UNIVERSITI PUTRA MALAYSIA

RHETORICAL MOVES WITH TENSE AND VOICE ANALYSIS OF THE RESULTS AND DISCUSSION CHAPTER IN MASTER THESES ACROSS SCIENCES

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By

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April 2017

Chairman   **: Helen Tan, PhD**
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There are well-established conventions within each academic discourse community that determine the structural organization of any related genre of that particular discourse community. As a specific genre in academic writing, writing a thesis is the most challenging task for postgraduate students especially the Integrated Results and Discussion chapter. In order to gain insight into Results and Discussion as integrated chapters of master's theses, the present study investigated the rhetorical units of Integrated Results and Discussion chapters of master students in the hard and soft sciences as an undiscovered genre. Besides, the study also compared and contrasted the rhetorical units as well as the use of tense and voice of the investigated texts. To achieve the objectives of the study, a total of 40 master's theses from a local public university in Malaysia were selected as the samples of the study. Of the 40 master's theses, 20 theses were from the hard sciences (10 theses from Chemistry and 10 theses from Physics) and another 20 from the soft sciences (10 theses from English Language and 10 theses from Economics). Other criteria for selection were that all the theses had an Integrated Results and Discussion chapter and they were written within a period of 10 years from 2002 to 2012. To conduct the study, a mixed-method approach was adopted. The quantitative analysis was conducted to locate the rhetorical movements of the corpus. As such, Kanoksilapatham's (2005) analytical model was adapted to identify and highlight the employed rhetorical moves and steps of the study. The different rhetorical movements used in the hard sciences and soft sciences were compared based on the frequency of occurrence. Additionally, the study also examined the use of tense and voice in the rhetorical moves and steps of the corpora because according to Larsen-Freeman, Kuehn, and Haccius (1999), the choice of English tenses and voices is one of the most difficult grammatical areas for ESL students. To enhance the robustness of the methodology, the shift in the use of tense and voice in the rhetorical steps were investigated qualitatively. The findings of the study indicated that the Integrated Results and Discussion chapters focused

predominantly on presenting the results of the study (*Stating Results*) followed by commenting on the gained results, which constituted Move 5 or *Stating Comments on Result*. These two moves together with their sub-units or steps constituted the most frequently used rhetorical units of the investigated texts. On the other hand, *Stating Limitations* and *Suggesting Further Research* were the least frequently used rhetorical units. A possible reason could be that the ESL student writers would prefer to communicate these two rhetorical units in the last chapter (*Conclusion*) of the theses. Disciplinary variation was also observed between the rhetorical movements used in the hard sciences and soft sciences. For instance, in the hard sciences, M3S2 (*Referring to Previous Research*) and M7S5 (*Making Overt Claims or Generalizations*) were obligatory. But they were found to be optional and in the soft sciences. On the other hand, in the soft sciences, M4S3 (*Invalidating Results*) was obligatory, but in the hard sciences, it was optional. In consequence, these results showed that the hard sciences had more tendencies towards providing subjective presentation than the soft sciences, and the soft sciences had more tendencies towards objective presentation than the hard sciences. Moreover, the analysis of tenses indicated that in both hard and soft sciences, the simple present tense was the preferred tense followed by the simple past tense. However, disciplinary variations were observed in the tense usage in the different rhetorical units.

The most observable variations were found in *Describing Aims and Purposes* (with dominant use of the simple past tense in the hard sciences and the simple present tense in the soft sciences), *Listing Procedures or Methodological Techniques* (with dominant use of the simple past tense in the hard sciences and the simple present tense in the soft sciences), *Invalidating Results* (with dominant use of the simple past tense in the hard sciences and the simple present tense in the soft sciences), and *Presenting Generalizations, Claims, Deductions, or Research Gaps* (with dominant use of the simple future tense in the hard sciences and the simple present tense in the soft sciences). The contextual analysis revealed that the contributing factors in the choice of tense were temporal aspects, rhetorical unit function, type of science, and the structure of the report. Additionally, it was found that the frequency of use of the active voice outnumbered the passive voice in the overall use of the voice aspect in the corpus. The voice disciplinary variations were observed mostly in *Structure of the Section* (dominantly presented in the passive voice in the hard sciences and the active voice in the soft sciences)*, Describing Aims and Purposes* (dominantly presented in the passive voice in the hard sciences and the active voice in the soft sciences), *Listing Procedures or Methodological Techniques* (dominantly presented in the passive voice in the hard sciences and the active voice in the soft sciences) and *Referring to Previous Research* (dominantly presented in the passive voice in the hard sciences and the active voice in the soft sciences). The influencing factors which governed the choice of voice in the corpus were the function of the step, the associated verb and tense, and the writers' stance in the text. To conclude, it is hoped that the results of this study explain how Integrated Results and Discussion chapters in different sciences are organized rhetorically, which in turn, may be useful for the successful writing of the Integrated Results and Discussion chapters in master's theses. Also, a thorough understanding of the full range of possible meanings and uses of the tenses and voices and how they can be applied to rhetorical uses in

academic writing will allow the writer the greatest flexibility in the use of tense and voice to express nuances in meanings (Taylor, 2001).

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk Ijazah Doktor Falsafah

LANGKAH- LANGKAH RETORIK DENGAN ANALISIS MASA DAN SUARA DALAM GABUNGAN KEPUTUSAN DAN PERBINCANGAN DALAM BAB TESIS SARJANA-MERENTAS DISIPLIN SAINS

Oleh

ZAHRA SHIRIAN DASTJERDI

April 2017

Pengerusi   : Helen Tan, PhD
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Terdapat konvensyen yang mantap dalam setiap komuniti wacana akademik yang menentukan organisasi struktur sebarang genre berkaitan masyarakat wacana tertentu. Sebagai genre spesifik dalam penulisan akademik, penulisan tesis adalah tugasan paling mencabar untuk pelajar pasca siswazah terutama bagi bab Hasil Kajian dan Perbincangan. Dalam usaha untuk mendapatkan pemahaman mendalam bagi bab Hasil Kajian dan Perbincangan dalam tesis sarjana, kajian ini telah melakukan penyelidikan ke atas unit retorik bab Hasil Kajian dan Perbincangan pelajar-pelajar sarjana dalam bidang sains semula jadi dan sains sosial, iaitu sebagai genre yang belum diterokai. Selain itu, kajian ini juga membandingkan dan membezakan unit retorik serta penggunaan kala dan kata kerja teks yang diselidik. Bagi mencapai objektif kajian ini, sebanyak 40 tesis oleh sarjana sebuah universiti awam tempatan di Malaysia telah dipilih untuk dijadikan sampel kajian. Daripada 40 tesis tersebut, 20 daripadanya adalah daripada bidang sains semula jadi (10 tesis dari aliran Kimia dan 10 lagi dari aliran Fizik) dan 20 buah tesis lagi adalah daripada sains sosial (10 tesis dalam bidang Bahasa Inggeris dan 10 lagi dari bidang Ekonomi). Untuk dipilih, kriteria lain yang diperlukan adalah semua tesis mesti mempunyai bab Hasil Kajian dan Perbincangan dan mesti ditulis dalam tempoh 10 tahun iaitu dari 2002 hingga 2012. Untuk menjalankan kajian ini, pendekatan kaedah pergerakan retorik korpus. Oleh itu, model analisis Kanoksilapatham (2005) telah disesuaikan untuk mengenalpasti dan menekankan gerakan dan langkah retorik yang digunakan dalam kajian. Perbezaan pergerakan retorik yang digunakan dalam sains semula jadi dan sains sosial telah dibandingkan berdasarkan kepada kekerapan ianya berlaku. Selain itu, kajian ini juga mengkaji penggunaan kala dan kata kerja dalam gerakan dan langkah retorik korpora kerana menurut Larsen-Freeman, Kuehn dan Haccius (1999), pemilihan kata kerja dan kala Bahasa Inggeris merupakan salah satu bidang tatabahasa yang paling sukar untuk pelajar ESL. Untuk meningkatkan keteguhan metodologi, perubahan dalam penggunaan kala dan kata kerja dalam

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langkah-langkah retorik telah diselidik secara kualitatif. Penemuan kajian menunjukkan bahawa bab Hasil Kajian dan Perbincangan berfokus terutamanya dalam membentangkan hasil kajian (*Menyatakan Hasil*) diikuti dengan ulasan hasil yang diperolehi, iaitu Langkah 5 atau *Menyatakan Ulasan pada Hasil*. Keduanya bergerak bersama-sama dengan sub-unit atau langkah-langkahnya yang merupakan retorik unit yang paling kerap digunakan daripada teks yang diselidik. Sebaliknya, *Menyatakan Had* dan *Mencadangkan Penyelidikan Lanjut* adalah unit retorik yang jarang digunakan. Satu sebab yang memungkinkan penulis-penulis iaitu pelajar ESL lebih gemar berkomunikasi mengenai kedua-dua unit retorik ini terdapat dalam bab terakhir (*Kesimpulan*) tesis. Variasi tatatertib juga diperhatikan di antara pergerakan retorik yang digunakan dalam sains semula jadi dan sains sosial. Sebagai contoh, dalam bidang sains semula jadi, M3S2 (*Merujuk kepada Penyelidikan Yang Lalu*) dan M7S5 (*Membuat Dakwaan Terbuka atau Anggapan Umum*) adalah wajib. Tetapi didapati, ia menjadi pilihan dalam bidang sains sosial. Bagi bidang sains sosial, M4S3 (*Hasil Tidak Sah*) adalah wajib, namun dalam bidang sains semula jadi pula, ia merupakan pilihan. Hasil kajian menunjukkan bahawa sains semula jadi memiliki lebih kecenderungan ke arah penyampaian yang lebih subjektif berbanding sains sosial, dan sains sosial lebih cenderung kepada penyampaian objektif. Selain itu, analisis kala menunjukkan bahawa dalam sains semula jadi dan sains sosial, kala kini selapis merupakan kala pilihan yang diikuti oleh kala lampau selapis. Walau bagaimanapun, perubahan disiplin diperhatikan dalam penggunaan kala pada unit retorik yang berbeza.

Variasi yang paling diperhatikan ditemui pada topik *Menggambarkan Matlamat dan Tujuan* (dengan penggunaan dominan kala lampau selapis dalam bidang sains semula jadi dan kala kini selapis dalam sains sosial), *Menyenaraikan Prosedur atau Teknik Metodologi* (dengan penggunaan dominan kata lampau selapis dalam sains semula jadi dan kala kini selapis dalam sains sosial), *Membatalkan Keputusan* (dengan penggunaan dominan kata lampau selapis dalam sains semula jadi dan kala kini selapis dalam sains sosial), dan *Membentangkan Anggapan Umum, Dakwaan, Kesimpulan, atau Perbezaan Penyelidikan* (dengan penggunaan dominan kata lampau selapis dalam sains semula jadi dan kala kini selapis dalam sains sosial). Analisis konteks mendedahkan bahawa faktor yang menjadi penyumbang kepada pemilihan kala adalah aspek duniawi, fungsi unit retorik, jenis sains dan struktur laporan. Selain itu, didapati bahawa kekerapan penggunaan kata kerja aktif melebihi penggunaan kata kerja pasif bagi keseluruhan aspek kata kerja dalam korpus. Variasi disiplin kata kerja banyak diperhatikan dalam *Struktur Seksyen* (dibentangkan secara dominan dalam kata kerja pasif dalam bidang sains semula jadi dan kata kerja aktif dalam bidang sains sosial), *Menerangkan Matlamat dan Tujuan* (dibentangkan secara dominan dalam kata kerja pasif dalam bidang sains semula jadi manakala kata kerja aktif dalam bidang sains sosial), *Menyenaraikan Prosedur atau Teknik Metodologi* dibentangkan secara dominan dalam kata kerja pasif dalam bidang sains semula jadi manakala kata kerja aktif dalam bidang sains sosial) dan *Merujuk kepada Penyelidikan Sebelumnya* (dibentangkan secara dominan dalam kata kerja pasif dalam bidang sains semula jadi, manakala kata kerja aktif dalam bidang sains sosial). Faktor yang mempengaruhi dalam penentuan pemilihan kata kerja dalam korpus adalah fungsi langkah, kata kerja dan kala yang berkaitan, dan pendirian penulis dalam teks. Sebagai kesimpulan, hasil kajian ini diharapkan dapat menjelaskan

bagaimana bab Hasil Kajian dan Perbincangan dalam bidang sains yang berbeza disusun secara retorik, dan seterusnya, mungkin berguna bagi kejayaan penulisan mengenai bab Hasil Kajian dan Perbincangan dalam tesis sarjana. Di samping itu, pemahaman mendalam mengenai rangkaian penuh maksud-maksud yang berkemungkinan dan penggunaan kata kerja dan kala, juga bagaimana keduanya boleh diaplikasikan bagi penggunaan retorik dalam penulisan akademik akan membolehkan penulis, dengan fleksibiliti terbesar dalam penggunaan kala dan kata kerja untuk menyatakan nuansa dalam makna (Taylor, 2001).

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I certify that a Thesis Examination Committee has met on 18 April 2017 to conduct the final examination of Zahra Shirian Dastjerdi on her thesis entitled "Rhetorical Moves with Tense and Voice Analysis of the Results and Discussion Chapter in Master Theses Across Sciences" in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Doctor of Philosophy.

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This thesis was submitted to the Senate of the Universiti Putra Malaysia and has been accepted as fulfillment of the requirement for the degree of Doctor of Philosophy.The members of the Supervisory Committee were as follows:

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Declaration by Members of Supervisory Committee

This is to confirm that:
- the research conducted and the writing of this thesis was under our supervision;
- supervision responsibilities as stated in the Universiti Putra Malaysia (Graduate Studies) Rules 2003 (Revision 2012-2013) were adhered to.

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Signature:
Name of Member
of Supervisory
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LIST OF ABBREVIATIONS

EFL	English as a Foreign Language
ENL	English as a Native Language
ESL	English as a Second Language
ESP	English for Specific Purpose

CHAPTER 1

INTRODUCTION

1.1 Overview

This chapter begins with the background of the study, discussing the issues of genre analysis in academic writing in general and writing conventions in theses as an example of an academic genre in particular. A statement of problem follows, which explains the need for conducting a study in relation to analyzing theses' Integrated Results and Discussion chapters of ESL (English as a Second Language) student writers. The objectives of the study are also presented and are concluded with the study's research questions. Besides, a discussion in relation to the significance of the study gives further details about the study. This is followed by scope and limitations of the study. The last sections comprised definitions of terms and summary of the study.

1.2 Background of the Study

In Van Dijk's (1997, pp. 1-2) view, 'discourse' refers to a form of language use, which raises questions such as 'who' uses it, and 'how' and 'why' it is used. Additionally, discourse refers to the kind of language associated with a particular social organization or community and expresses the valuable ideas of that specific community (Danaher, Schirato & Webb, 2000, p. x). Hence, a discourse community is definable in terms of a group of individuals with high levels of special knowledge and some other novices at the periphery (Swales, 1990). Accordingly, members of a particular discourse community employ a particular use of language in order to communicate efficiently. In differentiating between discourse communities, Ebrahimi and Chan (2012, p. 29) discussed that discourse communities are different from each other based on purpose, ways of communication as well as the level of related communicative knowledge. As a result, a number of particular genres in accordance with particular discourse communities' goals come into existence. Holmes (1997, p. 321) argued that a genre "can be briefly defined as a class of texts characterized by a specific communicative function that tends to produce distinctive structural patterns".

It is clear that academic discourse communities require their own particular genre respectively. There are different types of genres in academic spheres, which are definable in relation to a variety of academic discourse communities. As an example of such academic genres are the master's theses. Basturkmen (2012, p. 134) underlined that academic genres such as theses provide significant resources at researchers' disposal in order to examine "the writing conventions, social practices, and values of a discipline and research community". Hence, genre analysis, as a method of investigation in applied linguistics, can be used in order to identify the specific characteristics of a specific academic genre (Biber, Connor, & Upton, 2007;

Swales 1990; Hopkins & Dudley-Evans 1988) and in turn that of a specific discourse community.

Accordingly, genre analysis has motivated research in analyzing communicative functions of texts (Nodoushan, 2011; Brett, 1994), which may result in the evolvement of different methods of analyzing various genres in terms of the used rhetorical moves and steps. As an area of research in genre analysis studies, investigating rhetorical moves and steps was initially introduced by Swales (1981). In harmony with his previous views, Swales (2004, pp. 228-9) argued that a move is a "rhetorical unit that performs a coherent communicative function" in a text and thus is employed for a specific communicative purpose. Accordingly, a text may be analyzed in order to clarify its communicative purpose. On the other hand, according to Dudley-Evans and St Johns (1998, p. 89), a step refers to "a lower level text unit than the move that provides a detailed perspective on the options open to the writer in setting out the moves". In tandem with this view, Arulandu (2006, p. 59) further discussed that steps reflect the moves made by the writer in a text in order to achieve the communicative purpose in a particular genre. Biber et al. (2007, p. 24) also argued that by doing rhetorical moves and steps analysis, rhetorical organizational patterns of a text can be highlighted and described. Thus, studies on rhetorical moves and steps attempt to classify various discourse units which are embedded in a text in order to explain a text's communicative purpose(s). Different moves and steps of a genre may also be scrutinized from a grammatical point of view (Salager-Meyer, 1992; Shaw, 1992; Malcolm, 1987). This means that grammatical features of the rhetorical moves and steps of a specific genre can be examined in order to achieve a clear comprehension of the information flow of that specific genre and highlight the embedded message in it.

As mentioned earlier, theses is a type of academic genre that is substantially produced in academic contexts. A thesis may comprise different chapters. One significant chapter of a thesis is its Integrated Results and Discussion chapter. According to Ebrahimi and Chan (2012), Results and Discussion have a considerable potential for conducting research in applied linguistics. Genre analysis, as a method of text analysis, has been already employed in examining the rhetorical functions of Results and Discussion section of articles across different sciences (Fallahi & Erzi, 2003). Similarly, by examining patterns of rhetorical moves and steps of Integrated Results and Discussion chapter of theses in a variety of disciplines, it is possible to achieve a better understanding of the varied communicative purposes of the theses' Integrated Results and Discussion chapter. Hinkel (2004) discussed that the outcome of such rhetorical moves studies may shed a better light on the organization of this significant chapter of theses.

1.3   Statement of the Problem

Considering the mentioned background of genre analysis study, the present study tries to investigate patterns of rhetorical moves and steps as well as patterns of tense

and voice in the Integrated Results and Discussion chapter of theses in hard and soft sciences.

Postgraduate students in different sciences are required to conduct a research project or a thesis in order to complete their studies and graduate from universities. Genre studies have shown that writing is a troublesome process for student writers at both the master levels (Ren & Li, 2011; Dudley-Evans, 1991) and PhD levels. The challenge of writing is compounded if postgraduate student writers are confronted with writing their theses in a language other than their mother tongues (Thompson, 2012; Paltridge, 2002). Thompson elaborated that the ESL students' challenge in writing is compounded by an unfamiliar linguistic environment in which they have to discuss their disciplinary expertise in their theses.

Consequently, writing a thesis is a challenging task for ESL students because of the linguistic complexities, the size of the text, and the high standards of language use that must be met in writing a thesis (Thompson, 2012; Dong, 1998). In other words, ESL student writers are required not only to have the knowledge to write in the English language, but they should also be equipped with the necessary skills to "argue logically and coherently the meaning of the research results" (Dong, 1998, p. 369). The challenge of thesis writing also lies in having to synthesize as well as sustaining a coherent argument (Thompson, 2012).

In addition, Bitchener and Basturkmen (2006) noted that ESL postgraduate students are not explicitly taught the function, content, and organization of a dissertation/thesis. Moreover, the majority of academic supervisors do not have sufficient time to help the students to improve their writing. Paltridge and Starfield (2007) as well as Allison et al. (1998) also added that this problematic situation may be even more serious if the supervisors are not native speakers or near-native speakers of the English language.

In view of the need to write with a good academic style, Bitchener and Basturkmen (2006) maintained that although prior to writing their theses, ESL student writers could be made to pass a course on research methods as a necessary requirement for furthering their higher education. They believe this will initiate students into the requirements of thesis writing. This, however, does not guarantee their abilities in successfully writing their theses. Without a doubt, many student writers still suffer from inadequacies in their writing ability and in particular the writing of the Integrated Results and Discussion chapter. This challenge of writing Results and Discussion chapter is also attested by Dudley-Evans (1986) as well as Shaw (1991).

Additionally, Thompson (2012) postulated that the inadequacy of ESL students to write the Results and Discussion chapter of their theses is to some extent due to students' unfamiliarity with the rhetorical conventions of the target language. Rhetoric function knowledge is of importance in writing convention. This importance

is due to the role that rhetoric function plays in contributing to the overall communicative purpose of the text (Thompson, 2012). Therefore, the present study tries to understand the rhetoric function of Integrated Results and Discussion chapters of ESL students' theses in terms of investigating the required moves and steps of the chapter. This clarification may hopefully assist ESL students in efficiently meeting the writing needs that are required in presenting the Integrated Results and Discussion chapters of their theses.

Furthermore, another source of difficulty for ESL students in their writing tasks is related to the use of correct grammatical structures of the English language (Heslot, 1982; Lackstrom, Selinker, & Trimble, 1973). Similarly, Larsen-Freeman, Kuehn, and Haccius (1999) stated that the choice of English tenses and voices (active and passive) is one of the most difficult grammatical areas for ESL students. To address this concern, the study investigates patterns of tenses and voices that are used in the rhetorical moves and steps in Integrated Results and Discussion chapter of theses in hard and soft sciences.

In the last decades of the 20th century as well as in the beginning decade of the 21st century, a great number of research studies have been done on academic texts (Samraj, 2008, p. 56). However, the focus of research has mostly been on the research articles (for example, Swales, 2004; Hyland, 2000; Swales, 1990). The studies on the research articles have investigated the rhetorical structures of different sections of the articles (Swales, 2004; Yang & Allison, 2003; Hopkins & Dudley-Evans, 1988). Furthermore, there are other studies that delved into the patterns of the used linguistic features of different sections of research articles (for example, Hinkel, 2004; Burrough-Boenisch, 2003; Salager-Meyer, 1992). Additionally, Nguyen and Pramoolsook (2015) stated that most of the academic genre studies are on the texts produced by native speakers of English. Besides, in paying attention to post-graduate students' writing, plenty of research has been conducted on PhD theses (for example, Bunton, 2005, 2002; Ridley, 2000; Prior, 1998; Belcher, 1994; Berkenkotter, Huckin, & Ackerman, 1991). However, very few studies focused on the writing of the ESL master students' theses. In order to fill these gap in the literature, the present study focused on the Integrated Results and Discussion chapters of ESL student writers' theses in the hard and soft sciences.

As such, the results of such a study on Integrated Results and Discussion chapter focusing on moves and steps together with a description of the use of tense and voice patterns inherent in these moves and steps may facilitate master student writers' efforts in writing and organizing this important chapter of their theses. Furthermore, Brett (1994) opined that to achieve a better understanding of the rhetorical moves in the Results and Discussion chapter, it is necessary to integrate Results and Discussion of a research into a unified section. Therefore, the present study analyses Results and Discussion as an independently merged chapter (referred to as Integrated Results and Discussion by Stoller & Robinson, 2013).

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The skill of presenting results followed by discussing results requires an awareness of the various rhetorical moves and steps so that the content of the Integrated Results and Discussion chapter can flow coherently. As such, an awareness of the significance of rhetorical moves and steps together with appropriate choices of tenses and voices may assist ESL students in achieving a better performance in their writing tasks. Consequently, this awareness may help ESL master students to efficiently produce their Integrated Results and Discussion chapters of their thesis.

Essentially, the study seeks to explicate text organization in the level of moves and steps which help to provide functional purposes in writing the Integrated Results and Discussion chapter. Writing thus becomes more meaningful with this communicative approach. The Results and Discussion could be more effectively conveyed with the elaborations given as the linguistic manifestations of the moves and steps involved. In addition, the analysis of tense and voice will help learners in managing the important aspects of grammar in the thesis.

1.4   Objectives of the Study

In order to gain insights into the rhetorical patterns of the Integrated Results and Discussion chapters, using a genre analysis approach, the present study investigates the moves and steps patterns of the Integrated Results and Discussion chapters of the master's theses of ESL student writers in the hard sciences and soft sciences. In the hard sciences, master's theses in the fields of Chemistry and Physics are examined. In the soft sciences, master's theses in the fields of English Language and Economics are examined. As such, the study attempts to determine and compare the patterns of moves and steps between hard and soft sciences in order to clarify disciplinary differences.

Further, Halliday (1985) asserted that in performing a genre analysis study, it is required to include a grammatical analysis of the investigated texts. Accordingly, the present study not only investigates the moves and steps of the Integrated Results and Discussion chapters of theses, but also endeavours to determine the patterns of tense and voice within the moves and steps of the Integrated Results and Discussion chapters of the master's theses of ESL student writers in hard sciences and soft sciences. This goal is also in line with Biber et al.'s (2007, p. 38) claim that such an investigation may demonstrate how these features "interact with each other in a move to perform a particular communicative purpose".

The evaluation of a functional grammatical point of view which focuses on the "appropriateness of a form for a particular communicative context" (Lock, 1995, p. 1) is deemed to be beneficial for both learners and instructors of writing. Specifically, the study attempts to answer the research questions as put forth in the following section.

1.5   Research Questions

The following research questions were constructed to guide the study.

1. What are the patterns of the rhetorical moves and steps in the Integrated Results and Discussion chapter of master's theses in hard and soft sciences?
2. How are the patterns of rhetorical moves and steps in the Integrated Results and Discussion chapter different between the hard and soft sciences?
3. What are the patterns of tense selection in the rhetorical moves and steps in the Integrated Results and Discussion chapter in hard and soft sciences?
4. What are the patterns of voice selection in the rhetorical moves and steps in the Integrated Results and Discussion chapter in hard and soft sciences?

1.6   Significance of Study

It was already discussed that writing the Results and Discussion chapter is a challenging task for most postgraduate students (Nguyen & Pramoolsook, 2015; Brett, 1994). Nevertheless, this difficult process becomes twice as difficult for ESL students (Nguyen & Pramoolsook, 2015). However, genre analysis of the said chapter may help to solve the issue, because genre analysis inevitably leads to the development of insights and awareness of how writing is managed for a specific purpose. Findings of this study will hopefully explain how theses' Integrated Results and Discussion chapters in different sciences are organized rhetorically.

The present study is also a timely research because most ESL students may not only suffer from lack of required proficiency (Thompson, 2012), but they may also not have the necessary textual knowledge required to write Results and Discussion chapters (Nguyen & Pramoolsook, 2015; Bhatia, 1999). The results obtained from the present study will provide relevant feedback for postgraduate students who need to acquire the required knowledge for organizing and structuring this important chapter in a thesis.

As discussed in the Background of the Study, genre studies are supposed to highlight a series of communicative conventions which are reciprocally comprehensible by members of academic discourse community (Swales, 1990, p. 55). Thus, ESL master students need to gain the skills and experiences that are necessary to master the conventions of the required genre in order to gain admission into the discourse community. Therefore, the significance of the present study lies in providing an in-depth understanding of this particular discourse community's conventions.

The current study also presents a comparison between occurrences of the rhetorical moves and steps in the theses written in the hard sciences (Chemistry and Physics) and soft sciences (English Language and Economics) together with the ways of using tense and voice in the two sciences. Consequently, the structural organizations of the communicative purposes particular to each science will shed light on the role of the

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subject area in rhetorical organization and choice of specific grammatical features including tense and voice.

If novice postgraduate ESL students gain a deeper perception of conventions practiced by the related discourse communities, they will be able to produce their Integrated Results and Discussion chapters more efficiently. This view is also indicated by Bhatia (1993, p. 182) who stated that if conventions of writing are learnt by students, they will be encouraged to use the knowledge efficiently in producing a related discussion in line with the requirements of a related genre.

Besides, the findings of the study may have practical pedagogical values since they can be useful to supervisors and those involved in teaching academic writing. When novice ESL researchers present their drafts to their supervisors, their supervisors could provide practical sound criticism to make sense on how their writing is constructed and organized. When supervisors and writing instructors are well informed about concepts such as moves and steps and the use of tense and voice, they can then assist the novice writers in being more successful in writing Integrated Results and Discussion chapters of their theses.

Furthermore, the results of this study can be used for evaluative purposes. ESL teachers and instructors in the field of ESP will be able to grade the ESL students' writings efficiently if they are equipped with a good knowledge of writing processes. If instructors gain an awareness of communicative purposes and strategies of a particular communicative event, then evaluating students' related writings will be facilitated.

Finally, the findings of this study will help writers to understand how content and context affect the choice of grammatical forms which in turn make meaning for the audience. Also, a thorough understanding of the full range of possible meanings and uses of the tenses and voices and how they can be applied to rhetorical uses in academic writing will allow the writer the greatest flexibility in the use of tense and voice to express nuances in meanings (Taylor, 2001).

To summarize, the study presents a way of understanding as well as making sense of communicative events that occur in the writing of the Integrated Results and Discussion chapters of master students' theses. The study aims at presenting a practical account of how Integrated Results and Discussion chapters of ESL master students are organized as a genre. The results of the study also show how tenses and voices can be embedded in the moves and steps of Integrated Results and Discussion chapters of ESL master students who may need to differentiate the skills of writing according to sciences.

1.7   Scope and Limitations

In any research endeavour, there are limitations (Tan, 2011, p. 24). This study also has a number of limitations. One, the genre under investigation in this study was limited to master's theses. It must be acknowledged that according to Lewkowicz (2009) and Samraj (2008), most of the studies have focused on the PhD theses rather than the master's theses.

Furthermore, as Thompson (2001) underlined, the number of theses had to be increased to be more representative, while still remaining manageable and practicable. PhD theses were not chosen, because they are long texts, running up to 100,000 words in length, and they are also difficult to obtain as there are usually not many theses written in any one department, at a single university. In addition, for most master students, writing a thesis is the first writing experience in academic life. Also, based on the claim made by Soleimani and Soleimani (2015) and Hyland (2003), students look at each other's dissertations to get an idea of the structure, content, and expression. There may be errors in students' writings (Al-Buainain, 2011), however, error analysis is not in the scope of the present study and is offered for future research.

Another justification for choosing master's theses as the corpus of this study is that in the study by Arulandu (2006), it was revealed that the use of similar rhetorical and linguistic strategies was similar between the master and PhD theses. As another limitation of this study, it can be pointed to the choice of Integrated Results and Discussion chapters of theses as the corpus of the study. The rationalization for this is the gap in the literature. The organizations of certain sections of theses such as Introduction and Discussion sections (Dudley-Evans, 1986) and Conclusions (Hewings, 1993) have been already explored (Samraj, 2008). However, investigations of Integrated Results and Discussion chapters of theses is neglected in the previous studies. In addition, according to Samraj (2008), these studies have tended to focus on texts from single disciplines and have not taken into consideration the disciplinary variation in this student-produced genre. In order to fill this gap, in the present study, the data was collected from theses written in the hard sciences and soft sciences.

In addition, this study specifically focused on the theses from one institution. Unlike the studies on research articles which collect data from different journals, there are numerous studies on theses which collected data from one institution only. For example, Thompson (2001), Paltridge (2002), Strauss et al. (2003), Skillen and Purser (2003), Tuner (2003), Cheng (2014), and Aitchison (2003) collected their data from one institution only.

In the present study, the reason for collecting data from one institution was that the researcher, as a student at the same university, was familiar with the site and staff, and therefore, this familiarity could facilitate the data collection procedure. This

justification was also echoed by Kennedy (1998) who underlined the importance of accessibility and availability of the corpus in conducting discourse analysis.

Additionally, Paltridge (2002, p. 17) argued that since the beginning decades of the 21st century, public university students have become diverse in terms of "race, gender, nationality and economic background". In line with this argument, Duderstadt (2000, p. 22) emphasized that in the 21st century, since students of public universities "come from different backgrounds", they have the capabilities of performing research with "different intellectual objectives". Duderstadt (2000, p. 22) concluded that a single public university may provide a diverse population for data gathering purpose.

As a third reason for selecting a single public university for data collection, it may be referred to Bhatia (2000) who underlined that a university is an academic setting that provides an opportunity for students to get involved as well as participate in novel and recurring genres. Bhatia (2000) furthered that in an academic setting such as a public university, a wide range of genres including theses are available, and thus a researcher may consider a single public university as an adequately suitable source of data collection. Furthermore, Bhatia (2000) introduced the notion of "linguistic competence". According to Bhatia (2000), linguistic competence is the ability of students in an academic setting to utilize, interpret, and create suitable texts that are worthy of investigation.

Finally, this adequacy of selecting a single academic institution for data collection is indicated by other researchers (for example, Cheng, 2014; Strauss et al. 2003; Aitchison, 2003; Thompson, 2001; Kennedy, 1998). As such a single academic institution may be evaluated as a research location that bears resemblance to other academic settings. In line with this view, Tunnel (1977) maintained that resemblance between the research locations and the real world can intensify the representativeness of a research. This view of representativeness of an academic setting is underlined by Calder, Philips, and Tybout (1982, p. 201) who emphasized that a "real world situation" is the requirement of a study setting. Thus, a local public university with a high reputation for academic research, especially ESL studies, was selected as a location that the data of the study could be gathered.

1.8   Definition of Terms

Discourse

Nunan (1993, p. 5) described 'discourse' as a segment of language comprising of a number of sentences, which are related to each other in some ways. To provide a better insight of the term discourse, Fairclough (2001, p. 14) added that discourse is language as a type of social practice. This definition is significantly meaningful for the present study since the study evaluates theses as a type of written discourse.

Genre

Swales (1990, p. 58) provides a classic definition for genre by referring to discourse community as well as the communicative purpose of a discourse community. Swales (1990) opined that a genre contains a class of communicative events within a discourse community. Accordingly, in a discourse community, there are some particular communicative purposes in relation to some particular communicative events. As such, a genre is a way of communication that is employed by community members of a specific discourse community. Any genre requires using a specific schematic structure in terms of lexis, language use, and rhetoric. In tandem with this view, Holmes (1997, p. 321) argued that a genre "can be briefly defined as a class of texts characterized by a specific communicative function that tends to produce distinctive structural patterns". In the present study, thesis as a text produced by student writers is the genre under investigations.

Move

According to Ding (2007, p. 369), move is a "functional unit in a text used for some identifiable purpose, and is often used to identify the textual regularities in certain genres of writing".

Step

According to Dudley-Evans and St Johns (1998, as cited in Nodoushan & Montazeran, 2012, p. 3), step is "a lower level text unit than the move that provides a detailed perspective on the options open to the writer in setting out the moves".

Tense

According to Fontaine (2012, pp. 116-117), "Tense refers to grammatical meaning which can be evidenced through inflectional morphology; it concerns the structural form of a verb."

Voice

The active voice and the passive voice are verb forms in the English language. In the active voice, the person or thing represented by the grammatical subject performs the action represented by the verb. However, in the passive voice, the grammatical subject of a verb is subjected to or affected by the action represented by that verb (*Merriam-Webster's collegiate dictionary*, 2004)

1.9   Summary

The present study employs methods of genre analysis, as a way of pinpointing communicative functions of Integrated Results and Discussion chapters of master's theses as integrated chapters. The investigated theses are in the hard sciences (fields of Chemistry and Physics) and the soft sciences (fields of English Language and Economics). The results of the study are anticipated to shed light on the rhetorical pattern of Integrated Results and Discussion chapters of master's theses. Investigating the grammatical properties of tense and voice is also another aim of the study. The comparison between the occurrences of moves and steps together with tenses and voices in the investigated chapters of hard and soft sciences can help educators to gain a better knowledge of the mentioned sciences. Furthermore, the results of the study can assist ESL teachers and supervisor to better evaluate and grade master students' writings. In the next chapter, the methodology and research design of this study are elaborated. Both quantitative and qualitative approaches are discussed to examine the rhetorical moves and steps and the used tenses and voices in Integrated Results and Discussion chapters of master's theses.

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