

**GENERIC STRUCTURE OF THE METHOD
SECTIONS OF RESEARCH ARTICLES AND MA
THESES BY TURKISH ACADEMIC WRITERS**

Hüseyin KAFES¹

Abstract

The different sections and the lexico-grammatical features of the research article have been subject to numerous studies. Among these different sections, it is the methods sections of the research article that has received little attention despite its importance in displaying the validity and reliability of the research article. Among the few studies on the method section, we see no study on research article methods section by Turkish academic writers. Motivated by this need, the current study aims to investigate the method sections of a corpus of 20 research articles by expert Turkish academic writers and 20 MA method sections by novice Turkish academic writers, using Lim's model (2006). Analysis of the data has revealed that both corpora include the moves of Lim's model, displaying subtle differences when it comes to steps and sub-steps. It seems that the disciplinary culture shapes and constraints the microstructure of the methods sections. The results are discussed and theoretical and pedagogical implications were presented in light of the findings.

Keywords: *Academic writing, genre analysis, research article, generic structure, methods section.*

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¹ Assist. Prof. Dr., Akdeniz University, email: hkafes@gmail.com

1. Introduction

In the last two decades or so, academicians, researchers, and scholars have attached huge interest to the academic research article, driven partly by the need to disseminate the massive industry of knowledge and partly running parallel with the status of English as an international language. This has resulted in researchers analyzing the research article from different aspects such as the overall rhetorical structure, lexico-grammatical features, and historical development and social structure of the research article.

The rhetorical structure of the research article has largely been investigated with a specific focus on its different sections. Hyland (2000, 2004), Kafes (2012, 2015), Melander, Swales, & Frederickson (1997), Salager-Meyer (1990, 1992), Samraj (2005), and Swales & Feak (2009), just to mention a few, have investigated the research article abstract. Al-Qahtan (2006), Arvay & Tanko (2004), Hirano (2009), Jogthong (2001), Lim (2006), Loi (2010), Ozturk, (2007), Samraj (2002), Swales (1990), Swales & Najjar (1987) have analyzed the research article introduction. Basturkmen (2009, 2012), Brett (1994), Bruce (2009), Ruiying & Allison (2003), Thompson (1993), and Williams (1999), among others, have focused on the results section, while Hopkins & Dudley-Evans (1988) Holmes (1997), and Peacock (2002) have studied the discussion section. Among the different sections of the research article, it is the methodology section that has received the least attention from researchers. Unlike the other sections, it has attracted the attention of only a handful of scholars, probably due to the misconception that writing up this section is easy and straightforward. Yet, given the fact that studies gain value depending mostly on how sound their methodologies are, we can clearly understand its importance.

Among these few researchers are Bruce (2008), Coll Garcia (2002), Conduit & Modesto (1990), Lim (2006), Mur Duenas, (2007), Nwogu (1997), Peacock (2011), and Pramoolsook, Li, & Wang (2015). Bruce (2008), Lim (2006), Nwogu (1997), and Peacock (2011) come to the forefront with their models for analyzing this section. Bruce (2008) has analyzed this section of the research article with a focus on the cognitive genre structure. Nwogu (1997), based on his analysis of the methods sections of medical journals, has proposed another model for analyzing this section. Similarly, Lim (2005) has offered yet another model for this section based on his study on research article methodology sections from the field of management. Peacock (2011), on the other hand, has suggested a model of analysis consisting of seven moves based on his cross-disciplinary analysis of the methods sections from eight different disciplines.

As is known, the methodology section describes procedures employed in the study being reported (Kanoksilapatham, 2005). In describing procedures employed, writers present information about the steps they follow in conducting a study, collecting and analyzing their data. Thus, this section provides evidence for the reliability and validity of the results to be reported in the upcoming results section of a study (Swales and Feak, 2004).

As can be seen, we can see no study on the methodology sections of either the research article or MA or PhD thesis. Driven by this need, this study aims to analyze the methods sections of research articles by experienced Turkish academic writers and MA thesis methodology sections by novice Turkish academic writers from the field of applied linguistics. Specifically, in this study, we aim to investigate to what extent the rhetorical structure of the methods sections of the research article and MA thesis are similar.

2. Methodology

2.1. The corpus

This exploratory, qualitative and quantitative study aims to investigate the rhetorical structure of the methodology sections of RAs by experienced Turkish academic writers and the rhetorical structure of the methodology sections of MA thesis by novice Turkish academic writers. The corpus consists of 20 research article (RA) methods sections and 20 MA thesis methods sections from the field of applied linguistics. Both corpora include comparable academic RAs and MA thesis in terms of genre, subject matter, and cultural background of the writers.

Initially a corpus of 100 MA thesis was formed, downloading the first 100 MA thesis from the official website of Turkish Council of Higher Education Thesis Center. Then only one MA thesis from the same university was chosen, excluding the ones native speaking English teachers served as thesis advisors to. At the final stage, 20 MA thesis were randomly chosen from among the remaining 60 MA thesis to form the MA corpus.

Following the same path, the article corpus was formed taking academic journal articles from Turkey-based journals, which mainly address Turkish audience as the MA thesis do. After selecting 100 experimental research articles, the ones by multi-authored ones were excluded. Among the remaining 60 RAs, 20 of them were chosen using random sampling. The authors of the RA corpus all hold a PhD in Applied Linguistics and serve as lecturers at various universities in Turkey.

To analyze the methodology sections of the corpus, Lim's model (2006) was adopted as the analytical framework for the study (see Lim's model below), since it is a more comprehensive model for analyzing Methods sections than the others. It provides a very detailed description of each move. Following Lim (2006), the rhetorical structure of the methodology sections of the RAs and MA thesis was analyzed. As all the articles and MA thesis in the corpus were already organized into clearly labeled sections, identifying the methodology sections were a straightforward and easy process. Each sentence in the methodology section was assigned a move and step. In identifying the moves, which was conducted at sentence level, the functions and content of the texts were taken into consideration, following a top-down approach. When a sentence served two rhetorical purposes, rare though it was, it was considered as two moves or steps. In many cases, the sentence as the unit of coding was unproblematic, yet in few cases when a sentence included two moves, the sentence was assigned to the move or step that looked more salient. The corpus was coded by the researchers, independent of each other. The comparisons between the researchers' coding showed 88% agreement. To solve the remaining cases of disagreement, a third rater, an American lecturer was consulted. The three of us analyzed those cases and reached full agreement.

Figure 1. Lim's (2006) move-and-step analysis of Methods sections of business management articles

- Move 1: Describing the data collection procedure(s)
 - Step 1: Describing the sample
 - (a) Describing the location of the sample
 - (b) Describing the size of the sample/population
 - (c) Describing the characteristics of the sample
 - Step 2: Recounting the steps in the data collection
 - Step 3: Justifying the data collection procedures

- (a) Highlighting advantages of using the sample
- (b) Showing the representativeness of the sample
- Move 2: Delineating procedure/s for measuring variables
 - Step 1: Presenting an overview of the design
 - Step 2: Explaining the method/s of measuring variables
 - (a) Specifying items in questionnaires/data bases
 - (b) Defining variables
 - (c) Describing methods of measuring variables
 - Step 3: Justifying method/s of measuring variables
 - (a) Citing previous research methods
 - (b) Highlighting acceptability of the methods
- Move 3: Elucidating data analysis procedure/s
 - Step 1: Relating data analysis procedures
 - Step 2: Justifying the data analysis procedures
 - Step 3: Previewing results

Lim, 2006, p. 287).

3. Results and Discussion

Analysis of the results has revealed some interesting findings. First and foremost, apart from the moves, steps, sub-steps included in Lim's model (2006, p. 287), we have observed that both groups expressed their goals to a varying degree. Another observation is that each group seems to have their own overall rhetorical organization, although they contain moves, steps, and sub-step serving similar functions, if not the same ones. One of the prominent features of the MA corpus is that 60% of them begin with a general chapter overview, which informs the reader about its content. Another aspect of the MA corpus is that 35% of them begin announcing their goals, and 15% begin underlining their methodology. Unlike the RA corpus, 50% of the MA corpus begins by presenting information about their participants, with only one (5%) having a chapter overview. Contrary to MA corpus, 30% of this group begins with information about their methodology and only 15% begins by announcing their purposes.

The MA corpus seems to have a more homogenous rhetorical organization, which could be attributed to the fact that, as novice writers, they want to play safely. However, the RA writers do not feel the need to play safe in the same way the MA writers do, probably because of their experience.

3.1. Overall frequency distribution of the moves

The overall frequency distribution of the moves has indicated three important findings. The first of these observations is that both groups employed the three moves in close percentages as seen in the table 1 below. Another point is that both groups attached almost equal importance to the moves in that they used move 1 the most, followed by move 2 and move 3. The last finding is that MAs have used the moves more than the RAs group, which will be dealt with in the following sections.

Table 1. Frequency distribution of the moves

	RAs		MAs	
	#	%	#	%
Move 1	82	52.9	103	47.6
Move 2	59	34.7	77	35.6
Move 3	21	12.3	36	16.6
Total	162		216	

3.2. Overall frequency distribution of Move 1

As it is the case with the overall distribution of move use, MA methodology corpus has used Move 1 Describing Data Collection Procedure(s) a bit more as can be seen in table 2. Despite this minor dissimilarity, both groups have employed all of the steps and sub-steps of this move, with one exception that the RA corpus did not use sub-step of step 3.

As is known, in step 1 of move 1 Describing Data Collection Procedure(s), writers give information about the size, location, and characteristics of their samples. All of the writers in both groups gave information about the location of their participants, sub-step 1, as seen in the excerpt below.

(1) (RA 1)

...The participants are coming from five different universities, all in Ankara, Turkey. Three of these universities are private universities (namely, Atılım University, Başkent University and Bilkent University) while the other two are State universities (Hacettepe University and Middle East Technical University)...

Similarly, all of the writers in both groups gave information about the size of their samples/population when employing sub-step 2, describing the size of their samples/population as seen in the excerpt below.

(2) (MA 1)

...The participants of the study consist of three groups: the prep-students of the departments of Divinity and Teacher Training for the Culture of Religion and Ethics for Primary School Students, the first year students of the departments of Divinity and Teacher Training for the Culture of Religion and Ethics for Primary School Students, and the instructors of the departments of Divinity and Teacher Training for the Culture of Religion and Ethics for Primary School Students...

In addition to giving information about the locations and size of their locations, almost all of the writers, but one, described the characteristics of their samples/population, sub-step 3, describing the characteristics of their samples as seen below.

(3) (RA 4)

...They constituted almost 75% of the freshman students at the ELT Program in question. Since they had all passed a national English proficiency test and a preparatory school exemption exam, in this study their English proficiency levels were considered to be almost homogeneous. They all followed the same curriculum and most of the activities and assignments they had had and were having at the time being were similar...

As seen above, the writer gave information about the exams the participants had taken previously, their proficiency level, the curriculum they had followed and so on. Unlike the common employment of the first three sub-moves of step 1, only half of the writers in both groups used the last sub-step of step 1, describing the sampling criteria.

(4) (MA 4)

...The participants were purposefully selected for three reasons. Firstly, they are the seniors who have taken the necessary courses on methodology and educational sciences and are doing practicum as teachers at schools so in a sense they are both teachers teaching at schools and students who are taking courses to complete their own education...

In this excerpt, the writer underlines his sampling criterion saying that it was based on purposeful selection. While some writers mentioned both the advantages and disadvantages of the sampling criteria they had, some writers, like the one above, just named his criterion.

When it comes to step 2 of move 1, recounting the steps in data collection, it can be seen in table 1 that the MA corpus employed this sub-step a little more than the other group. Although all of the writers in the MA corpus employed this step, almost 70 % of the writers in the other group used it. This observation seems to be closely related to the space available in RA and MA methodology sections.

After giving some information about the preparation of the questionnaires used in the study, the writer recounted the steps he followed as seen above.

Table 2. Frequency distribution of Move 1

	RAs		MAs	
	#	%	#	%
Step 1				
A	20	24.3	20	19.4

B	20	24.3	20	19.4
C	19	23.1	20	19.4
D	11	13.4	11	10.6
Step 2	14	17	20	19.4
Step 3				
A	---		8	7.7
B	---		4	3.8
Total	82		103	

Unlike the steps and sub-steps mentioned so far, step 3 of move 1, justifying the data collection procedure(s), was employed the least by both groups. While a little more than a quarter of MA corpus employed sub-step 1, highlighting the advantages of using the sample and including information about how representative their samples were, the RA corpus included no information about these two sub-steps of step 3. After presenting some background information about his sample, the writer highlighted one benefit of using his particular sample as seen below.

(5) (MA 14)

...The reason why especially these groups were selected is that the researcher works in this university as an English instructor, and so observing these learners in teaching and learning process was much easier...

In realizing the second sub-step of step 3, showing how representative their sample was, writers generally underlined that their sampling was representative, explaining what made them representative as seen in the excerpt below.

(6) (MA13)

...Evciler Şehit Osman Özkan Primary School regarded as having the same properties with Çırpılar, Muratlar and Türkmenli Primary Schools since all these schools are in the villages of Bayramiç and they all located very near to each other and their students' characteristics are very similar to each other as they live in the same social and economical environment. Therefore, the sample chosen for the pilot study was thought to represent the main sample group...

3.3. Overall distribution of Move 2

The purpose of this move is to describe how variables will be measured in the overall design of the study. When it comes to the employment of move 2, delineating procedure(s) for measuring variables, we can see that MA corpus used them a little more than the RA corpus. What is more interesting is the observation that these groups attached differing importance to the steps and sub-steps of move 2, as can be seen in table 3 below.

Step 1 of move 2, presenting an overview of the design, has received almost equal amount of importance by both groups, although the MA corpus employed it the most, with 18 MA methodology sections including it. In realizing step 1 of move 2, writers gave some background information about the design of their studies as seen in the excerpt below.

(7) (RA10)

...In this study, the selected research methodology is a case study, since the research focus can be defined as “particularistic” in relation to the setting and scope (Merriam, 1998). The study setting was the Department of Basic English at Hacettepe University, Turkey. Eleven Turkish teachers who teach the same level of learners participated in the study...

After giving some background information in step 1 of move 2, writers informed their readers about their questionnaires/data bases in sub-step 1 of step 2, specifying them as seen in the excerpt below.

(8) (RA11)

...The preferred means of data collection were semi-structured interviews, a questionnaire and a post-conference carried out towards the end of the academic year. The analysis of data collection from seven teachers indicated that teachers’ discourse was loaded with grammar teaching...

Table 3. Frequency distribution of Move 2

	RAs		MAs	
	#	%	#	%
Step 1	10	18.5	18	23.3
Step 2				
A	18	30.5	16	20.7
B	20	33.8	17	22

C	5	8.4	17	22
Step 3				
A	1	1.6	1	1.2
B	---	---	8	10.3
Total	54		77	

In sub-step 2 of step 2, gave more information about their variables defining them further as seen in the excerpt below.

(9) (MA11)

...To assess the effects of short stories in teaching speech acts 28 pre-intermediate Turkish learners of English as a foreign language in a state university were selected and randomly assigned into two groups, one treatment and one control group, each containing 14 learners. To gather some information about whether foreign language instructors were aware of the pragmatic value of short stories in teaching process, 20 EFL (English as a Foreign Language) instructors from a state university and a private university were selected...

Before elaborating more on his variables, the writer of the above excerpt introduces his variables providing some general information about them. After defining their variables, writers provided the reader with information regarding how they measured their variables as seen in the excerpt below.

(10) (MA11)

...To examine whether short stories can be used to teach speech acts, and are efficient in developing learners' pragmatic competence, a controlled elicitation procedure was used in this study. The instrument used to elicit data from the students was a Discourse Completion Test (DCT). The selection of an appropriate data collection instrument is very important, since it determines the reliability and accuracy of the data to represent the authentic performance of linguistic action. One of the major data collection instruments in pragmatic research is Discourse Completion Test...

It is worth noting in passing that the RA corpus employed sub-step 1 and 2 of step 2 the most while they rarely realized sub-step 3 of step 2. A more interesting observation is that both groups employed step 3 of move 2 surprisingly rarely as seen in table 2 above. Writers can realize step 3, justifying the method(s) of measuring variables, by citing previous research method(s) and highlighting acceptability of their methods. Only one writer from each group preferred to cite previous research method(s) and eight writes belonging to MA group underlined acceptability of their methods.

3.4. Overall frequency distribution of Move 3

As is indicated in table 1, move 3, elucidating data analysis procedures, was the least preferred move among the three moves as it was employed the least by both groups. Writers employ this move to analyze data, test the research hypothesis and/or questions, and seek answers to the research questions posed (Lim, 2006). While step 1 and 2 was used by both groups to a varying extent, step 3 was not employed at all. Relating/recounting data analysis procedures the most seems to be obligatory as both groups employed it the most. In realizing this move, writers can narrate the steps they followed in data analysis procedure(s) as seen in the excerpt below.

(11) (MA14)

...Before conducting the questionnaire, permission was taken from METU Human Subjects Ethics Committee in February, 2009. Afterwards, the researcher explained the details of the study to the administration of the institution so as to get necessary permission for conducting the study. Afterwards, the classes were determined for each level and the researcher informed the instructors of the study...

Before a lengthy and detailed description of her data analysis procedures, the writer briefly mentions the procedures she followed in analyzing her data in the excerpt below. A few paragraphs after this excerpt, the same writer realized step 1 of move 3, justifying her data analysis procedure(s) by citing some writers' views on the procedures she employed.

(12) (MA14)

...The analysis involved the use of Multivariate Analysis of Variances [MANOVA] with Pillai's Trace test. Pillai's Trace test was preferred since it is, as Olson (1976) stated, more robust than the other three multivariate tests: Wilks's lambda, Hotelling's trace, and Roy's largest root (cited in Liu, 2003, p.54). It was also highlighted by Bray and Maxwell (1985) that as compared to the other tests, its robustness is the most when the assumptions are violated (cited in Field, 2005, p. 594)...

Table 4. Frequency distribution of Move 3

	RAs		MAs	
	#	%	#	%
Step 1	19	90.4	20	74
Step 2	2	9.5	7	25.9
Step 3	---	---	---	---
Total	21		27	

As has already been noted, it is worth mentioning in passing once more that, both groups did not employ step 3, previewing results, at all.

4. Conclusion

This qualitative and quantitative study, which sought to investigate the rhetorical organization of methodology sections of RAs by expert Turkish writers and the rhetorical organization of methodology sections of MA thesis by novice Turkish writers from the field of applied linguistics, has revealed some important observations. One of these observations is that both corpora included all of the moves of Lim's model (2006), though they displayed differences when it comes to employing steps and sub-steps of the moves. Another finding is that both groups employed move 1, Describing data collections procedure(s) the most, followed by move 2, Delineating procedure(s) for measuring variables, and finally move 3, Elucidating data analysis procedure(s). However, the MA corpus employed more steps and sub-steps.

Yet, subtle differences were noted when it comes to steps and sub-steps of the moves. It seems that the RA corpus lacks two very important rhetorical strategies, which might well affect the reliability and validity of a study. For one thing, the RA corpus did not employ step 3 of move 1, justifying the data collection procedures. They neither highlighted advantages of using the particular sampling, nor stated how representative their samples are. The other very important rhetorical feature this group ignored is step 3 of move 2, justifying the methods of measuring variables. They neither cited previous research method(s), nor expressed acceptability of their methods. Contrary to this group, the MA corpus employed these rhetorical strategies to varying degrees. This difference might be attributed to the fact that the MA writing process is a lot more rigorous with constant feedback and close supervision from thesis advisors. This might also be related with the limited time RA writers have who are faced with the dilemma of publishing in a limited time in order not to perish.

Overall, we can say that each group seems to have their own overall rhetorical organization, though they employ similar, if not the same, steps and sub-steps. We can also argue that they prefer to attribute differing prominence to steps and sub-steps of the moves, which seems to be closely related with experience and expertise in the field.

Given the limited data analyzed in this study, the results reported here can only reflect the rhetorical organization of the methodology sections analyzed in this particular corpus. Therefore, it should be emphasized that the findings presented here are exploratory and suggestive rather than conclusive. So, studies with a larger corpus from the same field are needed to verify the findings of this study. Further research might help unearth the causes of the differences observed. Further research might also focus on what moves, steps, and sub-steps native English speaker writers employ.

Still, the findings of this study can be useful for teaching English academic writing to novice writers and undergraduate students. One implication we can draw from this study is that if we can raise novice writers' consciousness about the established English academic writing conventions and how different factors influence writers' rhetorical choices, we can help them make informed decisions of the preferred rhetorical strategies.

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