Connector Usage in the English Essay Writing of Japanese EFL Learners

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Abstract

In this paper we report on our quantitative analysis of 25 logical connectors in advanced Japanese university students' essay writing and compare it with the use in comparable types of native English writing. We also present a brief comparison of the Japanese learners' usage with that of advanced French, Swedish or Chinese learners of English. As our research targets, we chose 25 logical connectors and selected two sub-corpora of the ICLE (International Corpus of Learner English) project to obtain comparable data on the usage of these logical connectors by advanced Japanese EFL learners and English native speakers. Every instance of our target logical connectors was extracted from the two corpora, and not only the frequency counts but also the occurrence position of each connector was examined. Our research findings show that Japanese EFL learners significantly overuse these logical connectors in sentence-initial position and that they significantly overuse such connectors as 'for example,' 'of course,' and 'first,' whereas they significantly underuse such connectors as 'then,' 'yet,' and 'instead.' The findings also show that there exist certain similarities and differences among the four learner groups in the use of logical connectors.

1. Introduction

With the rapid development of computer and information technology, new methodologies of linguistic research and language teaching have emerged as corpus-based approaches. In recent years, therefore, the construction of electronic corpora and their practical use in various applications are very common throughout the world.

SLA (Second Language Acquisition) research has also benefited from the improvements in language processing technology which can deal with a large amount of electronic language data very efficiently and effectively as well. For instance, the Centre for English Corpus Linguistics at Université Catholique de Louvain has been playing a pioneering role in promoting computer learner corpora, and their computerized language resources are known as the International Corpus of Learner English (ICLE). And also, there already exist a number of research papers using these computer learner corpora.

Some studies focus on the analysis of usage patterns of logical connectors in ESL (English as a Second Language) or EFL (English as a Foreign Language) academic writing to obtain empirical evidence supporting their nebulous impression that ESL/EFL learners tend to overuse logical connectors in their English essay writing. Using two sub-corpora of the ICLE, Granger and Tyson (1996) studied the connector usage in essay writing by advanced French learners of English, whereas Altenberg and Tapper (1998) did the same in essay writing by advanced Swedish learners. These two corpora are (1) Louvain Corpus of Native English Essays (LOCNESS) and (2) a learner corpus of advanced French or Swedish learners of English.

Granger and Tyson (1996) found no overall overuse of connectors by the French learners, but showed that 'the learners use most frequently those connectors which add to, exemplify, or emphasize a point rather than those which change the direction of the argument or take the argument logically forward' (ibid.: 20). In contrast, Altenberg and Tapper (1998) found that the Swedish learners tended to underuse connectors in their English essay writing, but they revealed evidence of both overuse and underuse of individual connectors. They also compared their corpus findings with the results of Granger and Tyson's (1996) study and found certain similarities and differences between the two learner groups, thereby suggesting that the learners' connector usage might not be much influenced by their mother tongue.

As for Chinese learners of English, Milton (2001) analyzed their written interlanguage and compared their connector usage with the use in British student's written data. Based on his observations of the overuse and underuse by Chinese learners, he suggested a strong possibility of institutional influences on second language acquisition in Hong Kong.

How do Japanese learners of English use logical connectors then? We have the impression that Japanese EFL learners use them quite frequently in sentence-initial position; however, we do not have any strong evidence that could be provided by corpus-based quantitative research. Thus we decided to conduct learner corpus-based research not only to clarify patterns of connector usage by the Japanese EFL learners but also to compare the patterns with the research findings as previously mentioned.

Before describing our study in detail, we need to emphasize that this study is limited to a quantitative analysis of EFL learners' production data and that the 'overuse' or 'underuse' of a given logical connector does not necessarily imply incorrect usage. Hence our research questions in this study are:

(1) Do advanced Japanese EFL learners use logical connectors in the same way as university students who are native speakers of English?

(2) How is the Japanese EFL learners' connector usage different from other EFL learners'?

2. Logical Connectors and Corpora Used

In previous studies, the choice of connectors was based on the list of 'conjuncts' in Quirk *et al*. (1985). Following this list and also referring to the list of 'linking adverbials' in the corpus-based work of Biber *et al*. (1999), we selected 25 logical connectors as our research targets. These connectors are classified into the following semantic categories according to Biber *et al*. (1999).

Semantic Category	Logical Connectors
Enumeration/Addition	first, next, in addition, similarly, also, furthermore, likewise, moreover, besides
Apposition	for example, for instance, that is to say
Result/Inference	therefore, thus, then, as a result, hence, of course
Contrast/Concession	on the other hand, in contrast, however, yet, instead, nevertheless, still

Table 1: Semantic Classification of Logical Connectors Examined in this Study

As comparable essay writing data, we selected two sub-corpora of the ICLE project with permission to use them for our research purposes: (1) the Japanese component of the ICLE corpus and (2) the Louvain Corpus of Native English Essays (LOCNESS). The Japanese component of the ICLE corpus contains 75,794 word tokens (6,014 word types) and covers argumentative essays written by Japanese third or fourth year college students, which will be referred to herein as JPICLE.

As a native English control corpus, we used a sub-corpus of the LOCNESS, a sample of argumentative essays written by American university students (mostly between 17 and 23 years old). This control corpus contains 149,698 word tokens (11,022 word types) and will be referred to herein as LOCNESS-US.

3. Data Analysis

Our quantitative analysis of two comparable corpora involved the following steps:

(1) Extract every instance of our target logical connectors from the target corpus with its adjacent contextual information.

(2) Discard irrelevant instances by manually checking all the instances extracted and annotate the occurrence position of each connector as I (Sentence-Initial), M (Medial) or F (Sentence-Final).[1]

(3) Automatically compute frequency counts of each logical connector per its occurrence position.

When the frequency computation was completed, these frequency counts were compared using a log likelihood (LL) ratio (or the 'G-score') because the two corpora differed in size. This statistical value was described as an alternative to a chi-square value by Dunning (1994).

4. Results

4.1 Frequency Counts

Table 2 shows the overall frequency of 25 logical connectors in JPICLE and LOCNESS-US. The LL ratio is +17.92, and thus it turns out that Japanese EFL learners significantly overuse these logical connectors ($p < 0.01$).

Item	JPICLE	LOCNESS-US
Number of Word Tokens	75,794	149,698
Overall Frequency of 25 Logical Connectors	487	750
Number of Connector Types Used	23	24

Table 2: Overall Frequency of 25 Logical Connectors in JPICLE and LOCNESS-US

The top six connectors in JPICLE and LOCNESS-US are shown in Table 3. We find that four of the top six logical connectors are identical and that, in particular, both Japanese EFL learners and the English native students prefer to use the contrastive connector 'however.'

JPICLE	N	%	LOCNESS-US	N	%
for example	92	18.9	however	172	22.9
however	90	18.5	then	156	20.8
of course	44	9.0	therefore	81	10.8
therefore	37	7.6	also	60	8.0
first	31	6.4	for example	54	7.2
then	30	6.2	yet	47	6.3
Total	324	66.5	Total	570	76.0

N = frequency counts of an individual logical connector
% = ratio of frequency counts of an individual logical connector to the overall frequency of the connectors examined

Table 3: Top Six Logical Connectors in JPICLE and LOCNESS-US

The individual connectors that were significantly over- or underused by Japanese EFL learners are shown, respectively, in Tables 4 and 5. As we can see, the Japanese learners tend to overuse enumerative/additive and appositive connectors (such as 'for example,' 'first,' 'moreover,' and 'in addition') and the resultative connector, 'of course.' On the other hand, they tend to underuse the inferential 'then' and contrastive connectors like 'yet' and 'instead.'

1 For example, instances of the word 'first' used as an adjective were discarded as being inadequate.

Overused Connectors	JPICLE	LOCNESS-US	LL Ratio (* p < 0.01)
for example	92	54	+52.46 *
of course	44	18	+35.99 *
first	31	8	+34.57 *
moreover	25	5	+31.58 *
in addition	22	7	+21.65 *

Table 4: Significantly Overused Connectors in JPICLE

Underused Connectors	JPICLE	LOCNESS-US	LL Ratio (p < 0.01)
then	30	156	-28.88 *
yet	4	47	-19.19 *
instead	2	21	-7.98 *

Table 5: Significantly Underused Connectors in JPICLE

4.2 Occurrence Position

The position of the connectors in the two corpora is shown in Table 6. As is evident, positional tendencies are quite different. Japanese EFL learners strongly prefer sentence-initial position (LL ratio = +100.08, $p < 0.01$), whereas English native students use the connectors in sentence-medial position to the same extent that they do in sentence-initial position.

Position	JPICLE	LOCNESS-US
I (Sentence-Initial)	399 (81.9%)	383 (51.1%)
Medial	85 (17.5%)	362 (48.3%)
F (Sentence-Final)	3 (0.6%)	5 (0.6%)
Total	487	750

Table 6: Position of connectors in JPICLE and LOCNESS-US

4.3 Comparison of Connector Usage by Japanese, French, Swedish and Chinese EFL Learners

To obtain a more general picture of the Japanese EFL learners' connector usage, our corpus findings are compared with those in previous studies: Granger and Tyson (1996), Altenberg and Tapper (1998), and Milton (2001). Tables 7 and 8 show our comparison of over- and underused connectors among the four learner groups where over- and underused connectors are ranked according to their LL ratios.[2]

In Table 7, we find that all the four learner groups overuse certain additive connectors including the common word 'moreover.' We also find the overuse of such appositive items as 'for example' and 'for instance' and that of the resultative connector 'of course' in Japanese, French, and Swedish learner groups but not in the Chinese learner group.

2 Since LL ratios are not available in Granger and Tyson (1996) nor in Altenberg and Tapper (1998), the authors computed these values based on the frequency counts reported in their papers.

Underused connectors in Table 8 also show a striking similarity among the four learner groups. It is, however, important to note here that the Japanese EFL learners overuse the contrastive connector 'however' (although not significantly) differently from the other learner groups.

Japanese Learners	French Learners	Swedish Learners	Chinese Learners
for example	for instance	still	moreover
of course	moreover	for instance	besides
first	on the contrary	furthermore	also
moreover	namely	of course	furthermore
in addition	of course	moreover	in addition

Table 7: Comparison of Overused Connectors among Four Learner Groups

Japanese Learners	French Learners	Swedish Learners	Chinese Learners
then	however	however	yet
yet	therefore	therefore	however
instead	then	thus	e.g.
likewise	instead	hence	similarly
in contrast	yet	yet	for example

Table 8: Comparison of Underused Connectors among Four Learner Groups

5. Discussion

Our corpus-based research findings in this study shed light on the real usage of major logical connectors by Japanese EFL learners. First, in comparison to the connector usage by English native university students, the Japanese EFL learners significantly overuse the connectors in sentence-initial position.

Second, the Japanese EFL learners and the English native students share a common set of high-frequency connectors, but there are obvious differences in individual connector usage. The Japanese EFL learners significantly overuse certain enumerative/additive and appositive connectors, whereas they significantly underuse such contrastive connectors as 'yet' and 'instead.'

Third, we find an interesting fact about connector usage in English interlanguage by our comparison of over- and underused connectors among four learner groups of different mother tongues. The results in Tables 7 and 8 show that the four learner groups share a common set of over- and underused connectors, and that there exist certain differences as well.

Given these findings, then, we will give further consideration to the connector usage by Japanese EFL learners. Why do they tend to overuse logical connectors, especially in sentence-initial position, what Conrad (1999) calls the 'unmarked position'? Why do they underuse certain contrastive connectors, whereas they frequently use the contrastive connector 'however'? In the light of the results found in this study, can we suggest any pedagogical implications for EFL writing instruction?

The tendency to overuse logical connectors in sentence-initial position may be partly a result of EFL learners' attempt to ensure cohesive ties between two sentences, which might be related to what Rutherford (1987) describes as the need for meaning to find "direct grammatical realisation." To put it another way, EFL learners may well be relieved to use explicit discourse markers in sentence-initial position separated from subsequent propositional information, thereby building an explicit linkage between the preceding and the subsequent propositions. Another possible reason is that EFL learners do not have sufficient knowledge of the difference in usage between adverbial connectors and conjunctions, let alone the flexibility of connector-positioning. Thus, if they mistakenly treat adverbial connectors the same as conjunctions, their frequent placement of these connectors in sentence-initial position might be unavoidable.

The next question is the underuse of such contrastive connectors as 'yet' and 'instead.' This may be due to the EFL learners' lower familiarity with the usage of these words as contrastive connectors, although they can freely use the contrastive connector 'however.' Lower familiarity may also apply to the underuse of the inferential connector 'then' and the additive connector 'likewise.' Turning our attention to underused connectors by the other three learner groups, we find that they uniformly underuse contrastive connectors including 'however.' A possible explanation is, therefore, that EFL learners are less familiar with the usage of these rather formal contrastive connectors and thus they are likely to use other semantic equivalents that are already familiar to them in order to provide contrastive information. In fact, Narita *et al*. (2003a) found that Japanese EFL learners significantly overused the conjunction 'but' whereas significantly underused the connectors 'yet' and 'instead.'

How can we make our EFL learners aware of the appropriate connector usage, then? One possible way is found in the development of new EFL teaching materials. As suggested by Crewe (1990) and Milton (2001), existing EFL instructional materials tend to employ an overly simplistic approach to the teaching of logical connectors in such a way that a semantically-sorted long list of logical connectors is given without detailed information on their individual usage, and/or the liberal use of connectors is consistently promoted. It is not easy, of course, to develop carefully worked-out teaching materials, but large-scale English native or learner corpora can open the way for new types of textbooks that could meet EFL learners' needs. This is because corpus-based research reveals not only the norm of English natives in connector usage but also the tendency of connector usage by EFL learners.

It is also possible to use a computer-based EFL writing tool in EFL writing instruction, as demonstrated in Narita *et al*. (2003b). With a concordancing program, for instance, if the learner inputs or selects a specific logical connector on the computer screen, a list of sample writings including the connector could be shown in the KWIC (Key Words in Context) format. Then the learner could access the full text to examine the usage of the connector specified. Repeated exposure to authentic texts of good quality is expected to have a positive effect on EFL writing, although further empirical research is necessary.

6. Conclusion

In this paper we have reported on our quantitative analysis of 25 logical connectors in advanced Japanese university students' essay writing and compared it with the use in comparable types of native English writing. We have also presented a brief comparison of Japanese learners' usage with that of advanced French, Swedish or Chinese learners of English.

Our research findings show that Japanese EFL learners significantly overuse these logical connectors in sentence-initial position and that they significantly overuse such connectors as 'for example,' 'of course,' and 'first,' whereas they significantly underuse such connectors as 'then,' 'yet,' and 'instead.' It is also evident that the four learner groups of different mother tongues share a common set of over- and underused connectors, and that there exist certain differences as well.

We have suggested some possible explanations of the EFL learners' behaviors in connector usage, but we need further research including (1) a 'qualitative' analysis of Japanese EFL learners' connector usage and (2) a study of current EFL writing practices in Japan.

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