WRITING INTRODUCTION SECTIONS OF RESEARCH ARTICLES IN APPLIED LINGUISTICS: CROSS-LINGUISTIC STUDY OF NATIVE AND NON-NATIVE WRITERS

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Abstract
Genre studies allow researchers to observe the repeated communicative functions and their linguistic components in different genres (Brett, 1994). Writing the introduction section is a tough and burdensome task for both native and non-native speakers (Swales & Feak, 1994). Hence, the present study aimed to investigate the generic organization of English research article introductions written by native English and Iranian non-native speakers of English. A total of 160 published articles were selected from established journals in Applied Linguistics. Following Swales' (2004) Create A Research Space (CARS) model, the researchers analyzed the articles for their specific generic patterns. Findings displayed that native English writers used significantly more strategies than Iranian non-native speakers of English, yielding richer texts. The findings of the present study contribute to the current knowledge of cross-cultural studies in academic writing to non-native English speakers in general and to non-native English novice writers in particular. Built on Swales' (2004) CARS model, the study describes how introduction sections are developed in English by native and non-native speakers, offering insights into ESP/EAP writing pedagogy.

Keywords: applied linguistics; CARS model; genre; introduction sections; research articles; rhetorical structures

Genre in humanities is generally referred to how texts are structured by the writers and how they are received by the readers (Frow, 2005), while genre analysis is technically used with particular disciplines such as applied linguistics (Shaw, 2016). Among other genres, research article is a widely researched area for English for academic purposes (EAP) and it continues to be the "pre-eminent genre of the academy" and "is the principal site of knowledge-making (Hyland, 2009a, p. 67)." This is due to the fact that nowadays universities worldwide require researchers to publish in top-tier Anglophone journals (Hyland, 2009b) which adds to the importance of English in EAP making the pedagogical application of discourse studies invaluable (Samraj, 2016). Following Swales' (1981, 1990) seminal work on the rhetorical organization of research articles, a vast number of studies have been conducted to examine the rhetorical structures of different types of genres along with their lexico-grammatical features, across disparate disciplines (Samraj, 2016).

This research was carried out to examine the rhetorical organization of the introduction sections of research articles in applied linguistics written by native and non-native speakers of English. The study is structured as follows: first, the literature review provides background to genre and genre analysis and contribution of genre studies in English for Specific Purposes (ESP) followed by some empirical research on cross-linguistic studies of rhetorical structures of research articles. Then, objectives and research methods are explained. The section is followed by reporting and discussing the findings. Finally, pedagogical implications, conclusions, and ideas for future research are presented.

Theoretical and Research Background
During the last few decades or so, numerous studies have examined how different research article sections in diverse disciplines are written using genre-based approaches. According to Swales (1990, p. 58), a genre is:

> "a class of communicative events, the members of which share some set of communicative purposes. The purposes are recognized by the expert members of the parent discourse community, and thereby constitute the rationale for the genre. This rationale shapes the schematic structure of the discourse and influences and constraints choice of content and style."

Indeed, genres are "staged, structured, communicative events, motivated by various

communicative purposes, and performed by members of specific discourse communities" (Flowerdew, 2011, p. 140). Examples of genres include newspaper articles, political speeches, lectures, movies, different types of business letters, emails, Instagram comments, etc. Features of genre could be naturally acquired at home for first language speakers; however, they need to be taught to those who have little or no exposure to second language (L2) (Flowerdew, 2013).

In the tradition of ESP research, the focus has been on the implications of genre studies and analysis to assist non-native speakers of English to become proficient in the functions and linguistic conventions of texts in their disciplines and professions (Bhatia, 1993; Swales, 1990). In other words, ESP researchers are primarily concerned with teaching formal features of texts in order for non-native English students to master the rhetorical organization and stylistic features of the academic genres (Martín-Martín, 2013).

Swales stated that texts are developed in a sequenced and staged manner, technically known as moves and steps. The most well-known model of these sequential patterns which could be obligatory or optional with variations in sequence and frequencies is Swales' (1990) CARS (Create-A-Research-Space) structure suggested for introduction sections of research articles (henceforth RAs), which leads to a large number of studies on rhetorical examination of introduction sections of RAs across disciplines and languages. The result of these studies prompted Swales (2004) to modify his framework and to accommodate more genres. Swales' (2004) extended framework for introduction sections discusses three major moves with some relevant steps: Move 1, establishing a territory; Move 2 establishing a niche; and Move 3, occupying the niche.

Many studies on introduction sections of research articles have only focused on one move in different disciplines and languages (Samraj, 2016). Some studies found out that some languages like Malay (Ahmad, 1997) and Swedish (Fredrickson & Swale, 1994) avoid using Move 2, i.e., establishing a niche which could prove challenging for writers of those languages when planning to submit to high-impact English journals where stating the research gap is of great importance (Samraj, 2016).

Duszak (1994) referred to the flexibility of Swales' model to analyze introduction sections of RAs by assisting the readers in what they can expect from the writer after reading the introduction. According to Duszak (1994, p. 299), moves have "a preliminary indicator of areas of (in)comparability among various writing styles". The CARS model, originally based on studies into the rhetorical structure of introductions of RAs and widely used in English Language Teaching (ELT) research, has been subjected to scrutiny and revision since 1981

and, as such, has been one of the chief models of genre analysis (Anthony, 1999).

Developing a well-written introduction section for an article is definitely a tough and burdensome task for both native and non-native speakers (Swales & Feak, 1994). In the last decades, the study of introduction sections has received growing attention from many researchers. The importance of studying this research article section stems from the fact that it serves:

> the need to re-establish in the eyes of the discourse community the significance of the research field itself; the need to 'situate' the actual research in terms of that significance; and the need to show how this niche in the wider ecosystem will be occupied and defended (Swales, 1990, p. 142, cited in Hirano, 2009).

The structure of RA introductions and its variations in different disciplines (e.g. Abdullah, 2016; Habibi, 2008), and languages (e.g. Fallahi & Mobasher, 2007; Jalilifar, 2010; Khani & Tazik, 2010; Loi, 2007; Omidi & Farnia, 2016; Rahimi & Farnia, 2017; Sheldon, 2011) have been extensively investigated. For example, Sheldon (2011) researched rhetorical differences in RA introductions in Applied Linguistics written in English and Spanish by native and non-native speakers of English and native speakers of Spanish. A corpus of 54 RAs (18 in English L1, 18 in Spanish L1, and 18 in English L2) was analyzed based on Swales' (2004) model. The findings revealed that native speakers' writings more closely corresponded to Swales' model in terms of organization in comparison with L1 Spanish corpus which showed some culture-specific writing style.

In yet another research, Fakhri (2004) analyzed 28 RA introduction sections in humanities and social science journals written in Arabic language using Swales' (1990) CARS model. The findings showed variation in terms of organizations as few of the analyzed works seemed to fit into CARS framework. This researcher also found evidence of "Arabic discourse such as repetition and high-flown, ornamented expressions interact with rhetorical aspects of introduction (p.1119)". In a cross-cultural study, Hirano (2009) compared the rhetorical organization of introduction section of RAs in Applied Linguistics written in Brazilian Portuguese and English. To this aim, twenty RAs in each language were analyzed in the light of Swales' (1990) CARS model. It was observed that English articles followed Swales' pattern while Brazilian Portuguese followed a different organizational structure. By way of illustration, no explicit gap statement was found in Brazilian Portuguese corpus. The differences in Brazilian Portuguese were ascribed to their cultural norms, that is, "Brazilian scholars tend to favor solidarity, avoiding conflict with the local discourse community (p.246)."

Using Swales' (1990), Kanoksilaphatam (2007) and Nwogu's (1991) model, Khani and Tazik (2010) investigated the introduction and discussion sections of Applied Linguistics RAs published in local and international journals to examine the rhetorical structures in the corpus. They found no significant differences in terms of the obligatory moves of the introduction sections; however, significant differences in the discussion sections were observed. In a cross-disciplinary study, Habibi (2008) examined RA introductions in three disciplines, namely, ESP, Psycholinguists, and Sociolinguistics. The data consisting of 90 RAs were analyzed using Swales' (1990) CARS model. The researchers were able to show that despite variations in the use of rhetorical structures in the three fields, no significant differences were found in the introduction section of RAs. Moreover, since there were differences between the study corpus and that of Swales' model, Habibi (2008) suggested developing a more flexible and open-ended model.

Although the number of studies on genre introduction sections written by Iranian non-native speakers of English is abundant, there are few studies with introduction sections of applied linguistics research articles in focus. Therefore, based on Swales' (1990, 2004) two-level classification of moves and steps, the present study aims to examine the rhetorical structure in the introduction sections of Applied Linguistic RAs written by native speakers of English and Iranian non-native speakers of English. Thus, the objectives of the study were twofold:

1. To examine the rhetorical structures used in the introduction sections in Applied Linguistics RA written by native English and Iranian non-native speakers of English
2. To study the similarities and differences between the RA introduction sections written by native English and Iranian non-native speakers of English

METHOD
Corpus
The data set included a total of 160 randomly selected RA introductions written by native speakers of English and Iranian non-native speakers of English from leading journals in Applied Linguistics published from 2010 to 2016. The Iranian non-native speaker articles were selected from recognized local journals and the English native speaker corpora were selected from the article whose authors' academic affiliation was based in an English speaking country from leading English journals.

Swales (1990) identified four sections in each research article, namely Introduction, Method, Results and Discussion (IMRD). Therefore, each article selected for the present corpus started with Introduction or Introduction and Outline of the Study. To make sure they followed Swales' IMRD sections, the articles selected all reported in experimental studies.

Data Analysis
The articles were analyzed based on Swales' (2004) CARS model for introduction sections of RAs. The model consists of three major moves (i.e. rhetorical patterns), namely, establishing a territory, establishing a niche, and occupying the niche. The corpus was read sentence by sentence to examine the rhetorical structures. In doing so, the occurrence of moves were identified based on Nwogu's (1997) definition of move as "a text segment made up of a bundle of linguistic features (lexical meanings, propositional meanings, illocutionary forces, etc. which gives the segment a uniform orientation and signal the content of discourse in it" (p. 114). Following previous studies (e.g. Atai & Fallah, 2004; Hirano, 2009), in the present study, a sentence is considered the unit of analysis. To ensure a reliable codification procedure, two raters checked the coded data, yielding an inter-rater reliability coefficient of 9.

After the data were codified, a series of statistical non-parametric tests for nominal data, i.e., Chi-square test, were run to establish the statistical significance of frequency differences.

It needs to be pointed out that according to Swales (1990, cited in Khani & Tazhik, 2010), obligatory moves are those which occurred in more than half of the RAs and optional moves are those which occurred in less than 50% of the RAs.

RESULTS AND DISCUSSION
In this section, the results are presented and discussed in the light of Swales' (2004) CARS model and relevant, previously published studies.

Move 1 Establishing a Territory
As was alluded to above, writers can report the significance of their research within their field using Move 1, that is, establishing a territory. This rhetorical strategy consists of three steps: step 1 claiming centrality, step 2 making topic generalization, and step 3 literature reviews. The results of codification are tabulated in Table 1.

Move 1 Step 1 Claiming Centrality
As previously mentioned, writers tend to use this rhetorical step to report the relevance, importance and usefulness of the topic and its significance in the research area. According to Swales (1990), centrality claims are "appeals to the discourse community whereby members are asked to accept that the research about to be reported is part of a lively, significant or well-established research area (p.144)." As put by Samraj (2005), writers do this

by either discussing the importance of the topic in the real world or by stating the current activity in that area of research. The findings of the present investigation show that Move 1 step 1 appeared 100% in all articles in native and non-native corpus and thus was found to be an obligatory move.

Table 1. Frequency of move 1 and its steps in native and non-native corpus

Moves		Corpus	Native Corpus		Non-native Corpus		df	X2
			F	%	F	%		
Move 1	Step 1	Claiming centrality	80	100.00	80	100.00	1	1.00
Establishing a territory	Step 2	Making generalizations of increasing specificity	53	66.25	65	81.25	1	.03*
	Step 3	Literature review	47	58.75	20	25.00	1	.00*
Total number of instances			180		156		1	.01*

Some examples from English native speakers' corpus (henceforth, NC) and Iranian non-native speaker corpus (henceforth, NNC) are as follows:

[NC] Students who engage in English for specific purposes benefit from access to and control of genres in their academic disciplines and workplace domains.

[NNC] There have been numerous approaches in the history of teaching writing: product approach, process approach, English for academic purposes.

Move 1 Step 2 Making Topic Generalization
As noted above, this rhetorical step reports the current state of knowledge or practice. Results obtained for the present study displayed that move 1 step 2, i.e, making generalizations, appeared 53 times in native speaker corpus and 65 times in non-native speaker corpus. Statistical analyses revealed a significant difference ($p = 0.03$, $\alpha < 0.05$). The Examples are shown as follows.

[NC] Doctoral programs, which could be identified as being peopled environments, include multiple spaces and ongoing social interactions between people and texts.

[NNC] Nowadays alternative assessments such as portfolios, conferencing, peer assessment and self-assessment are used as an alternative to put an end to one shot traditional assessment.

Move 1 Step 3 Literature Review (Reviewing items of previous research)
Through this rhetorical move, the writers are required to relate the studies conducted previously to that of the present study. The findings show that this step occurred 47 times in native writer corpus and 20 times in non-native writer corpus. Chi-square analysis confirmed the statistical significance of the difference in the use of this step (p =0.00, α <0.05). The following excerpts are the examples:

[NC] Martin and Schwartz (2005), in studies teaching fractions to nine- and ten-year-olds, found that using relatively unstructured manipulatives rather than well-structured manipulatives, resulted in better transfer to new problems.

[NNC] To investigate the value of portfolios as a tool for students' preparation of micro-level skills for their final examinations, Nezakatgoo (2005) made a comparison between portfolios based and non-portfolios based writing classroom. The result of the study revealed a significant difference between the two groups.

Overall, the findings display that move 1 is present in the two groups of RAs. Like English L1 speakers in Sheldon's (2011) corpus, the native speaker corpus in the present study displayed more flexibility in using Move 1 than non-native speaker corpus as the number of instances abounds in native speaker corpus leading to producing a richer text. In fact, it can be concluded, through using a wide range of strategies that the writers tend to make their texts "more interesting, vibrant and relevant to the discipline" (Shehzad, 2006, p.139, cited in Sheldon, 2011).

Move 2 Establishing a Niche
Move 2 is an essential move in developing introduction sections and connects move 1 (what has been done) to move 3 (what the present research is about). Put differently, it expresses the reason for which the study is conducted by claiming a "niche". To this aim, writers may either discuss the inadequacy or limitations of previous studies in effectively addressing the issues in question and covering the gap. Once a reader finishes move 2, she should have an insight as to what move 3 should be like (Swales & Feak, 1994). The results of move 2 across two corpora are reported in Table 2. As can be observed, results show a very slight fluctuation in the use of move 2 across the two corpora.

Move 2 Step 1A Counter Claiming
This move represents opposing viewpoints or identifies the weakness in previous studies. The findings show that step 1A occurred 32 times in native speaker corpus and 26 times in non-native speaker corpus. Despite the difference, however, there was no statistically significant difference in the use of step 1A between native and non-native corpus (P = 0.35, α <0.05), as shown in the following examples:

[NC] Contrary to Rounds` findings, Fortanet identified 'you' as the most frequently used pronoun in the lecture, colloquia and study group interactions and attributed the reduce occurrence of 'we' to an evaluation of academic speech towards 'I' and 'you'.

[NNC] However, it seems that an interactional practice has been left both under-represented and under-researched; that is wait-time, which refers to the duration of pauses either after a teacher's utterance, typically question, or a student's utterance, particularly response.

Table 2. Frequency of move 2 and its steps across the native and non-native corpus

Moves	Corpus		Native Corpus		Non-native Corpus		df	X2
			F	%	F	%		
Move 2	Step 1A	Counter claiming	32	40.0	26	32.5	1	.35
	Step 1B	Indicating a gap	54	67.5	52	65.0	1	.77
Establishing a niche	Step 1C	Question raising	4	5.0	2	2.5	1	.40
	Step 1D	Adding to what is known	14	17.5	10	12.5	1	.38
	Step 2	Presenting positive justification	15	18.75	6	7.5	1	.01*
Total number of instances			119		96		1	.03*

Move 2 Step 1B Indicating a gap
The writer reports the gap for which the study is being conducted. Again, the findings demonstrated a very slight fluctuation between the use of move 2 step 1B (indicating a gap) in native and non-native corpus. In fact, writers in the two corpora used this step very frequency as it appeared 54 times (67%) and 52 times (65%) in native speaker and non-native speaker corpora, respectively. Examples:

[NC] Despite many scholarly insights and recommendations on EAP methodology, little is known about teachers` practices and conceptions of appropriate methodology for reading comprehension instruction. The gap is particularly wide in some countries where two groups of teachers, that is, ELT instructors and subject teachers, teach EAP reading comprehension courses.

[NNC] The majority of those studies were done in subject matters such as science, mathematics, physics, etc. Thus, research on the issue within the realm of second language learning and teaching is quite scarce in the literature.

Move 2 Step 1C Question raising
The writer raises questions specifically with regard to previous research. The analysis shows that this move is the least frequently used steps in move 2. Results displayed four instances of this move in native corpus and two instances in non-native corpus, as shown in the examples below.

[NC] On a global scale, we would like to know what the consequences of such multilingualism will be. Will linguistic diversity on the internet increase to match the diversity of its users?

[NNC] However, the problem that arises about those studies is whether there is a significant difference between these two kinds of group working, asymmetrical and symmetrical.

Move 2 Step 1 D Adding to What is Known
This step emphasizes the gap in the existing territory (Yayli & Canagarajah, 2014). As shown in the table,

this step appeared 14 times in native speaker corpus while non-native speaker used it 10 times. Examples:

[NC] Hence, given the highly specific EAP contexts under study, more in-depth qualitative studies are required to explore teachers` voices and probe the cognitions and beliefs behind their reading comprehension policies and practices.

[NNC] Hence, in light of the importance of MI theory, course materials should be used in a way that encompasses all the eight intelligences in the classroom.

Move 2 Step 2 Presenting Positive Justification
This step often follows some gap in the existing literature to justify the present research. Results showed more variation in this step in the corpus. A statistically significant difference was observed across the corpora. More specifically, native writers tended to put more emphasis on presenting positive justifications in their research article introductions than non-native writers. The examples are as follows:

[NC] Such comparisons can provide insights into how successful EAP instructors balance the need for making this discourse accessible to students in the process of developing academic English competence.

[NNC] This is the place that EFL teacher can act as facilitator and provide more language support for students in the groups, and she or he can remove, to some extent, the affective factors and encourage motivation and self-confidence of students.

The frequent use of move 2 in the two corpora confirms that the fact it is a crucial component of the introduction section, though the native speakers used move 2 significantly more than non-native speakers. This is in line with previous studies (e.g. Khani & Tazik, 2010; Sheldon, 2011) where English speakers were reported to use move 2 more frequently than non-native English speakers. As

Sheldon suggests, non-native speakers of English displayed a weaker version of this move, in comparison with native speakers. The low frequency of move 2 step 3, question raising, in the two corpora could be attributed to the fact that writers prefer to "find the gap in the previous studies rather than questioning the previous findings and, questioning previous findings with respect to the different context in which the studies under investigation have been done may not be valid and acceptable" (Khani & Tazik, 2010, p. 111). Another possibility of the low occurrence of question raising, as put by Burgess (1997, cited in Sheldon, 2011), is that the writers believe they belong to a "small community in which the writer is very likely to know key members of the community" (Burgess, 1997, p. 258).

Move 3 Occupying the Niche
The final move in the CARS model is *occupying the niche*, the purpose of which is to make an offer to fill the gap (or answer the questions) that has already been developed in move 2. The writers report and discuss the purpose of their study and give the goals of their research away in move 3. According to Swales (2004), "in appropriate circumstances, early positive evaluations, early justifications, and early clarifications can work to both impress and reassure the reader that the paper is worth pursuing further (p. 232)." Through the application of move 3, occupying the niche, the writers report the goals, methods, and findings to the readers. The occurrence of move 3 and its steps in native and non-native corpus is presented in Table 3.

Table 3. Frequency of moves and its steps across native and non-native corpus

Moves		Corpus	Native Corpus		Non-native Corpus		df	X2 Sig
			F	%	F	%		
Move 3	Step 1	Announcing present research descriptively	75	93.75	67	83.75	1	.21
	Step 2	Presenting research question/hypothesis	28	35.00	35	43.75	1	.28
	Step 3	Definitional clarifications	14	17.50	4	5.00	1	.01*
Occupying	Step 4	Summarizing methods	21	26.25	14	17.50	1	.19
the niche	Step 5	Announcing Principal findings	14	17.00	2	2.50	1	.00*
	Step 6	Stating the value of the present research	23	28.75	13	16.25	1	.06
	Step 7	Outlining the structure of the paper	32	40.00	10	12.50	1	.00*
Total number of instances			207		145		1	.00*

Move 3 Step 1 Announcing present research descriptively
The writer presents the purpose/aims of the research for the problems/gaps they have previously presented in move 2. As shown in the table, step1, which is an obligatory move in Swales' model, is the most frequently used step in the two corpora. Examples:

> *[NC] The purpose of the present study is to identify discourse strategies used in professional e-mail negotiation.*

> *[NNC] The purpose of this study is to investigate the effects of various scaffoldings in the reading comprehension development of EFL students in asymmetrical and symmetrical groups.*

Move 3 Step 2 Presenting research question/ hypothesis
The results of the analyses show that non-native writers tend to use Step 2, presenting research questions/hypothesis, more frequently than native writers do. However, despite the difference, the analysis indicated no significant differences in the two corpora. Examples:

> *[NC] The following questions are addressed in the present study: What does the qualitative research on mentor education focus on?*

> *[NNC] To achieve the purpose of the study, the following research questions were put forth: What kinds of ideologies are promoted through the "Spectrum" and "True to Life" textbook series imported and used in Iran?*

Move 3 Step 3 Definitional clarifications
The writers explain the operational definition of their keywords in this move. Step 3, *definitional clarification* was the least frequently used step by non-native speakers. The analysis shows that whereas native speakers used this step 14 times, their non-native speaker counterparts employed it 4 times in their introduction sections. In other words, native speakers used these steps significantly more frequently than non-native speakers (p= 0.01, α <0.05). The following excerpts are the examples:

> *[NC] The term "conjunction" is used here to refer to words that are traditionally classified as conjunctions even though they may not functions as conjunctions, that is, as linking elements between words, phrases or clauses.*

> *[NNC] The focus of this study is on SA which is defined by Andrade, Du, and Mycek (2010) as "a process of formative assessment during which students reflect on the quality of their work, judge the degree to which it reflects explicitly stated goals or criteria, and revise accordingly" (p. 3).*

Move 3 Step 4 Summarizing methods

The writer reports a summary of the methods applied to conduct the research. As the findings displayed, step 4, *summarizing method,* occurred 21 times in native speaker corpus while in the non-native writers' sample the number was 14. The difference, however, was not statistically significant. Examples:

> [NC] *This work builds on and extends Oswald and Plonsky`s (2010) review, partially replicating meta-syntheses in other social sciences that have sought to better understand the distribution of effects in their respective fields.*

> [NNC] *In this study, a level specific approach was taken. In other words, an approach in which the tasks used were each targeted at one specific level; the written responses of the students were assessed by having trained raters assign a fail/pass rating using level-specific rating instruments.*

Move 3 Step 5 Announcing principle findings

Through this step, the writer reports the major findings of their study. Data analysis suggested that there is variation in the use of this step in the corpus. This step appeared 14 times in native speaker corpus while it was used only 4 times in the non-native speaker corpus. In other words, native speakers used this step statistically more frequently than native speakers ($p= 0.01$, $α <0.05$). Examples:

> [NC] *As shown in Table 1, the prevalence estimates provided by different demographic studies vary between 1.3% and 10.3%.*

> [NNC] *In the processing, it has been found that the high span participants were able to retrieve the filler from their WM faster than the low span participant.*

Move 3 Step 6 Stating the value of the research

The writer reports the significance of the current study. This was found 23 and 13 times in native speaker and non-native speaker corpora, respectively. Chi-square analysis showed a slight similarity in the use of this step, as reflected in the examples below:

> [NC] *This research responds to the call for research on the theory of mitigation in general and considering Spanish language.*

> [NNC] *The current study may contribute to SLA research beyond oral data to data from written sources.*

Move 3 Step 7 Outlining the structure of the paper

Through this step, the writer discusses how the paper is organized or in what order the content is discussed. The outcomes show that this step is differentially used in that it appeared 32 times in

native speaker corpus while it was used only 10 times in non-native speaker corpus. Chi-square analysis established significant differences in the application of this step. The examples are:

> [NC] *To frame our discussion, we provide an overview of the 'Write Like a Chemist' project, including its impetus and the four genres targeted for analysis and instruction. We then focus on just one genre, the chemistry journal article, and our analysis of its organizational structure, and compare it to journal articles published in biochemistry, an overlapping discipline. We conclude with pedagogical implications and tips for ESP professionals engaged in genre analyses.*

> [NNC]*In what follows, we review several related studies on collaborative writing (collaborative composing) following with two studies on collaborative planning in L2 oral performance.*

Overall, move 3 step 1 (announcing the present research descriptively) was found to be the most frequently used step across the two corpora, a finding which accords with similar studies (e.g. Khani & Tazik, 2010). The findings also consistent with Swales' (1990, 2004) statement considering move 3 step 1 as an obligatory step across introduction sections of research articles. Comparative cross-cultural studies of languages other than English have demonstrated that the discrepancy in textual organization of each language could be attributed to both linguistic factors and cultural norms of writers' L1 (Fredrickson & Swales, 1994; Taylor & Chen, 1991, cited in Sheldon, 2011).

Pedagogical Implications of the Study

Flowerdew (2015) believes that Swales' Genre Analysis has had a tremendous influence on writing pedagogy in academic, research-related fields, and also language pedagogy. In fact, a particular purpose of genre analysis is pedagogic in that it makes prescription about the layout, organization and proper language for a specific writing or speaking task. From a pedagogical vantage point, Swales (1990) calls for "sensitizing students to rhetorical effects, and to the rhetorical structures that tend to recur in genre-specific texts" and proposes that "consciousness-raising about text-structure will turn out to be as important as it has been shown to be for grammar" (p. 213).

Pedagogic reasons for genre analysis are gaining prominence with the surge of interest in writing research articles. Studies based on genre analysis can help students become more effective writers in that they shed light on the rhetorical patterns utilized by eminent authors to produce a persuasive scholarly written discourse.

The outcomes of this study also contribute to the knowledge base and offer helpful insights which could be built on to link cross-cultural studies in

academic writing to promoting non-English academics' writing ability. Succinctly put, this study might be of interest to those scholars, especially Iranian ones, who wish to publish in international English-medium journals as the findings can help them prepare articles which are appealing to a wider spectrum of audience and cultural contexts by avoiding the transfer of typical first language (L1) features into their L2 discourse.

The findings of this study revealed the schematic structures of introduction sections of research articles. Therefore, it can help teachers to teach the way an academic text is typically organized in a more effective manner in writing and reading classes. Additionally, the results can help writers and readers to perform more professionally. They may also be of help in training non-native English writers to prepare and submit research articles to prestigious journals.

CONCLUSION

The present study analyzed genres in the introduction sections written by native and non-native writers. Generally speaking, results displayed that English native speakers used significantly more strategies (i.e. application of the moves and steps) to develop the introduction sections of applied linguistics research articles than Iranian non-native speakers of English. Such studies would benefit those EFL writers and early-career researchers who are incognizant of the way rhetorical structures of different sections of research articles vary across disciplines, sub-disciplines, and languages (Khani & Tazhik, 2010). The findings of the present study could contribute to the available knowledge of cross-cultural studies in academic writing to non-native English speakers in general and to non-native English novice writers in particular. In effect, the chief advantage of genre studies is to develop awareness in students' academic writing across languages through consciousness-raising (Martín-Martín, 2013). This field of inquiry is far from exhausted as further studies are definitely needed to examine the variation of moves and steps in other disciplines. Interviews could also possibly provide a wider insight as to why writers develop introduction sections the way the results of this study revealed.

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