A Cross-Disciplinary Genre Analysis of Research Articles:
A Focus on Rhetorical Structures

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Abstract

Genre in English for Specific Purposes (ESP) has emerged as one of the important concepts in English education at the tertiary level. While many genre studies have examined specific skills and knowledge within a particular discipline with regard to writing a research article, no comprehensive study has encompassed a wide range of disciplines and all sections of articles to examine article rhetorical structures. Furthermore, very few genre studies have involved the participation and perspectives of discourse community members in their analyses.

This dissertation explores cross-disciplinary similarities and differences by applying move analysis (Swales, 1990) to entire articles, without limiting the target texts to having the conventional structure of Introduction, Methods, Results, and Discussion (IMRD), in order to better understand rhetorical structures and expressions that serve to achieve the intended purpose of texts. Discussions are presented based on the theoretical framework of ESP, more specifically English for Academic Purposes (EAP), which is further categorized into English for General Academic Purposes (EGAP) and English for Specific Academic Purposes (ESAP). In this study, members of the target discourse communities participate to identify rhetorical units and select useful expressions in research articles of their own fields.

The research questions addressed in the dissertation include the following: (1) What are the rhetorical structures of research articles of various disciplines? In what ways are these structures similar and different? (2) Are there subdisciplinary variances of the rhetorical structure within single disciplines? and (3) What expressions are helpful for writing research articles? Are there any relationships between these expressions and rhetorical structures?

Chapter 1 provides an introduction and an overview of genre analysis of research articles and the EAP framework. The chapter highlights the need for empirical cross-disciplinary analysis of research articles based on the EGAP and ESAP framework and for analysis of expressions in relation to rhetorical structures, along with the importance of involving the discourse community's perspectives in rhetorical and linguistic analyses.

Chapter 2 reviews the literature on ESP and explores the following: (1) the definition of genre, (2) the analysis of genre, (3) move analysis, and (4) genre analysis of research articles and its application to teaching and learning. The chapter closely describes the notion of move developed by Swales (1990), a rhetorical unit of a text having a specific communicative function and purpose. The chapter also reviews issues pertaining to previous genre studies of research articles in terms of target

texts as well as roles that specialist informants play in ESP research.

Chapter 3 describes the study's corpus, participants, and procedures for coding moves and steps, smaller rhetorical segments constituting moves, as well as the selection of useful expressions, methods of move analysis, and expression data analysis. Fifty-one researchers from 15 disciplines at a research-oriented university in Japan coded moves and selected expressions in 423 articles from the Kyoto University academic corpus, one of the largest academic corpora in Japan. Move-coded texts were analyzed based on the frequency and range of moves and steps per discipline. Descriptive analyses were also conducted to illustrate the conventional move patterns. Expressions selected by the researchers were organized per move, and frequent expressions were also extracted for the purpose of comparative analysis.

Chapter 4 presents the results of rhetorical move analysis applied to entire research articles to address the first research question. The results of the move analysis are presented in the following order: newly found moves and steps, particularly in disciplines that have not been studied before; frequent move sequences; and disciplinary descriptions of move components intended to convey the general tendency of rhetorical structures. Discussions were made based on a 50% occurrence rate for constituting conventional move patterns. Common and divergent moves and steps across disciplines were identified, as well as frequently used sequences such as those that allow for repetition of a sequence that presents a specific result and its discussion. To enable a clear cross-disciplinary comparison, the study focused particularly on the constituent moves and steps in introductory sections that were observed in all disciplines. The results revealed similarities across disciplines that are considered to be distinct.

Chapter 5 examines a case study of research articles in the discipline of engineering, which is considered to consist of numerous subdisciplines, in order to address the second research question regarding rhetorical structures across subdisciplines. In the discipline of engineering, six engineering researchers identified the moves of articles in five subdisciplines: structural engineering, environmental engineering, electrical engineering, chemical engineering, and computer science. There are some sections and moves that are conventional across subdisciplines, although no common move patterns exist across all subdisciplines. There are some subdisciplines closer in move and step structure than others, at least in certain sections. For example, the use of a method step, "recounting experimental process," was found to be obligatory in chemical engineering and conventional in environmental and electrical engineering; articles in computer science exhibited divergent move patterns. The case study of engineering subdisciplines is considered to be relevant to other disciplines and their subdisciplines.

The descriptions of texts in particular disciplines and subdisciplines in Chapters 4 and 5 lay the groundwork for a better understanding of textual structures and writing instructions for preparing students to join the disciplinary communities. Certain similarities and differences in rhetorical

structures are attributed to the different types of experiments and analyses, and some are explained by disciplinary cultures. For example, newer and interdisciplinary fields such as environmental engineering require detailed provisions of contextualizing the research with a cycling of moves and steps in the introductory and concluding sections. Disciplines with an orientation toward application of knowledge, such as education, engineering, and agriculture, tend to use prescribed introductory structures. While disciplinary specificities exist, cross-disciplinary analysis revealed that disciplinary rhetorical structures are not always distinct, providing a new perspective on disciplines that may lead to a potential theoretical concept of a genre system for research articles.

Chapter 6 presents an analysis of rhetorical structures and expressions selected as useful by the researchers to answer the third research question. Because the textual data were all categorized into moves and steps, an analysis of selected expressions based on the structural segments of an entire paper was possible. The author interpreted the function of the selected expressions to describe the expressions particular to each move and step. Although the expressions were concentrated in the moves of introductions and discussions, useful expressions were observed throughout all moves. The study also examined the nature of the selected expressions by focusing on one- and four-word expressions in their forms and functions, comparing them with frequency-based extractions. The findings include the researchers' choices of adverbial clauses and noun phrases created by the writer and indicate the importance of discourse community members' perspectives in the selection of useful expressions.

Chapter 7 discusses the results and concludes the dissertation, synthesizing the answers to the research questions. It first reviews the findings along with the limitations of the study and then suggests the pedagogical implications for EGAP and ESAP courses as a continuum. It also demonstrates a possible application of the results by visualizing genre characteristics—both rhetorical structures and selected expressions—focusing on the case of research articles in education. This chapter discusses the study's comprehensive approach, which included articles with a non-IMRD structure in the analysis and provided different move results from previous studies; it also discusses collaborations with specialist informants in EAP research. Finally, the chapter proposes a framework to consider the genre of research articles as a system, which includes a common core, similarities, and specificity of disciplines and subdisciplines in terms of rhetorical structures and expressions.