



Key Considerations in Generic Move Analysis Research (1990 to 2023): A Systematic Review

Aliyeh Azizi¹

Reza Khany^{2*}

Leila Shoja³

Abstract

Following Swales' (1990) pioneering study on the generic structure of research article (RA) introductions, the Create-a-Research-Space (CARS) model has inspired numerous move-based studies on different sections of RAs. Therefore, to outline the generic, field-specific characteristics of the relevant body of research and identify future trends in the research agenda, the authors conducted the present systematic review. In doing so, we examined: The research themes addressed in the retrieved studies 2. Rhetorical idiosyncrasies as well as theoretical frameworks within which the studies have been conducted, and 3. Other field-specific aspects of the corpora. 190 move-based studies published between 1990 and 2023 were included in this review. The findings reveal rapid, consistent growth in move analysis research, with particular emphasis on cross-disciplinary comparison, cross-linguistic comparison, and the applicability of move frameworks. The abstract and introduction sections dominated the published research. Researchers applied various models to analyze different sections of RAs. Applied linguistics and language education were the most frequently studied fields. The inherently interpretative nature of move identification, achieving inter-coder agreement, and maintaining analytical consistency were identified as the most prevalent challenges in identifying and analyzing moves. This study offers important implications for further research.

Keywords: Move analysis, generic structure, themes and trends in move analysis, systematic review

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1. Ph.D. Candidate, English Department, Ilam University, Ilam, Iran. aliye.azizi19@gmail.com

2. Professor of Applied Linguistics, English Department, Ilam University, Ilam, Iran. (Corresponding Author)
r.khany@ilam.ac.ir

3. Assistant Professor in TEFL, English Department, Ilam University, Ilam, Iran. l.shoja@ilam.ac.ir

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Move analysis, as a text-analytical approach, was first developed by Swales (1981) to investigate the generic structure of academic research articles (RAs), and has been an important area of research over the past decades. In this approach, moves are rhetorical or discoursal units that perform coherent communicative functions in texts (Swales, 2004), "whose linguistic realizations may be very variable in length and in other ways" (Moreno & Swales, 2018, p. 40). Each move can be realized by smaller rhetorical constituents called steps (Biber et al., 2007). Both moves and steps are functional rather than formal units (Swales, 2004). Accordingly, as El-Dakhs (2020) notes, one can identify the parts that function as semantic and functional text units. In other words, identifying generic moves and steps enables classifying text chunks based on their primary communicative intentions (Ruiying & Allison, 2003).

Over the years, move analysis has also been used to uncover the underlying rhetorical structure of a wide range of academic and professional genres, including theses, presentations, lectures, proposals, graduate program applications, negotiation letters, job application letters, and law reports (Cotos, 2014; Moreno & Swales, 2018). However, RAs have been at the forefront of move-based investigations because of their importance in disseminating academic knowledge (Kousazntoni, 2006). The utilization of English as the international language of research and publication (Kurniawan et al., 2019) has been definitive in recent decades. This has encouraged scholars to publish their research findings in English to join the international academic discourse community and gain international recognition (Ahmadi, 2022). In addition, in most countries, whether Anglophone or non-Anglophone, international publications are regarded as a key evaluation criterion for academic promotion and professional success (Lillis & Curry, 2010).

A growing body of literature indicates that academic writers' success in publishing research papers in prestigious journals is closely related to their awareness of the generic structure of RAs (e.g., Amirian et al., 2008; El-Dakhs, 2018; Li & Ge, 2009; Samraj, 2005). Indeed, such awareness, as Kanoksilapatham (2005) and Swales (1990) point out, enables writers to produce more coherent, logically organized texts, thereby increasing their chances of getting their papers approved. Awareness of the generic structure of RAs seems more critical for non-native academics whose research papers were unpublished because of inappropriate organizational patterns compared with their international counterparts (Tahririan & Jalilifar, 2004). Nevertheless, understanding the conventional characteristics of RA writing has been perceived as a complex and demanding task, particularly for novice and non-native academic writers (Suherdi et al., 2020). One major contributing factor is the influence of cultural and contextual variables on the structure and rhetorical organization of academic writing (Ahmadi, 2022). In addition, each section of RA has its own conventional written pattern or form (Kurniawan et al., 2019). More importantly, the rhetorical structure of RAs varies by academic discipline (Swales, 1990). Therefore, academic writers must become familiar with the discipline-specific generic structure of RAs to meet disciplinary expectations when composing different sections of their manuscripts (Afshar et al., 2018).

Recognizing the importance of publishing RAs in prominent international journals and the difficulties many academic writers face, numerous researchers have long attempted to facilitate writing RAs in English through a move-analysis approach. In a pioneering study, Swales (1990) scrutinized the generic structure of the introduction section of RAs and proposed a three-move model called Create a Research Space (CARS). Based on this model, the introduction section of RAs includes three rhetorical moves: establishing a territory, establishing a niche, and occupying the niche.

Following Swales' seminal work, a wealth of research studies has explored the generic structure of the various sections of RAs, namely abstract (e.g., Hatzitheodorou, 2014; Zand-Moghadam & Zhaleh, 2022), introduction (e.g., Alharbi, 2021; Chahal, 2014), literature review (e.g., Jian, 2010; Marefat et al., 2021), result (e.g., Brett, 1994; Ruiying & Allison, 2003), method (e.g., Uzun, 2016; Zhang & Wannaruk, 2016), discussion (e.g., Amnuai, 2019; Basturkmen, 2012), and conclusion (e.g., Jahangard et al., 2014; Moritz et al., 2008) in different academic disciplines. Furthermore, analyzing the generic structure of RAs, cross-disciplinarily and cross-linguistically, has received great attention from many scholars (e.g., El-Dakhs, 2020; Luthfianda et al., 2021; Zanina, 2017).

These move-based findings can help researchers, particularly novices, become familiar with the standard structure of research writing within and across academic disciplines and languages, enabling them to produce better-written, more effective academic papers and participate more actively in academic communication.

The need for a systematic review

The analysis of the generic structure of research articles (RAs) has long constituted an important line of inquiry in English for Academic Purposes (EAP) and English for Specific Purposes (ESP). Recent reviews of empirical research in ESP further highlight the prominence of written discourse, text-based data, and genre-oriented inquiry in the field (Ghanbar & Rezvani, 2024a, 2024b). In particular, ESP research has paid sustained attention to writing, reflecting genre's central role in understanding how disciplinary knowledge is constructed and communicated. This continuing scholarly interest is also closely related to the pedagogical value of genre and move analysis for academic writing instruction, as such analyses can help writers recognize and respond to the rhetorical expectations of their discourse communities (e.g., El-Dakhs, 2018; Fauzan et al., 2020; Zamia, 2017).

The need to conduct move -based studies is becoming increasingly critical with the rapid growth in the number of academic writers, particularly non-natives and novices. This increase creates a crucial need to raise writers' awareness of the rhetorical sophistication of RAs to help them produce well-organized texts and meet the expectations of the international scientific community.

Despite the substantial body of move-based studies across different academic fields and research paper sections, conducting move-based research remains challenging and time-

consuming. When planning move-based investigations, researchers must make several key methodological decisions, most notably which RA sections to examine and which fields of study merit greater scholarly attention. However, the literature lacks a clear, consolidated account of which RA sections and academic disciplines have been the focus of move-based investigations over the past decades. This lack of clarity has resulted in a fragmented understanding of the areas that have received significant attention and those that remain underexplored. In addition, selecting and using appropriate theoretical move models is a key methodological concern in move analysis research. Although numerous models have been proposed for different sections of RAs, the literature still lacks a comprehensive and systematic taxonomy of these theoretical frameworks. Moreover, previous studies have paid little attention to the prevalence and distribution of these models. As a result, researchers are still far from consensus on the theoretical models they draw on to analyze their corpora.

The need to classify, taxonomize, and appraise the current chaos therefore seems warranted. In addition to addressing these gaps, this systematic review examines the growth trajectory of move-based studies over the past decades, identifies dominant research themes, and reports the challenges of identifying and analyzing generic moves, aiming to provide a more comprehensive picture of research in this field. Thus, the following research questions are formulated:

RQ1. How have the move-based studies evolved specifically from 1990 to 2023?

RQ2. What are the main research themes in these studies from 1990 to 2023?

RQ3. What sections of RAs have been investigated in these studies from 1990 to 2023?

RQ4. What theoretical move models have been drawn upon in these studies from 1990 to 2023?

RQ5. What fields of study have been the focus of these studies from 1990 to 2023?

RQ6. What challenges have researchers encountered in identifying and analyzing generic moves in these studies?

Method

This systematic review was conducted and reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement (Moher et al., 2009). PRISMA is a widely utilized framework for synthesizing literature reviews, involving three main procedures: (a) literature search, (b) study selection, and (c) data extraction and analysis. These procedures are outlined in detail below.

Literature Search

We conducted an exhaustive electronic search for relevant literature in the following databases: ScienceDirect, Taylor and Francis, Sage Journals, Oxford Journals, and De Gruyter. Search terms included genre analysis, move analysis, generic structure, rhetorical move structure, schematic structure, and textual organization, based on a preliminary review of the move analysis literature. To ensure that the retrieved studies were directly related and explicitly

focused on move analysis as their central research objective, the search was limited to publication titles using the advanced search option.

The database search was conducted in two phases. In the first phase, researchers searched each database using each term separately. In the second phase, to identify more appropriate studies, researchers combined these terms using Boolean operators. Examples of term combinations used in this phase included genre OR move analysis, generic OR rhetorical move structure, and schematic OR textual organization.

The database search delivered ۴۵۴۵ references, including 1852 records from ScienceDirect, 1214 from Taylor and Francis, 783 from Sage Journals, 426 from Oxford Journals, and 270 from De Gruyter.

To further reduce the risk of missing relevant studies, we conducted a multi-layered supplementary search. First, we searched Google Scholar using the same search terms to retrieve additional relevant research that might not have been indexed in the selected databases. As is typical, this search returned tens of thousands of references, so we stopped the Google Scholar review once the hits were no longer thematically relevant, yielding 114 records. Second, to avoid the limitations of using pre-determined search terms, we performed backward snowballing by meticulously examining the reference lists of the key studies on move analysis of RAs (e.g., Amnuai & Wannaruk, 2013; El-Dakhs, 2018; Kanoksilapatham, 2005; Khany & Malmir, 2019; Zand-Moghadam & Zhaleh, 2022), which resulted in 68 additional records, and also a general Google search, which provided 18 further hits. In total, these supplementary searches retrieved 200 additional studies. This approach aimed to maximize coverage while maintaining thematic rigor. All searches were completed on October 25, 2023.

Study Selection

Inclusion and Exclusion Criteria

We applied inclusion and exclusion criteria to select appropriate studies and keep the review focused (Boelens et al., 2017). The inclusion criteria for the present study were the following: (a) studies designed to explore the rhetorical structure of RAs, (b) empirical studies employing original qualitative, quantitative, or mixed-methods inquiries of the generic structure of RAs, (c) studies written in English, (d) studies published between 1990 and 2023 (as of October), and (e) studies providing a detailed and clear description of their methodology.

The exclusion criteria were employed as follows: (a) studies focusing on the generic structure of proposals, theses, and other types of academic genres; (b) dissertations, proposals, and book reviews; (c) theoretical and review studies; (d) studies written in languages other than English; (e) short conference papers without a detailed description of the methodology; and (f) studies whose full text was unavailable.

Application of Inclusion and Exclusion Criteria

Overall, the search strategy applied yielded ۴۷45 records. The retrieved records were then uploaded to EndNote, and duplicates were removed. After removing 912 duplicate articles, the

remaining 3833 records were divided among the three researchers, and each checked the title and abstract individually for preselection using the inclusion and exclusion criteria. To ensure consistency and mitigate bias, we randomly selected 15% of records and screened them with all three researchers. We computed inter-rater reliability for the sample ($Kappa = 0.92$). Title and abstract screening produced 198 studies. Next, the researchers independently reviewed the full texts of these studies against the inclusion and exclusion criteria. The authors resolved disagreements through consensus, resulting in the exclusion of five studies. Ultimately, the authors selected 193 studies for further evaluation.

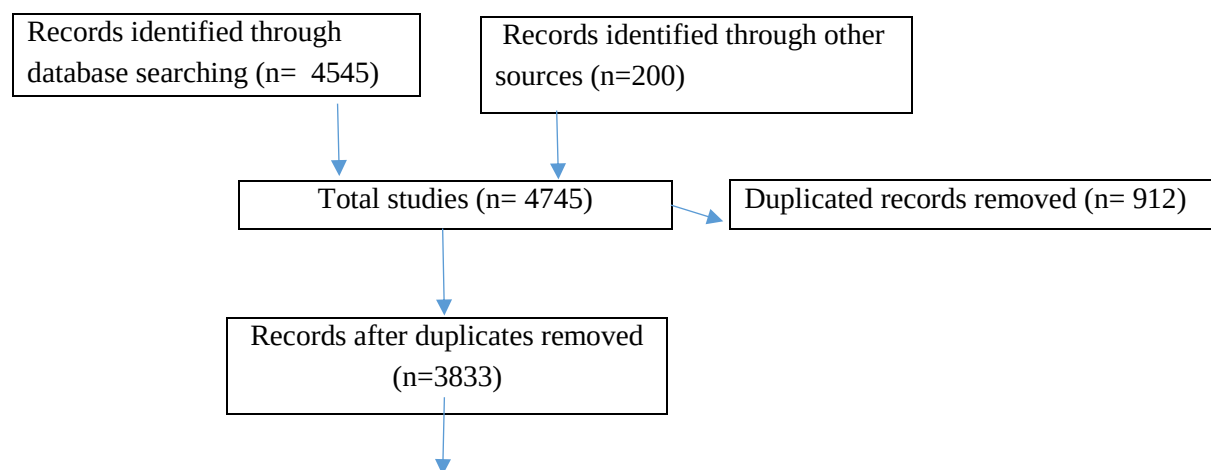
Methodological Quality Appraisal

After full-text screening, the remaining 193 studies underwent a methodological quality appraisal before the final synthesis. Each study was assessed against six predefined methodological criteria relevant to research on the generic structure of RAs: (a) clarity of research objectives, (b) conceptual and analytical framing, (c) appropriateness of research design, (d) sampling and corpus description, (e) data collection procedures, and (f) data analysis procedures. Each criterion was rated on a four-point scale from 0 to 3, where 0 indicated the criterion was not met, 1 indicated it was met to a limited extent, 2 indicated it was mostly met, and 3 indicated it was fully met. The maximum possible score for each study was 18. Based on the total score, we categorized studies as inadequate (0-4), low (5-9), medium (10-14), or high (15-18) in methodological quality. We excluded studies rated as inadequate or low from the final sample.

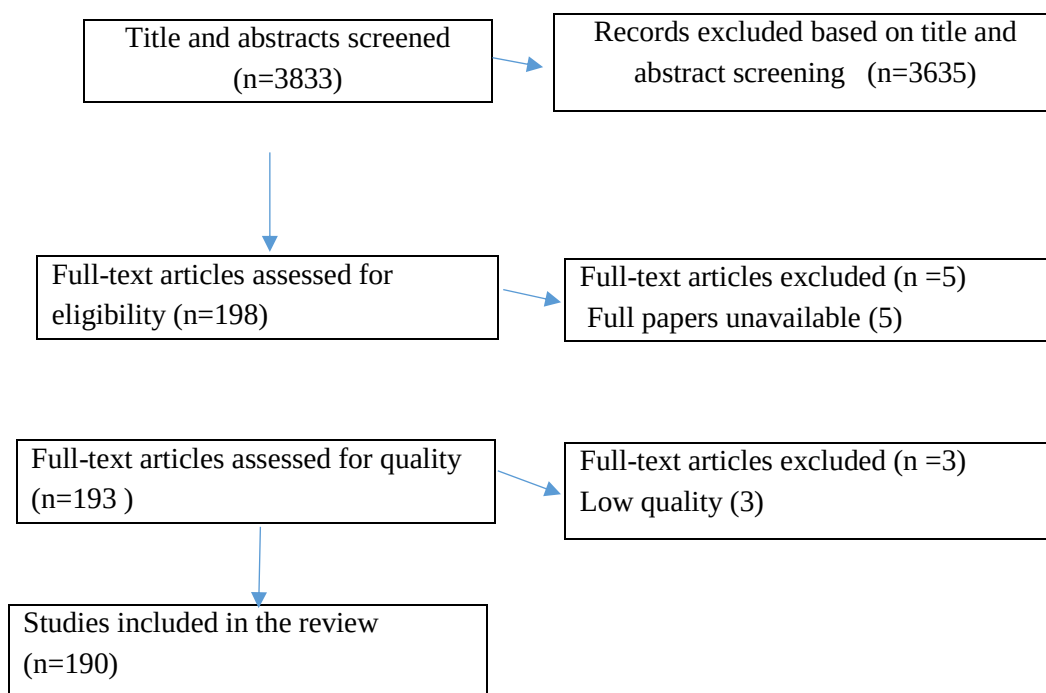
Three researchers conducted the appraisal independently. The researchers resolved discrepancies through discussion until they reached full agreement. Consequently, we excluded three studies for low methodological quality, leaving a final sample of 190 studies for the review. For a graphic overview of the selection procedure, see Figure 1.

Figure 1

PRISMA Flow Diagram of Study Selection Process



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Data Extraction and Analysis

Coding Procedure

In the present systematic review, a thorough coding procedure ensured a comprehensive and systematic analysis of the included studies. We developed a coding scheme based on the research objectives and questions to capture key information about the research trajectory of studies examining the generic structure of RAs. We piloted and refined the scheme with a random sample of 30 studies, then applied it to all included studies. The final coding scheme comprised six main categories: publication information (year of publication), themes, investigated sections (e.g., abstract, introduction, method), used models (if any), fields of study, and challenges in move identification and analysis. In this review, a challenge is defined as any difficulty researchers experience in identifying and analyzing generic moves, as explicitly reported or implicitly indicated in the methods, results, or discussion sections of the reviewed studies. To ensure consistency and reliability, three researchers independently coded all included studies and resolved discrepancies through consensus. Data were entered into a Microsoft Excel spreadsheet for analysis.

Analytical Procedures

Data analysis in a systematic review is a critical stage that involves examining and interpreting data from the included studies to address the research questions. In this study, the data were analyzed using thematic analysis. As a qualitative method, thematic analysis enables the systematic identification of recurring patterns and themes in the data gathered from the included studies. The analytical process involved organizing the previously extracted and coded

data into themes, facilitating a structured synthesis of findings across the studies. After identifying themes, we assigned numerical codes to the final themes to calculate their frequencies in SPSS. We used these frequency counts solely for descriptive purposes, providing an overview of theme distribution across the included studies.

Results

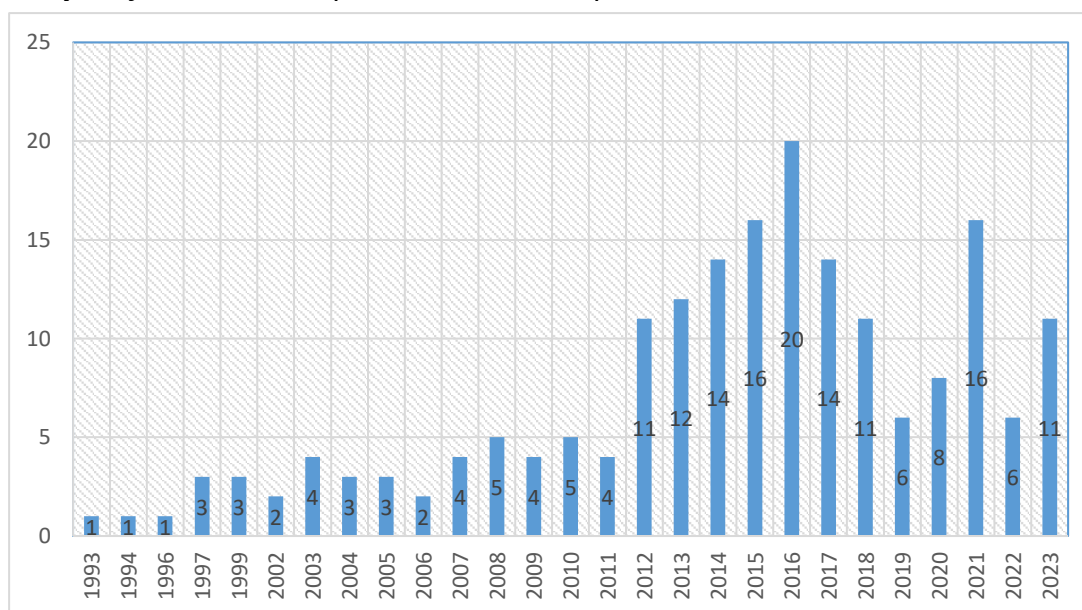
In this section, we describe the results of the analysis for each of the six research questions: RQ1. How have the move-based studies evolved, specifically from 1990 to 2023?

Figure 2 illustrates the frequency distribution of articles published between 1993 and 2023. Although we designed our search strategy to cover the period from 1990 onwards - acknowledging the emergence of move analysis following the seminal work of Swales (1990) - the earliest relevant article meeting our inclusion criteria was identified in 1993. Therefore, the frequency distribution in Figure 2 reflects trends from 1993 to 2023, while the period from 1990 to 1992 serves as the field's historical foundation.

As shown in Figure 2, the number of articles increased until 2016. In 2016, publications peaked at 20. This spike revealed a significant increase in research output in that year. After a sharp dip from 20 to 6 between 2016 and 2019, the number of publications rose to 16 between 2019 and 2021. Although there was a dramatic drop in 2022, the number of articles increased to 11 in 2023, showing that the move analysis of RAs remains an important and growing field of research.

Figure 2

Frequency Distribution of Articles Published from 1993 to 2023



RQ2: What are the main research themes in these studies from 1990 to 2023?

To identify the main themes in studies focusing on the rhetorical structure of RAs, we extracted 11 research themes. We considered themes with 8% or more as main themes (see Table 1 in Appendix A). We empirically determined the 8% threshold based on the frequency distribution within the corpus, allowing us to distinguish the most frequently investigated research areas from those explored less often. Table 1 illustrates that six themes were more frequent over the last 33 years. The six main themes include cross-disciplinary comparison, Cross-linguistic comparison, applicability of move frameworks, development of move frameworks, rhetorical variation across research venues, and linguistic realization of rhetorical moves. We further analyzed the frequency distribution of these themes across decades to identify trends.

Table 2 depicts the frequency count and percentage of the six main themes from the 1990s to 2023. This study used a frequency of 9% or more to identify trends. The classification of themes as trendy was guided by multiple criteria, such as their relevance to the research questions and the quality of studies addressing them. The results indicate that cross-disciplinary comparison and the applicability of move frameworks were trendy themes throughout the last three decades, including from 2020 to 2023, with a noticeable increase in the number of articles from the 1990s to the 2010s. Cross-linguistic comparison and development of move frameworks trended upward until the 2010s, but both saw a sharp decline in the number of articles from 2020 to 2023. Rhetorical variation across research venues increased moderately from the 2000s to the 2010s, but declined from 2020 to 2023. Finally, linguistic realization of rhetorical moves was the most frequently explored theme in recent years. The prominence of these themes reflects the central concerns of move -based research, particularly the comparison of rhetorical practices across disciplines and languages, as well as the continued development and application of analytical frameworks in genre studies. These findings can inform future studies and provide valuable insights into key areas of investigation in move analysis research.

Table 2

Frequency and Percentage of Main Research Themes from 1990 to 2023

Decades Themes	the 1990s (N= 9)	the 2000s (N = 27)	the 2010s (N = 113)	2020-2023 (N = 41)	Total (N = 190)
Cross-disciplinary comparison	1 (11.1%)	3 (11.1%)	24 (21.2%)	6 (14.6%)	34 (17.8%)
Cross-linguistic comparison	0	6 (22.2%)	24 (21.2%)	3 (7.3%)	33 (17.3%)
Applicability of move frameworks	2 (22.2%)	7 (25.9%)	19(16.8%)	4 (9.7%)	32 (16.8%)
Development of move frameworks	4 (44.4%)	7 (25.9%)	15 (13.2%)	3 (7.3%)	29 (15.2%)
Rhetorical variation across the venues of research	0	3 (11.1%)	11 (9.7%)	8 (19.5%)	22 (11.5%)
Linguistic realization of rhetorical moves	0	0	6 (5.3%)	10 (24.3%)	16 (8.4%)

N= number of published articles

RQ3. What sections of RAs have been investigated in these studies from 1990 to 2023?

Table 3 shows the overall results for the analyzed sections as well as the results for each decade under analysis. The most frequently investigated RA section was the abstract (71, 37.3%), followed by the introduction (40, 21.0%) and discussion (27, 14.2%). Conclusion and method accounted for 5.2% of the total studies. Literature review (LR) (5, 2.6%) and results (3, 1.5%) were the sections receiving the least attention. Of the 190 studies, 9.4% explored RAs in their entirety. Most of these studies examined the applicability of the IMRD prototypical pattern (introduction, method, result, and discussion) as the default organizational structure for the selected corpus and then identified generic moves in each section. An additional 6 (3.1%) studies investigated the generic structure of more than one section of RAs, including introduction and discussion (Khany & Tazik, 2010, 2011; Rezaee & Sayfour, 2009), introduction and abstract (Samraj, 2005), introduction and LR (Jalilifar et al., 2016), and result and its subsequent sections (Ruiying & Allison, 2003).

Table 3 also shows that reviews of the abstract section increased significantly from the first decade (1, 11.1%) to the second and third decades (6, 22.2%, and 43, 38.8%, respectively). Moreover, although focus on this section declined from 2020 to 2023, it remained the most dominant section during this period. Interestingly, introduction, method, discussion, conclusion, and RAs as a whole increased until the 2010s, but all, like abstract, experienced a sharp decline in the number of articles from 2020 to 2023. In addition, LR began appearing in RAs published after the second decade. While results was the most dominant section in the 1990s, only one study (Ruiying & Allison, 2003) investigated its generic structure as an individual section of RAs from the 2000s onward. The provided results highlight the dominance of the abstract and introduction in move analysis studies published over the last 33 years. This imbalanced distribution may reflect the relatively standardized structure of sections such as the abstract and introduction, which makes them more accessible for move analysis, whereas sections such as the results or literature review may involve more complex rhetorical patterns.

Table 3

Analyzed Sections from 1990 to 2023

Sections	the 1990s	the 2000s	the 2010s	2020- 2023	Total
Abstract	1 (11.1%)	6 (22.2%)	43(38.8%)	21 (51.1%)	71 (37.3%)
Introduction	2 (22.2%)	9 (33.3%)	19(16.8%)	10 (24.3%)	40 (21.0%)
Discussion	1 (11.1%)	3 (11.1%)	20 (17.6%)	3 (7.3%)	27 (14.2%)
Conclusion	0 (%)	1 (3.7%)	9 (7.9%)	0 (0)	10 (5.2%)
Method	0 (0%)	1 (3.7%)	7 (6.1%)	2 (4.8%)	10 (5.2%)
LR	0 (0%)	0 (0%)	3 (2.6%)	2 (4.8%)	5 (2.6%)
Result	3 (33.3%)	0 (0%)	0 (0%)	0	3 (1.5%)
RAs as a whole	2 (22.2%)	4 (14.8%)	9(7.1%)	3 (7.3%)	18 (9.4%)
More than one section	0	3 (11.1%)	3 (2.6%)	0	6 (3.1%)
Total	9 (100%)	27(100%))	113 (100)	41 (100%)	190 (100%)

RQ4. What theoretical move frameworks have been drawn upon in these studies from 1990 to 2023?

Another key component explored in this systematic review is the theoretical move models applied in the included studies. Tables 4 to 8 in Appendix B represent the results. Overall, 88.9% (n=169) of the 190 reviewed studies used move models to analyze their corpora. Of the 169 studies, 150 used one model, and 19 employed more than one model. Given space limitations, we describe the most commonly used frameworks for each investigated section. As Table 4 shows, for the abstract section, about half of the studies (49.2%) used Hyland's (2000) model as the sole analytical framework. For the introduction section, most studies used Swales' (1990, 2004) CARS model (37,92.5%). Of these 37 studies, 18 drew upon Swales' (2004) CARS model, 16 upon the 1990 version of this model, and 3 studies used both versions of the CARS model. We treated these three studies as a separate category and did not include them in the counts for either version.

For the literature review, method, and result sections, we identified no dominant frameworks (see Table 5). In the discussion section, Ruiying and Allison's (2003) model (22.2%) was the most frequently used, followed by Dudley-Evans (1994) (14.8%). Ruiying and Allison's (2003) model for conclusion (60%) was more frequent than other models used in move-based conclusion studies. In studies examining the rhetorical structure of RAs as a whole, the dominant model was Swales (1990, 2004), accounting for 38.8% of these studies. In addition, the results reveal many other models that can be used to evaluate the generic structure of the various sections of RAs (see also Tables 4 to 8 in Appendix B).

We also examined the 19 studies that used more than one move model to understand the rationale for using multiple models in their data analysis. Our analysis found that in most of these studies, no single model could identify rhetorical moves across the entire sample. Hence, researchers in these articles used other models to meet the requirements of their corpora (e.g., Shamsabadi, 2014; Putra, 2023). Some studies also drew on multiple models and combined them to develop new models (e.g., Moritz et al., 2008; Hatzitheodorou, 2014). The remaining 21 studies (out of the 190 reviewed studies) did not apply any specific move models. Most of these studies aimed to develop new analytical frameworks for analyzing the move structure of RAs. These studies reveal several new move frameworks for different sections of RAs. Table 9 lists these models, as well as models developed in studies using more than one model. Note that this list includes models not applied in the included studies.

Table 9

Proposed Models for Different Sections

Sections	Models
Abstract	Tanko (2017), Soy et al. (2023)
LR	Jian (2010), Saadabad Motlagh & Pourchang (2019)
Method	Cotos et al. (2017)
Result	Ruiying & Allison (2003)

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Discussion	Jaliliffar et al. (2012), Holmes (1997), Hashemi & Moghadam (2016), Amnuai & Wannaruk (2013)
RAs as a whole	Dujcik & Zhu (2016), Fryer (2012)

RQ5. What fields of study have been the focus of these studies from 1990 to 2023?

To gain a full picture of the reviewed studies, we examined not only the overall results by field of study but also the results for each investigated section (see Tables 10 and 11 in Appendix C). As Table 10 shows, of the 190 studies, 149 (78.4%) investigated the generic structure of RAs in specific disciplines. These mono-disciplinary studies covered 43 disciplines in total. Applied linguistics was the most frequently researched field, accounting for 30.2% (n=45) of the 149 studies. Language education (16, 10.7%), medicine (10, 6.7%), and linguistics (10, 6.7%) were the next three most frequent fields of study. Table 10 also shows that of the 45 studies focusing on applied linguistics, 17 (37.7%) investigated the generic structure of the abstract section of RAs in this field. While discussion and introduction received moderate attention, other sections of RAs in this field were neglected. No studies examined the method or result sections, and only two studies focused on the literature review section.

Notably, in studies focusing on language education and linguistics, the abstract also received the most attention. Notwithstanding its popularity in the move analysis studies, this section remained unexplored in some academic fields identified in this study, including marketing, math, software engineering, philosophy, biotechnology, chemistry, and biochemistry. In sum, to see how much attention was paid to the various sections of RAs in the fields of study identified in this review, see Table 10.

Despite the importance of cross-and intra-disciplinary studies in improving academic research writing, only 18.5% (n=35) and 3.1% (n=6) of the corpus, respectively, focused on these studies (see Table 11). Of the 35 cross-disciplinary studies, 48.5% (n=17) focused on the abstract section. Applied linguistics also emerged as the most prominent area within these studies. This strong focus on applied linguistics may reflect the field's central role in genre and discourse analysis. Still, it may also indicate a relative imbalance in the disciplinary distribution of move-based research.

RQ6. What challenges have researchers encountered in the process of identifying and analyzing generic moves in these studies?

The analysis of the 190 reviewed studies identified a range of challenges researchers encountered when identifying and analyzing generic moves (see Table 12 in Appendix D). The most prevalent challenge concerned the inherently interpretative nature of move identification, which was reported in 92 studies (48.4%). This challenge reflects that move identification relies on interpreting communicative purposes not explicitly signposted in texts, requiring researchers to make numerous context-dependent analytical decisions throughout the coding process. Closely related, 85 studies (44.7%) identified challenges in achieving inter-coder agreement and maintaining analytical consistency, reflecting the interpretative demands of assigning moves to textual segments. A substantial proportion of research also highlighted the manual,

labor-intensive, and time-consuming nature of move analysis, particularly for large corpora (43.1%). Additional challenges included handling complex or non-linear move configurations at the level of overall text organization (32.1%) and dealing with segments that serve multiple communicative purposes simultaneously (30.5%). Less frequently noted difficulties involved identifying implicitly or ambiguously realized moves (24.2%) and limited familiarity with the target genre or disciplinary conventions (21.5%).

Discussion

This study presents a systematic review of 190 studies published between 1990 and 2023 on move analysis of RAs. The review examines various dimensions of the research, including year of publication, themes, trends, investigated sections, theoretical move frameworks, fields of study, and the challenges encountered in identifying and analyzing generic moves. While narrower review-oriented works exist in related areas (e.g., Hyland & Jiang, 2021; Ötügen et al., 2021), this study offers the first comprehensive synthesis of empirical move analysis research on RAs, providing valuable insights into the field.

Regarding the first research question, the data show a growing trend in the number of move-based studies over the last three decades, with a significant increase in the 2010s.

Notably, although the review period began in 1990 to recognize Swales' (1990) seminal contribution, the earliest eligible study in the dataset appeared in 1993. This three-year interval suggests that adopting Swales' move-based framework in empirical genre research was not immediate, but required time for researchers to interpret, adapt, and operationalize the model in empirical studies. In this sense, the early 1990s may be viewed as a formative stage in which Swales' framework first provided a conceptual foundation before generating a visible body of empirical research. This pattern also has broader implications for adopting theoretical frameworks in the field, showing that scholarly uptake is not instantaneous but a gradual, iterative process. It suggests that seminal frameworks often require a necessary phase of conceptual assimilation within the scholarly community before they can be fully operationalized in empirical investigations. This interpretation accords with the subsequent expansion and refinement of Swalesian genre analysis across disciplinary and professional contexts, as researchers adapted move-based frameworks to the rhetorical demands of different genres and discourse communities (Bhatia, 1993; Swales, 2004).

From 2020 to 2023, 41 studies were published, which is more than the total number of articles published in the 1990s and 2000s, reflecting the increasing importance of generic move analysis research in recent years. This upward trajectory broadly aligns with wider developments in EAP research, where discourse-, genre-, and writing-related concerns have gained prominence over time (Hyland & Jiang, 2021). This pattern is further supported by evidence from ESP research indicating sustained growth in empirical publications and a predominant focus on writing and written discourse (Ghanbar & Rezvani, 2024b). In a related review, Wang et al. (2024) also reported continued scholarly attention in genre-focused

research, further supporting the view that the upward trajectory observed in the present review forms part of a broader expansion of genre-based inquiry. On a more positive note, given the significant role of RA publication in today's highly competitive academic environment and the recognized importance of communicative moves in scholarly publication, the upward trend in generic move analysis research is likely to continue in the current decade.

Regarding the second question, the study identified six main themes in studies examining the generic structure of RAs: cross-disciplinary comparison, cross-linguistic comparison, applicability of move frameworks, development of move frameworks, rhetorical variation across research venues, and linguistic realizations of generic moves. While cross-disciplinary comparison and applicability of move frameworks were present throughout the decades, linguistic realization of rhetorical moves was the most prominent theme from 2020 to 2023, showing a trend in this area.

Despite their popularity in move-based studies over the last three decades, cross-linguistic comparison and the development of move frameworks did not emerge as prominent themes in studies published between 2020 and 2023. This observation is noteworthy, especially given the importance of cross-linguistic studies in providing empirical evidence for identifying the expectations of diverse academic discourse communities. Such evidence is essential not only for advancing our understanding of global academic communication but also for informing the instruction of non-native writers in successfully navigating academic genres. Equally important, however, is the continued development of comprehensive move frameworks, as such models are essential for the systematic analysis of different sections of RAs, a point also highlighted in reviews of move analysis models in ESP and genre studies (e.g., Ötügen et al., 2021). Overall, although these six research themes are significant areas of research in the studies focusing on move analysis of RAs, it is also important to investigate new research subjects and continue exploring previously investigated ones to achieve a more comprehensive understanding of the rhetorical move structure of RAs.

For the third research question, the findings indicate that the reviewed studies predominantly focused on RA abstracts. The dominant focus on RA abstracts can be attributed to their significant roles and functions in research communities (Lores, 2004; Wahyuni et al., 2021). As Hyland (2002) contends, "an RA abstract is generally the readers' first encounter with a text, and is often the point at which they decide whether to continue and give the accompanying article further attention or to ignore it" (P. 63). Moreover, abstracts have an important role in promoting academic writing. They can help readers filter the literature they encounter (Hyland & Jiang, 2017). More importantly, abstract content is one of the main criteria for assessing the quality of RAs. Thus, abstract quality affects journal editors' evaluation of RAs (Cutting, 2012). Given their recognized worth, academic writers should organize abstracts of their RAs as best they can.

However, RA abstracts, as argued by Gillaerts and Van de Velde (2010), have a particular makeup that can make them rhetorically tricky, even for skilled writers, because publication

requirements and conventions vary. Therefore, RA abstracts, regarded as a stand-alone genre because of their unique characteristics (Tullu, 2019), deserve due attention and analysis. Evaluating the generic structure of RA introductions was also paramount. It is generally acknowledged that the introduction is the most rhetorically complex section of RAs (Irawati et al., 2017; Shibayama & Wang, 2020) and thus one of the most difficult parts to write (Armağan, 2014; Fazel, 2019). This may be because the introduction is the section in which researchers not only provide background information about their research topic but also establish the significance of their studies to persuade readers to continue reading the rest of the article (Ahlstrom, 2017). Moreover, journal editors and reviewers meticulously review and sharply criticize the introduction when assessing articles for publication (Afshar et al., 2017). Therefore, the quality of the introduction section is another key criterion in determining whether RAs are considered publishable. For these reasons, the introduction section has consistently attracted substantial attention in move analysis research.

Our findings further show that while the discussion section received moderate attention, other sections, such as the conclusion, method, literature review, and results, remained underexplored. Given the prevalence of strong marketization in academic discourse, learning how to promote different sections of RAs has become an essential skill for academic writers who aspire to join the academic community (Lindberg, 2004). As Amnuai (2019) argues, different sections of RAs have their own conventional rhetorical structures. Familiarity with these section-specific conventions enables academic writers and scholars to produce more effective, publishable research texts. Hence, future research should systematically examine the generic structure of individual sections of RAs (Ganji & Derakhshan, 2020; Ghane et al., 2021), particularly those sections that have received limited attention to date. In addition, evaluating the overall generic structure of RAs warrants further investigation, as it can yield valuable insight into the behaviors of generic moves and steps throughout RAs.

In move analysis, theoretical move models play a key role in guiding research studies. These models function as strategic blueprints and analytical filters that enable scholars to identify, classify, and critically evaluate the constituent elements of complex scholarly texts. Consequently, carefully selecting and systematically applying move models is essential to ensuring the rigor and validity of research studies in this field. In response to the fourth research question, this review indicates that many studies have used models to explore the generic structure of RAs, emphasizing the importance of theoretical move models in generic move analysis research. As the findings show, Hyland's (2000) model has been widely employed in studies investigating the generic structure of RA abstracts. This popularity stems from its strong empirical foundation: the model was developed based on a large dataset of 800 abstracts from eight different disciplines, namely, applied linguistics, philosophy, physics, sociology, marketing, biology, electrical engineering, and mechanical engineering, ensuring its robustness and applicability across different academic fields.

Furthermore, studies focusing on introductions found Swales' (1990, 2004) CARS model to be the most frequently used. Our analysis shows that this model can account for the generic structure of the introduction section of RAs, regardless of discipline. This observation supports Jalilifar's (2010) claim that the CARS model is the most comprehensive framework for analyzing the rhetorical structure of RA introductions. Swales' model has also proven a reliable framework for analyzing abstract and literature review sections of RAs, as well as RAs in their entirety. While various move models have been used to examine the generic structure of the literature review, results, method, discussion, and conclusion sections, no universally applicable model has been established for analyzing the structural organization of these sections across academic fields. This may be why the studies on the rhetorical organization of these sections of RAs are limited.

Therefore, future research should focus on developing and validating new move models that are specifically sensitive to the unique communicative demands of each section and are tested rigorously across disciplinary boundaries. This effort is crucial for advancing a more comprehensive and nuanced understanding of academic article structure. The review also provides a list of the proposed models for different sections of RAs. Users should use these models with caution, as they were developed from analyses of RAs in specific disciplines and may not capture all RAs across all academic fields, highlighting the need for further research on their broad applicability.

Regarding the fifth research question, most reviewed studies were mono-disciplinary, suggesting a strong focus on investigating the generic structure of RAs within specific disciplines. The prevalence of mono-disciplinary studies observed in this review aligns with findings from related research, such as Wang et al. (2024), who also reported a dominance of mono-disciplinary investigations in their analysis of academic titles.

Given that each academic discipline has its own rhetorical move structure (Swales, 1990), academic writers need to be familiar with the nature of the academic fields under investigation and their conventional writing styles to meet the expectations of their readership, which typically consists of established members of the same disciplinary community who are well aware of the norms governing academic discourse. Consequently, to assist academics, particularly novices and non-native academic writers, in this relatively daunting task, a host of move-based studies has been conducted to describe and analyze the moves and sub-moves in the various sections of RAs in different disciplines.

Further analysis of these studies demonstrates that applied linguistics, language education, medicine, and linguistics were the four most frequently researched fields, with applied linguistics receiving particular attention. This pattern may reflect the discipline's inherently practice-driven nature (Cook, 2003), in which genre awareness and rhetorical competence play a central role (Hyland, 2004). Nevertheless, despite the abundance of discipline-specific research on the generic structure of RAs, many disciplines identified in this review remain insufficiently familiar with the permissible structure of RA writing, including geography,

psychology, law, marketing, economics, cultural studies, political science, tourism, accounting, and agriculture. Therefore, the review highlights the need to pay more attention to these fields of study to help academic writers develop the disciplinary knowledge required to participate effectively in academic communication.

Furthermore, the findings show that cross-disciplinary studies have not received the attention they deserve. Exploring the generic structure of RAs across disciplines matters because each field follows its own conventions for research writing. These variations and differences across disciplines help us understand how scholars in different fields engage readers and develop their main points and arguments in academic writing (Wang et al., 2024). This approach is particularly valuable in today's cross-disciplinary academic world, as it enhances collaboration across fields. Although the disciplines examined in the reviewed studies are diverse, cross-disciplinary comparisons have often focused on contrasts between soft sciences (e.g., applied linguistics) and hard sciences (e.g., engineering) because of their distinct conventions and styles. RAs in the soft sciences typically use a more narrative, descriptive style that reflects their predominantly qualitative nature, whereas those in the hard sciences prioritize concise language and empirical data. This distinction illustrates how disciplinary characteristics shape the creation of RAs and offers valuable insights into cross-disciplinary academic communication. However, developing a deeper understanding of cross-disciplinary variation requires continued research.

Move analysis research has indicated that the generic organization of RAs varies even across subdisciplines within a single discipline (e.g., Basturkmen, 2012; Kanoksilapatham, 2015; Li & Pramoolsook, 2015), a finding that may be discouraging for both researchers and those involved in academic writing pedagogy. Accordingly, the current review also underscores the importance of exploring sub-disciplinary variations and the need for further research to familiarize academic writers and researchers with the variations in research writing across subdisciplines, thereby better preparing them for successful communication within their respective fields.

In response to the sixth research question, the challenges identified across the reviewed studies reflect the inherent methodological complexity of move analysis research. The prominence of interpretative difficulties and inter-coder agreement issues highlights that generic moves are not discrete or explicitly marked units, but analytically constructed categories that require researchers to infer communicative purposes from contextual, rhetorical, and disciplinary cues (Hyland, 2004; Swales, 2004). From this perspective, the interpretive dimension of move identification should not be viewed solely as a practical obstacle, since a degree of subjectivity has long been recognized as inherent to rhetorical and genre analysis (Tardy, 2011). This helps explain why interpretive variations emerge even in studies that employ detailed coding procedures. This inherent interpretive complexity becomes more pronounced when move analysis is applied to larger, more diverse corpora, where variations in genre conventions, disciplinary norms, and textual structures increase the analytical demands

of the process. In this regard, recent developments in corpus-based and computational approaches have been suggested as potential ways to enhance consistency and scalability in move analysis, particularly in large datasets. However, these approaches are generally considered supportive frameworks that complement, rather than replace, expert qualitative judgment (Biber & Conrad, 2009).

In addition, challenges associated with complex or non-linear move configurations and segments that simultaneously serve multiple communicative purposes underscore the dynamic and flexible nature of academic discourse, which resists rigid or linear analytical models (Biber et al., 2007). Overall, these findings suggest that many difficulties reported in the literature stem from the intrinsic rhetorical complexity of the genres under investigation, as well as from the analytical processes required to capture their rhetorical organization. The challenges documented across the reviewed studies therefore emphasize the need to refine analytical frameworks, increase methodological transparency, and establish explicit analytical criteria. In summary, these issues suggest that while move-based analysis is a valuable approach for understanding the generic structure of RAs, careful consideration of methodological choices and potential sources of variation is essential for ensuring the validity and interpretability of research findings.

Conclusion

This systematic review set out to provide a comprehensive synthesis of studies on the move analysis of research articles (RAs) published between 1990 and 2023. One major contribution of this review is its systematic documentation of the growth and diversification of generic move analysis research over the past three decades. The steady increase in the number of publications, particularly in recent years, reflects the growing recognition of generic move structure as a central component of effective academic communication. By identifying dominant research themes, frequently studied sections of RAs, widely applied theoretical move models, disciplinary patterns, and the methodological challenges of move identification and analysis, this review clarifies how scholars have approached the study of rhetorical organization in academic writing.

The findings reveal that move analysis research has increasingly focused on themes such as cross-disciplinary comparison, cross-linguistic comparison, the applicability of move frameworks, the development of move frameworks, rhetorical variation across research venues, and the linguistic realization of rhetorical moves. At the same time, the results demonstrate that certain sections of RAs, particularly abstracts and introductions, have received considerable attention, while other sections, such as methods, results, and conclusions, remain comparatively underexplored. The review also highlights the central role of established theoretical models in guiding move-based investigations, with Hyland's (2000) model widely applied in abstract analysis and Swales' (1990, 2004) CARS model dominating research on RA introductions. In addition, the analysis shows that move analysis research has been conducted predominantly

within individual disciplines, with applied linguistics and language education emerging as the most frequently investigated fields. Taken together, these findings contribute to a more systematic understanding of the evolution, priorities, and methodological orientations of move analysis research.

Beyond synthesizing existing research, this review's findings have several practical implications for researchers and TESOL and EAP practitioners. For researchers planning move-based studies, the results guide making informed methodological decisions, particularly in selecting appropriate RA sections, identifying appropriate theoretical frameworks, and recognizing disciplinary patterns in previous research. For example, scholars examining RA abstracts can draw on Hyland's (2000) model as a well-established analytical framework, while those investigating RA introductions can benefit from Swales' CARS model because of its strong empirical support and broad applicability across disciplines. In this sense, the review can help researchers navigate the wide range of available analytical models and identify areas that require further investigation.

The findings also carry important pedagogical implications for TESOL practitioners and instructors involved in English for Academic Purposes (EAP) programs. Because move analysis research provides insights into the rhetorical organization of academic texts, it can serve as a valuable foundation for teaching academic writing to multilingual scholars and novice researchers. For instance, instructors can use Hyland's (2000) five-move model of RA abstracts as a practical framework for teaching students how to structure effective abstracts.

At a broader curricular level, the synthesis presented in this review supports the development of data-informed EAP materials that reflect authentic disciplinary practices rather than generalized writing advice. By incorporating insights from move analysis research into syllabus design, academic writing courses can better prepare students to navigate the expectations of international publication and disciplinary discourse communities.

Despite its strengths, this review has some limitations. First, the review was limited to RAs published in English, which inevitably excluded potentially relevant studies in other languages. Second, the title-only search strategy, while helping to ensure strong thematic relevance by prioritizing studies explicitly focused on move analysis, may also have excluded relevant studies whose focus was not reflected in the title. Third, although the search terms were carefully selected based on a preliminary review of the move analysis field, reliance on predefined search terms may have limited retrieval of studies that addressed move analysis using alternative terminology. Finally, excluding major indexing databases such as Scopus and Web of Science may have reduced the comprehensiveness of the search. Although supplementary procedures, including Google Scholar, backward snowballing, and a general Google search, were used to broaden coverage, they may not have fully compensated for these limitations. Given these methodological limitations, exercise caution when interpreting the results.

In sum, the present study advances the field by offering a structured overview of three decades of move analysis research while simultaneously identifying conceptual, disciplinary, and methodological gaps. Continued expansion into underexplored RA sections and disciplines, along with refining analytical approaches, will be essential to deepen our understanding of how knowledge is rhetorically constructed in research writing and to strengthen the pedagogical applications of genre-informed instruction.

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Appendices

Appendix A

Table 1

Frequency and Percentage of Themes from 1990 to 2023

Themes	Frequency	Percentage
Cross-disciplinary comparison	34	19.4
Cross-linguistic comparison	33	17.3
Applicability of move frameworks	32	16.8
Development of move frameworks	29	15.2
Rhetorical variation across the venues of research	22	11.5
Linguistic realization of rhetorical moves	16	8.4
Rhetorical variation across native and non-native writers	9	4.7
Intra-disciplinary comparison	7	3.7
Pedagogical application	5	2.6
Rhetorical variation across research paradigms	2	1.0
Diachronic studies	1	0.4
Total	190	100

Appendix B:

Tables of Applied Theoretical Move Frameworks for Investigated Sections of RAs

Table 4

Abstract and Introduction Sections

Abstract (N=7)		Introduction (N=40)	
M	F/P	M	F/P
Hyland (2000)	35 (49.2%)	Swales (2004)	18 (45%)
Swales (1990, 2004)	9 (12.6%)	Swales (1990)	16 (40%)
Santos (1996)	5 (7.0%)	Swales (1990, 2004)	3 (7.5%)
Swales & Feak (2009)	4 (5.6%)	Nwogu (1997)	1 (2.5%)
Kanoksilapatham (2013)	1 (1.4%)	Kanoksilapatham (2005)	1 (2.5%)
Dongmei & Ruiying (2005)	1 (1.4%)	More than one model	1(2.5%)
Hatzithodorou (2014)	1 (1.4%)		
Pho (2008b)	1 (1.4%)		
Bahtia (1993)	1 (1.4%)		
More than one model	6 (8.4%)		
No models	7 (9.8%)		

Note. N: number of studies , M:model , F: frequency , P:percent.

Table 5
Literature Review , Method, and Result Secions

LR (N=5)		Method (N=10)		Result (N=3)	
M	F/P	M	F/P	M	F/P
Swales (1990)	2 (40%)	Nwogu (1997)	1 (10%)	Brett (1994)	1 (33.3%)
Kwan (2006)	1 (20%)	Lim (2006)	2 (20%)	No models	2 (66.6%)
More than one model	1 (20%)	Zhang & Wannaruk (2016)	1 (10%)		
No models	1 (20%)	Peacock (2011)	2 (20%)		
		Huang (2014)	1 (10%)		
		No Models	3 (30%)		

Table 6
Discussion and Conclusion Sections

Discussion (N=27)		Conclusion (N= 10)	
M	F/P	M	F/P
Ruiying& Allison (2003)	6 (22.2%)	Ruiying &Allison (2003)	6 (60%)
Dudley-Evans (1994)	4 (14.8%)	Dudley-Evans (1994)	1 (10%)
Hopkin & Dudley-Evans (1988)	2 (7.4%)	Moritz et al. (2008)	1 (10%)
Peacock (2002)	2 (7.4%)	More than one model	2 (20%)
Basturkmen (2009)	1 (3.7%)		
Kanoksilapatham (2007)	1 (3.7%)		
Swales (1990) *	1 (3.7%)		
More than one model	7 (25.9%)		
No models	3 (11.1%)		

Note:* Eight move model of Swales (1990) for discussion

Table 7
RAs as a Whole

N=18	
M	F/P
Swales (1990, 2004)	7 (38.8%)
Maswana et al. (2015)	3 (16.6)
Kanoksilapatham (2005)	2 (11.1 %)
More than one model	2 (11.1%)
No models	4 (22.2%)

[illegible]

Abstract (N= 18)	
Linguistics & translation studies	linguistics & literature
Applied linguistic & educational technology	Civil & biomedical engineering*
Applied linguistics, economics, & mechanical engineering	Applied Linguistics & TESL
Applied linguistics & mathematic	Law & business
Management & marketing as subdisciplines of business*	Applied mathematics, applied linguistics , & applied chemistry
English literature & translation studies	Applied linguistics, information , & communication technology
Applied linguistics & English literature	Persian language and literature & engineering (power & chemical
Applied linguistics, economics, & mechanical engineering	Humanities (education & sociology) & science (electronics & agronomy
Nanoscience & nanotechnology	

KEY CONSIDERATIONS IN GENERIC MOVE ANALYSIS RESEARCH

Applied linguistics & computer engineering

Introduction (N=6)	
ESP, EGP , & DA*	psychology & medicine
Wildlife behavior & conversation biology	Applied linguistics & chemistry
Mathematics & sociology	English linguistics & literature
LR (N=2)	
Management & information technology	Neuroscience & Neurology
Method (N=2)	
Humanities /social science (applied linguistic, economics) & natural science (agriculture & chemical engineering)	Marketing & management*
Result (N=0)	
Discussion (N=3)	
Applied linguistics & chemistry	Civil, biomedical , & software engineering*
History, political science , & sociology as sub-disciplines of social science*	
Conclusion (N=5)	
EIT & nursing	Applied linguistics & civil engineering
Chemistry & applied linguistics	Psychology, Persian literature , & applied
Mechanical engineering & applied linguistics	Linguistic
RA as a whole (N=4)	
Applied linguistics & educational technology	Structural, environmental ,electrical, &
Management ,education & chemistry ,civil engineering (2)	chemical engineering*
Introduction & abstract	
Conservation biology &wildlife behavior	

Note: * Fields of study in the studies investigating sub-disciplinary variation

Appendix D

Table 12
Challenges Encountered in Move Identification and Analysis

Challenges	N	Percentage
The inherently interpretative nature of move identification	92	48.4
Achieving inter-coder agreement and maintaining analytical consistency	85	44.7
Manual, labor-intensive, and time-consuming nature of move analysis	82	43.1
Handling complex or non-linear move configurations	61	32.1
dealing with segments serving multiple communicative purposes simultaneously	58	30.5
Identifying implicitly or ambiguously realized moves	46	24.2
limited familiarity with the target genre or disciplinary conventions	41	21.5

Note. Percentages exceed 100% because individual studies could report more than one challenge