CHAPTER 5
SCHEMATIC STRUCTURE OF THE ENGLISH AND
JAPANESE ARTICLES

5.1 Introduction

In this chapter, first, the definition of an experimental research article and its schematic structure in the literature is reviewed. Then a schematic structure containing all the sections found in the English and Japanese articles in the present study is presented followed by a contrastive study between the English and Japanese articles. The findings will be discussed in Chapter 12.

5.2 Definition of Experimental Research Article and its Schematic Structure in the Literature

A research article can be defined as a paper written by an investigator for the objective of reporting the findings of a research study to other people who have the same academic interest. Research articles can be categorized into (a) experimental (quantitative) articles, often seen in natural science journals and (b) non-experimental (qualitative) articles that are more often found in social science journals. The major difference between the two types is that the former is a report on an experimental study in which the investigator presupposes certain hypotheses and examines them using experimental data, while the latter is a report on an observational study and the theory based on observation.
As mentioned previously in Chapter 4, the present study is on experimental research articles. Experimental research articles in any academic field have a similar schematic structure. Hill et al. (1982) suggested a diagram indicating the schematic structure as follows:

![Overall Organization of the Research Paper](image)

(Source: Hill et al., 1982)

The above diagram was structured based on one research article on psychology. However, as Swales admitted (1990, p. 133), it also depicts the hybrid structure of any experimental research article. In the introduction section, the writer leads the readers from a general topic to the particular topic of the present research. Then the writer proceeds to the procedure section and describes the study. Finally in the discussion section, the writer discusses the findings and develops general theories from them.

Weissberg and Buker (1990) presented a more elaborate version of the above diagram indicated below:
Weissberg and Buka's figure gives a visual image of the schematic structure of an experimental research article in both the natural and social sciences. It depicts the sections in a research article in general. These sections are the abstract, introduction, method, result and discussion. The abstract is the section in which the writer gives a preview of the research activity. The introduction introduces the specific topic. The theoretical framework, assumptions and literature review are often presented in this section followed by the research question and/or hypothesis. The method section describes the procedure. The results are given in the result section followed by the discussion section in which the findings of the research are generalized.

5.3 Schematic Structure Found in the English and Japanese Research Articles

The study on the schematic structure of the English and Japanese data revealed that there are six sections both in the English and Japanese research articles in the applied linguistics field:
Among the above sections, the introduction section was found only in 23 (77%) English and 13 (43%) Japanese articles. The conclusion section was found in 26 (87%) English and 27 (90%) Japanese articles. The other sections were found in all the articles in both the English and Japanese data. The sections not found in Weissberg and Buler's model introduced in the previous section are the background and conclusion sections. Another difference is that while in Weissberg and Buler's model, results and discussion are given in separate sections, they are combined into one section, i.e., 'Results and Discussion' section in the present data. In the following sections, each section found in the present study is discussed in detail.

(a) Abstract Section

All the articles contained the abstract section. This section was typographically conspicuous both in English and Japanese articles: the section was typed in a smaller font size with wider margins to the right and left. It summarized the whole article thus providing the readers with a brief idea of what the article was about.

(b) Introduction and Background Sections

Among the articles, there were 23 (77%) English and 13 (43%) Japanese articles that had both the introduction and background sections. The remaining articles had the background section only.
The introduction was usually not preceded by any heading to indicate that it is the introduction. The contents of the section usually included the introduction of the context, the literature review, and the introduction of the research.

The background section was usually preceded by a heading that indicated that the section provides the background information of the study. The heading was simply ‘Background’ in English or ‘Haikei’ (Background) in Japanese, or any other content specific heading, for example ‘Previous Research’, or ‘Basic Assumptions’. In the background section, prevailing theories in the subject field and/or the findings of previous studies that readers need to know were presented. Generally, this kind of information is given in the introduction, but in applied linguistics, some writers showed a preference for placing it separately from the introduction. In some articles, there was an overlap of contents between the introduction and background sections. The pages devoted to this section were as many as four or five depending on the amount of background information the writer wished to present.

The distinction between the introduction and background sections in the present study was made based mainly on (i) the heading and (ii) the length of section. If the section was not preceded by any heading and it was short with one or a few short paragraphs, it was categorized as the introduction section. However, if the section was longer and the heading of the section was ‘Background’ in the English articles and ‘Haikei’ (Background) in the Japanese articles, or other content specific heading(s) indicating background information, the section was categorized as the background section.
Holmes (1997), in his study of the background section in social science research articles, attributed the existence of a 'lengthy Background' to the absence of an agreed theoretical framework. Holmes, however, did not mention that there were articles in which the absence of introduction section was observed.

It is interesting to note that 77% of the English articles contained both the introduction and background sections despite the fact that the Publication Manual of the American Psychological Association (1994), to which the editorial board of both TESOL Quarterly and Studies in Second Language Acquisition asks the writers to refer to, does not mention the background section. It only mentions the introduction section (1994, p. 11) and suggests that the writers develop the background within the section.

(c) Method Section

The method section was found in all the articles in both sets of data. In this section, the data, data collection procedure, or experimental procedure, analysis procedure were observed. The contents of the section found in the study were similar to those in Weissburg and Boker's model (1990).

(d) Results and Discussion Section

All the articles in both sets of data contained the results and discussion section. Among the articles, four (13%) English articles and 18 (60%) Japanese articles had results and the discussion in the same section. The other 26 (87%) English articles and 12 (40%) Japanese articles presented results and discussion as separate sections.
In the Publication Manual of the American Psychological Association (1994), the results and discussion sections are introduced separately. However, in the present research, it was decided to integrate these sections into one section. There are two reasons for this: (1) even in the articles that had the results and discussion in one section, they were presented separately, i.e., in separate moves, hence the integration of the two sections would not affect the schematic analysis; and (2) since some articles had the results and discussion in one section with the cyclic pattern of statement of a result followed by the discussion, distinguishing the results and discussion as two separate sections would make it difficult to analyze the schematic structure of research article as a whole. This section was the last section in 4 (13%) English and 3 (10%) Japanese articles. This contradicts Weissburg and Buker’s model.

(e) Conclusion Section

Among the articles, 26 (87%) English and 27 (90%) Japanese articles contained the conclusion section. This section is not mentioned in the Publication Manual of the American Psychological Association (1994) nor in Weissburg and Buker’s model.

The conclusion section summarized the previous sections, or the discussion section, and/or included theoretical or pedagogical implications, or the implications for further research. The heading of this section was usually ‘Conclusion’ in the English articles and ‘Ketsuron’ (Conclusion), or ‘Owarini’ (Concluding Remarks) in the Japanese articles.
5.4 Comparison of Schematic Structure in the English and Japanese Articles

The schematic structure of the English and Japanese articles was compared and contrasted.

5.4.1 Comparison of Schematic Structure as a whole

The schematic structures of both the English and Japanese articles were found to be similar. As mentioned in 5.3, the schematic structure of the two sets of articles contained six sections, i.e., ‘abstract’, ‘introduction’, ‘background’, ‘method’, ‘results and discussion’, and ‘conclusion’. Among these sections, the introduction and conclusion sections were not observed in all the articles.

The introduction section was observed in 23 (77%) English and 13 (43%) Japanese articles. It can be concluded that English writers assign more importance to the introduction section than Japanese writers.

There were 26 (87%) English articles and 27 (90%) Japanese articles that had the conclusion section as the last section of the article. The finding suggests that while the conclusion section is not necessarily an obligatory section, it has similar significance to both language writers.

For the results and discussion section, 26 out of 30 (87%) English articles while only 12 out of 30 (40%) Japanese articles had results and discussion in separate sections. It can be concluded that there is a stronger tendency among English writers to present the results and discussion separately.
One interesting finding related to the differences in the headings given to the sections by the writers. Among the English articles, 16, compared to eight Japanese articles, had the background section under content specific titles such as ‘Strategic Competence and Communication Strategies’ (#E1), ‘Mental Model Construction’ (#E4), and ‘本研究で採用したコミュニケーション方略 (Honkenkyuku de Saiyou shita Komyunikeishonn Houryaku)’ (Communication Strategies Adopted in the Present Research) (#J14). These articles were #E1, #E4, #E5, #E7, #E10, #E12, #E13, #E14, #E18, #E19, #E20, #E23, #E24, #E25, #E26, #E29 and #J2, #J8, #J10, #J14, #J24, #J26, #J27, #J28. In the Japanese articles, four articles (#J4, #J8, #J10, #J29) had the method section under content specific titles such as ‘留学生の学習 S の使用調査 (Ryugakusei no Gakshu S no Shiyou Chousa)’ (Survey on the Use of Learning Strategies by Foreign Students) (#J10). There were seven Japanese articles (#J4, #J8, #J9, #J15, #J22, #J28, #J30) that had the results and discussion section under content specific titles such as ‘誤用分析の結果 (Goyoubunseki no Kekka)’ (The Results of Error Analysis) (#J22). These results suggest that in the English articles, with the exception of the background section, the titles of the sections were more fixed and general than in the Japanese articles. Japanese writers apparently have more freedom in giving the headings they like to the sections, although the number of writers who actually did so was small.

5.4.2 Comparison of Significance of Each Section

In order to identify the significance of each section in the English and Japanese articles, the number of information units in each section was counted and compared. Table 5-1 shows the average number of information units in each section. Graph 5-1
compares the percentage of the information units of the section on the average to the average total number of information units found in the article as a whole.

Table 5-1 Average Number of Information Units in Each Section

<table>
<thead>
<tr>
<th>Section</th>
<th>English</th>
<th>Japanese</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract</td>
<td>6.0</td>
<td>6.0</td>
</tr>
<tr>
<td>Introduction</td>
<td>3.6</td>
<td>4.4</td>
</tr>
<tr>
<td>Background</td>
<td>10.8</td>
<td>5.6</td>
</tr>
<tr>
<td>Method</td>
<td>14.2</td>
<td>8.7</td>
</tr>
<tr>
<td>Results and Discussion</td>
<td>39.9</td>
<td>31.0</td>
</tr>
<tr>
<td>Conclusion</td>
<td>5.7</td>
<td>4.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>80.2</strong></td>
<td><strong>59.7</strong></td>
</tr>
</tbody>
</table>

Graph 5-1 Percentage of Number of Information Units of Each Section

It is obvious from the above table and graph that writers in both sets of data assign the greatest importance to the results and discussion section. The order of significance of remaining sections in the two sets of data is also similar. It can thus be concluded that the significance assigned to each section in the two sets of data is similar.
5.5 Summary

The schematic structure of the experimental research articles in the field of language teaching and second language acquisition in applied linguistics was found to consist of six sections:

1. Abstract
2. Introduction
3. Background
4. Method
5. Results and Discussion
6. Conclusion

The research findings indicated that English writers appear to assign more importance to the introduction section than Japanese writers (77% compared to 43% respectively). Although the conclusion section is not an obligatory section, the majority of writers, both English (87%) and Japanese (90%), assign importance to it. The significance assigned to each section was also found to be similar in the two sets of data.

An interesting finding regarding the headings of the subsections of each section was that while English writers give content specific headings only to the background section, Japanese writers give content specific headings to the background, method and results and discussion sections.