LEXICAL BUNDLES AND MOVES IN AGRICULTURAL SCIENCE RESEARCH ARTICLES

Huimin Shi

A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Arts in English Language Studies

Suranaree University of Technology

Academic Year 2010

กลุ่มคำศัพท์และอันตรภาคในบทความวิจัยทางวิทยาศาสตร์การเกษตร

นางสาวฮุยมิน ซือ

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาศิลปศาสตรมหาบัณฑิต
สาขาภาษาอังกฤษศึกษา
มหาวิทยาลัยเทคโนโลยีสุรนารี
ปีการศึกษา 2553

LEXICAL BUNDLES AND MOVES IN AGRICULTURAL SCIENCE RESEARCH ARTICLES

Suranaree University of Technology has approved this thesis submitted in partial fulfillment of the requirements for a Master's Degree.

Thesis Examining Committee

_____

(Dr. Jitpanat Suwanthep)

Chairperson

_____

(Assoc. Prof. Dr. Anchalee Wannaruk)

Member (Thesis Advisor)

_____

(Dr. Butsakorn Yodkamlue)

Member

_____

(Dr. Issra Pramoolsook)

Member

_____ _____

(Prof. Dr. Sukit Limpijumnong) (Dr. Peerasak Siriyothin)

Vice Rector for Academic Affairs Dean of Institute of Social Technology

ฮุยมิน ซือ : กลุ่มคำศัพท์และอันตรภาคในบทความวิจัยทางวิทยาศาสตร์การเกษตร (LEXICAL BUNDLES AND MOVES IN AGRICULTURAL SCIENCE RESEARCH ARTICLES) อาจารย์ที่ปรึกษา : รองศาสตราจารย์ ดร. อัญชลี วรรณรักษ์, 181 หน้า

ในปัจจุบันงานวิจัยทางด้านการเขียนงานวิชาการได้มุ่งเน้นไปในสองแนวทางคือมุ่งศึกษารูปแบบโครงสร้างหลักของตัวบทความวิชาการหรือศึกษาลักษณะเฉพาะทางภาษาศาสตร์ งานวิจัยฉบับนี้มีจุดประสงค์เพื่อวิเคราะห์อันตรภาคเชิงวาทศิลป์ (move) และกลุ่มคำศัพท์ (lexical bundles) ของอันตรภาคของบทความวิจัยทางด้านวิทยาศาสตร์การเกษตร ผู้วิจัยได้ทำการวิเคราะห์บทความวิจัยสามสิบเรื่องในสาขาวิทยาศาสตร์การเกษตรได้แก่ สาขาเทคโนโลยีการผลิตพืช สาขาเทคโนโลยีอาหาร และสาขาเทคโนโลยีการผลิตสัตว์ ตามแนวทางของกนกศิลปธรรม (Kanoksilapatham, 2005) หลังจากนั้นกลุ่มคำศัพท์ที่พบบ่อยในแต่ละอันตรภาคจะถูกวิเคราะห์และจัดกลุ่มตามลักษณะหน้าที่ โดยกลุ่มคำศัพท์ได้มาจากคลังข้อมูล (CASA) ซึ่งรวบรวมบทความวิจัยทางด้านวิทยาศาสตร์การเกษตร จากวารสารระดับนานาชาติที่มีการตรวจสอบโดยผู้เชี่ยวชาญ ลักษณะทางภาษาศาสตร์และหน้าที่ของกลุ่มคำศัพท์จะช่วยให้นักวิจัยหน้าใหม่หรือนักศึกษาสามารถอ่านและเขียนบทความวิจัยทางวิทยาศาสตร์การเกษตรได้อย่างมีประสิทธิภาพ

สาขาวิชาภาษาอังกฤษ ลายมือชื่อนักศึกษา_____

ปีการศึกษา 2553 ลายมือชื่ออาจารย์ที่ปรึกษา_____

HUIMIN SHI : LEXICAL BUNDLES AND MOVES IN AGRICULTURAL SCIENCE RESEARCH ARTICLES. THESIS ADVISOR : ASSOC. PROF. ANCHALEE WANNARUK. Ph.D., 181 PP.

MOVE/ LEXICAL BUNDLES/ RESEARCH ARTICLES

Currently, there have been two lines of research in the study of academic writing, focusing on the structural organization of academic text or specific linguistic features. The aim of this study was to identify rhetorical moves and their lexical bundles in research articles in the field of Agricultural Science. Thirty research articles in three major fields of Agricultural Science, including Crop Production Technology, Food Technology and Animal Production Technology, were analyzed based on Kanoksilapatham's (2005) framework. Then, frequent lexical bundles of each move were identified and classified functionally on the basis of a Corpus of Agricultural Science Articles (CASA) which consists of international peer-reviewed research articles. The lexical bundles which link linguistic features and convey functional units may help novice researchers or students to read and write agricultural science research articles effectively.

School of English Student's Signature_____

Academic Year 2010 Advisor's Signature_____

ACKNOWLEDGEMENTS

I wish to express my deepest appreciation to my advisor, Associate Professor Dr. Anchalee Wannaruk, for her guidance. I am grateful to her for having introduced me to the field of Corpus Linguistics. She always encouraged me to come up with my own ideas and approaches towards solving a problem. She has given me her valuable time and patience. Her encouragement has contributed a great deal to the accomplishment of the thesis. I enjoyed talking to her and I learned a lot from her, including attitudes about life and learning.

I would like to express my heartfelt gratitude to the committee members for the defense of the present thesis, Dr.Jitpanat Suwanthep, Chair of the Committee, Dr. Butsakorn Yodkamlue and Dr. Issra Pramoolsook. They all offered very useful suggestions that were very impressive and improved my thesis a lot. Special thanks should go to Associate Professor Dr. Adrian Evan Flood and Mr. Peter Bint who have put considerable time and effort into checking the reliability of the move analysis and lexical bundles.

I also owe a special gratitude to all the teachers of the course work at SUT. They have helped me to develop a fundamental and essential academic competence.

My sincere appreciation also goes to the academic committee members of SUT who awarded me the research grant and to the secretaries of the School of English at SUT who have often helped me with my work.

I owe my deepest thanks to Mr. Tian Xingbin, Dean of Foreign Language Department at Tongren University, China. It was his encouragement that made me able to continue my study at SUT. He gave me many academic suggestions. Also, he treated me like a friend with a very kind attitude towards my troubles. Mr. Zhang Baoya who works with Associate Professor, Dr. Anchalee Wannaruk has proofread my list of lexical bundles. I am also grateful to all my Chinese and Thai friends at SUT for helping me whenever I have needed them.

Last but not least, my gratitude also extends to my family who have been assisting, supporting and caring for me all of my life, especially my mother and sister.

Huimin Shi

TABLE OF CONTENTS

Page

ABSTRACT (THAI)…….....I

ABSTRACT (ENGLISH) II

ACKNOWLEDGEMENTS……..III

TABLE OF CONTENTS……V

LIST OF TABLES……..…IX

LIST OF FIGURES……..……..XI

LIST OF ABBREVIATIONS……..……XII

CHAPTER

1. INTRODUCTION…….1

1.1 Statement of the Problem…….1

1.2 Rationale of the Study……..……5

1.3 Statement of the Purposes…….6

1.4 Significance of the Study……..7

1.5 Scope of the Study…….7

1.6 Limitations of the Study…….8

1.7 Definitions of Key Terms……8

1.8 Summary……..9

2. REVIEW OF LITERATURE……10

2.1 Genre Analysis in ESP Writing……10

2.2 Previous Studies of the Structure of Research Articles……13…

TABLE OF CONTENTS (Continued)

Page

2.3 Corpus-based Lexical Analysis……..

2.4 Lexical Bundles……

2.5 Summary……

3. RESEARCH METHODOLOGY……

3.1 Compilation of the Corpus……

3.2 Framework of Move Analysis……

3.3 Software Programe for Lexical Bundles Identification……

3.4 Data Analysis Procedure……

3.5 Pilot Study…….

3.6 Main Study……

3.6.1 Samples and Sampling Procedure……

3.6.2 Move Identification……

3.6.3 Lexical Bundles Identification……..

3.6.3.1 Lexical Bundles Identified in the Introduction Section…..

3.6.3.2 Lexical Bundles Identified in the Methods Section…….

3.6.3.3 Lexical Bundles Identified in the Results Section……

3.6.3.4 Lexical Bundles Identified in the Discussion Section……..

3.7 Reliability of Move Identification and Lexical Bundles Identification……35

3.7.1 Reliability of Move Identification……...

3.7.2 Reliability of Lexical Bundles Identification……

3.8 Summary……

TABLE OF CONTENTS (Continued)

Page

4. RESULTS…….

4.1 Rhetorical Moves in Agricultural Science Research Articles…….

4.1.1 The Introduction Section……

4.1.2 The Methods Section……..

4.1.3 The Results Section……

4.1.4 The Discussion Section……

4.2 Lexical Bundles in Each Move in Agricultural Science

Research Articles…….

4.2.1 Lexical Bundles Identified in the Introduction Section……

4.2.2 Lexical Bundles Identified in the Methods Section……..

4.2.3 Lexical Bundles Identified in the Results Section……...

4.2.4 Lexical Bundles Identified in the Discussion Section…….

4.3 Summary……

5. DISCUSSION……

5.1 Move Analysis…….

5.2 Lexical Bundles in Agricultural Science Research Articles……

5.2.1 Same Lexical Bundles with Different Functions Occuring

in Different Moves……..

5.2.2 Same Lexical Bundles with the Same Function……

Occurring in Different Moves……

5.3 Summary …….

TABLE OF CONTENTS (Continued)

Page

6. CONCLUSIONS …….

6.1 A Summary of the Findings……..

6.2 Implications of the Present Study…….

6.3 Suggestions for Further Study……

REFERENCES……...

APPENDICES……...

CURRICULUM VITAE ……...

LIST OF TABLES

Table **Page**

Table 2.1 Previous Studies of the Structure of Individual Sections……

Table 2.2 Previous Studies of the Structure of Complete IMRD Sections……

Table 3.1 Corpus of Agricultural Science Articles……..

Table 3.2 List of Journals and the Number of Articles Selected…….

Table 3.3 Move 1: Stating why the topic is important

Table 3.4 Move 2: Indicating a research gap

Table 3.5 Move 3: Introducing the present study

Table 3.6 Move 4: Describing materials

Table 3.7 Move 5: Describing experimental procedures

Table 3.8 Move 6: Detailing equipment

Table 3.9 Move 7: Describing statistical procedures

Table 3.10 Move 8: Describing the mathematical modeling of the system

Table 3.11 Move 9: Stating procedures

Table 3.12 Move 10: Justifying procedures or methodology

Table 3.13 Move 11: Stating results

Table 3.14 Move 12: Commenting on the results

Table 3.15 Move13: Contextualizing the study

Table 3.16 Move 14: Consolidating results

Table 3.17 Move 15: Stating the limitations of the present study

Table 3.18 Move 16: Suggestions for further research

LIST OF TABLES (Continued)

Table **Page**

Table 3.19 Inter-coder Analysis of the Four Sections of Agricultural Science RAs

Table 4.1 Rhetorical Moves of Agricultural Science RAs

Table 4.2 Rhetorical Moves of the Introduction Section of Agriculture Science RAs

Table 4.3 Rhetorical Moves of the Methods Section of Agriculture Science RAs

Table 4.4 Rhetorical Moves of the Results Section of Agriculture Science RAs

Table 4.5 Rhetorical Moves of the Discussion Section of Agriculture Science RAs

Table 4.6 List of Lexical Bundles Identified in the Introduction Section

Table 4.7 List of Lexical Bundles Identified in the Methods Section

Table 4.8 List of Lexical Bundles Identified in the Results Section

Table 4.9 List of Lexical Bundles Identified in the Discussion Section

Table 5.1 List of Lexical Bundles with More than One Functions

LIST OF FIGURES

Figure **Page**

Figure 3.1 Step of Loading Corpus Files……

Figure 3.2 Step of Searching for Keywords

Figure 3.3 Example of Concordance Output for the Word “objective”

Figure 3.4 Step for Sorting

Figure 3.5 Example of Identifying Move Boundary

Figure 3.6 Example of Concordance Output for the Word “aim”

Figure 3.7 Sample Move Analysis of a Research Article Introduction

Figure 4.1 Lexical Bundles Collection Procedure

LIST OF ABBREVIATIOINS

CARS	=	Create a Research Space
CASA	=	Corpus of Agricultural Science Articles
EFL	=	English as a Foreign Language
ESL	=	English as a Second Language
ESP	=	English for Specific Purposes
IMRD	=	Introduction Methods Results Discussion
KWIC	=	Key Word in Context
M1	=	Move 1
M2	=	Move 2
M3	=	Move 3
NES	=	Native English Speaking
NNES	=	Non-native English Speaking
SCI	=	Science Citation Index
URL	=	Uniform Resource Locator