CHAPTER 4

METHODOLOGY

4.1 Introduction

In this chapter, first, the objectives of the study are clarified. Then, the research questions are presented followed by a description of the methodology of the study. The description of the methodology includes the description of data, definition of the terms used in the study, and explanation of the moves analysis procedure, metatextual analysis and contrastive analysis between the English and Japanese articles.

4.2 Objectives

The writer's experience in teaching expository writing and research paper writing in English to Japanese college-level students, both English and non-English majors, led to the realization that the students have difficulty with coherence and cohesion strategies in English. The students' writing, both expository and academic, lacked coherence and cohesion even when they included sufficient information on the subject matter. In other words, the topical progression of English texts written by the Japanese students lacked semantic unity from the Anglo-American perspective. In order to be accepted for international publications, papers must be written in English. Therefore, it is imperative that the Japanese-speaking students and researchers learn coherence and cohesion strategies in Anglo-American logical development.
Despite their being key issues in the teaching of academic English to Japanese speakers, there is a general lack of information on the differences in logical development between English and Japanese texts. There have been a few contrastive studies on the logical development of English and Japanese expository texts (Kobayashi, 1984) and argumentative essays (Oi, 1986; Oi and Kamimura, 1997), and expository and argumentative essays (Kubota 1997, 1998, 1999). However, the study of genre-specific contrastive rhetoric between English and Japanese has been neglected.

The primary objective of the present research is to identify the differences in logical development between English and Japanese academic texts in the field of language teaching in applied linguistics. According to Bhatia (1993, p. 19), one effective method of studying logical development, or cognitive structuring in a text is to carry out genre analysis. Through the analysis of moves in a particular genre, one can see the topical progression common in the subject genre. For example, one contrastive moves analysis study by Taylor and Chen (1991) revealed common underlying rhetorical structure in English Science texts written by Anglo-American speakers and Chinese speakers and Chinese texts written by Chinese speakers as well as systematic variations from the common structure (See Chapter 3). In the present research, in order to identify the differences in coherence tactics between English and Japanese, the writer carried out a moves analysis study using Swales’ framework. The results were then discussed from a socio-cultural point of view to account for the reasons and causes of the differences on the premise that the language is interrelated with culture.
Another objective of this study is to identify differences in the use of cohesive strategies by English and Japanese writers of research articles. To do this, the use of metatextual phrases in the texts was analyzed. Since metatextual phrases are text-organizing elements, they are important in the topical progression of a text. The studies by Mauranen (1993) and Valero-Garces (1996) revealed that Anglo-Americans use more metatext than either Finnish or Spanish-speaking writers (see Chapter 3). This would suggest that Anglo-American readers, in contrast to other language speakers, are used to reading texts with explicit organizational signals. Therefore, based on this, it is anticipated that the present study would reveal differences in the use of metatextual phrases by the English and Japanese writers of research articles.

The final objective of the present research is to utilize the research findings and to outline pedagogical implications for teaching academic English writing to Japanese researchers and students.

4.3 Research Questions

For the above objectives, the following four research questions were stated:
1 How does the generic structure or the logical arrangement of the information elements differ between the English and Japanese research articles in the field of applied linguistics?

2 Is there any difference in the use of metatextual phrases between the two sets of texts?

3 How can the results of research questions 1 and 2 be explained from a socio-cultural point of view?

4 How can the results be utilized in teaching academic English to native speakers of Japanese?

These research questions would help identify the differences, if any, in the logical development and the use of coherence and cohesion strategies between writers of English and Japanese research articles; provide explanations for such differences from a socio-cultural point of view; and present better ways of teaching academic English to Japanese writers.

The articles studied were 60 applied linguistics experimental research articles (30 English and 30 Japanese) published in the years of 1995 to 2000. To answer the first research question, schematic differences between the two sets of data were identified. First, the writer studied the structure of research articles in both languages as a whole. Based on the literature review, it is anticipated that the following sections will appear in the articles: abstract, introduction, method, results, and discussion. Next, to identify the schematic structure of each section, a moves analysis was carried out based on Swales' framework. As part of the moves analysis, predictable patterns of moves were studied. Since differences in the reference to previous research were observed in the articles, the moves that referred to previous research were studied. Lexical signals were also analyzed for two reasons: first, as a part of moves analysis
and secondly, to see the cohesion and coherence strategies adopted by the writers. To answer the second research question, metatextual phrases were studied based on Märtanen’s framework to identify the cohesion and coherence strategies. For the third research question, the results of the study were discussed from a socio-cultural perspective using Kaplan’s contrastive rhetoric framework. Finally for the fourth research question, pedagogical implications were drawn to improve the academic English teaching in Japan.

4.4 Definition of Terms

The definition of the terms used in the study are presented in the following sections. These terms include move, step, and information unit, as well as lexical signal and metatextual phrase.

4.4.1 ‘Move’, ‘Step’, and ‘Information Unit’

(a) Move

A ‘move’ is a unit of semantic structure embedded in the procedural elements within the generic structure. Each section of the research article, therefore, is built up of moves, each of which has both semantic and schematic functions. Nwogu gives a comprehensive definition of a ‘move’ as follows:

By the term ‘move’ is meant a text segment made up of a bundle of linguistic features (lexical meanings, prepositional meanings, illocutionary forces, etc.) which give the segment a uniform orientation and signal the content of discourse in it. Each ‘move’ is taken to embody a number of ‘Constituent Elements’ or submoves which combine to constitute information in the move.

Nwogu (1991)
Observation of Swales’ studies (1981 and 1990) reveals that a move may consist of one sentence to a multiple number of paragraphs. In some cases a single sentence may be enough to function as a move. In other cases, a group of paragraphs on the same topic can be counted as one move. For example, when a paragraph is followed by paragraphs that, for instance, enumerate the examples that support the idea given in the first paragraph, the relevant group of paragraphs can be considered as consisting of one move.

(b) Step

A move can be further divided into sub-moves i.e., steps according to Swales’ study in 1990. Swales labeled these steps using numbers to indicate the order of the moves, i.e., 1, 2, 3... Each step supports and guarantees the validity of the idea given in the move. A step has a schematic and a semantic function to support the central move so as to achieve its communicative goal. Some moves need not be divided further into steps, while others may consist of more than two steps. Some steps may be categorized into sub-steps. Swales labeled these sub-steps using letters of the alphabet, i.e., A, B, C... In the present research, following Swales, the text was first divided into moves, then if necessary, into steps, and sub-steps.

(c) Information Unit

In the present research, the length of each move, or step, was measured. This was to investigate which move, or step, is considered more important in the subject discourse community. Usually, the unit of measurement is the sentence, which is considered the minimal constituent of a step or a move (Holmes, 1997; Nwogu, 1991, 1997). However, a purely syntactic unit like a sentence is problematic in a
contrastive study between different languages. For example, two propositions may be expressed in a compound sentence in one language whereas the same two propositions can only be expressed in two separate sentences in the other language. Consider the following example:

**English:** George Washington was the first president of the United States. How about Abraham Lincoln?

**Japanese:** アブラハム＝リンカーンは何番目のアメリカ大統領ですか。
(Abraham Lincoln wa nanbanme no amerika daitoryo desuka?)

Both the English and Japanese texts in the example are asking for the answer ‘Abraham Lincoln was the 16th president of the United States’. However, a proposition is required before asking the question in English whereas in Japanese the question implies the meaning of the proposition. In the Japanese language, there is such an expression as ‘nanbanme’ (what-th), whereas in the English language, there is no such expression.

For this reason, the information unit in the present research is a functional or semantic unit rather than a syntactic unit. It may consist of one or a number of sentences that express one idea. Consider the following example, which is one move consisting of two information units. The example was obtained from article #E30 in the English data.

<table>
<thead>
<tr>
<th>#E30</th>
<th>Results on the reading comprehension measure for the two main effects of prior knowledge and topic interest, although in the expected direction, did not reach significance, possibly because of a significant interaction between those two variables. There was also a significant effect for English proficiency level, as well as a significant interaction between interest and gender, with males more influenced by high topic interest than females.</th>
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<td></td>
<td>Semantic Segment</td>
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<tr>
<td></td>
<td>Semantic Segment</td>
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</table>
The above paragraph, in this study, is considered to represent a move on the findings of research. The paragraph presents results in reference to the effects of various variables. However, a closer look at it reveals that this move consists of two semantic segments, each mentioning different results. In the present study, such a semantic and functional segment is called an information unit and is used as the unit of measurement of the length of text. The relationship between move, step, and information unit in the present study can be summarized as follows:

1. An information unit consists of one or more sentences and expresses one idea.
2. A move or a step consists of one or a multiple number of information units that has the same semantic function.

It must be admitted however, that the segmentation of text into information units, as well as the coding of the moves and steps, involves a certain degree of subjectivity that is unavoidable (Holmes, 1997).

4.4.2 ‘Lexical Signal’

Swales defines lexical signals as ‘some typical examples of the linguistic exponents (and signals) of a particular move’ (1990). Lexical signals are thus, the frequently observed expressions in a section. Swales’ definition has been expanded for the purposes of the present research as follows:
1 The expression (word or phrase) that is used repeatedly and commonly to signal a certain move or step in each set of articles.
   example: "results" in the results and discussion section
             "implication" in the discussion or conclusion section.

2 The expressions (words or phrases) with a similar meaning that are used repeatedly and commonly to signal a certain move or step in each set of articles.
   example: "many researchers have investigated", "considerable research has been done",
             "numerous studies have been conducted" are not exactly the same expression,
             but all have a similar meaning and therefore can be a signal of a move or a step
             that refers to previous research.

4.4.3 'Metatextual Phrase'

Metatextual phrases are the author's comments on text-organizing elements. Those
that were studied in the present research are connectors, reviews and previews (see
Chapter 3), which indicate the relationship between information units. Illocution
markers defined as indicators of discourse acts performed in the text (Mauranen,
1993) (see Chapter 3) are not included in the present research because it was felt that
the boundary between illocution markers and the author's comments on the
information element in the text was not clear from the literature review. In the
following sections, the definitions of the three categories of metatextual phrases are
stated.

(a) Connectors

Connectors are conjunctions, adverbial and prepositional phrases, which indicate
relationships between propositions in text (Mauranen, 1993). Examples of connectors
are given below. In each example, the dotted line indicates the boundary between
information units.
... Rost (1994) also mentions using conversational fillers to keep the conversation going in his list of communication strategies. The question, then, is whether it is justifiable to include stalling strategies among CSs or not. ...

This article examines the role of lexical aspect in determining the pattern of acquisition of the past tense by adult learners of English as a second language. Lexical aspect, one facet of verbal semantics, refers to the inherent temporal makeup of verbs and predicates. Temporal characteristics, such as whether a verb or verb phrase describes an action with inherent duration like *talk* and *sleep*, or is punctual like *recognize* and *notice*, or has elements of both duration and culmination like *build a house* and *paint a picture*, have been found to influence the acquisition of tense. To date, however, most studies have been largely anecdotal, relying on the spontaneous production of very few learners.

In Example 1, ‘then’ indicates a causal relationship between the first and the second information units, the boundary of which is indicated by a line. In Example 2, in the first information unit, there is a phrase ‘such as’ that shows the relationship of sample-giving between the second and third sentences. In the present research, however, this was not counted as a connector because only metatextual phrase that bridge information units were studied. On the other hand, bolded ‘however’ is counted because it indicates a paradoxical relationship between the first and second information units.

(b) Reviews

Reviews are clauses (sometimes abbreviated), which contain an explicit indicator that an earlier stage of the text is being repeated or summarized (Mauranen, 1993). Examples of reviews are given below.
<table>
<thead>
<tr>
<th>Review Example 1 #E6</th>
<th>… McCormick (1989) argues that previews are helpful because the questions or directions in previews imply what is significant and can elicit predictions and help students relate text information to prior knowledge.</th>
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<td></td>
<td><strong>To summarize,</strong> both providing background knowledge and previewing have been shown to be effective for both L1 and L2 readers. ...</td>
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</tbody>
</table>

<table>
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<tr>
<th>Review Example 2 #E24</th>
<th>The Pearson Product Moment correlation between the scores given by the two graduate assistants was .98. Where there were differences, the first author reviewed and discussed the response with the two raters and then decided on the score to be given.</th>
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<tbody>
<tr>
<td></td>
<td><strong>As noted above,</strong> students’ responses to the semantic differential attitude items were simply tallied. ...</td>
</tr>
</tbody>
</table>

In Example 1, ‘To summarize’ is a metatextual phrase that announces that the information unit is a summary of the previous information unit. In Example 2, ‘As noted above’ announces that the writer is going to repeat what has already been said in the previous information unit.

(c) **Previews**

Previews are clauses (sometimes abbreviated), which contain an explicit indicator that a later stage of the text is being anticipated (Mauranen, 1993). Examples of previews are given below.
| Preview Example 1 | The teachability of CSs has been a source of considerable controversy in the past decade. Whereas strong theoretical arguments reject the validity and usefulness of specific CS training, practical considerations and experience appear to support the idea. A brief summary of the problem and the arguments follows. Tarone (1981) points out that CSs, rather than being part of linguistic knowledge, are “descriptive of the learner’s pattern of use of what he/she knows as he/she tries to communicate with speakers of the TL [target language]” (p.63). |
| Preview Example 2 | ... In what follows, I will draw on rule-based theories of automaticity in general and on Anderson’s ACT-R model in particular. For an empirical study drawing on memory-based theories of automaticity in general, and Logan’s instance theory in particular, see Robinson (this issue). AUTOMATIZATION OF SECOND LANGUAGE RULES Automatization is the process that leads to automaticity. In the field of applied linguistics, the notion of automatization was used loosely by proponents of audiolingualism (e.g., Rivers, 1964) and cognitive code (e.g., Chastain, 1971) and elaborated didactically by early communicative methodologists (Paulston & Bruder, 1976). ... |

In Example 1, ‘A brief summary of the problem and the arguments follows’ is a metatextual phrase that previews that the following information unit is a summary of the previous text. In Example 2, ‘In what follows...’ is a metatextual phrase that previews the contents of the following information unit.

Metatextual phrases from the Japanese data were obtained based on the same criteria.

4.5 Data

For the present study, as mentioned earlier, research articles on empirical studies published in academic journals in the field of language teaching and learning in applied linguistics from 1995 to 2000 were selected. The articles closely conform to the conventional Introduction-Methods-Results-Discussion (IMRD) pattern. The
total number of articles was 60, of which 30 were written in English and the other 30, in Japanese.

(a) English Data

Among the 30 articles, 15 articles were obtained from TESOL Quarterly published in the years, 1995 to 2000. TESOL Quarterly is published in the United States by TESOL (Teachers of English to Speakers of Other Languages) and is popular among ESL (English as second language) and EFL (English as a foreign language) teachers. The submission categories stated in the editorial policy are as follows:

<table>
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<tr>
<th>Full-length articles:</th>
<th>Quantitative and qualitative studies</th>
</tr>
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<tbody>
<tr>
<td>Reviews:</td>
<td>Evaluative review on books and instructional materials</td>
</tr>
<tr>
<td>Review articles:</td>
<td>Comparative discussions on more than two articles of the same topical category</td>
</tr>
<tr>
<td>Brief Reports and Summaries:</td>
<td>Short reports on theory and practice in the field of teaching English to speakers of other languages</td>
</tr>
<tr>
<td>The Forum:</td>
<td>Comments and reactions from the readers</td>
</tr>
</tbody>
</table>

The themes of the full-length articles, according to the editorial policy, should be confined to the following six categories:

1. Psychology and sociology of language learning and teaching; issues in research and research methodology
2. Curriculum design and development; instructional methods, materials, and techniques
3. Testing and evaluation
4. Professional preparation
5. Language planning
6. Professional standards
According to the editorial policy, full-length research articles must be written in a format, which conforms to the specification given in the Publication Manual of the American Psychological Association (4th ed.). The articles obtained from TESOL Quarterly were labeled #E1 to #E15 according to the date of publication.

The other 15 English articles were obtained from Studies in Second Language Acquisition published by Cambridge University Press published from 1996 to 1998. This journal features discussion of various issues in second and foreign language acquisition of any language. According to the editorial policy, it welcomes unsolicited articles including replication studies. The following types of articles are commissioned by the editors:

1. State of the art articles
2. Review articles
3. Articles in thematic issues
4. Responses
5. Point and counterpoint articles
6. Book reviews

This journal also requires that all submissions conform to the requirements of the Publication Manual of the American Psychological Association. The articles obtained from Studies in Second Language Acquisition were labeled #E16 to #E20 according to the date of publication.

(b) Japanese Data

Twenty-six Japanese articles were obtained from Nihongo Kyoiku (Journal of Japanese Language Teaching) published from 1995 to 2000. Nihongo Kyoiku is published quarterly for teachers of Japanese to speakers of foreign languages by
Nihongo Kyoiku Gakkai (The Society for Teaching Japanese as a Foreign Language). There are more than 3500 members, including academic institutions and overseas members in the society. The editorial board does not specify any rules or regulations except for the length which is limited to 11 B5-size pages (34 letters x 33 lines). The table of contents of the issues published in the years 1995 to 2000, however, revealed that the types of the articles include the following:

1. Research article
2. Study report
3. Practical application report

The themes of the articles can be categorized into 19 categories among them:

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<table>
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<tbody>
<tr>
<td>1</td>
<td>Japanese linguistics</td>
</tr>
<tr>
<td>2</td>
<td>Sociolinguistics and pragmatics</td>
</tr>
<tr>
<td>3</td>
<td>Contrastive rhetoric, cross-cultural communications and other cultural issues</td>
</tr>
<tr>
<td>4</td>
<td>Phonology</td>
</tr>
<tr>
<td>5</td>
<td>Morphology/Lexicology</td>
</tr>
<tr>
<td>6</td>
<td>Sentence structures</td>
</tr>
<tr>
<td>7</td>
<td>Discourse analysis</td>
</tr>
<tr>
<td>8</td>
<td>Notation/Letters</td>
</tr>
<tr>
<td>9</td>
<td>Pedagogical issues</td>
</tr>
</tbody>
</table>

The articles obtained from *Nihongo Kyoiku* were labeled #J1 to #J26 according to the date of publication.

The remaining four Japanese articles were obtained from *Nihongo Kyoiku Ronshu* (Journal of Japanese Language Teaching) published from 1995 to 1996. This journal is published yearly by the International Student Center of the University of Tsukuba,
Japan. This journal is for the faculty of the University of Tsukuba to present their studies; hence the author, or one of the authors, must be a member of the faculty. The editorial board does not specify detailed submission guidelines, except that the articles are limited to the field of Japanese language education and peripheral areas. The table of contents found in the past issues published from 1995 to 2000 revealed that the articles contained in each volume can be categorized into the following 5 types:

2. Teaching Methods and Teaching Materials
3. Measurement and Evaluation
4. Reports on Teaching Praxis
5. Research Materials

The objective of the publication of this journal is thus to contribute to the development and improvement of research on Japanese language teaching. Although this is a university publication, copies are sent to educational institutions that offer Japanese language courses both inside and outside Japan. The articles obtained from *Nihongo Kyoiku Ronshu* were labeled #J27 to #J30 according to the date of publication.

The above four journals were selected for their worldwide popularity among researchers in the applied linguistics field. The articles are therefore meant to contribute to the development of the applied linguistics field.
4.6 Methodology

In this section, the procedure of the present research is presented. First, the schematic structure of the English and Japanese research articles as a whole was studied to identify the differences between the two languages. Next, a moves analysis of each section found in the study of the schematic structure was carried out. The moves analysis included the study of significance of each move and the study of predictable move patterns. Then, the study of lexical signals was carried out followed by a metatextual analysis. After the analysis of each set of data, a contrastive analysis was carried out.

4.6.1 Analysis of Schematic Structure of Research Articles as a Whole

To identify the differences in schematic structure between the two sets of articles, the articles were divided into sections. The following sections were expected to be found based on the literature review:

1. Abstract
2. Introduction
3. Method
4. Results
5. Discussion

The abstract section can be easily distinguished since it is usually typographically different. It is usually observed at the beginning and is typed using a smaller font size. The introduction section usually presents the topic of the research with assumptions and literature review. The method section presents the procedure. The results section presents the results and findings of study followed by the discussion section in which the writer discusses the results/findings.
4.6.2 *Moves Analysis*

A moves analysis was carried out to identify the schematic structure of each section. As a result, a move structure model that contained all the moves found in each section of the research articles in both languages was created. The length of the section was also studied based on the number of information units. Then, for the contrastive study of the English and Japanese articles, the moves in each section were studied in four aspects: frequently observed moves and optional moves, significance of each move, predictable patterns of moves, and the opening and concluding moves of each section. Each step of the procedure is explained in detail below.

(a) *Move Structure Model*

First, a move structure model of each research article section containing all the moves found in both the English and Japanese data was created based on Swales' framework. To develop the model, the texts were divided into information units. The information units found in the articles were categorized into moves, steps and sub-steps. This model was then used as the basis for the contrastive study of the English and Japanese articles.

(b) *Moves Study*

In the study of moves, four aspects, i.e., (i) the length of section, frequently observed and optional moves, significance of each move; (ii) predictable and cyclic patterns of moves and opening and concluding moves of the section; (iii) moves and information units that referred to previous research; and (iv) steps and sub-steps were analyzed and contrasted.
(i) Length of Section, Frequently Observed and Optional Moves, Significance of Each Move in Each Section

In the present research, the length of the section was analyzed by calculating the average number of moves and information units in it. Frequently observed moves in a section were defined as those that occurred in more than 70% of the articles that contained the section in the same language. On the other hand, optional moves of a section were defined as those that occurred in less than 10% of the articles that contained the section in the same language. Significant moves, or the ones that the writer assigned more importance to, were identified by comparing the average number of information units of each move with the average number of information units per move.

(ii) Predictable and Cyclic Patterns of Moves and the Opening and the Concluding Moves of the Section

The analysis of predictable patterns and cyclic patterns of the moves and the opening and the concluding moves of the section were carried out using Microsoft Excel, spreadsheet software.

(iii) Moves and Information Units That Referred to Previous Research

This was carried out to see if socio-cultural differences emerged from the data. The moves and information units that referred to previous research were manually counted for a contrastive study.
(iv) Steps and Sub-steps

Finally, the steps and sub-steps of each move were analyzed. The results of each set of data were then immediately compared and contrasted.

4.6.3 Study on Lexical Signals

The number of articles that contained a particular lexical signal indicating a move was counted. The lexical signals that occurred in more than 20% of the articles that contained the move were singled out for a contrastive study.

4.6.4 Metatextual Analysis

Only metatextual phrases that bridge the information units in each section were studied using Muralian’s framework. The metatextual phrases studied in this research were connectors, previews and reviews. The density of each category of metatextual phrase was analyzed by calculating the number of metatextual phrases per information unit. The results were then compared and contrasted.

4.6.5 Contrastive Analysis

The results of the above analyses were discussed using Kaplan’s contrastive rhetoric framework in which language and culture are considered inter-related. The reasons for the similarities and differences between the English and Japanese articles were discussed from historical and socio-cultural points of view. Based on the discussion, the pedagogical implications for teaching English academic writing to native speakers of Japanese were identified.
4.7 Summary

In the present chapter, the two main objectives of study were identified. Then, four research questions were formulated to realize the objectives. Next, the research data were identified, i.e., English and Japanese research articles in the field of applied linguistics. The terms used in the study were then defined. These terms include the units of analysis, i.e., move, step and information unit; lexical signals; and metatextual phrases, i.e., connectors, reviews and previews. Finally the procedure of analysis of the generic structure of research article as a whole was explained, as well as the moves analysis of each section, the study of lexical signals analysis, and metatextual analysis accompanied by a contrastive analysis of the English and Japanese articles. The results of these analyses are given in the following chapters (Chapter 5 to 11) followed by the discussion of findings in the final chapter (Chapter 12).