Comparative Rhetorical Move Analysis of Qualitative, Quantitative, and Mixed Methods Research Article Abstracts in Iranian vs. International Applied Linguistics Journals

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Article Info	ABSTRACT

There is a shortage of studies on the generic structure of research article abstracts published in Iranian and international applied linguistics journals considering their employed research approach (i.e., quantitative, qualitative, or mixed methods). Thus, this study endeavored to analyze the moves in 288 quantitative, qualitative, and mixed methods research (MMR) article abstracts in six Iranian and six international applied linguistics journals published between 2012 and 2019, following Hyland's (2000) model. To analyze the data, the frequency of distribution and percentages of the rhetorical moves were estimated, and the Kruskal-Wallis test was run on the data. The findings indicated that the moves of Purpose, Product, and Method occupied the largest portion of local and international abstracts. Furthermore, in comparison to the international corpus, the Iranian corpus contained more moves based on Hyland's (2000) model. A deeper analysis of both corpora revealed that the rhetorical moves were distributed almost evenly within quantitative, qualitative, and MMR abstracts, with the exception that in the international corpus, the Product move appeared significantly less in qualitative abstracts than in quantitative and MMR abstracts. The most frequently used move patterns in both datasets were; I-P-M-Pr-C, P-M-Pr-C, P-M-Pr, and I-P-M-Pr. It can be concluded that applied linguistics researchers tend to follow Hyland's (2000) model as much as possible when writing research article abstracts. Furthermore, although some divergences exist regarding the rhetorical moves frequency of distribution and patterning in qualitative, quantitative, and MMR abstracts in both local and international datasets, similarities are more remarkable than differences. The results can provide practical insights into the rhetorical and discursive practices associated with research article abstracts to applied linguistics researchers, students, and instructors.

1. Introduction

Different disciplinary domains have their own unique academic genres (Li, 2020) as there is a "divergent construction of specialized knowledge within discourse communities" (Parodi, 2009; p. 402). Understanding the structure of research articles in different fields of study has urged researchers for many years to analyze the rhetorical moves appearing in various sections of academic papers (Amnuai, 2019; Khany & Malmir, 2020; Marefat et al., 2021). Move analysis is an approach to the analysis of texts from specific genres, in which a move carries out a particular communication function as a discoursal segment (Swales, 2004, 2019). In particular, researchers have examined the rhetorical moves appearing in different parts of research papers, such as in the abstract (e.g., El-Dakhs, 2018, 2020; Khany & Malmir, 2020; Marefat & Mohammadzadeh, 2013), introduction (e.g., Jalilifar, 2010), literature review (e.g., Marefat et al., 2021), methodology (e.g., Uzun, 2016), and discussion (e.g., Jalilifar et al., 2012).

Given the fact that examining the moves and steps in every particular section of a research article is of great importance (Ganji & Derakhshan, 2020; Ghane et al., 2021), many studies have been conducted to systematically describe and analyze the moves and steps in specific genres used in specific disciplines (Malmir et al., 2019). Among these disciplines is applied linguistics (Yoon & Casal, 2020). Thus far, in applied linguistics, a number of studies have compared articles from local journals against those from international journals to explore potential degrees of divergence or convergence with regard to the occurrence and frequency of distribution of rhetorical moves within them. Examples of such endeavors in the context of Iran can also be found in the literature as researchers have attempted to compare the issue among various Iranian and international journals of applied linguistics (e.g., Biook & Zamanian, 2013; Chalak & Norouzi, 2013; Jalilifar et al., 2012; Marefat et al., 2021).

However, such studies have failed to distinguish among the research approaches adopted by the authors of the articles in their corpora. That is, most of them did not classify their corpora into quantitative, qualitative, and mixed methods research (MMR) articles. This is a neglected area of research needing immediate attention as applied linguistics researchers must be attuned to the unique generic features of quantitative, qualitative, and MMR articles. To address the identified gap, the present study attempted to 1) analyze the moves appearing in research article abstracts published in Iranian and international applied linguistics journals and 2) compare the rhetorical moves frequency of distribution among quantitative, qualitative, and MMR articles.

2. Literature Review

The abstract is an essential component of research articles as it is usually the first part that the reader encounters and, accordingly, decides whether to continue reading the paper or to disregard it (Hyland, 2002). In fact, abstracts are thought of as containing the essence of academic papers or the outline of what is presented throughout the text (Tullu, 2019). It is also believed that research article abstracts function differently from other parts of research papers as they have a distinct communicative purpose (Bhatia, 1993).

Hyland (2005) encourages writers to organize their research article abstracts to the best of their writing potential since, through this section, they can indicate their membership in their community of practice. Because of their uniqueness, research article abstracts are appointed to an independent academic genre deserving due attention and analysis (Tullu, 2019). As stated by Piqué-Noguera (2012), despite their recognized worth, many research article abstracts are poorly written, signifying that academic writers should first become aware of the moves in abstract writing and then incorporate them in their writing practice.

A move is a component of genre, mainly used to describe research articles rhetorical structure (Swales, 2019). It refers to "a discoursal or rhetorical unit that performs a communicative function in a written or spoken discourse" (Swales, 2004, p. 228-229). Also, Nwogu (1997) describes a move as "a text segment made up of a bundle of linguistic features (lexical meaning, propositional meanings, illocutionary forces, etc.) which give the segment a uniform orientation and signal the content of discourse in it" (p. 122). Each move, having a particular communicative function, can be realized through smaller constituents within it, called steps. The significance of rhetorical moves in academic writing has led move analysis to become the most prevalent, influential, and applicable approach to genre analysis (Amnuai, 2019). Through move analysis, one can specify the parts which act as functional and semantic text units (El-Dakhs, 2020).

Among the sections of research articles, the research article abstract has been the focal point of many move analyses to date, encouraged by the existence of several pertinent models for its analysis (Li, 2020; Yoon & Casal, 2020). In this respect, the model proposed by Bhatia (1993) for writing the research article abstract consists of successive moves of Introduction, Method, Results, and Discussion. Similarly, Santos's (1996) model involved five moves of Situating the Research, Presenting the Research, Describing the Methodology, Summarizing the Findings, and Discussing the Findings. For instance, following Santos's framework (1996), Can et al. (2016) examined 50 abstracts from the English for Specific Purposes Journal,

published between 2011 and 2013. It was found that the Presenting the Research, Describing the Methodology, and Summarizing the Findings moves were realized in the majority of the abstracts, while the inclusion of the Situating the Research and Discussing the Findings moves were mainly disregarded in them. While the results of this study are significant, they are based only on 50 research article abstracts chosen from a single journal. Thus, such results cannot be readily generalized to all research articles in all applied linguistics journals.

Moreover, the model introduced by Swales (1990), which was originally proposed for the analysis of the moves in the introduction section of research articles, explained the importance of the Introduction-Method-Result-Discussion (IMRD) pattern. In this respect, Marefat and Mohammadzadeh (2013) scrutinized 90 literature research article abstracts of Persian and English speakers based on Swale's CARS (2004) and IMRD (1990) models. The outcomes of their analyses revealed that first, the Introduction and Results moves were recurrently employed in the literature research article abstracts, while the Method and Discussion moves were disregarded in them. Second, the CARS model was followed more in the abstracts than the IMRD model. Finally, the abstracts authored by Persian writers contained some unique standards, deviating from both international and Persian writing norms. While the results of this study contribute to one's understanding of the distribution of moves in literature research article abstracts, they are not readily transferable to research article abstracts in applied linguistics.

Another model of move analysis is Hyland (2000), which was adopted for the analysis of rhetorical moves in research article abstracts within the present study. This model is comprised of five consecutive moves of Introduction, Purpose, Method, Product, and Conclusion. Some previous studies have analyzed moves in research article abstracts based on Hyland's (2000) model. Among the empirical studies examining the rhetorical moves of research article abstracts within applied linguistics and its sister fields, El-Dakhs (2018), for instance, analyzed 200 research article abstracts published in more prestigious and less prestigious journals for their metadiscourse and rhetorical structure. Employing Hyland's (2002) model for analysis, the researcher reported that abstracts from lower-ranked journals contained longer Introduction, Purpose, and Method moves, while a lengthier Product move was more prevalent in the abstracts published in higher-ranked journals. Likewise, Al-Khasawneh (2017) conducted a genre analysis comparing 40 applied linguistics research article abstracts written by either non-native or native English speakers. The researcher employed the model proposed by Hyland (2000). The results indicated that both groups employed the moves of Purpose, Method, and Conclusion similarly in their abstracts.

However, the Introduction and Conclusion moves were more frequently used by native writers.

In the same vein, Suntara and Usaha (2013) studied 200 linguistics as well as applied linguistics abstracts based on Hyland's (2000) model. They reported that in linguistics abstracts, Purpose, Method, and Product functioned as conventional moves, while in applied linguistics abstracts, in addition to the Purpose, Method, and Product moves, the Introduction move was considered to be conventional. While the results of the studies that employed Hyland's (2000) model of move analysis contribute to and expand the existing literature on the rhetorical move analysis of research article abstracts using Hyland's (2000) model, there is still little research in this regard in the Iranian context.

Furthermore, among the studies focusing on the rhetorical moves of articles in applied linguistics, some of them have analyzed local and international journals to explore their similarities and differences regarding the realization of rhetorical moves in them (e.g., Wannaruk & Amnuai, 2015). In this regard, some researchers in the context of Iran have attended to the issue by comparing sections, like the introduction (e.g., Ebrahimi & Mohsenzadeh, 2018), results and discussion (Jalilifar et al., 2012), and abstract (Biook & Zamanian, 2013; Chalak & Norouzi, 2013). For instance, the results of Biook and Zamanian's (2013) study, which examined 148 research article abstracts of applied linguistics articles from Oxford University and the Islamic Azad University of Tabriz based on Swales's (1990) model, showed that although the four structural moves in Swales's model were found in the two corpora, they were differently distributed within them.

More importantly, a thorough review of the literature manifested that no study to date has attended to the rhetorical moves of applied linguistics abstracts considering their employed research approach. That said, the present research endeavored, first, to examine and compare the rhetorical moves appearing in quantitative, qualitative, and MMR research article abstracts published in international and Iranian applied linguistics journals within an eight-year period from 2012 to 2019 based on a local corpus and an international corpus, second, to explore the most frequently used rhetorical move patterns in the three research approaches within the two sets of corpora, and finally, to explore whether there exist any significant differences among the three types of research in both sets of corpora. Thus, the following research questions were formulated:

1. What is the frequency of distribution of rhetorical moves in the abstracts of quantitative, qualitative, and mixed methods research

articles in international and Iranian applied linguistics journals from 2012 to 2019?

2. Are there any significant differences regarding the frequency of distribution of rhetorical moves among the abstracts of quantitative, qualitative, and MMR articles in international and Iranian applied linguistics journals from 2012 to 2019?

3. Method

3.1. Corpora

Two sets of corpora were formed in the current study: one Iranian and the other international, each including 144 applied linguistics articles published between 2012 and 2019. The logic behind targeting the most recent eight-year period for this study was that most of the high-quality journals in Iran have started their publication since 2012. For compiling the two corpora, two processes were involved: first, selecting the journals and second, collecting the papers. As to the first process, to collect the international corpus, the international journals were targeted according to the following criteria: (1) Publishing articles in the domain of applied linguistics within the temporal range of 2012 to 2019, (2) Publishing quantitative, qualitative, as well as MMR articles, (3) Having a high impact factor based on the Journal Citation Reports (JCR), (4) Being among the high-quality journals suggested by Weber and Campbell (2004) or Hashemi and Gohari Moghaddam (2016), (5) Publishing the full-text articles in English, and (6) Being approved to be included by an expert in the field. Accordingly, six journals of *Language Teaching Research* (SAGE Publications Ltd), *TESOL Quarterly* (Wiley-Blackwell), *RELC* (SAGE Publications Ltd), *Applied Linguistics* (Oxford University Press), *System* (Elsevier), and *English for Specific Purposes* (Elsevier) were targeted.

Regarding journals selection for the local corpus, the following criteria were considered: (1) Publishing articles in applied linguistics within the temporal range of 2012 to 2019, (2) Publishing quantitative, qualitative, as well as MMR articles, (3) Being indexed in the Islamic World Science Citation (ISC) Database, (4) Being graded as "A" or "B" based on the Ministry of Science Research and Technology (MSRT) journal ranking system (MSRT has started to grade the journals from 2020 from A to D based on their quality; check https://mapfa.msrt.ir/ for the details.) (5) Publishing the full-text articles in English, and (6) Being approved to be included by an expert in the field. Accordingly, *Applied Research on English Language* (University of Isfahan), *Journal of Research in Applied Linguistics* (Shahid Chamran University of Ahvaz), *Iranian Journal of Applied Language Studies* (University of Sistan and Baluchestan), *Issues in Language Teaching*

(Allameh Tabataba'i University Press), *Journal of English Language Teaching and Learning* (Allameh Tabataba'i University Press), and *Teaching English Language* (Teaching English Language and Literature Society of Iran, TELLSI) were selected in this study.

3.2. Data Collection Procedure

After journal selection came the second phase involving the collection of quantitative, qualitative, and MMR research articles in applied linguistics. The only criterion applied at this phase was for the articles to include purely empirically-driven data (i.e., no review articles or essays) (Peacock, 2011). Moreover, attempts were made to select an equal number of articles within the three research approaches at each year, (i.e., 6, 6, 6). As a result, each of the two sets of corpora included 144 articles (i.e., 48 quantitative, 48 qualitative, and 48 MMR articles). Table 1 shows more details about the corpora.

Table 1

Corpora Specification

Year	Local Corpus	Number of Articles	Year	International Corpus	Number of Articles
2012	Quantitative	6	2012	Quantitative	6
	Qualitative	6		Qualitative	6
	MMR	6		MMR	6
2013	Quantitative	6	2013	Quantitative	6
	Qualitative	6		Qualitative	6
	MMR	6		MMR	6
2014	Quantitative	6	2014	Quantitative	6
	Qualitative	6		Qualitative	6
	MMR	6		MMR	6
2015	Quantitative	6	2015	Quantitative	6
	Qualitative	6		Qualitative	6
	MMR	6		MMR	6
2016	Quantitative	6	2016	Quantitative	6
	Qualitative	6		Qualitative	6
	MMR	6		MMR	6
2017	Quantitative	6	2017	Quantitative	6
	Qualitative	6		Qualitative	6
	MMR	6		MMR	6
2018	Quantitative	6	2018	Quantitative	6
	Qualitative	6		Qualitative	6
	MMR	6		MMR	6
2019	Quantitative	6	2019	Quantitative	6
	Qualitative	6		Qualitative	6
	MMR	6		MMR	6
Total	Quantitative	48	Total	Quantitative	48
	Qualitative	48		Qualitative	48
	MMR	48		MMR	48
	Total	144		Total	144

3.3. Move Analysis Framework

To analyze the moves, Hyland's (2000) model was adopted (Table 2). What is important in the process of identifying move occurrences and move patterns is the rhetorical function that each move plays. As presented in Table 2, each move in Hyland's model has its own distinct function(s).

Table 2

Move Analysis Model (Hyland, 2000, p. 67)

Move	Function
1.Introduction	Establishes context of the paper and motivates the research.
2.Purpose	Indicates purpose, thesis or hypothesis, outlines the intention behind the paper.
3.Method	Provides information on design, procedures, assumptions, approach, data, etc.
4.Product	States main findings or results, the argument, or what was accomplished.
5.Conclusion	Interprets or extends results beyond scope of paper, draws inferences, points to applications or wider implications.

The rationale for choosing Hyland's (2000) model was that this model has some advantages over the other models used for analyzing the rhetorical moves in research article abstracts. For instance, compared to Santos's (1996) model, derived from the investigation of 94 applied linguistics abstracts, Hyland's (2000) model was developed based on examining 800 abstracts from eight different disciplines pertaining to social sciences and general science. Furthermore, since its emergence, Hyland's model has been extensively employed by researchers to analyze abstracts, making it easier to discuss the outcomes of the present study (e.g., Amnuai, 2019; El-Dakhs, 2018, 2020; Suntara & Usaha, 2013; Zand-Moghadam & Meihami, 2016; Zhang et al., 2012). Also, Hyland's model is preferred over Bhatia's (1993) model as it includes an Introduction move to occupy a niche, which is not included in Bhatia's model. Meanwhile, Swales' (1990) model involves the Introduction-Method-Result-Discussion (IMRD) pattern, within which there is no place for the Purpose move represented in Hyland's model.

3.4. Data Analysis

Move embedding occurs when two or more moves are realized through a single sentence (Samraj, 2005). Thus, it is necessary to mention that the researchers should be aware of this notion of move embedding which, according to Bhatia (1993), is inevitable during the analysis of rhetorical moves of research article abstracts. In the present study, the researchers considered the possibility of move embedding in that those

sentences containing move embedding were given the labels of dual or more moves. To analyze the data, the frequency of distribution and percentages were estimated, and the Kruskal-Wallis test was run on the data through SPSS Version 24.

Estimating inter-coder agreement is highly recommended in corpus analysis studies in order to ensure the reliability of coders' codification (Ary et al., 2014). To ensure that the data collection process was done properly, first, the second author collected the two corpora, and then, 30% of each corpora (i.e., 10% qualitative, 10% quantitative, and 10% MMR abstracts) were checked by a university professor in the field of applied linguistics, who had prior experience in doing genre analysis, to ensure whether the articles were coded accurately into the quantitative, qualitative, or MMR categories. The inter-coder agreement coefficients reported for international corpus and local corpus were $r=.90.7$ and $r=.97.67$, respectively. For the codes where disagreement was found between the first and second coders, disagreements were resolved through discussion, resulting in the final corpora of the study.

Afterward, the two corpora were coded by the second author of the present study based on Hyland's (2000) model. In this way, the first coder checked if any of the moves of Introduction, Purpose, Method, Product, and Conclusion were present in the research abstracts of articles published in the six Iranian and six international applied linguistics journals targeted in this study. Subsequently, a university professor in the field of applied linguistics who had prior experience of doing genre analysis studies coded 30% from each corpus independently. Prior to coding, the second coder was briefed that Hyland's (2000) model was used for move analysis of the research article abstracts in the present study. As in this study each of the two corpora were subdivided into three categories of quantitative, qualitative, and MMR articles, each including an equal number of abstracts (i.e., each group included 48 abstracts), to choose 30% of the data for estimating inter-coder reliability, from each corpus, 10% of the abstracts from each of the quantitative, qualitative, and MMR categories were selected randomly (i.e., 10% qualitative, 10% quantitative, and 10% MMR abstracts). A total agreement of 100% was found between the two coders' coding of both datasets as prior to coding, and the researchers went through training in how to code the moves in research article abstracts according to Hyland's (2000) model, resulting in an accurate coding of the two sets of corpora.

4. Results and Discussion

4.1. Results

With regard to the first research question of this study, initially, the frequency of distribution of abstract moves in quantitative, qualitative, and

MMR papers from both international and local datasets was estimated. As shown in the Tables 3 and 4, all the moves within Hyland's (2000) model were observed in the two corpora.

It was observed that the moves of Purpose, Method, and Product were the most recurrent ones in the abstracts of quantitative, qualitative and MMR international papers (Table 3). It was also found that the Purpose move was realized in almost all of the MMR (100%), qualitative (98%) and quantitative (98%) international abstracts. With regard to the Product move, while all the MMR abstracts (100%) and 47 of the quantitative abstracts (98%) contained this move, it appeared less frequently in the qualitative abstracts (88%). The third frequently-used move in the international corpus was Method, which was present in 92%, 90%, and 88% of the quantitative, MMR, and qualitative abstracts, respectively. Conclusion was the fourth frequent move in the international corpus, occurring in 79% of the quantitative and MMR as well as 77% of qualitative abstracts. Finally, the move with the least frequency of distribution in all the three research designs was Introduction, which was observed in 56%, 48%, and 46% of the MMR, quantitative, and qualitative abstracts, respectively. Thus, it seems that the frequency of distribution of the five moves were more or less the same within the three research designs of quantitative, qualitative, and MMR in the international corpus.

Table 3

The Frequency of Distribution of Abstract Moves in the International Corpus

Move	Quantitative (N= 48)	Qualitative (N= 48)	MMR (N= 48)	Total International Corpus (N= 144)
Introduction (I)	23 (48%)	22 (46%)	27 (56%)	72 (50%)
Purpose (P)	47 (98%)	47 (98%)	48 (100%)	142 (97%)
Method (M)	44 (92%)	42 (88%)	43 (90%)	129 (90%)
Product (Pr)	47 (98%)	42 (88%)	48 (100%)	137 (95%)
Conclusion (C)	38 (79%)	37 (77%)	38 (79%)	113 (78%)

As to the frequency of distribution of moves within the local corpus, similar to the results from the international corpus, it was observed that the Purpose, Method, and Product moves occupied the largest portion of the local corpus (Table 4). More particularly, both Purpose and Product moves gained the first rate of the frequency of distribution in the local corpus by emerging in all (100%) of the abstracts from each of the three research designs. The second frequent move was Method, observed in 99% of the local corpus in general, and in 100% of the MMR and quantitative abstracts as well as 96% of the qualitative local abstracts, in particular. The Conclusion move was the third frequent move, noticed in 80% of the MMR and quantitative abstracts

as well as 67% of the qualitative local abstracts. Similar to what was discovered in the international corpus, the Introduction move had the lowest frequency of distribution compared to other moves in the local corpus, being noticed in 63%, 56%, and 50% of the qualitative, MMR, and quantitative abstracts, respectively. It can also be claimed that the frequency of distribution of the five moves was more or less the same within the quantitative, qualitative, and MMR local abstracts.

Table 4

The Frequency of Distribution of Abstract Moves in the Local Corpus

Move	Quantitative (N= 48)	Qualitative (N= 48)	MMR (N= 48)	Total Local Corpus (N= 144)
Introduction (I)	24 (50%)	30 (63%)	27 (56%)	81 (56%)
Purpose (P)	48 (100%)	48 (100%)	48 (100%)	144 (100%)
Method (M)	48 (100%)	46 (96%)	48 (100%)	142 (99%)
Product (Pr)	48 (100%)	48 (100%)	48 (100%)	144 (100%)
Conclusion (C)	38 (80%)	32 (67%)	38 (80%)	108 (75%)

Furthermore, it should be noted that although the moves were distributed with similar frequencies in the quantitative, qualitative, and MMR abstracts from the two sets of corpora (Table 3 & 4), small differences were found in their amount in the two corpora. Compared to the international corpus, the local corpus included more instances of the Introduction, Method, and Product moves. On the other hand, the moves of Purpose and Conclusion occurred more frequently in the international corpus.

To address the second part of the first research question, attempts were made to identify the most frequent rhetorical move patterns in the quantitative, qualitative, and mixed methods research article abstracts from the international and local datasets.

Analysis of the abstracts from the international corpus revealed the existence of 12 move patterns, four of which most frequently occurred in the corpus. As evident in Table 5, the most frequently-used pattern was I-P-M-Pr-C, occurring in 34% of the international corpus. To be more precise, this pattern was noticed most within the MMR abstracts (44%), followed by the quantitative (33%) and qualitative (25%) abstracts. The second most frequent pattern was P-M-Pr-C, lacking the Introduction move. This pattern emerged in 30% of the international corpus, with its most frequent appearance in the quantitative abstracts (35%) compared to its use in the qualitative (31%) and MMR (23%) abstracts. The third highly-ranked pattern was P-M-Pr, lacking the Introduction and Conclusion moves, which appeared in 13% of the corpus, with its most frequent use in the MMR abstracts (38%). It was also

found less in quantitative (10%) and qualitative (10%) international abstracts. Finally, the fourth frequent pattern in this corpus was I-P-M-Pr, not having the move of Conclusion. This pattern appeared in 8% of the international corpus. More particularly, it appeared in 8% of the quantitative and qualitative as well as 6% of the MMR abstracts of the international corpus.

Table 5

Four Most Frequent Rhetorical Move Patterns in the International Corpus

Rhetorical Move Patterns	Quantitative (N= 48)	Qualitative (N= 48)	MMR (N= 48)	Total International Corpus (N= 144)
I-P-M-Pr-C	16 (33%)	12 (25%)	21 (44%)	49 (34%)
P-M-Pr-C	17 (35%)	15 (31%)	11 (23%)	43 (30%)
P-M-Pr	5 (10%)	5 (10%)	8 (38%)	18 (13%)
I-P-M-Pr	4 (8%)	4 (8%)	3 (6%)	11 (8%)

Furthermore, according to Table 6, among the six move patterns observed in the local corpus, the one with the highest frequency of distribution was I-P-M-Pr-C, found in 47% of the local corpus. More specifically, it appeared in 52% of the MMR and 42% of the qualitative and quantitative local abstracts. The second highly-employed pattern was P-M-Pr-C, emerging in 26% of the local abstracts. Within this corpus, it was most-frequently found in the quantitative abstracts (33%), followed by the MMR (25%) and qualitative (21%) abstracts. The third recurrently noticed pattern was P-M-Pr, observed in 17% of the local corpus. Specifically, 19% of MMR and 17% of the quantitative and qualitative local abstracts contained this move pattern. Ultimately, I-P-M-Pr was found as the fourth frequently-used pattern in the local corpus (8%), occurring most in the qualitative abstracts (15%), less in the quantitative abstracts (6%), and least in the MMR ones (4%).

Table 6

Four Most Frequent Rhetorical Move Patterns Found in the Local Corpus

Rhetorical Move Patterns	Quantitative (N= 48)	Qualitative (N= 48)	MMR (N= 48)	Total Local Corpus (N= 144)
I-P-M-Pr-C	21 (44%)	21 (44%)	25 (52%)	67 (47%)
P-M-Pr-C	16 (33%)	10 (21%)	12 (25%)	38 (26%)
P-M-Pr	8 (17%)	8 (17%)	9 (19%)	25 (17%)
I-P-M-Pr	3 (6%)	7 (15%)	2 (4%)	12 (8%)

The comparison of the observed move patterns within the international and local corpora uncovered that, interestingly, the four patterns

of I-P-M-Pr-C, P-M-Pr-C, P-M-Pr, and I-P-M-Pr were the most frequently used move patterns in both sets of corpora. Even the patterns obtained the same frequency of distribution in the two corpora. Despite these similarities, there existed some areas of divergence within the local and international corpora with regard to their research article abstract move patterns. First, while, on the whole, 12 move patterns were observed in the international corpus, only six patterns were recognized in the local corpus. Second, although the mentioned four-move patterns obtained the same frequency of distribution in the two corpora, they differed in their specific number of occurrences in the two corpora. In this respect, in comparison to the international corpus, the local corpus included more instances of the I-P-M-Pr-C, P-M-Pr, and I-P-M-Pr patterns. In contrast, the P-M-Pr-C pattern appeared more recurrently in the international corpus.

To address the second research question, i.e., to identify any significant difference(s) between the two or more groups, before running a Kruskal-Wallis test, the descriptive statistics were calculated. As Table 7 shows, within the international corpus, in the Introduction move, the MMR approach has the highest mean rank (77), and the qualitative approach has the lowest mean rank (69.5). Moreover, in the Purpose move, the MMR approach has the highest mean rank (73.5), and the mean rank of the quantitative and qualitative approaches is equal (72). In addition, in the Method move, the highest mean rank (74) is for the quantitative approach, and the lowest mean rank (71) is for the qualitative approach. Besides, in the Product move, the highest mean rank (76) belongs to the MMR approach, while the lowest mean rank (67) belongs to the qualitative approach. Finally, for the Conclusion move, the lowest mean rank (71.5) is for the qualitative approach, and the mean rank of the quantitative and MMR approaches is equal (73).

In order to find out whether these differences are significant or not, a Kruskal-Wallis test was run (Table 8). The results of the Kruskal-Wallis test on the international corpus showed that there was a significant difference in the frequency of distribution of the Product move among the abstracts of the quantitative, qualitative, and MMR articles, $[\chi2(2) = 9.24, p = 0.010]$, with a mean rank of 74.50 for the quantitative, 67 for qualitative and 76 for MMR articles. However, no significant difference was found in the frequency of distribution of the other rhetorical moves among the abstracts of the quantitative, qualitative, and MMR articles: Introduction $[\chi^2(2) = 1.15, p = .56]$, Purpose $[\chi^2(2) = 1.00, p = .60]$ Method $[\chi^2(2) = .44, p = .80]$, and Conclusion $[\chi^2(2) = .08, p = .96]$.

Table 7

Descriptive Statistics of Differences in the International Corpus

Move	Research approach	Mean	SD	Mean Rank
Introduction	Quantitative	.47	.50	71.00
	Qualitative	.45	.50	69.50
	MMR	.56	.50	77.00
Purpose	Quantitative	.97	.14	72.00
	Qualitative	.97	.14	72.00
	MMR	1.00	.00	73.50
Method	Quantitative	.91	.27	74.00
	Qualitative	.87	.33	71.00
	MMR	.89	.30	72.50
Product	Quantitative	.97	.14	74.50
	Qualitative	.87	.33	67.00
	MMR	1.00	.00	76.00
Conclusion	Quantitative	.79	.41	73.00
	Qualitative	.77	.42	71.50
	MMR	.79	.41	73.00

Table 8

The Kruskal-Wallis Test Results for the International Corpus

	Introduction	Purpose	Method	Product	Conclusion
Chi-Square	1.159	1.007	.443	9.245	.082
df	2	2	2	2	2
Asymp. Sig.	.560	.604	.801	.010	.960

a. Kruskal Wallis test
b. grouping variable: international corpus

As shown in Table 9, within the local corpus, in the Introduction move, the qualitative approach has the highest mean rank (77), while the quantitative approach has the lowest mean rank (68). Moreover, in the Purpose move, the mean rank of the quantitative, qualitative, and MMR approaches is equal (72.5). In addition, in the Method move, the qualitative approach has the lowest mean rank (70.5), and the mean rank of the quantitative and MMR approaches is equal (73.5). Besides, in the Product move, the mean rank of the quantitative, qualitative, and MMR approaches is equal (72.5). Finally, in the Conclusion move, the qualitative approach has the lowest mean rank (66.5), and the mean rank of the quantitative and MMR approaches is equal (75.5).

Table 9

Descriptive Statistics of Differences in the Local Corpus

Move	Research approach	Mean	SD	Mean Rank
Introduction	Quantitative	.50	.50	68.00
	Qualitative	.62	.48	77.00
	MMR	.56	.50	72.50
Purpose	Quantitative	1.00	.00	72.50
	Qualitative	1.00	.00	72.50
	MMR	1.00	.00	72.50
Method	Quantitative	1.00	.00	73.50
	Qualitative	.95	.20	70.50
	MMR	1.00	.00	73.50
Product	Quantitative	1.00	.00	72.50
	Qualitative	1.00	.00	72.50
	MMR	1.00	.00	72.50
Conclusion	Quantitative	.79	.41	75.50
	Qualitative	.66	.47	66.50
	MMR	.79	.41	75.50

To find out whether these differences are significant or not, the Kruskal-Wallis test was employed. Table 10 indicates the results of Kruskal-Wallis on the local corpus. The Kruskal-Wallis results showed no significant difference in the frequency of distribution of the five rhetorical moves among the abstracts of the quantitative, qualitative, and MMR articles within the local corpus: Introduction [$\chi^2(2) = 1.51$, $p = .46$], Purpose [$\chi^2(2) = 0.00$, $p = 1.00$], Method [$\chi^2(2) = 4.02$, $p = .13$], Product [$\chi^2(2) = .00$, $p = 1.00$], and Conclusion [$\chi^2(2) = 2.64$, $p = .26$].

Table 10

The Results of the Kruskal-Wallis Test for the Local Corpus

	Introduction	Purpose	Method	Product	Conclusion
Chi-Square	1.51	.00	4.02	.00	2.64
df	2	2	2	2	2
Asymp. Sig.	.46	1.00	.13	1.00	.26

a. Kruskal Wallis test
b. grouping variable: local corpus

4.2. Discussion

The present study aimed to 1) examine the frequency of distribution of the rhetorical moves in the quantitative, qualitative, and mixed methods research article abstracts published in international and Iranian applied linguistics journals from 2012 to 2019, 2) to identify if any significant differences exist concerning the frequency of distribution of these moves among the three types of research in both sets of corpora, and 3) to explore

and compare the most frequent move patterns in the local and international corpora.

Concerning the frequency of distribution of the moves, in line with previous findings (e.g., Amnuai, 2019; Khany & Malmir, 2020; Zand-Moghadam & Meihami, 2016; Zhang et al., 2012; Yoon & Casal, 2020), it was found that the Purpose, Method, and Product moves occupied the largest portion of the local and international abstracts. This means that applied linguistics researchers, irrespective of their nationality, tend to provide information mainly on the purpose of their research, the method they employ, as well as the results they gain (Marefat & Mohammadzadeh, 2013). Similarly, El-Dakhs (2018, 2020) reported the Method and Product moves to be the most prevalent ones in the abstracts in the field of linguistics. Two reasons may justify these findings; first, by drawing on Schmidt's (1993) noticing hypothesis, it can be mentioned that since these three moves are used in many research article abstracts, applied linguistics researchers are more exposed to these moves and, as a result, are more likely to consciously employ them in their own writing; second, abstracts outline and reflect the most significant elements represented in their respective papers. Within research articles, the sections related to the purpose, employed method, and obtained findings seem to be very crucial (Li, 2020). Thus, it is likely that researchers pay focal attention to these three aspects when writing abstracts.

In addition, the two moves of Conclusion and Introduction did not appear as recurrently as the three other moves in both corpora. These outcomes were similar to those of Al-Khasawneh (2017), Amnuai (2019), and Suntara and Usaha (2013). It seems that applied linguistics researchers believe that the introduction and conclusion sections are not very essential to be discussed in the abstract. They might consider the abstract as the mere summary of the article by the authors (i.e., Summary vs. Abstract). Only when researchers have found the article to be interesting based on their initial reading of the abstract, they can read the whole text for information regarding all sections, including introduction and conclusion. Another justification for these outcomes may be that, in contrast to the Purpose, Method, and Product moves which appeared in many abstract moves models, the Introduction and Conclusion moves appeared for the first time in Hyland's (2000) model. Researchers following other models may not be informed of the significance of these two moves. Another reason highlighted by Suntara and Usaha (2013) is that researchers may embed the Introduction and Conclusion moves respectively into the moves of Purpose and Product.

A deeper analysis of the two corpora revealed points of divergence and convergence regarding the occurrence of the moves within the three approaches toward research. In the international corpus, the Introduction move was used more in the MMR abstracts than in their quantitative and

qualitative counterparts. The Purpose move was realized in all of the MMR abstracts and in the majority of qualitative and quantitative abstracts. The Method move occurred most frequently in the quantitative abstracts, although the rate of its occurrence was also high in the MMR and qualitative abstracts. The Product move occurred in all of the MMR abstracts, while it occurred less in the quantitative and least in the qualitative abstracts. Finally, the Conclusion move was distributed almost evenly within the three approaches. Thus, it seems that the international MMR abstracts contain more moves than the other two research approaches. This may be because of the nature of MMR studies which is more comprehensive as they must provide explanations from both qualitative and quantitative research paradigms, which justifies the realization of more moves in their abstracts.

Within the local corpus, the Purpose and Product moves were realized in every abstract from the three research approaches. Similarly, the Method move was realized in all of the quantitative and MMR as well as in the majority of the qualitative local abstracts, suggesting that Iranian applied linguistics researchers are more concerned with incorporating these three moves in their abstracts than their counterparts from other nationalities. Furthermore, the Introduction move was realized most frequently in the qualitative, less in the MMR, and least in the quantitative local abstracts, recommending that researchers tend to set their study scene most when the nature of their research is qualitative, less when it is MMR, and even least when it is quantitative. Furthermore, the Conclusion move was realized in similar portions within the quantitative and MMR local abstracts, and it appeared less in the qualitative abstracts. This may be because of the fact that qualitative researchers tend to provide an in-depth analysis of a small number of cases and may not be able to reach decisive conclusions based on their findings and consequently use the Conclusion move less in their abstracts. In contrast, quantitative and MMR researchers are more likely to make sample-to-population generalizations based on their outcomes and more frequently employ the Conclusion move.

When the two corpora were examined through the Kruskal-Wallis Test regarding the frequency of distribution of moves within their qualitative, quantitative, and MMR abstracts, only a significant difference was found between the three research approaches in the international corpus with regard to the Product move. Although this move appeared in all the MMR abstracts and in the majority of the quantitative ones (98%), it appeared less frequently in the qualitative abstracts (88%). This can be justified by stating that qualitative findings cannot be summarized in few sentences and that they may need to be explained in detail within the body of the text. Therefore, in situations where researchers cannot briefly explain their findings in the

abstract, they may totally disregard them or implicitly refer to them in the Conclusion move (i.e., move embedding).

Regarding the move patterns, the results indicated that the four most-recurrently observed rhetorical move patterns in the international and local datasets totally overlapped; I-P-M-Pr-C, P-M-Pr-C, P-M-Pr, and I-P-M-Pr. These outcomes were in congruence with those of Amnuai's (2019) study. More particularly, although these four patterns were recognized as the most frequent patterns in both corpora, they differed with regard to their frequency of distribution. In this respect, I-P-M-Pr-C was used more regularly in the local corpus (47%) than in the international corpus (34%), showing that the local writers are more inclined to represent all moves of Introduction, Purpose, Method, Product, and Conclusion in their writing. Instead, more instances of P-M-Pr-C were found in the international corpus (30%) than in the local corpus (26%). Furthermore, P-M-Pr occurred more regularly in the local corpus (17%) than in the international corpus (13%), whereas I-P-M-Pr appeared with the same frequency of distribution in both sets of corpora. It should be noted the identification of P-M-Pr-C as a frequent move pattern in this study was in agreement with the outcomes of other studies (e.g., El-Dakhs, 2018, 2020; Suntara & Usaha 2013). Furthermore, the dominance of the I-P-M-Pr-C pattern in both corpora gives credence to the notion that many applied linguistics researchers consider all five moves of Hyland's (2000) model to be essential for developing a good research article abstract.

Additionally, in both sets of corpora, the I-P-M-Pr-C pattern was found more recurrently in the MMR abstracts, meaning that researchers following quantitative and qualitative research paradigms in one study are more willing to follow the five moves of Hyland's (2000) model in their abstract writing. Similarly, in both sets of corpora, P-M-Pr was used more in the MMR abstracts. However, the use of this move pattern was not as frequent as the I-P-M-Pr-C and P-M-Pr-C patterns. Furthermore, the P-M-Pr-C pattern was more prevalent in the quantitative abstracts of the two sets of corpora. It was revealed that the move patterns observed in the local and international datasets shared very high degrees of similarity.

5. Conclusion and Implications

The followings are the main findings of the present study: (1) The Purpose, Method, and Product moves were employed more frequently in both local and international applied linguistics abstracts compared to the other moves; (2) The two moves of Conclusion and Introduction appeared less frequently than the other moves in both local and international applied linguistics abstracts; (3) I-P-M-Pr-C was the most-frequently employed pattern in both international and local sets of corpora; (4) In general, the

move patterns observed in the local and international sets of corpora shared very high degrees of similarity; (5) In both international and local corpora, the I-P-M-Pr-C pattern was found most recurrently in the MMR abstracts; and (6) Except for the Product move, no significant difference was found among the quantitative, qualitative, and MMR abstracts regarding the frequency of distribution of the Introduction, Method, Results, and Conclusion moves within them.

It can be concluded that applied linguistics researchers tend to enact Hyland's (2000) five-move model as much as possible in their research article abstracts. Furthermore, although some divergences exist with regard to the rhetorical moves frequency of distribution and patterning in qualitative, quantitative, and MMR abstracts in both local and international journals, on the whole, similarities in this regard are more remarkable than differences. The outcomes obtained from this research can be redound to the benefit of applied linguistics students, graduates, and researchers, for whom publishing research papers in scholarly journals can be a rewarding activity. That is, when researchers gain the knowledge of academic writing genres commonly used in their specific discipline, they can be accepted more easily as a member of their community of practice.

Furthermore, awareness of the genres of a specific discipline may help researchers gain more benefits when reading relevant research articles; research article abstracts constitute a recognized genre of its own in academic writing, in general and applied linguistics, in particular. Therefore, through the awareness of the rhetorical moves in applied linguistics research paper abstracts, applied linguistics researchers may present more appealing abstracts to the readers from their professional community. Such awareness can be enhanced in students and, in turn, be realized in their actual writing practice through explicit instruction in the form of genre-based pedagogy, aiding the learners to read and produce filed-specific genres more effectively (Swales, 2004, 2019).

Like any other research undertaking, this study has some limitations and delimitations. First, due to practicality considerations, in this study, data were collected only from six Iranian and six international applied linguistics journals between 2012 and 2019; future studies can investigate the topic on abstracts from other local and international applied linguistics journals and also in other temporal periods. Second, in the current study, only Hyland's (2000) model was used to analyze the rhetorical moves in research article abstracts. Further studies can also examine the rhetorical moves using other models and frameworks. More importantly, for the first time, research article abstracts from quantitative, qualitative, and MMR articles were compared in this study. Other researchers can follow this lead and add to this fledging

aspect of the literature by examining the abstracts or other sections of research articles selected from these three approaches to research.

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