A Comparative Study of Research Article Discussion Sections of Local and International Applied Linguistic Journals

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This study aimed to investigate the generic structure of the discussion sections of Applied Linguistics research articles (RAs) published in a representative sample of local (Iranian) and international journals. The main purpose of this analysis was to identify the move structure of RA discussions in the above mentioned discipline and to see if non-native English researchers publishing in local journals produce texts that are rhetorically different from texts produced by researchers publishing in international journals. The data comprised 80 RA discussions (40 from local and 40 from international journals) which were analyzed by incorporating Dudley-Evans' (1994) model. The findings demonstrated no major quantitative differences between the moves utilized in the two groups of RAs except for move 5 (*Reference to previous research*). The lower frequency of references in local RA discussions indicates that the writers of these RAs may not consider the significance of relating their findings to those reported in the previous research. Finally, a revised version of Dudley-Evans' (1994) model is introduced.

Key words: move, step, local journals, international journals

INTRODUCTION

The dominance of English in various domains and the high proportion of academic textbooks and research articles being published in English, whether being intended for an internal English speaking community or an international one, have increased the need for non-native speakers of English to reach a high level of competence in English. Moreover, as English becomes an avenue to prestigious forms of knowledge, this adds to the reinforcement of the position of English and its forms of culture and knowledge, and this can be felt in the education system (White, 2004). In view of that, the generic structure of English research articles (RAs) that are considered the main vehicle for scholarly communication and circulation of academic knowledge is of paramount importance (Peacock, 2002; Swales, 1990). In point of fact, the RA has become the gateway for the exchange of knowledge among researchers from different discourse communities. This growth along with Swales' (1990) discussion of communicative moves in research has turned RA into a high-status genre to be examined in various studies concerned with academic writing.

These RA studies have shown that, due to its argumentative nature, the discussion section is the most intriguing part of the RAs for research writers, who have focused on issues such as disciplinary (Holmes, 1997; Hopkins & Dudley-Evans, 1988; Peacock, 2002), sub-disciplinary (Ruiying & Allison, 2003), and native/non-native speaker (NS/NNS) differences (Bitchener & Basturkmen, 2006) though many issues are yet to be resolved.

Holmes (1997) and Peacock (2002) acknowledge that the most comprehensive description of moves in an RA discussion section is Dudley-Evans's (1994). Dudley-Evans considers a three-part framework for discussion, including *introduction*, *evaluation*, and *conclusion*. The main task of *introduction* is setting the scene by means of restating the aim of the study and presenting a summary of the work done. The main body of the discussion, *evaluation*, entails the key results and the writer's main claims. The main results and claims are then summarized in the *conclusion*. He adds that the key move cycles are those involving *Statement of results* or *Findings* followed by a *Reference to previous research* or a *Claim*, also

followed by a *Reference to previous research*. However, sometimes the order is reversed, and the result or finding is used as a confirmation for a claim proposed by previous researchers. This entails that referring to previous research has a key role in increasing the plausibility of a claim proposed by a researcher. Dudley-Evans proposed nine-move sequences for the discussion section of an RA (1) *Information move*, (2) *Statement of result*, (3) *Finding*, (4) *(Un)expected outcome*, (5) *Reference to previous research*, (6) *Explanation*, (7) *Claim*, (8) *Limitation*, and (9) *Recommendation*.

Studies on the discussion section of RAs can be divided up into two types: those that investigate the generic configuration of this section across disciplines and those that look into this section for the rhetorical specifications within one discipline.

In one of the pioneering cross-disciplinary studies on discussion section using an earlier version of Dudley-Evans (1994) model, Holmes (1997) examined the ways in which the discussion sections of social science RAs differ from those in the natural sciences. Subsequent to that, Peacock (2002) investigated communicative moves in 252 RA discussion sections published across seven disciplines of Physics and Material Science, Biology, Environmental Science, Business (Marketing and Management), Language and Linguistics, Public and Social Administration, and Law. These studies have underscored the optional nature of the moves and interdisciplinary variations regarding the frequency of moves and move cycles. Furthermore, Holmes's study delineated that the moves tend to occur in a predictable order and in cycles.

Looking for disciplinary characteristics, Posteguillo (1999) analyzed the discussion section of 34 RAs published in computer science taking Swales' (1990) list of moves within a conclusion as a reference. He found some cyclical patterns between the moves *Statement of results* and *Deduction and hypothesis* or *Recommendation* (p. 152). In fact, Swales (1990) considers *Statement of results* as a "quasi-obligatory" move (p. 172) and believes that most cyclical patterns begin with this move. The rest of the moves appeared less frequently which could be an indication of their optional nature. A controversial finding was regarding the move *Reference to previous research* that was claimed by Swales to be the most frequent move. However, the results of Posteguillo's study did not confirm Swales' claim.

In another disciplinary investigation, Kanoksilapatham (2005) analyzed 60 biochemistry research articles using Swales' (1990) model. Four moves and 11 steps were identified in the discussion section. The first three moves reported were *Consolidating results* (100%), *Contextualizing the study* (in 89.94% of all RAs), and *Stating limitations of the study* (80%) and the last move was *Suggesting further research* (53.33%).It was found that the first two moves were conventional and that the emphasis on these moves could be due to the researchers' desire to situate their work in the interest of their discourse community.

In applied linguistics context, Ruiying and Allison (2003) compared and analyzed the results, discussions, and the subsequent sections of 20 empirical RAs. Though seemingly less than enough for arriving at reliable conclusions, it was found that *Commenting on results* is the most frequent, obligatory move, while *Reporting results* and *Summarizing results* together occur less often and the preceding one was considered as quasi-obligatory. However, they attributed the differences found between the findings of this study and those of other studies such as Swales (1990), Hopkins and Dudley-Evans (1988), and Holmes (1997) to the difference in the framework of analysis.

Looking through these studies makes it apparent that there are still some areas in need of more investigation. For example, there are no fixed schemes regarding the move cycles that appear in this section. Moreover, there is no consensus on the obligatory move(s) that might occur in the discussion section of RAs. Finally, most important of all, there are no studies focusing on the generic differences that might exist between the discussion section of Applied Linguistic RAs in local and international journals. This importance is because of the fact that international journals are considered as a high-status place for non-native English researchers to publish their RAs. In other words, local researchers by publishing an RA in an international journal try to prove the importance of their study and find a more prestigious place among their co-researchers.

It must be mentioned here that despite the similarities that might exist between the discussion sections in local Iranian and international RAs and the communicative functions they serve, they seem to be different because they are written for different target audiences; local RAs might be read only by a local

community, while international RAs are addressing an international community. The generic structure of international RAs is mostly affected by the decisions taken by the journal gatekeepers who license publishing or announce rejecting an article. This might be in contrast to the more lenient approach taken by English journals especially in non-English contexts. It must be said that the possible distinctiveness in communicative purposes of local and international RAs is sufficient to justify and validate the present study.

Thus, this contrastive rhetorical study contributes to the identification of non-English rhetorical characteristics in original texts written in English as a second language by referring to equivalent rhetorical characteristics used in equivalent original texts written independently in English as a first language (Moreno, 2008). The study, accordingly, can play an important role in increasing the NNS English research writers' awareness of the generic differences that might exist between the RA discussion sections of local and international journals, thereby increasing their chances of publishing their articles in international journals. Therefore, the present study aims to investigate the generic structure of Applied Linguistic RAs published in Iranian and international journals. Based on the above argument, this study addresses the following questions:

1. What generic differences are found between the discussion sections of RAs published in local and international journals in Applied Linguistics?
2. Which cultural and educational factors may help to account for such differences?

METHODOLOGY

Materials

To control probable disciplinary variations, the only discipline selected for this study was Applied Linguistics. This is because previous studies on rhetorical organization have revealed that disciplinary variations can affect and shape the

rhetorical structure and language use (e.g., Nwogu, 1997; Posteguillo, 1999; Swales, 1990). The corpus for this study consists of the discussion sections of 40 English RAs taken from local Iranian journals in Applied Linguistics and 40 English RAs published in high-status international journals in the same field. To identify the Iranian applied linguistics journals that publish papers in English, we obtained an official list of Iranian journals that are granted the status of *academic* by the Ministry of Higher Education in Iran from which we selected three journals. Due to the fever for publication, these journals usually receive a large number of manuscripts from local Iranian researchers who struggle to find space for publication. Having extracted the papers from the electronic sites of the journals, we agreed that the selected papers were written by Iranian contributors. We then tagged the discussions and converted them into rich text format for further analysis. A corpus of this size can be considered as a representative of the discipline and is sufficient to make tentative generalizations about the rhetorical structure preferences of the members of the international and the Iranian academic communities in this area (Holmes, 1997; Posteguillo, 1999; Ruiying& Allison, 2003).

The assumption is that despite the similarities in the communicative functions, the discussion sections of RAs in international and local journals seem to be different because they are written for different target audiences; one is addressing an international community, and one might only be read by postgraduate students and scholars inside Iran. Accordingly, the reason behind choosing local and international journals was to assess the effect of discourse community variation and its size on the generic structure of the discussion sections. It must be added that the writer status (nationality) was not taken as a variable in the selection of the international articles. The assumption was that papers accepted for publication in prestigious international journals must follow the strict regulations for publication and they become nativized before final acceptance. The corpus was restricted to empirical studies between year 2000 and 2008 because, according to Crookes (1986), the rhetorical structure of RAs may vary in the course of time. The articles were chosen on the assumption that each article should contain all the four major

sections, namely the Introduction, Method, Results and Discussion (IMRD) sections.

To insure that the results obtained from the move analysis would be generalizable to the target discourse, the top established journals in Applied Linguistics were selected. Local journals were represented by *Iranian Journal of Applied Linguistics*, *Teaching English Language and Literature*, and *Iranian Journal of Language Studies*. International RAs were chosen from *Applied Linguistics*, *International Journal of Applied Linguistics (IJAL)*,and *Studies in Second Language Acquisition (SSLA)*. The motive behind selecting these journals was their popularity among the discourse community members and the large readership they address.

TABLE 1
The List of Journals and RAs

Local	*Iranian Journal of Applied Linguistics*	*Teaching English Language and Literature*	*Iranian Journal of Language Studies*
	16	12	12
International	*Applied Linguistics*	*International Journal of Applied Linguistics*	*Studies in Second Language Acquisition*
	16	12	12

Instrument

The purpose of this analysis is to explore the elements of generic structure contributing to the success of those researchers who manage to get their research reports recognized in the international discourse community through international publication. Dudley-Evans' (1994) analysis of RA generic structure has revealed the occurrence of regular organization patterns within the discussion section of RAs published in similar disciplines. Such a finding implies the generality of the pattern, and that this manner of communication is expected from the members of a particular discourse community. It, also, implies that if research writers are to be judged as successful, then, their RAs should employ similar rhetorical strategies.

Thus, our purpose was to investigate whether the local and international RAs display similar or different rhetorical structures, and how the possible differences might help Iranian research writers publish their RAs in international journals.

The instrument selected for this study was Dudley-Evans' (1994) model for the analysis of RA discussion sections. The model proposes that discussion section contains nine-move sequences: *Information move, Statement of result, Finding, (Un)expected outcome, Reference to previous research, Explanation, Claim, Limitation, Recommendation.*

The rationale for selecting this model, despite the more recent ones proposed by Peacock (2002) and Ruiying and Allison (2003), is that Dudley-Evans' model is written originally for Applied Linguistics RA discussion sections, and it is the most comprehensive paradigm introduced so far for this type of research (Peacock, 2002). In addition, it has been used in several studies (Holmes, 1997; Kanoksilapatham, 2005; Posteguillo, 1999) across various disciplines (Computer Science, Biochemistry, Physics, Biology, Environmental Science, Business, Language and Linguistics, Public and Social Administration, and Law) and has proven to be a reliable paradigm for analysis of RA discussion sections.

Procedure

Since the aim of the present study was to investigate the overall (i.e. macro) structure of RA discussion sections, other sections such as introductions, methods, results, conclusions, footnotes, endnotes, and references were left out. According to Holmes (1997), the sentence was selected as the unit of analysis implemented for examining moves, and the identifying feature was the communicative purpose of each move. In other words, using Dudley-Evans' description, each sentence in a discussion was given a move label. The criterion for the classification of moves was the linguistic evidence and formal clues such as explicit lexemes and expressions, verb forms, and text conjunctions. It is important to note that more reiteration was not taken into account. That is, these moves were considered as either present or absent.

Due to the same reasons and for considerations of reliability, the classification was validated by testing inter-rater agreement. This procedure was carried out to show that a unit of text could be defined in such a way that different individuals can distinguish the boundary of units at a satisfactorily high level of conformity. Two university instructors with a Ph.D. in Applied Linguistic Studies who are familiar with genre studies were asked to study the model in depth and independently rated 30 percent of the corpora. For assessing intra-rater agreement, one of the researchers also re-classified 30 percent of the corpora one month after the initial classification. This quantity, in line with some recent studies (Ozturk, 2007; Peacock, 2002), guaranteed the reliability of the research. The resulting intra-rater and inter-rater reliability indices were 0.93 and 0.90 respectively.

RESULTS AND DISCUSSION

Results from Statistical Analysis

A total number of 514 moves were found in the entire corpus, an average of seven moves per paper (six in local, seven in international papers). The analysis of the two groups revealed a number of similarities and differences regarding the frequency of move occurrences. The following table displays the frequency of each move in the discussion sections of the papers.

TABLE 2
Frequency of Moves in Local and international RA Discussion Sections

Move	Local	%	International	%
1. Information move	40	100	40	100
2. Statement of result	34	85	32	80
3. Finding	31	77.5	35	87.5
4. (Un)expected outcome	27	67.5	30	75
5. Reference to previous research	17	42.5	32	80
6. Explanation	24	60	26	65
7. Claim	40	100	40	100
8. Limitation	14	35	17	42.5
9. Recommendation	16	40	19	47.5
Total	243		271	

Since the frequency difference observed in move 5 (*Reference to previous research*) was more than 5, *chi-square* analysis was applied to determine whether this difference is statistically significant or not. Notwithstanding the frequency difference in this move across local and international RAs, the result of the application of *chi-square* analysis revealed a statistically significant difference because the critical value exceeds the level of significance designated for the *chi-square* test (value = 4.167, $p < 0.05$, sig. = 0.842).

In general, the two most frequent moves were *Information move* and *Claim* (present in all the papers, or 32% of all moves in the corpus), indicating that these two moves are obligatory in both groups of discussions. This finding is in direct contrast with those of Holmes (1997) and Peacock (2002) as they did not find any obligatory moves in their studies. This discrepancy could be due to the disciplinary variations that exist between Applied Linguistics and other branches of science (Physics, Biology, Environmental Science, Business, Language and Linguistics, Public and Social Administration, and Law) studied in their projects. Four moves, also, seemed to be almost obligatory (quasi-obligatory): *Statement of result* (in more than 80% of the papers or 13% of all moves in the corpus), *Finding* (in more

than 77% of all the papers or 13% of all moves in the corpus), *(Un)expected outcome* (in 67.5% of local and 75% of international papers or 11% of all moves in the corpus), and *Explanation*(in 60% of local and 65% of international papers or 10% of all moves in the corpus). Finally, the least frequent (optional) moves were *Limitation* (31 occurrences in all papers or 6% of all moves in the corpus) and *Recommendation* (35 occurrences in all papers or 7% of all moves in the corpus).

An interesting finding is variation in move 5 (*Reference to previous research*) across the two groups. The results show that international RAs indicate a greater tendency towards this move. While being found in 80% of international RAs, move 5 occurs in only 42.5% of local RAs. Fewer references to previous research indicate that the local RA writers may have a different view of the importance of this section in terms of establishing a solid argument on the relationship between their research findings and other studies.

Move Analysis of RAs

In this part, the results of our analysis of the RAs will be discussed. This will be followed by an investigation of move cycles observed in the corpus. Finally, in the light of the results of the study, a revised model will be presented.

Move 1: The Information Move

Swales' (1990) and Dudley-Evans' (1994) criteria for the *Information move* are its relatively free occurrence and function to support the discussion by highlighting theoretical or technical information. As no further signals are specified in either of these models, we set the criteria for identification that this move is expected to occur in the beginning of the section, or at a point where the writer wishes to begin a new topic of discussion, and its content indicates reference to previous sections or points of discussion.

The analysis shows that the two RA groups employ this move in a similar manner. The *Information move* occurs both in the initial part and later in the discussions. It is worth mentioning that, when occurring later in the text, it usually marks the beginning of a cycle of moves. The information presented in the

international RAs includes restatement of the purpose of the study, research questions, or the main focus of the study. Actually, extensive background sections are infrequent since delineation of a larger context is generally seen as redundant. It seems that the authors are mostly concerned with the study under investigation itself rather than the broader area in which their study is situated. This brevity could be due to the fact that much of the context can be assumed to be common disciplinary knowledge. *Information move* is usually explicitly signaled by lexical choices, with phrases such as *this paper aims to explore, the research questions, the general perspective of the article, the discussion will consider, the first, second, third… research question*, combined with definite marker *the* and the use of *past tense*, signaling presumed information.

On the other hand, in the local RAs, the *Information move* includes definitions, assumptions or expectations of the research, purpose of analysis, and methodological aspects. Compared with international RAs, in local RAs there is more evidence of theoretical knowledge provided in this move. Other than content identification, there are, also, some linguistic features, for instance, *in this research,* and *in this study* to be identified as signals. In the following example, the author has used this move to provide the reader with some background information in the form of a definition:

(1) The supermaxims and maxims of manner refer to a set of cooperative and rational requirements which are directly addressed by these metadiscourse strategies.

(extracted from a local paper)

Moves 2 & 3: Statement of the Result And Finding

Due to their similar function, we discuss these two moves under the same heading. Both these moves present a brief, general statement of the results of the research. The only difference is that in move 3 (*Finding*), observations from the research are presented without using any actual figures. As stated by Dudley-Evans (1994), in both groups of RAs, these moves were used in both the introduction and

evaluation sections of the discussions. The linguistic realizations of move 2 for both groups of RAs were lexical items, for example, *according to table x, results (of analysis), findings*, and reporting verbs such as *show, indicate, reveal,* and *find.*

Move 3 (*Finding*) provides information on the main results of the analysis. The text helps the reader to focus on the crucial aspects of the result and interpret them. The statements are objective, without indication of the writers comment or interpretation of the results. This move, in both groups of RAs, is characterized by the use of *simple present*, or *past tense*, specific lexical signals in phrases, such as *the following result of the experiment, the result of the study/analysis,* and *it was found that.*

Analysis of the data revealed that the researchers in both groups of RAs use quite similar strategies in utilizing these two moves through their discussion sections. This could be due to the moves straightforwardness of the function and linguistic realization that makes them manageable for the researchers to exploit them in order to objectively report the results of their studies.

Move 4: (Un)Expected Outcome

Move 4 presents comments from the writer on the expectedness of the results in relation to the research questions or whether the results are within their expectation or defy the assumption or hypothesis of the research. It was found that move 4 is either expected or unexpected. The *Expected outcome* expresses the writers' positive comments on the results and is realized by specific lexical choices or by positive or negative statements as shown in the following examples from the international RAs:

(2) *It was not surprising that there was a strong relationship between the knowledge-based performance and the general language ability of both ESL learners and native speakers to the same degree.*

(3) *It was expected that extroversion and introversion would be equally distributed among the sample.*

The *Unexpected outcome* expresses the writer's comments on the unexpected results, and is presented in a lexically explicit statement indicating surprise or negative evaluation. Swales (1990) considers this move to be rare and difficult to distinguish from move 6 (*Explanation*). However, as it functions to present the writer's comments on the results, it is reasonable to expect that the stage will be signaled with some linguistic features expressing the writer's evaluation of the results as demonstrated in the following excerpts from international journals:

(4) *Interestingly, with one exception, the results failed to show an increase in productive vocabulary knowledge for these words in the interview.*

(5) *However, interestingly, and unexpectedly, sequencing tasks from simple to complex versus the reverse sequence did not significantly affect ratings of the difficulty of the complex version.*

The analysis revealed that move 4 occurred in 30 of the international RAs (17 expected & 13 unexpected). The identification of this move is based on content and linguistic features. In terms of content, this stage presents some difficulty in identification because it involves both identifying the writer's comments and the extent to which the results of the research are expected or unexpected. In many cases, the *Expected outcome* seems to be signaled less overtly. As a consequence, the expected outcomes tend to be written as positive or negative statements, whereas the unexpected outcomes are presented with overt linguistic signals (as shown in the above examples) in phrases such as *most surprising*, *fail to account for*, *did not happen*, *fail to show*, *not supported*, and *very little*. Other linguistic resources used as signals are modal verbs showing probability such as *seem,* and *appear*.

As far as local RAs are concerned, the *Expected outcome* is found in 17 texts. Some explicit lexical items found in the local RAs are *as might be expected*, *seem very effective*, and *not very* surprising. The *Unexpected outcome* was found in 10 local RAs. Compared with the *Expected outcome*, the *Unexpected outcome* tends to be more explicitly signaled with specific lexical items such as *contrary to what was expected*, *there is a discrepancy*, and *fail to fulfill*.

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Although it gives the idea that this move has been used in a similar manner in both groups of RAs, there is an indication that the *Expected outcome* has happened more frequently in the local and international discussion sections. The higher occurrence of this move could be attributable to a number of reasons such as the writers' meticulous predictions at the outset of their studies that are confirmed in the form of an *Expected outcome*. It is, also, likely that the researchers have a preference for accepting rather than rejecting their own hypotheses, as if declining their postulates would damage their reputation in their discourse community.

To end with, in the local RAs, move 4 may overlap with other stages, which causes difficulty of identification. The overlap may occur between moves 3 and 4, which is due to the neutrality of the statements and unclear relationships between clauses, as illustrated in the following example.

(6) *In the area of the grammatical and the mechanical quality in both the descriptive and the argumentative papers, the frequency of errors <u>did not increase</u>, <u>as might be expected</u>, as the students took more courses.*

Move 5: Reference to previous research

This move serves to present a comparison or contrast of the present study with previous relevant research. As such, the references found are of two types: support and contrast. Reference to previous research is made to show how the present research is connected to the existing research activities as well as whether the new findings are supportive of or conflicting with previous research.

As a quasi-obligatory move, in international RAs, the supporting references occur with greater frequency (21 occurrences, 65%) than references for contrast (11 occurrences, 35%). Contrast is frequently signaled with conjunctive adjuncts (*despite, however, although*) or negative statements. On the other hand, support is signaled with positive statements, and the use of comparative words such as *a similar interpretation, follow, replicate, a finding that accords with, complements, lend some support,* and *consistent with*.

As an optional move in local RAs, move 5 occurs only in 17 RAs, with only 2 instances displaying contrast, and 15 cases showing support. While these findings are not adequate to draw conclusions about the features of move 5, the lower frequency of references, in general, shows that the writers may not consider the importance of relating their findings with previous findings or do not feel the pressure to make their studies stand out from those of their competitors. Given the crucial role of previous studies to establish the position of the new research findings within the wider body of knowledge, absence of this stage may be interpreted as lacking knowledge in the area, and thus becoming a disadvantage if the writers aim for recognition in a wider community of readers. In effect, lack of previous research might lead to introducing claims without being sufficiently warranted and so jeopardizing the researcher's face. In other words, reference to previous research compensates for the possible face threatening acts or assumptions that have to be mitigated if they are to be accepted by members of a discourse community. Furthermore, the low occurrence of contrast might show that the writers of the local RAs tend to endorse rather than to reject the results gained by other researchers in preceding studies, and that such studies are likely to be replications of the studies published in international RAs.

Move 6: Explanation

The function of this move is to provide explanations for any surprising results. This move represents the writers' careful introduction of new claims about the research results. In dealing with this crucial stage, they need to present their position clearly, especially when their claims are potentially in disagreement with already established claims, as inappropriate presentation of this could cause rejection of the new claims. To achieve such a purpose, the writers will be expected to choose among the variety of linguistic resources items that enable them to present the content message. The analysis found that both the international and local RAs display similar features of this move, and both employ various linguistic resources as signals, with modalized statements showing various degrees of probability. Explicit lexical choices to signal the functions, such as *explanation, raise the*

possibility, an indication, explain, in combination with modal verbs and reporting verbs such as *may suggest, may tend to,* and *may explain*, are features of this stage.

In both international and local RAs, *Explanation* provides further clarification for the brief comments made in the outcome. In international RAs, as part of the introduction of new claims, this stage is characterized with various degrees of the writers' commitment to the statements — from neutral or positive to highly evaluative and subjective statements. Accordingly, the linguistic resources employed also vary; a range of reporting verbs showing low commitment to high commitment and the use of modalized expressions, ranging from low to high modality of probability, as it is exemplified in the following excerpts from international and local RAs respectively:

(7) *One of the possible reasons might be the kind of reasoning: inductive or deductive.*

(8) *This might be because in society the position in which LC is engaged is not so considerable and they feel a great distance between themselves and members of the other classes.*

(Low commitment)

(9) *This can clearly indicate that before taking the test, the unpredictability of the test format and content accelerate the students' anxiety.*

(10) *This discrepancy between students' attitudes toward and employment of avoidance strategies proves that avoidance can help carry out their communicative needs; otherwise, they will not use avoidance.*

(High commitment)

The international RA writers are well aware of the various linguistic resources they can employ to serve the purpose of presenting new claims. The use of modalized clauses of low probability shows that writers are careful in presenting the new claims so that they do not sound as if they are forcing the readers to agree with or accept their ideas.

In the local RAs, move 6 is also realized via a choice of linguistic resources, ranging from positive unmodalized statements to highly modalized, with most of them expressing a causal relationship with move 4 in the preceding stage.

(11) _A very surprising finding_ was that involving language learners in picture production directs them towards processing the verbal information more deeply (***(Un)expected outcome***). _The intention to produce related pictures seems to have_ the effect of keeping readers on task and pushing them toward deeper processing. _It can show_ because readers have to produce pictures on paper, they cannot just memorize or ignore essential information (**Explanation**).

Some other linguistic features characterizing this move include (a) verbs _indicate, point, appear/seem, interpreted, supported by, caused by, result,_ and _allow_, (b) nouns showing possibility _possibility, explanation, factor,_ and _reason_, (c) modal adjuncts _might, could, may (have been), probably,_ and _obviously_, (d) conjunctive adjuncts _contrary to, because, in other words,_ and _in this way,_ and (e) various phrases showing possibility and explanation _what was probably happening, it should be noted that, it is reasonable why, it is not impossible, this means that,_ and _it is likely that_. In conclusion, similarities in the frequency of use and various linguistic realizations in move 6 in the international and local RAs show that both writer groups seem to have a comparable understanding of the importance of move 6 in RA writing.

Move 7: Claim

This move presents the claims about the generality of some or all of the reported results, which is inferred or concluded from the line of argumentation in the previous part of the text. As stated by Dudley-Evans (1994), this move is expected to be found at the end of RAs. In some cases, moves 7, 8, and 9 may be presented in a separate subsection i.e. _Conclusion_. It must be said that the only section of the RAs analyzed in this study was the discussion section, and the probable following

sections such as *conclusion*, and *further research* were not included. *Claim* presents the main points of the results, and as such, it is characterized with explicit lexical choices, for example, *conclusion*, and *to conclude* as illustrated in the following example:

(12) *In conclusion, what this research suggests is that concrete vocabulary items may be better practiced first in association with related pictures before they begin to establish and the learners begin to relate them to schemes and conceptual networks.*

The analysis found that this move occurs in all international and local RAs, with explicit signals by either subsection or lexical items. *Claim* may also be found prior to *Conclusion* subsection, namely, at the end of every cycle of moves. In this case, deductions made are more localized and the generalization only applies for the particular points presented within the cycle. Some lexical signals of this move in international RAs are *conclude, conclusion, to sum up, the result would suggest that, implication,* and *imply*.

In the local RAs, move 7 shows a number of interesting features. First, the degree of certainty of the claims made varied, from highly certain (*strongly believed, it is clear that*) to expressions showing low degree of certainty (*it seems, it is speculatively stated that*). Secondly, the local RAs, also, signal *Claim* with expressions normally found in move 3 or move 6 such as *show, appear, suggest*. These less appropriate signals can result in less efficient reporting or failure in signaling the stages of reporting clearly. Nonetheless, this disadvantage may be compensated for with the presence of a subsection (*Conclusion*) that carries the function.

Analysis of this move in the local RAs, also, presents more difficulties caused by the limited length of the discussion sections. For instance, one local RA discussion is so short that it is difficult to identify the different stage(s).

(13) *In response to the first question, the Features and Levels of Understanding was employed to explore how medical students socialize in their*

*interactions in cyberspace while blogging journals. Moreover, in order to confirm the results obtained from students' social interaction in blogging, several interview questions related to the issue of the students' social interaction in the class community weblog were also analyzed (**Information move**).*

*As to the second research question, the results from this study showed that the mean score of the class which participated in the class community weblog is higher than the mean score of the class who took part in journal writing and also significantly higher than the results obtained from the students taking part in traditional writing classes (**Finding**). The procedure also revealed that the results of the IELTS test is significantly different among the three groups (the mean square for between-group was 7343.447 and fcr within group 49.424), which places the class using weblogs in the first position, obtaining the highest score, and the journal writing class and traditional writing, respectively in second and third place (**Statement of result**). The weblog not only enjoys the advantages of journal writing but its lively and online discourse also affects many other aspects of students' learning (**Claim**).*

The discussion section in this text consists of no more than two paragraphs. The first paragraph, merely, includes move 1 (*Information move*). No other moves are found in the first paragraph. The next paragraph conveys move 3 (*Finding*) and move 2 (*Statement of result*) followed by move 7 (*Claim*). It seems that the presentation of moves 2 and 3 without providing further discussion about the findings does not seem to be a successful strategy for making new claims. Furthermore, such a short account of the findings and the generalization made based on the findings will tend not to give room for the reader to challenge the claims. In this case, instead of negotiating new claims, the writer seems to take a one-way communication strategy and force the reader to accept the writer's point of view. This strategy is in opposition to the mechanism of communication in a discourse community, where the writers are in the position of convicting and persuading expert members in the community, such as the readers and journal

editors. This authoritative position is less likely to be successful in gaining a wide readership.

Moves 8 & 9: Limitation and recommendation

These optional moves introduce one or more caveats about the study and advocate the need for further research or suggest possible lines of future research. The appearance of these moves in discussion is often influenced by whether there is a subsequent conclusion or pedagogical implications section. According to Swales, this stage may be omitted because researchers may not wish "to give advantages to others in an increasingly competitive market for research grants" (1990, p. 173). In other words, as a result of the fierce competition for the grants in the sciences researchers do not want to reveal what directions further research could take because they themselves want to conduct that research. They would rather save the idea for their own grant proposals. However, these two moves along with some suggestions for more pragmatic purposes, such as the application of the present findings into practice, are present in less than half of both international and local RAs.

The analysis of move 8 in the international and local RAs indicates that this move is employed in a relatively similar manner along the discussion sections. As stated by Dudley-Evans (1994), this move was found at the conclusion part of the discussion sections. The linguistic expressions used in both groups of RAs include *limited approach, variation in the results,* and *caution should be applied.*

The analysis of move 9 in the RAs shows that this move occurs in both text groups with some similarities and differences. The similarities are that move 9 is explicitly signaled and indicates two types of recommendation: for further study and for pragmatic purposes. The differences between the two RA groups include location and frequency of move 9.

In the international RAs, move 9 is found at the end of the discussion section in 19 RAs. The choice of linguistic resources to realize this stage of writing indicates that the writers are very careful in not imposing their findings as the sole solution to problems faced in given areas. Recommendation for further study is found in 13

international RAs, indicated by explicit linguistic signals such as verbs *examine, direct, explore, require, call for, conduct a research*, nouns *(further) investigation, (further) study, replication, further development of research methods* in combination with modals *need to, should, could, will*. On the other hand, recommendation for pragmatic purposes is found in 6 RAs, expressed in the use of explicit features, and modality of low probability. Some signals of this type are *pedagogical implication, applicability of current research, would caution,* and *seem reasonable.*

In the local RAs, move 9 is found in 16 texts. Ten instances are recommendations for further studies and 6 for pragmatic purposes. In some RAs, where cycles of moves occur, recommendations are also repeated. Recommendation for further study mostly occurs in the conclusion section. The stage is basically identified with some lexical items as signals such as *a follow up, to replicate the study, the need to investigate, further studies*. On the other hand, recommendation for pragmatic purposes is implicitly signaled with some lexical items such as *application, applicable, practical, suggestions, recommend*. This stage varies in tone, from direct to indirect suggestion to institutions or individuals who may benefit from the findings. The directness is revealed in the choice of modality elements, which, also, seems to indicate the interpersonal relationship the writer wants to build with their readers.

(14) *The results of this study imply more attention to teaching word properties.*
<div align="right">(indirect suggestion)</div>

(15) *The results of this study can be utilized in listening comprehension tests in institutes, universities, and schools. Also English teachers, and test constructors can take these results into account and be careful about them.*
<div align="right">(direct suggestion)</div>

Implied in their choice of modality is the position of authority the writers indicate, sometimes a superior position of having the information and wishing to tell it to the readers. This position is usually signaled with a modalized statement showing obligation. Alternatively, the writers may take an equal position, by showing the

possibility of negotiation. This is expressed in the use of modality indicating low probability, such as *may*. These two positions are illustrated in the following examples:

(16) *Due to the fact that the textbooks will not only be used by the teachers but also by the students, then <u>the textbook writers and publishers should consider the price of textbooks</u>…*

(High obligation)

(17) <u>*Teachers may provide*</u> *good language, teaching materials, and methods…*

(Low obligation)

In some cases, move 9 is found earlier in the text, that is to say, at the end of every cycle of moves, which is likely to be due to the length of the text and the complexity of the topic.

(18) *The present study is the first investigation of this type conducted in the context of Iranian EFL test-takers in general and a high-stakes test like the INUEE in particular (**Information move**). The results imply some sort of effect for the field of study as a possible source of DIF (**Claim**). However, since content analysis alone does not necessarily lead to good results further studies which specially employ meticulous content analysis combined with other techniques like think aloud may prove helpful (**Recommendation**).*

This strategy does not seem to disrupt the overall structure and produce a different structure, since each cycle tends to complete the series of stages before beginning another cycle. On the contrary, it may help readers to follow a complete discussion of one particular topic without getting it mixed with other issues. As a final point, the greater frequency of move 9 for pragmatic purposes (6 occurrences in local RAs compared to 3 occurrences in international RAs) in the local RAs may be related to the view that research activities should be oriented towards finding solutions for pragmatic issues.

Move Cycles

One major characteristic in Dudley-Evans' (1994) model is the likelihood of moves being recurring and, consequently, forming a cycle. Cycles of moves have been identified as an essential part of RA discussion sections. They are deep-rooted in both the international and local RAs. The results of the analysis indicated that the Dudley-Evans nine-move model was reasonably useful for describing overall structure, but less successful for move cycles.

The detailed analysis of the data revealed that the model properly predicted the organization of 89 percent of introductions to the discussion sections. Nonetheless, only 41 percent of the moves in the central evaluation sections (the key results and the writer's main claims), and 53 percent of the moves in the conclusion sections (summary of the main results) were predicted by the model. Accordingly, a number of other move cycles that were not part of the model were found to be frequent, and this is evidently one explanation for the low predictive accuracy of the model for the evaluation and conclusion section move cycles. In the important evaluation part, two cycles predicted by Dudley-Evans (7+5 and 5+7) made up only 15% of all move cycles, while the unexpected cycles (4+5 and 4+6) were very common, making up 46% of all cycles. In conclusions, other than the predicted cycle (3+7), the cycles 7+8 and 7+9 were also frequent. Our findings, therefore, signify gaps in the model. We shall offer a revised model in the following section.

Improving the Model

Despite Dudley-Evans' model being of popular appeal among genre analysts for successful prediction of the discussion section, we think an improvement needs to be made. The justification for applying changes to the model comes from the results of the present study. One suggestion is the coalescence of moves 2 and 3, since in both moves authors refer back to a finding, either with or without reference to a graph or a table. In fact, the only difference is whether the move includes graphs, tables, or refers to a numerical value. Besides, move 9 seems to be two faceted. It can be used to present suggestions for future lines of research (as predicted in the

model) or for pragmatic purposes. Moreover, it was found that the framework proposed for the move cycles is rather inaccurate and incomplete. Except for the *introduction* of the discussion sections that the model seemed to be satisfactorily acceptable, the *Evaluation* and *Conclusion* sections contained moves that were not part of the model.

In light of the above discussion, the revised model consists of eight moves (two moves have been combined, and four others altered), along with a new taxonomy of move cycles for the three parts of discussion sections as follows:

1. *Information move*
2. *Finding* (with or without a reference to a graph or table)
3. *Expected or unexpected outcome* (comment on whether the result is expected or not)
4. *Reference to previous research*
5. *Explanation* (reasons for expected or unexpected results)
6. *Claim*
7. *Limitation*
8. *Recommendation* (for future research or for pragmatic purposes).

A three-part framework for move cycles
I. Introduction (moves 1+5, 2/3+5/6)
II. Evaluation (5+7, 7+5, 4+5/6)
III. Conclusion (moves 3+7, 7+8/9).

As a final word, it is worth mentioning that users of this revised model should exercise caution utilizing this model for their own studies because this revision is based on our examinations of RAs in Applied Linguistics. In other words, some other moves and move cycles might be found in RAs written in different disciplines.

CONCLUSION

For researchers to gain recognition in the wider research community, it is necessary to be able to communicate in language that reaches a global readership. Dissemination of knowledge has become a necessary part of communication among researchers, and this has become possible with the role of English as the most widely used international language. However, use of one particular language, also, entails with it the assumptions and the complex meaning making strategies tied with the use of that particular language. Studies of discourse, in general, have pointed out the need of non-native writers not only for the knowledge of lexico-grammar but more importantly also for the awareness of the generic aspects of the written language in order to produce well-written texts in the target language.

The current study was based on the view that meaning making in language is constructed by various elements such as the nature of knowledge being communicated, context of use, participants involved, and the writers' understanding and ability to employ the resources available in the language. In terms of Iranian RA writers, this could mean that the acceptance of writing into the international English research community will depend largely on the writers' understanding of how scientific knowledge is constructed and presented in English, the purpose of text, the expected readers, and the writers' ability to employ linguistic resources in the target language to achieve their purposes. The information gathered helps build up a picture of the formal aspect of the organization of RA discussions through stages or *moves* in writing. This knowledge is necessary information for Iranian research writers to help display the stages of reporting in consideration of prospective audience.

The results suggest that except for move 5 (*Reference to previous research*) both RA groups show a fair resemblance to the model. What is missing in local RAs, as far as international RAs are concerned, is the link between the present study and the existing findings from the previous similar studies. The link is crucial, considering that RAs are a product of an activity of the members of the particular research community, where the members actively influence and are influenced by one another. Thus, it is very important that in a research report the writer acknowledge

previous studies. In international RAs, the references are made to provide support or contrast to the findings being presented. In other words, the references to preceding studies help construct a solid foundation of research that would be a counter-study, continuation, or filling the gap from the earlier studies. While the writer might be considered too ignorant of other research activities and findings in this area, we believe the major reason for the existing difference lies in the fact that Iranian researchers are more concerned with reporting the results and offering explanations of their own study than establishing a link between the reported and the reporting studies.

In conclusion, RA authors seek acceptance and appeal to their discourse community members (editors and readers) to claim membership of their discourse community. They might face rejection or questioning of their claims if they do not follow the conventions established by the expert members of their discourse community. The tight publication pressure may strongly motivate authors to follow discipline conventions and observe rhetorical constraints within their discourse community. We conclude that the differences in move utilization and move cycle patterns found tell us much about the discourse community norms, and that the patterns are accepted within the relevant discourse communities as being the recognized way for writers to persuade readers of the validity of their data and conclusions.

The study reveals one critical weakness in the research reporting in the Iranian context: *Reference to previous research*. This issue may be rooted in various related areas such as critical reading ability and understanding of the role of intertextuality in text construction which is essential to the social context of persuasion and allows writers to establish a credible writer ethos (Hyland, 2004). What seems further attention in the academic context of Iran, as distinct from the wider international context, is a more intelligent view of citation and attribution to the works of others. Learners of scientific writing may need to be made aware that references function far more than just providing definitions and concepts, but are part of argument building in the text.

As a final point, the RA writers may need to expand their writing skills and knowledge of RA writing in order to gain more control of the writing process, to be

more sensitive to the readers' expectations, and to utilize the linguistic resources to achieve their communicative goals. Thus, the results of this study call attention to the generic organization differences displayed by non-English RA papers aiming for publication in the research world.

This analysis is limited to inspecting the generic structure of local and international discussion sections of RAs. As a consequence, it is a preliminary study of writing strategies utilized across local and international RAs. The possibilities are open for more comprehensive investigation of the other RA sections, involving a greater number and variety of RAs from several disciplines. Studies involving all RA sections will be needed to give a more comprehensive picture of the generic features employed by Iranian research writers.

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