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English Language Department

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Submitted in the Partial Fulfillment of the Requirements for the Degree of
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Entitled

**The Comparative Study of Metadiscourse Elements in Scientific
Research Articles**

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be accepted in the Partial Fulfillment of the Requirements for the Degree
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IN THE NAME OF GOD

To my mother

&

to the memory of my father

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<p>Abstract: This study was motivated by three factors, which also contribute to its significance for today's academic writing. First, research articles are the significant means of communication between the writers and researchers all over the world. Second, persuasion and organization are crucial notions in academic writing where the authors have to consider the academic audiences and their needs. Third, some writers are not the native speakers of English and write their research articles in English. Presumably some differences may exist in their using of textual metadiscourse resources (TMRs). TMRs are essential components in research articles. Despite their importance in academic writing, we know little about how they are used in different disciplines and genres and how foreign language writers use these resources in their writing. This study examines distributions of TMRs in research articles and as a consequence disciplinary variation in the three disciplines of Mechanical Engineering (ME), Medicine (MED), and Applied Linguistics (AL). These three disciplines were chosen as representative of the three broad disciplines of Engineering, Health Sciences and Humanities. A comparison is made between research articles written by native English speakers and Iranian writers writing in English in the research articles of the three disciplines. Based on a corpus of thirty research articles, the frequency of TMRs was calculated per 1,000 words. Then, the overall, rhetorical, and categorical distribution of TMRs in research articles of three disciplines and in the articles of native and non-native writers were compared. The findings of the study indicate significant differences in the distribution of TMRs in three disciplines and also between the writings of native and non-native writers. The differences may be partly due to the influence of writing practices in the non-native writers' first language and partly to the writers' attempt to find an appropriate format in the absence of well-established research writing conventions in the first language. Also, some differences were found in the rhetorical distribution of TMRs in the articles of native and non-native writers. In addition, these findings may have some implications for teaching disciplinary communication especially to foreign language learners of English. Disciplinary knowledge and awareness to rhetorical purposes of research articles rather than mere language skills are more essential for students of academic disciplines.</p>	

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List of Abbreviations

A	Abstract
AL	Applied Linguistics
EAP	English for Academic Purposes
ESP	English for Specific Purposes
F	Frequency
I	Introduction
ME	Mechanical Engineering
MED	Medicine
N	Native
NN	Non-Native
R &D	Result and Discussion
SFL	Systemic Functional Linguistics
TMRs	Textual Metadiscourse Resources
W	Words

CHAPTER 1: INTRODUCTION

1.0. Background and Need for the Study

Traditional academic writing has considered that researchers should be objective and have an impersonal style when reporting their studies. This thought mainly shows preferences and general tendencies in academic writing. This prevailing view of academic writing has been criticized by a number of researchers (e.g. Swales, 1990; Tang & John, 1999; Hyland, 2001; Vassileva, 2001; Harwood, 2005). Researchers (Thetela, 1997; Hoey, 2001; Hyland, 2005) argue that interaction in written texts can be conducted as that in the spoken text, though with different effects as a result of the different medium. This view has gradually reflected a perception of academic writing as social engagement, involving interaction between writers and readers.

These proliferation of studies on academic written discourse in general and English for academic purposes in particular about interaction has entailed increased research activity into what language and communication tools the researchers and the students must acquire to become fully socialized into their research community. In such contexts, the process of gaining entry into these communities is seen as being dependent on awareness of, and competence in, the writing practices of the relevant discourse community (Hyland, 2004).

Scientific and academic contributions or the way researchers share their findings with the research community they belong to, are influenced by the disciplinary culture they have been socialized into through their academic studies. The choices of tools among metadiscourse resources help to establish the interaction between writer and reader in academic texts. Academic writers do not simply produce texts that discuss social or natural realities but use language to acknowledge, construct and negotiate social relations (Hyland,

1998). The interpersonal resources organize texts coherently and to convey credibility and reader sensitivity.

A great deal of recent research (e.g. Hyland, 2004; Dahl, 2004; Ifantidou, 2005; Hempel & Degand, 2008) has shown a growing tendency toward the interaction aspects of research articles in different disciplines that is created by textual metadiscourse resources (TMRs). Their focus is on the range of metadiscursive resources that are at an author's disposal for a clearer structuring of the propositional content of his/her message.

In order to improve knowledge of the interactive characteristics in the research articles, it seems necessary to have a systematic account of using metadiscourse resources, which researchers across disciplines deploy to achieve their intended effects. The present thesis attempts to contribute to the investigation of metadiscourse resources in research articles that belong to three academic disciplines of Applied Linguistics (AL), Medicine (MED), and Mechanical Engineering (ME).

1.1. Statement of the Problem and Purpose of the Study

The purpose of this study is to investigate the tendency of the English and Iranian academics in the use of metadiscourse resources that helps to the textual organization of the research articles in three academic disciplines (AL, MED, and ME). The reason for selecting the investigation of the use of TMRs in research articles is to determine the form and distribution of these resources in trying to form more organized and more coherent texts. So the main purpose is to show to what extent each discipline displays audience sensitivity in the form of features that their main function is directing and building coherence and also address the variations in academic discourse between different academic disciplines.

1.2. Research Questions and Research Hypotheses

This study seeks answers to the following research questions:

Research Question 1: Is there any significant difference among Mechanical Engineering, Medicine, and Applied Linguistics research articles in the use of TMRs in three rhetorical sections namely, Abstract, Introduction, and Result & Discussion?

Null Hypothesis 1: There is no significant difference among Mechanical Engineering, Medicine, and Applied Linguistics research articles in the use of TMRs in three rhetorical sections namely, Abstract, Introduction, and Result & Discussion.

Substantive Hypothesis 1: There is a significant difference among Mechanical Engineering, Medicine, and Applied Linguistics research articles in the use of TMRs in three rhetorical sections namely, Abstract, Introduction, and Result & Discussion.

Research Question 2: Is there any significant difference between native and non-native writers of English in the use of TMRs in three rhetorical sections of Abstract, Introduction, and Result & Discussion in Mechanical Engineering, Medicine, and Applied Linguistics research articles?

Null Hypothesis 2: There is no significant difference between native and non-native writers of English in the use of TMRs in three rhetorical sections of Abstract, Introduction, and Result & Discussion in Mechanical Engineering, Medicine, and Applied Linguistics research articles.

Substantive Hypothesis 2: There is a significant difference between native and non-native writers of English in the use of TMRs in three rhetorical sections of Abstract, Introduction, and Result & Discussion in Mechanical Engineering, Medicine, and Applied Linguistics research articles.

1.3. The Importance of the Study

Written academic discourse plays important roles in creating and disseminating knowledge among individuals and groups and across boundaries imposed by practice differences of disciplines. As a result, studies in the field of academic writing generally draw on comparisons of the different disciplines consequently. Swales (1990) asserts that writers in different disciplinary communities should conform to conventional styles of English rhetoric if they are to be accepted and to succeed in publishing and in their field of study. Viewing written text as an interaction, the study investigates how the use of textual resources might reveal writers' perception of their role and their attempts in creating coherent and more organized text. Knowledge of these resources helps writers to project themselves into their work more efficiently and hence might bring the author a deeper sense of ownership over their writings. Taken as a critical feature of good native and learner language writing (Intraprawat & Steffenson, 1995), metadiscourse is an essential, yet neglected aspect of language use in general and in academic contexts in particular.

A comparison between the English and Iranian non-native academicians might be better to reveal the differences and similarities in the use of interactive resources; so I want to analyze research articles written by both groups. Seeing that hedges, boosters, and self-mention from broad category of metadiscourse have received considerable attention in the literature (Hyland, 1994; Salager-Meyer, 1994; Crompton, 1997; Vartalla, 1998; Tang and John,

1999; Ivanic and Camps, 2001), I believe that there is still substantial scope to explore other metadiscourse resources especially the textual ones and their frequencies. Corpus based studies such as ours will shed light onto further research concerning the investigation of textual resources in academic disciplines.

1.4. Definitions of Key Terms

Discourse:

Discourse is a general term for examples of language use, i.e. language which has been produced as an act of communication. Whereas grammar refers to the rules of a language used to form grammatical units such as clause, phrase and sentence, discourse refers to a larger unit of language such as paragraphs, conversations and interviews (Richards, Platt & Platt, 1992).

Research article:

A research articles constitutes a key genre used by scientific communities for the dissemination and ratification of knowledge (Koutsantoni, 2006).

1.5. Organization of the Study

To attain the objectives outlined above, the present study builds on the analysis of corpus of thirty research articles from three disciplines of AL, MED, and ME. Chapter 1 gives the background to the study and describes the nature of the problem and the justification of carrying out this study. Chapter 2 expatiates on the metadiscourse and its related concepts. Chapter 3 outlines the research methodology composed of data selection criteria and procedures of data analysis. Chapter 4 outlines the findings of the analysis. The result of each question is reported in the forms of figures and tables. Chapter 5 draws