the authors of the articles in high-impact journals included in this study, other RGS: claiming the absence of research on a

particular topic (strategy-1), claiming insufficient research (strategy-2), or continuing the results of previous studies (strategy-5) could be as effective as using strategy-4 (contrasting or conflicting results from previous research).

Conclusion

In this study, it is found that the majority of RAAs in LRF published in high-impact journals have four moves (Moves-2, 3, 4 & 5). However, unlike the findings of previous studies, Move-5 (conclusion/suggestion/implication) is also frequently used in the RAAs. As also found by other researchers such as Pho (2008), Samraj (2002) and Suntara & Usaha (2013), and Saeew & Tangkiengsirisin (2014), this is probably because of a limited number of words allowed for an abstract or the authors may have thought that the centrality claim and an RGS can be advocated later in the introduction section of the article.

The most frequent RGS used by the authors in their RAAs is Strategy 2 (claiming inadequate studies on a particular topic) while the least ones are Strategy 1 (the nonexistence of research on a particular topic or issue) and Strategy 4 (contradicting or conflicting findings in the previous research). Although strategy 4 (contrasting evidence) has the strongest argument and persuasion, it was rarely used by expert authors in justifying their research projects in their RAAs. This may be because it takes more space to argue for the importance of a study by referring to the contradictory findings of previous studies while an abstract must be written in a limited number of words.

In this study only 100 RAAs from 10 different journals were included to be analyzed; these abstracts may not represent other high-impact journal abstracts in language-related disciplines. Therefore, future studies could include abstracts from more high-impact international journals to be more representative. Also, in this study there are only two aspects of the abstracts were analyzed: the rhetorical moves and research gap strategies. Future studies should include other analyses, such as the use of centrality claims, meta-discourse, and argument and persuasion techniques used by the authors to convince readers that their abstracts, as well as articles, are attractive and important to read.

One implication of the findings of this study is that authors in language education or applied linguistics should write complete abstracts particularly including purposes, methods, results or findings, and conclusions when submitting an article to a high-impact international journal in English. They should also attract readers from the beginning of their abstracts by addressing a research gap strategy particularly Strategy 4 (contrasting evidence found in the results of previous studies). This is because this research gap

strategy is believed to be the strongest and the most persuasive one among the five different strategies. This is aimed at increasing the possibility of an article being accepted by high-impact international journals.

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Appendix

Check-list for Move Analysis

Journal title & Code :
 Abstract number :

No	Rhetorical Moves	Description	Sentence Number
1	Move-1 (Introduction)	Establishes the context of the paper and motivates the research.	
2	Move-2 (Purpose/s)	Indicates the purpose and outlines the aim behind the paper.	
3	Move-3 (Method)	Provides information on design, procedures, data analysis, etc.	
4	Move-4 (Product/Results)	Indicates the results and the argument.	
5	Move-5 (Conclusion)	Points to applications or wider implications and interpretation scope of the paper.	

Check-list for Research Gap Strategy Analysis

No.	Strategies	Description	Sentence Number
1.	Absence	Authors claim there is no research ever conducted on a specific topic or that the proposed topic has not been conducted by previous researchers.	
2.	Insufficient	Authors claim insufficient studies on a specific aspect or a limited number of studies (e.g., prediction of absenteeism).	
3.	Limitation/s	Authors claim limitation/s in previous research or identify shortcomings from previous research, such as in classification, methodology, etc.	
4.	Contrasting evidence	Authors address contrasting/ conflicting previous research findings or find similarities and differences among previous research findings.	
5.	Continuing previous studies	Authors claim that their study adds to the available knowledge from the results of previous studies or continuing previous research projects.	

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