MOVE ANALYSIS OF THE DISCUSSION SECTION IN ARABIC AND ENGLISH RESEARCH ARTICLES

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Abstract

The purpose of this study is to explore the rhetorical organization of the Discussion section written in two different languages, Arabic and English. For this purpose, 40 Arabic and English research article Discussions in the field of education were examined using Yang and Allison's (2003) framework for genre analysis. The results showed that the move structure in Arabic texts was simple as it mostly employed the M2-M4 (Reporting Results-Commenting on Results) sequence, while it was complex in the English group, where the M1-M2-M4-M6 (Background Information-Reporting Results-Commenting on Results-Evaluating Results) schema was predominant. The two sets of texts also varied at the sub-move or step level. In the Commenting on Results move, for instance, authors of Arabic articles preferred comparing results with those in previous literature and also favoured accounting for the results and interpreting them, while their English counterparts focused on interpreting the obtained findings and less frequently comparing them to previous literature as a process of evaluating and consolidating the results. The findings have pedagogical implications that can be incorporated into academic writing instructions.

1. Introduction

There is a growing consensus among scholars that writing is an important channel of communication among academics and that communication of knowledge is a crucial facet of writing. Hence, communication of knowledge via written research articles (henceforth RAs) should be persuasively argumentative if it is to be credible and worthwhile. One of effective mechanisms for achieving a convincing argument recognized in academic domains is that academic discourse has to follow certain conventions of written text organization at both structural and discourse levels. This requires having a good command of certain linguistic and rhetorical strategies. In the case of writing in non-native English settings and since English is a recognized language in international scientific fields (or a 'Lingua Franca' between academics worldwide), non-native English researchers (Arab academics are no exception) need to follow the writing conventions of native English writers if their aim of writing is to share knowledge with academic colleagues internationally and gain recognition for their writing.

Rhetorical move functionality at discourse organization levels has recently been examined within a framework of genre analysis. Since its evolution as an analytical framework with Swales (1990), genre analysis has been applied to a considerable number of RAs in different academic fields. This is not surprising as RAs have been the most widely acknowledged academic and scholarly medium of communication among academics. Analysing the rhetorical moves of written discourse within a genre analysis approach has recently been of interest to applied linguists in different disciplines. This interest is increased by the pedagogical need for providing feasible models for analysing the move structures of written academic texts in ways that help EFL students and novice researchers understand the relation between the correct use of rhetorical moves and the communicative purposes of the texts (Holmes 1997). For example, Alotaibi (2016) investigated Arabic RA introductions and found that the introduction consists of subheadings. According to Alotaibi, these subheadings have different functions; therefore, restricting the analysis, using Swales' (1990) model, to the first part of the introduction may yield misleading results. According to Swales (1990: 58) "[a] genre comprises a class of communicative events, the members of which share some set of communicative purpose. These purposes are recognized by the expert members for the parent discourse community, and thereby constitute the rationale for the genre".

In the present study, I analyse the rhetorical moves in the Discussion sections of RAs written in Arabic and English. The main objective of this study is to explore the general trends of rhetorical organization in the two sets of Discussions and make a comparison between them to see to what extent they vary in terms of move deployment. The rationale for choosing to analyse Discussion sections lies in the fact that Discussion is the subgenre in which "the researcher presents to the reader the meaning of the quantitative findings, and shows how their study contributes to theory and practice in the discipline" (Le and Harrington 2015: 46).

Using the genre-based approach developed by Swales (1990, 2004), researchers in general investigated the textual organization of RA Discussions focusing on a single discipline such as dentistry (Basturkmen 2012), applied linguistics (Basturkmen 2009; Yang and Allison 2003) and biochemistry (Kanoksilapatham 2005). Other studies have focused on a range of disciplines such as natural sciences, Political Science, Sociology and History (Holmes 1997) and Engineering sub-disciplines (Kanoksilapatham 2015). Therefore, it was of interest to see whether the schematic structure of Discussion sections varies across disciplines. Basturkmen (2012), for example, examined how the schematic structure of Discussion sections in Dentistry RAs might be different from those in Applied Linguistics, as reported by Basturkmen (2009). She found that both disciplines appeared to have similar rhetorical structure at move level but varied at the sub-move or step level. For example, the steps in the Commenting on results move were used in fairly even proportions in Dentistry texts but the Applied Linguistics Discussions showed a marked preference for using the Explaining Findings step compared to the rest of steps in this move.

In fact, the Commenting on results move has proved to be the most crucial in Discussions as was found in Basturkmen (2012), Le and Harrington (2015), and Yang and Allison (2003). It is of vital importance because authors use it to explain and evaluate results, present arguments, and make claims. Yang and Allison (2003) have provided a detailed account of this move by identifying four steps: Interpreting results; Compar-

ing results with the literature review; Accounting for results; and Evaluating results. Another important move in Discussion is Reporting the results, as found in studies on fields of Dentistry (Basturkmen 2012), Irrigation and Drainage (Hopkins and Dudley-Evans 1988), and Applied Linguistics (Yang and Allison 2003). Discussions in History, Political Science, and Sociology (Holmes 1997) commonly opened with this move. Additionally, the Background Information move has been seen as vital but to a lesser degree compared to the previous two moves (Discussion and Reporting the Results). Researchers use it "to relate their discussion to the study by recapitulating main points such as research questions, aims and purposes, theoretical or methodological information" (Yang and Allison 2003: 382). According to Basturkmen (2012), discussions in dentistry often open with this move.

From this short literature review, it can be noticed that genre analysis of the RA Discussion section has provided interesting disciplinary discrepancies which are fruitful for pedagogical implications. Surprisingly, little or no attention has been paid to how the rhetorical organization of the RA Discussion might be developed in non-English texts, particularly in RAs written in Arabic. To my knowledge, the only study on the schematic structure of Arabic RA Discussions was conducted by Najjar (1990) who studied the Arabic RA format as a whole and in one section he addressed the Results and Discussion section. He showed that 40 out of 48 Agricultural RAs had Results and Discussion as a single section and the remaining eight articles formed a separate section for results and another for discussion. In the Results and Discussion section, nine moves were identified: Background Information, Statement of Results Reference to previous research for comparison (Agreement, Disagreement), Reference to previous research for support, Deduction, Hypothesis, Method, Expected outcome, and finally Conclusions and Recommendations. Due to the merging of results with Discussions in one section – the Results and Discussion section – it was difficult to determine which moves were associated with the Discussion. For example, Najjar (1990) indicated that the Statement of results (or Reporting results) was the most frequent move. He showed that all results of the study in other RAs were reported in the section of Results and Discussion but only selected results were reported in the separate Discussion section. Therefore, it was unclear whether the Reporting the Results move was frequent in Discussions or only associated with the results segment. Also, the last move, i.e. Conclusions and Recommendations, seemed to be employed because the selected articles did not include concluding sections.

The current study is an attempt to fill the gap in the research by comparing the Discussion in Arabic and English RAs in terms of rhetorical move structures and patterns of deployment. The difference between this study and the one by Najjar (1990) is threefold: a) Najjar's analysed Discussion sections were chosen from RAs written in the field of agriculture, the data for the present study are taken from RAs focusing on Education, b) the current study also analyses the rhetorical moves of Discussion sections of RAs by Arab academics and compares to those by English native speakers, c) while most of Najjar's analysed data were combinations of Result and Discussion sections, the analysed materials in this study are Discussion sections only (separate from Results). Such a comparison in the schematic structure of Discussion sections written by academics in different languages may contribute to exploring cross-linguistic as well as

cultural variations and the extent to which they affect the overall discussion purpose and organization.

Thus, in order to provide a clear picture of the rhetorical construction of the Discussion in non-English texts, the present study focuses on Discussions that are followed by at least one section such as Pedagogical Implications and Conclusion. More importantly, the study selects Discussions that are written separately, i.e. not merged with Results, for instance. The study examines the RA Discussions in two languages – Arabic and English – in the field of Education. It seeks to establish the extent to which the conventional moves found in English texts, developed by Yang and Allison (2003), are employed in Arabic discussions. The main objective of this present study is to explore the general tendency of rhetorical moves present in Arabic and English research Discussion sections, make a series of comparison to see the extent to which they are similar to or different from one another, and examine how the deployment of rhetorical moves fits with their functions. The study, therefore, endeavours to find answers to the following questions.

1. What are the main trends of rhetorical move deployment in the Discussion sections of Arabic and English RAs?
2. What are the similarities and differences in the ways rhetorical moves are employed in both groups of Discussions?
3. To what extent does the employment of rhetorical moves serve the communicative purposes of Discussions?

2. Methodology

2.1. *Data collection*

The corpus used in the present study consists of 40 Arabic and English RA discussions in the field of education. The 20 Arabic RAs were selected from two established journals in the Arab world - *The Journal of Educational & Psychological Sciences* (JEPS) (n=10), published by the University of Bahrain in Bahrain and *The Journal of Educational Studies* (JES) (n=10), published by King Saud University in Saudi Arabia. Each journal includes publications from writers across the Arab world, thus the journals can be considered as good representatives of research writing in the Arab world. The Arabic texts were written by first-language Arabic speakers, according to the names of the authors and their affiliations, and were published from 2014-2017. The 20 English texts were drawn from the *International Journal of Educational Research* and were published from 2014 to 2017 by first-language English speakers. The information regarding the mother tongue of the writers was obtained by emailing the corresponding authors to confirm that the authors are native English speakers. The size of the corpus and information about the authors are displayed in Table 1.

For the requirement of building comparable corpora (Moreno 2008), my selection policy was rigorous as all texts from the three journals a) were from the same academic discipline (education), b) were written by native speakers of each language group, c) were written within a time span of 4 years, d) the Discussion section appeared separately (thus RAs that combined Results with Discussion or Discussion with Conclusion, for example, were excluded), e) the Discussion section was not the last part of the RA (this

	Arabic	English
Total no. of words	17756	22528
Average no. of words	887	1126
No. of authors	1 author: 12 2 authors: 8 3 authors or more: 0	1 author: 3 2 authors: 7 3 authors or more:10
Countries of authors	Saudi Arabia-Kuwait-Bahrain-Egypt-Jordan-Sudan-Palestine	USA-UK-Australia-Ireland-New Zealand-Canada

Table 1. The size of the corpus and distribution of the authors

criterion was to avoid the possible merging of rhetorical moves of the Conclusion with the Discussion moves), and f) all the RAs were data-based (experimental or quasi-experimental), hence other types such as reviews or theoretical were excluded.

2.2. *The analytical framework*

Yang and Allison's (2003) taxonomy was used as the analytical framework for the rhetorical structure of the Discussion sections in the present study. This model was selected because of its comprehensiveness and flexibility in terms of capturing moves in adjacent sections such as the Results and the Conclusion that may overlap with Discussion. In comparing their model with those in previous studies, Yang and Allison (2003: 379) stated as follows:

> [...] we believe that our hierarchical, seven-Move framework is preferable to a single-level scheme of analysis (Hopkins and Dudley-Evans 1988; Holmes 1997; Swales 1990). Our use of two levels, Move and Step, serves to distinguish the communicative purposes from the rhetorical techniques realizing the purposes. This captures the structure of Discussion sections quite succinctly, while still providing detail.

The model was found suitable in studies by Basturkmen (2009) and Le and Harrington (2015), although the focus in these two studies was on Move 4 (Commenting on results).

As shown in Table 2, the model consists of seven moves. In Move 1 (Background information), the authors restate certain aspects of the study such as the research objectives, research questions, purpose, and methodology. They can also provide background knowledge about the topic, which makes it similar to Move 1 (Establishing a territory) in the CARS model. Move 2 (Reporting Results) is concerned with presenting main findings which clearly reflects how the Discussion section overlaps with the Results part. Move 3 (Summarizing Results) is similar to Move 2 but here a number of results are integrated. Move 4 (Commenting on Results) is concerned with offering explanations of results, indicating the significance of results, and presenting arguments and claims. It

includes four steps (Step 1: Interpreting Results, Step 2: Comparing Results with literature, Step 3: Accounting for Results, and Step 4: Evaluating Results). Basturkmen (2009) reduced the four steps identified by Yang and Allison (2003) by merging Step 1 with Step 3 because there is no clear difference between them. Le and Harrington (2015) excluded Step 4 (Evaluating Results) on account of its low frequency. Move 5 *(*Summarizing the Study) is concerned with providing a succinct account of the main points of the study. Move 6 (Evaluating the study) comprises three steps: Step 1 (Indicating limitations), Step 2 (Indicating significance/advantage), and Step 3 (Evaluating methodology). Move 7 (Deductions from the research) includes three steps: Step 1 (Making suggestions), Step 2 (Recommending further research), and Step 3 (Drawing pedagogic implications).

It is important to note that the last three moves – Move 5 (Summarizing the study), Move 6 (Evaluating the study), and Move 7 (Deductions from the research) – appear to relate to the Conclusion section more than the Discussion, unless the Discussion Section is the last part in the RA, which was the case in Yang and Allison (2003). In our study, however, as pointed out earlier, all of the Discussion sections were followed by another section. This choice was to avoid the possible interference of Conclusion moves in the Discussion.

Move 1 Background information

Move 2 Reporting results

Move 3 Summarizing results

Move 4 Commenting on results

>>> **Step 1**: Interpreting results

>>> **Step 2**: Comparing results with literature

>>> **Step 3**: Accounting for results

>>> **Step 4**: Evaluating results

Move 5 Summarizing the study

Move 6 Evaluating the study

>>> **Step 1**: Indicating limitations

>>> **Step 2**: Indicating significance/advantage

>>> **Step 3**: Evaluating methodology

Move 7 Deductions from the research

>>> **Step 1**: Making suggestions

>>> **Step 2**: Recommending further research

>>> **Step 3**: Drawing pedagogic implications

Table 2. Moves and Steps in the RA Discussion section (Yang and Allison 2003: 376)

2.3. *Data coding and procedures*

Firstly, after careful reading, the rhetorical moves were identified by using different colours. Specifically, blue was used to mark Move 2 (reporting results), green to mark Move 3 (stating selected results), yellow to mark Step 1 in Move 4, orange to mark Step 2 in Move 4 (comparing results with literature), pink to identify Step 3 in Move 4 (accounting for results), and red was used to mark Step 4 in Move 4 (evaluating results). The moves in the analysed texts can either be obligatory or optional based on the number of their occurrences. In this study, we considered a move to be obligatory when it occurs in all 20 papers, quasi-obligatory if it is found in 17 to 19 papers and optional when it occurs otherwise.

For the Arabic texts, only the chosen excerpts were translated into English. The excerpts are followed by the letter *E* to indicate that they belong to English texts and the letter *A* for Arabic ones, and there is also a number ranging from 1 to 10 referring to the order of the text in the corpus.

3. Results

This section presents the results of the analysis by focusing on the presence or absence of moves. It also focuses on each move and step by presenting a summary of general results and observations. From the analysis of both samples of texts, we found some variations as displayed in Table 3.

Moves and steps		Arabic	English
M1		6	20
M2		20	18
M3		-	-
M4	Step 1	16	17
	Step 2	19	14
	Step 3	20	8
	Step 4	1	8
M5		3	3
M6	Step 1	-	15
	Step 2	-	7
	Step 3	-	3
M7	Step 1	-	5
	Step 2	-	9
	Step 3	-	4
Total		**85**	**131**

Table 3. The distribution of rhetorical moves in Arabic and English RA discussions

As displayed in Table 3, all rhetorical moves were employed in Discussion sections except that Move 6 (Evaluating the study) and Move 7 (Deduction from the research) did not occur in Arabic texts and Move 3 (Summarizing results) was not found in any of the texts of both language groups. The move structure in Arabic texts was simple, featuring a Move 2-Move 4 sequence. The move structure in English, however, was complex with different degree of variation. It roughly followed a Move 1-Move 2-Move 4-Move 6 structure.

The findings revealed that Move 2 (Reporting results) and Move 4 (Commenting on results) were obligatory in Arabic texts, as they appeared in 19 texts or more. In English Discussions, however, these two moves were found quasi-obligatory, as they were employed in 17 or 18 texts. Interestingly, Move 1 (Background information) was the only obligatory move in the English group. In terms of steps, step 3 (Accounting for results) of Move 4 was optional in English as it appeared only in eight texts. In Arabic texts, Step 3 and Step 2 (Comparing the literature) were obligatory.

The results also showed interesting variations in respect to opening and closing Discussion sections. In the Arabic set, 15 out of 20 Discussions opened up with Move 2 (Reporting results), whereas 14 English texts commenced with Move 1 (Background information). In addition, 17 Arabic texts closed with Move 4 (Commenting on results) while 15 English Discussions had Move 6 at their final position. These results may indicate that Arab writers prefer to begin the discussion with presenting results and end it with either accounting for, interpreting the obtained results or occasionally comparing them with others in literature. By contrast, English authors' preference is to give background information before getting into discussion and closing it later with evaluating the study, especially with Step 1 (Indicating limitations). Concerning closing Discussions, however, a number of texts in English Discussions closed with indicating limitations which can be contrasted to Sociology Discussions found in Holmes (1997), that showed a preference for closing with recommendations.

3.1. *Move 1: background information*
Move 1 was the only obligatory rhetorical move in English sections since it appeared at least once in every text. Most of Move 1 occurrences in English texts (14 out of 20) were found in initial positions which may indicate that the general tendency among English writers is to begin the Discussions with giving background information about their research studies. The following examples illustrate the instances.

> (1) <u>The first aim of the research was to determine the professional goals pursued by beginning (graduating and early career) teachers and a Beginning Teachers' Professional Goals framework has been developed. The overarching personal, situated and career goals were conceptualized using previous research on goals (Ford 1992 Ford & Nichols 1987), as well as more recent work concerning teachers' resilience, commitment and effectiveness</u>. Situated goals, referring to goals enacted in the teaching situation, were by far the most highly nominated, indicating that these beginning teachers focused on the immediate context of their anticipated or experienced work. E5.

> (2) <u>Before discussing the findings related to the specific research questions, a brief comment will be made about the predictive validity of A-levels in this study</u>. A-levels predicted 10% of the variance in the overall degree marks, which is remarkably consistent with pre-

vious findings for psychology undergraduate ranging over almost 40 years (9% reported by Pilkington & Harrison 1967, and 10% reported by (Farsides & Woodfield 2003). Although the numbers in the current study are relatively small, the findings do not suggest that the sample is typical for psychology undergraduates. E11.

In both examples, the writers preceded their Discussions with Move 1 (underlined). In Example (1), the aim of the study was presented together with some explanatory theories from prior literature before getting into Discussions. Likewise, in Example (2), Move 1 was initially employed to acquaint readers with the nature of "the predictive validity of A-levels." By drawing on Move 1, the writers in the two cases most probably try to lay the grounds of understanding for their audience and keep their minds linked to the topic of the study. This, in turn, would help readers follow the upcoming discussed items in a cohesive and coherent way. In other words, readers can keep following the Discussions in the light of the general background available to them. This is reasonable since it is easier for a non-specialist reader to have an idea of the research topic, method, and objectives here than to go back to previous sections to search for the information.

3.2. *Move 2: Reporting result*

As shown earlier, Move 2 was found to be obligatory in Arabic texts and quasi-obligatory in English papers. Most instances of Move 2 in Arabic texts appeared at the beginning of the Discussion section while in English texts they mostly followed Move 1. This indicates that Arabic authors get into discussion without restating the objectives or methodology of their study; a strategy that may trigger some disturbance in keeping the flow of information as readers of the following excerpts may need some time and effort to go back to previous sections to understand the nature of "the training programs " and "referendum", as exemplified in (3) and (4), respectively.

(3) The research findings demonstrated the effectiveness of the training programs in improving teaching staff' members' competence of setting achievement tests in the fields of planning, construction, utilization of results and results' analysis. A8.

(4) The results proved disparities in the sample answers on referendum. A20.

3.3. *Move 4: Commenting on results*

Move 4 was found to be obligatory in Arabic Discussions and quasi-obligatory in the English texts. In terms of steps, Step 2 and Step 3 were obligatory in Arabic while Step 1 was quasi-obligatory in both language groups. Step 4 was the least frequent as it occurred eight times in English texts and only once in Arabic papers.

3.3.1. *Step 1: Interpreting results*

This rhetorical step appears nearly equally in both groups (16 in Arabic and 17 in English). The researchers make some comments on reported results usually to explain the results (Example 5) or to make some generalizations (Example 6).

(5) After the results being statistically analyzed, they revealed that the degree of effectiveness of these programs in achieving their objectives is significant. This indicates the

> great care given by the UNRWA education institute to preparation, production and mod-
> ernization of such programs in the light of educational developments, the concerns of the
> department of education, the real needs for trainees and curricula. A2.

> (6) Teachers generally increased their use of open-ended questioning, but this was a little
> erratic, one or two teachers showing a typical result. On average the percentage of time
> that pupils contributed to discussion increased from 41% to 66%. This is a striking change
> in the traditional balance of pupil talk to teacher talk. It also implies that the children felt
> sufficiently confident to contribute in this way. E2.

The underlined sentences in the two previous examples represent the writers' comments on the preceding reported results. In Example (5), the writer concluded in the light of the reported results that the UNRWA in conjunction with the department of education played a major role in making the programs successful in terms of realizing their intended purposes. In the same manner, the writer of Example (6) commented on the results as being the most important shift in pupil-to-teacher talk, as he interpreted this from the percentage included in the obtained results (41% to 66%). Thus, the employment of Step 1 may reflect the endeavour of researchers to convince their academic discourse community by providing detailed comments on results by making claims and generalizations.

3.3.2. *Step 2: Comparing results with literature*
Step 2 was more frequent in Arabic Discussions than in their English counterparts (19 versus 14 as shown in Table 3 above). Although there is no consistency in the positioning of Step 2 in the Discussions, 9 out of 20 Discussions in the Arabic group ended with Step 2. In English Discussions, by contrast, none of the texts had Step 2 in final positions, but it occurred either right after Move 2 (Reporting results) or Step 1 (Interpreting the results) of Move 4.

In Example (7), the writer commented on the results by showing agreement with a previous study. Interestingly, confirming the consistency of results with previous research findings was by far the most dominant type of comments in Step 2 in the Arabic group.

> (7) The results revealed that the majority of students fall in the medium term of emotional
> intelligence, and the percentage of heights in emotional intelligence is higher than propor-
> tions of depression [...] This result is consistent with the one that arrived at by AL-Gha-
> boshi (2010), which indicated a high level of emotional intelligence among girl students of
> Um-Algora University. A5.

This inclination of comparing results with those in previous studies in the Arabic texts could be intended to consolidate and evaluate those results as an attempt on the part of the researcher to make the argument more persuasive.

3.3.3. *Step 3: Accounting for results*
In a similar vein, Step 3 was obligatory in Arabic discussions and optional in English texts. The writers accounted for the results that they already reported in Move 2, usually by providing reasons as exemplified in (8) and (9).

(8) The study has shown that there are no differences of statistical significance among groups having years of experience in setting achievement tests along with their different dimensions, as the years of experience did not affect female trainee staff members' competence. And this may be attributed to the lack of adequate training. Poor competence is also the main reason for the trainees' incapacity that will never be improved by years of experience alone. A8.

(9) This study revealed that the gender variable affects primary education teachers' awareness of behavioral problems among the students who have attention deficit hyperactivity disorder, and the primary education female teachers' awareness of behavioral problems was higher than male teachers. This may be attributed to female teachers' endurance and strength of observation. They are also more patient with children than their male counterparts. A11.

After reporting the results, the writer in Example (8) attempted to account for the reasons behind the trainees' inability to set achievement tests, stating that years of experience appear to make no difference in improving their competence. Likewise, the writer of Example (9) first drew on Move 2, right above the underlined sentences, to present the findings of his study which highlight the role played by gender in understanding the behavioural problems encountered by students. Then he turns to Step 3 to explain the main factors responsible for female teachers being more aware of the students' behavioural problems than male teachers, providing three reasons: endurance, close observation, and patience. In so doing, the writers in both examples devote their rhetorical efforts to working out reasons and factors that may validate their reported results as an attempt to enhance their argument and discussion in a more convincing way.

3.4. *Move 6: Evaluating the study*

This move was absent in Arabic Discussions. In English texts, however, Step 1 (Indicating limitations) was the most prominent one. The limitation is conventionally stated in the domain of academic empirical research writing to show insufficiency of the quality or quantity of the investigative data or inapplicability of some part of the methodology related to a particular area under investigation. Thus, it can be plausibly taken as a logical layout for suggestions and recommendations for further studies. Although both authors in Examples 10 and 11 used hedging devices to express the limitation, the author of (10) used the keyword *limitation*.

(10) The major limitation of this study is the low reliability of the critical thinking measures used. E11.

(11) The findings may not be generalizable outside of the school district undertaking this project, and certainly not out of elementary school. The study relied on measurement of a limited number of variables, but these were chosen as suitable for the purpose and of established reliability. E2.

3.5. *Move 7: Deductions from the research*

Move 7 was absent in Arabic Discussions and was low in frequency in English texts. Step 2 (Recommending further research) as exemplified in (12) was used slightly more often than Step 1 (Making suggestions) and Step 3 (Drawing pedagogical implications).

(12) To address these issues, a much larger scale study would be required. However, our results would suggest that further study into the potential benefits of collaborative cognitive-activation teaching strategies is warranted and, if this article serves as catalyst for triggering it, our aim will have been realized. E18.

4. Discussion

The key result in the present study is the predominance of Move 4: Commenting on results in both groups of the examined Discussion sections. This may imply that the writers in both language groups are equally aware of the rhetorical function of commenting on results in the obtained results discussion. Likewise, the writers are aware of the importance of commenting on results as a strategy via which results are explained, accounted for, and justified in a way that they think is persuasively acceptable and preferable in academic contexts. Drawing on Commenting on results in the present study may justify Basturkmen's (2009) assumption that Move 4 is a key move in Discussion sections. More importantly, while authors of Arabic articles use different options to comment on results by interpreting them (Step 1), comparing them with those in past literature (Step 2), and accounting for them (Step 3), English writers focus mostly on explaining and interpreting the obtained findings (Step 1) as a process of evaluating and consolidating the results. English authors' employment of Step 1 in Move 4 (Interpreting results) as a strategy for commenting on their obtained results reiterates Basturkmen's (2009: 249) finding that "most of rhetorical attention was given to Move 4-step 1 with considerable efforts made to explain why result was as obtained".

Although writers in Arabic RAs draw on Step 1 (Explaining the results), nearly the same as their English counterparts (with a very slight preference of English over Arabic writers), most efforts by authors in the Arabic group are devoted to comparing results with others in prior RAs and accounting for them. Comparing results with others in previous studies as a process of commenting on the obtained results is also reported in prior literature. Yang and Allison's (2003: 374) empirical investigation of Discussions in applied linguistics concluded that "[c]omparing results with literature is the most frequent step". Hopkins and Dudley-Evans' (1988: 119) claim that Discussions "appear to be judged less on the actual results presented than on the way the writer relates them to previous work in the field". More interestingly, Najjar (1990: 176) explains that the comparison by Arab writers is "to emphasize agreement rather than disagreement between the current results and the findings of previous research". Variation in rhetorical strategies of commenting on results employed by English and Arab writers may be attributed to cross-linguistic factors. To prove this, however, comparison needs to be extended to include Discussion sections from multi-discipline RAs.

Another difference is that, while Move 2 (Reporting results) and Move 4 (Commenting on result) are completely obligatory in Arabic sections, only Move 1 was obligatory in English texts. The frequency of occurrence of Move 2 and Move 4 in Arabic Discussions is similar to that found by Yang and Allison (2003). Yet, it seems to mark an obvious contrast to Hopkins and Dudley-Evans' (1988) finding that only Move 2 was obligatory in biology, irrigation, and drainage papers, and to Holmes' (1997: 331) results that "there is no completely obligatory move in social science Discussion sections".

In terms of frequency (the second most prominent result found in this study), the overall findings indicate that Move 1, Move 2, and Move 4 are the most frequent rhetorical moves detected in the Discussion sections of both Arabic and English texts. While Move 2 and Move 4 are completely obligatory in Arabic sections, only Move 1 is obligatory in English texts. The presence of Move 2 (Reporting results) as obligatory in Arabic Discussion might be attributed to genre or academic discipline- specific nature rather than to cross-linguistic factors, since the same result is found in the literature. It was found obligatory in Hopkins and Dudley-Evans (1988), quasi-obligatory in Swales (1990) and Posteguillo (1999), and frequent in Holmes (1997). The analysis by Yang and Allison (2003) also showed that both Reporting Results and Commenting on Results are obligatory moves.

Another interesting result found in this study is that Arabic Discussions tend to have simple patterns of move sequence following the M2-M4 sequence, whereas English Discussions have a complex move structure following the M1-M2-M4-M6 sequence. By contrasting these results with those of the three disciplines in Holmes' (1997) study, we find that the move structure of Arabic texts resembles the rhetorical structure of History texts, while the structure of English texts resembles that of sociology and political science. Recalling that all texts in the present study were taken from one discipline, i.e. education, this result lends support to the importance of cross-linguistic examination, as it indicates that the discipline may vary across languages.

The sequential patterns of M2-M4 in Arabic and M1-M2-M4-M6 in English Discussions may also indicate that there are some variations between the two sets of the analysed data in the ways authors open and close Discussions. While Arab authors tend to begin discussion with reporting results, their English counterparts prefer to provide background information and reporting results before getting into discussion. This difference in opening Discussions between the two groups of researchers can scarcely be attributed to cross-linguistic reasons since opening Discussions with Reporting results is reported in the findings of RAs conducted on English-written texts. Holmes' (1997: 328) findings, for instance, emphasize that "Move 2 'Statement of results' stands out very clearly as the preferred opening for Discussions". More interestingly, Holmes also found Move 1 'Background information' to be the second most frequent move with which writers begin discussing the results. It seems to be, therefore, that opening Discussions with Move 2 (by Arab writers) and Move 1 (by English writers) is the norm in social sciences. Yet, many more research studies are needed to account for the variation in opening Discussions by Move 2 and Move 1 by Arab and English academic writers, respectively.

Returning to the closing moves in the analysed Discussions, the results have shown that most English authors tend to end Discussions with indicating limitations (using Move 6-Step 1). Interestingly, this finding is in contrast with the one that appears in Holmes (1997). Holmes claims that sociology Discussions close with Recommendations (Move 7-Step 2). In Arabic Discussion sections, however, Move 6 and Move 7 are completely absent, which may indicate that there is a difference in the rhetorical move structure of this part of Discussions. The difference is most likely due to the methodology of discourse organization followed by two groups. In Arabic RAs, Move 6-Step 1 (Stating limitations) is included in Introduction sections usually in a separate subheading entitled *Research boundaries*. For Move 7, it is the norm in Arabic RAs to find

a separate genre named as *Suggestions and Recommendations* and put at the final re-search positions. This variation in the methodology of research organization has led to suggesting some modifications in Yang and Allison's (2003) model in the current study as explained later in Table 4.

5. Conclusions

The present study investigated the Discussion sections in Arabic and English RAs. I investigated how expert writers manipulate available rhetorical moves to realize the intended meanings conceived in their Discussions, and to what extent they successfully mobilize the moves to arrive at the communicative and persuasive type of argumenta-tion pursued in the academic writing domain. The main objective of the study was to explicate the general tendency of rhetorical moves deployment and the extent to which the moves fit their communicative purposes in the two sets of Discussions. The study also makes systematic comparisons between move structures in both texts to reveal similarities and differences. The employment of rhetorical moves and sub-moves in each language group revealed in this study may reflect the writers' considerable aware-ness of utilizing the rhetorical structure of the discussion section in the genre of the RA. In other words, the utilization of the rhetorical moves proposed in the genre theory evidently demonstrates writers' attempts to enhance the communicative functionality of their written texts in a way that reasonably and convincingly navigates potential readers in following up the discussions.

With reference to the applicability of Yang and Allison's (2003) rhetorical moves model, minor difficulties were experienced which might call for slight modifications. Firstly, it was somewhat difficult to set demarcation lines between Step 1 (Interpreting Results) and Step 3 (Accounting for Results) of Move 4 (Commenting on Results) in the English set. This remark was already pointed out by Basturkmen (2009). Interestingly, such a difficulty was not found in Arabic papers as writers used obvious and direct lexi-cal categories of attribution such as *attributed*, *ascribed*, *because of*, *the reasons behind*, etc. Future studies may thus merge Step 1 with Step 3 when dealing with English texts. More importantly, future studies should examine how these two steps are treated in other languages to determine whether the language factor plays any role. The absence of Move 6 (Evaluating the study) and Move 7 (Deduction from the research) in Arabic Discussions may be attributed to two main organizational factors. For Move 6, especial-ly for Step 1 (Stating limitations), it is the norm in Arabic RAs to include a subheading in the Introduction sections entitled Research Boundaries. The function of this section might fulfill the function of stating the limitations. For Move 7, Arabic RAs include a fi-nal section, mostly entitled Suggestions and Recommendations. Thus, writers of Arabic Discussions may find it sufficient to postpone the functions in Move 7 to this final part. Unlike in English, where the final section is mostly entitled Conclusion, writers may find it more convincing to cycle certain functions in these concluding sections, as was detected in Yang and Allison (2013).

Based on my findings, I propose two modified models (see Tables 4 and 5). Because I had a limited corpus and my analysis was restricted to RAs from a single discipline, future studies should examine this pair of simplified move and sub-move structures.

Move 1 Background information (Obligatory)

Move 2 Reporting results (Quasi-obligatory)

Move 3 Commenting on results (Quasi-obligatory)

> **Step 1**: Interpreting/Accounting for results
>
> **Step 2**: Comparing results with literature
>
> **Step 3**: Evaluating results

Move 4 Evaluating the study (Optional)

> **Step 1**: Indicating limitations
>
> **Step 2**: Indicating significance/advantage
>
> **Step 3**: Evaluating methodology

Move 5 Deductions from the research (Optional)

> **Step 1**: Making suggestions
>
> **Step 2**: Recommending further research
>
> **Step 3**: Drawing pedagogic implications

Table 4. Moves and Steps in the English Discussion section

Move 1 Background information (Optional)

Move 2 Reporting results (Obligatory)

Move 3 Commenting on results (Obligatory)

> **Step 1**: Interpreting results
>
> **Step 2**: Comparing results with literature
>
> **Step 3**: Accounting for results

Move 4 Summarizing the study (Optional)

Table 5. Moves and Steps in the Arabic Discussion section

I believe that the findings of the current study give non-native writers (Arabic writers are no exception) and novice researchers insights into rhetorical strategies and conventions that are followed in writing RA's Discussion genres. The study may be of particular value for Arab academics whose aim is to write for publishing, claiming recognizable authorship, and sharing knowledge with the international academic community. In addition, the study offers some pedagogical implications as the findings can be useful resources and materials for teaching academic writing to both graduate students and novice researchers (particularly in Arabic contexts). Exploring schematic

rhetorical move variations across languages, the findings may also contribute to EAP instruction and academic writing (particularly for advanced learners in both Arabic and English contexts). Likewise, they can be a basis on which academic writing instructions can be shaped with more focus on the discoursal and conventional requirements of writing Discussion as a key genre of RAs. In the light of such research findings as the ones contained in the present study, Arabic graduates and novice academic researchers may be exposed to the variability of rhetorical moves deployment due to differences in languages and academic disciplines.

It is important to note, however, that the analysed data of the present study are taken from one academic discipline. Therefore, the findings can scarcely be generalized to other disciplines. For more comprehensive results, the area of investigation should be broadened to include other academic disciplines. Moreover, further studies are needed to examine in depth the cross-linguistic variations expected in research papers written by academics speaking different languages. Additionally, some variations found in this study cannot be accounted for with considerable accuracy because of the limited number of examined papers and the fact that only one genre was involved in this investigation. Examining other sections of the RA as well as expanding the corpus is recommended in future studies. Regarding the selection process of the Arabic Discussions, the authors are assumed to be native speakers of Arabic according to their names and affiliations. It is preferable for future studies, however, to directly contact the authors to confirm that Arabic is their native language.

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