



Terms and Conditions of Use of Digitised Theses from Trinity College Library Dublin

Copyright statement

All material supplied by Trinity College Library is protected by copyright (under the Copyright and Related Rights Act, 2000 as amended) and other relevant Intellectual Property Rights. By accessing and using a Digitised Thesis from Trinity College Library you acknowledge that all Intellectual Property Rights in any Works supplied are the sole and exclusive property of the copyright and/or other IPR holder. Specific copyright holders may not be explicitly identified. Use of materials from other sources within a thesis should not be construed as a claim over them.

A non-exclusive, non-transferable licence is hereby granted to those using or reproducing, in whole or in part, the material for valid purposes, providing the copyright owners are acknowledged using the normal conventions. Where specific permission to use material is required, this is identified and such permission must be sought from the copyright holder or agency cited.

Liability statement

By using a Digitised Thesis, I accept that Trinity College Dublin bears no legal responsibility for the accuracy, legality or comprehensiveness of materials contained within the thesis, and that Trinity College Dublin accepts no liability for indirect, consequential, or incidental, damages or losses arising from use of the thesis for whatever reason. Information located in a thesis may be subject to specific use constraints, details of which may not be explicitly described. It is the responsibility of potential and actual users to be aware of such constraints and to abide by them. By making use of material from a digitised thesis, you accept these copyright and disclaimer provisions. Where it is brought to the attention of Trinity College Library that there may be a breach of copyright or other restraint, it is the policy to withdraw or take down access to a thesis while the issue is being resolved.

Access Agreement

By using a Digitised Thesis from Trinity College Library you are bound by the following Terms & Conditions. Please read them carefully.

I have read and I understand the following statement: All material supplied via a Digitised Thesis from Trinity College Library is protected by copyright and other intellectual property rights, and duplication or sale of all or part of any of a thesis is not permitted, except that material may be duplicated by you for your research use or for educational purposes in electronic or print form providing the copyright owners are acknowledged using the normal conventions. You must obtain permission for any other use. Electronic or print copies may not be offered, whether for sale or otherwise to anyone. This copy has been supplied on the understanding that it is copyright material and that no quotation from the thesis may be published without proper acknowledgement.

**Learning Vocabulary in the Authentic Written
Form for Novice English-Speaking Learners of
Japanese with Limited Orthographic Knowledge**

Volume 1

A dissertation submitted to the University of Dublin
for the Degree of Doctor of Philosophy

Saeko Ogiso

Trinity College Dublin, April 2012

School of Education

Trinity College Dublin



Thesis 9661.1

Declaration

I hereby declare that this thesis has not been submitted as an exercise for a degree at this or any other University and that it is entirely my own work.

I agree that the Library may lend or copy this thesis upon request.



Summary

It is conventionally assumed that complicated Japanese orthography is too difficult to learn for learners from non-logographic language backgrounds at the early stages of learning. However, this sort of assumption may have negatively affected how both teachers and learners of Japanese approach the learning of vocabulary in Japanese. Learners of Japanese, particularly those from non-logographic language backgrounds, are often exposed to words written in inauthentic Japanese at the early stages of learning.

Adapting a vocabulary learning approach devised by Devitt (n.d.) to Japanese language teaching, the present study investigated whether novice JFL learners from alphabetical language backgrounds, with limited orthographic knowledge, could learn new Japanese words including recognising them in their authentic written form. The challenges that learners faced and how they coped with the use of strategies in order to compensate for insufficient orthographic knowledge was also examined.

The major findings of the study are as follows:

- By compensating for limited orthographic knowledge with the use of vocabulary learning strategies, novice JFL learners from non-logographic language backgrounds can learn new words in Japanese, including recognising them in their authentic written form.
- The use of vocabulary learning strategies can be a key factor that enables L2 learners from non-logographic language backgrounds with limited orthographic knowledge to learn new words in their authentic written form.
- Novice learners from non-kanji orthographic backgrounds are able to analyse the word structure in kanji words without explicit explanation or prior knowledge of kanji characters. Some strategies employed by the learners of this study were observed as a first step of kanji learning strategies for the foundation of learners' future learning.
- Reading support in rōmaji can negatively affect the recognition of authentic written scripts in Japanese.
- It is not necessary to postpone the learning of kana words in authentic written form until learners acquire individual kana symbols.
- Knowledge of kana orthography does not necessarily offer an advantage of learning kana words over learning kanji words. Also, some kanji words can be easier to learn than some kana words.
- Learners use different strategies for receptive retrieval and productive retrieval in the learning of a new word.

Acknowledgements

This thesis would not have been possible without the encouragement and support of the following people:

Firstly, I would like to express my deepest gratitude to my supervisor, Dr Seán Devitt, for his intellectual stimulation, guidance and encouragement, as well as his patience, generosity and support in all aspects.

I would also like to thank Dr Ann Devitt for her advice on creating databases for analysis.

I am also indebted to all the students who willingly participated in the vocabulary learning class, and to Dr Keiko Inoue and Mr Masakazu Kudara for offering me their classes.

I am also thankful to all my colleagues at Cardiff Japanese Studies Centre for their support, particularly Dr Christopher Hood and Mrs Rosemary Smith.

I would also like to thank Mr Graham Ross, a graduate of Cardiff University and whom I used to teach. I have always been inspired by his comments about Japanese language learning.

Lastly, I wish to thank all my friends and family for their support.

I am indebted to all.

Contents

Volume 1

	Abstract	i
	Acknowledgements	iii
	List of Tables	xiv
	List of Figures	xv
	List of Abbreviations	xvi
Chapter 1	Introduction	1
	1.0 Introductory remarks	1
	1.1 Japanese orthography	1
	1.1.1 Kana syllabaries	1
	1.1.2 Kanji	2
	1.1.3 Rōmaji	3
	1.1.4 Learning Japanese writing systems	3
	1.2 Learning Japanese vocabulary for L2 learners of Japanese	3
	1.3 Negative effect of the use of non-authentic writing systems	4
	1.4 Vocabulary instruction for JFL learners with limited orthographic knowledge	5
	1.5 Issues regarding L2 vocabulary learning for beginners: Vocabulary problem or orthographic problem?	6
Chapter 2	The Role of Vocabulary in Second Language Acquisition Research	9
	2.0 Introduction	9
	2.1 The importance of vocabulary	9
	2.2 Research on vocabulary within SLA research	10

2.3	The position of vocabulary in second language learning	11
2.3.1	Grammar Translation Method	11
2.3.2	Audio-Lingual Method	12
2.3.3	Communicative Language Teaching	13
2.3.4	Vocabulary learning and teaching methodologies	14
2.4	The recent emphasis on vocabulary in SLA research and the role of vocabulary instruction	15
Chapter 3	How Vocabulary is Learnt	17
3.0	Introduction	17
3.1	What it means to know a word	17
3.1.1	Vocabulary knowledge: Dimension approach	18
3.1.2	Vocabulary knowledge: Developmental approach	21
3.2	Processes involved in vocabulary acquisition and learning	23
3.2.1	L1 vocabulary acquisition and learning	24
3.2.2	L2 vocabulary acquisition and learning	24
3.3	Concluding remarks	26
Chapter 4	Learning Vocabulary for L2 Learners of Japanese	29
4.0	Introduction	29
4.1	Learning burden	29
4.2	Features of Japanese vocabulary	30
4.3	Lexical access in Japanese	35
4.3.1	The relationship between phonology and orthography in word recognition	35
4.3.2	The effects of L1 on learning Japanese words	36

Chapter 5	Research into Vocabulary Acquisition and Learning in Japanese as a Second or Foreign Language	37
5.0	Introduction	37
5.1	The current state of research on L2 vocabulary acquisition and learning in Japanese	38
5.2	Recent research findings on L2 vocabulary acquisition and learning in Japanese	40
5.2.1	Incidental vocabulary learning: How is incidental vocabulary learning investigated in the context of Japanese language learning?	41
5.2.2	Extensive reading and incidental vocabulary learning	43
5.2.3	The use of graded readers for extensive reading	45
5.2.4	Guessing word meanings from context	47
5.2.5	The importance of lower-level processing for L2 learners of Japanese	51
5.2.6	The role of phonological information for L1 English learners of Japanese	52
5.2.7	Kanji learning strategies and learners' beliefs about kanji learning	53
5.3	Pedagogical implications on vocabulary learning for beginners of Japanese	54
5.4	Concluding remarks	55
 Chapter 6	 The Present Study	 57
6.0	Introduction	57
6.1	Research questions	57
6.2	Method	58
6.2.1	Target group of learners	58
6.2.2	Vocabulary learning approach adopted for the present study	58
6.2.2.1	Set of target words to be learnt	59
6.2.2.2	Procedures of the vocabulary learning class	59

6.2.2.3	Selection of the target words	62
6.2.2.3.1	Target words for a set of activities - vocabulary related to transportation	63
6.2.2.3.2	Target words for a set of activities - vocabulary related to animals	67
6.2.2.4	Grammar used for each set of vocabulary learning activities	68
6.2.2.4.1	Grammar necessary for a set of activities - vocabulary related to transportation	68
6.2.2.4.2	Grammar necessary for a set of activities - vocabulary related to animals	70
6.3	Implementation of the vocabulary learning classes	71
6.3.1	Description of participants	71
6.4	Data collection	74
6.4.1	Follow-up vocabulary tests	74
6.4.2	Questionnaires	75
6.4.3	Elicitation instruments used to record the experiment with classes	75
6.4.4	Summary of the experiment and data collection	75
6.5	Analysis and evaluation of data	77
6.5.1	Evaluation of test results	77
6.5.1.1	Self-assessment on the target words	77
6.5.1.2	Teacher assessment on the target words	78
6.5.1.2.1	Marking criteria for Test 1 (Receptive Test: Japanese → English)	78
6.5.1.2.2	Detailed marking scheme for Test 1	79
6.5.1.2.2.1	Marking scheme for Test 1 assessing knowledge of vocabulary related to transportation	79
6.5.1.2.2.2	Marking scheme for Test 1 assessing knowledge of vocabulary related to animals	82
6.5.1.2.3	Marking criteria for Test 2 (Productive Test: English → Japanese)	84

6.5.1.2.4	Detailed marking scheme for Test 2	85
6.5.1.2.4.1	Marking scheme for Test 2 assessing knowledge of vocabulary related to transportation	85
6.5.1.2.4.2	Marking scheme for Test 2 assessing knowledge of vocabulary related to animals	89
6.5.2	Analysis on the use of vocabulary learning strategies	93
6.5.2.1	Four main categories for vocabulary learning strategies	93
6.5.2.1.1	Classification for memory strategies	93
6.5.2.1.2	Classification for cognitive, social and affective strategies	97
6.5.3	Analysis on easiness and difficulty in learning the target words	98
6.5.4	Analysis of the learners' strategy use and evaluation of the target words	99
6.5.5	Constraints on the analysis of the data	99
Chapter 7	Findings of the Experiment and Discussion	103
7.0	Introduction	103
7.1	Results of the follow-up vocabulary tests	103
7.1.1	Results of the first receptive test	104
7.1.1.1	Retention of the words used throughout the vocabulary learning class (Phase 1~4)	105
7.1.1.2	Retention of the words used only in Phase 1 and Phase 2	108
7.1.1.3	Retention of the words used only in Phase 3 and Phase 4	112
7.1.2	Results of the first productive test	114
7.1.3	Results of the second follow-up tests	124
7.1.4	Is it possible for beginning JFL learners from non-logographic language backgrounds, with limited orthographic knowledge, to learn new words, including recognising them in their authentic written form?	124
7.2	Analysis of the learners' comments on the target words	125

7.2.1	Analysis of the vocabulary learning strategies used for learning target words for reception	125
7.2.1.1	Strategies used for learning target words in katakana	126
7.2.1.2	Strategies used for learning target words in kanji	136
7.2.1.2.1	Strategies used for learning one-kanji-character words	137
7.2.1.2.2	Strategies used for learning kanji compound words	142
7.2.2	Analysis of the vocabulary learning strategies used for learning target words for production	156
7.2.3	Summary of the vocabulary learning strategies used by the learners	157
7.3	What challenges did the learners face in the process of learning new words?	160
7.4	Concluding remarks	164
Chapter 8	Discussion and Conclusion	167
8.0	Introduction	167
8.1	Summary of findings and discussion	167
8.1.1	Key findings of the study	167
8.1.2	Learning new words including recognising them in their authentic form for JFL learners with limited orthographic knowledge	169
8.1.3	Reading support for authentic writing systems at the beginning stages of learning	172
8.1.4	The importance of an early emphasis on the development of vocabulary learning strategies	173
8.1.5	The importance of exposure to authentic writing systems from the early stages of learning	174
8.1.6	The importance of an emphasis on the establishment of a holistic approach to vocabulary learning in Japanese	174
8.2	Limitations of the present study and suggestions for future research	176
8.3	Concluding remarks	177
References		179

Volume 2

Appendices 201

Appendix A Materials used for learning words related to transportation 201

A-1a	Overhead transparency (Pictures and words in the written form with reading support of furigana for kanji and rōmaji for all the words)	201
A-1b	Overhead transparency (Pictures and words in the written form with reading support of furigana for kanji)	202
A-1c	Overhead transparency (Pictures only)	203
A-2	Cards (Picture on one side and words in the written form on the other side)	204
A-3	Cards (Words in kana or kanji with furigana)	206
A-4	Cloze test	207
A-5	Picture of a street scene	208
A-6	Instructions to colour different vehicles in the picture	209
A-7	Sample end products	215
A-8	Sample sentences for describing the picture	217
A-9	Overhead transparency (written form of three colours in kanji with furigana and rōmaji)	218
A-10	Flashcards (written form of three colours in kanji with furigana)	219

Appendix B Materials used for learning words related to animals 221

B-1a	Overhead transparency (Pictures and words in the written form with reading support of furigana for kanji and rōmaji for all the words)	221
B-1b	Overhead transparency (Pictures and words in the written form with reading support of furigana for kanji)	223
B-1c	Overhead transparency (Pictures only)	225
B-2	Cards (Picture on one side and words in the written form on the other side)	227
B-3	Cards (Words in kana or kanji with furigana)	231

B-4	Cloze test	233
B-5	Picture of a farmhouse scene	234
B-6	Instructions to place the different objects in the picture	235
B-7	Sample end products	241
B-8	Sample sentences for describing the picture	243
Appendix C	Questionnaires and Tests	245
C-1	Questionnaire 1	245
C-2	Questionnaire 2	247
C-3	Test 1 Example (Vocabulary related to transportation)	248
C-4	Test 2 Example (Vocabulary related to transportation)	249
C-5	Rōmaji chart (Test 2: Vocabulary related to transportation)	250
C-6	Test 1 Example (Vocabulary related to animals)	251
C-7	Test 2 Example (Vocabulary related to animals)	253
C-8	Rōmaji chart (Test 2: Vocabulary related to animals)	255
Appendix D	An example of the vocabulary learning class (Video transcription)	257
Appendix E	Data collected from participants	301
E-1	Data from Class 1	301
E-2	Data from Class 2	325
E-3	Data from Class 3	347
E-4	Data from Class 4	387
E-5	Data from Class 5	421
E-6	Data from Class 6	449
E-7	Data from Class 7	481

Volume 3

Appendix F	Test Results	565
F-1a	Test results on vocabulary related to transportation (Means, standard deviations, highest and lowest marks)	565
F-1b	Test results on vocabulary related to transportation (Distribution of marks)	599
F-1c	Test results on vocabulary related transportation (Results of the second follow-up tests)	633
F-2a	Test results on vocabulary related to animals (Means, standard deviations, highest and lowest marks)	643
F-2b	Test results on vocabulary related to animals (Distribution of marks)	669
Appendix G	List of the learners' strategy use and evaluation	695
G-1	List of the learners' strategy use and evaluation of the words related to transportation	695
G-2	Summary of the learners' strategy use (Vocabulary related to transportation)	809
G-3	Summary of evaluation (easiness and difficulties in learning the target words) reported by the learners (Vocabulary related to transportation)	813
G-4	Strategies used for learning three colours (Vocabulary related to transportation)	815
G-5	Strategies used for learning the word pronunciation (Vocabulary related to transportation)	819
G-6	List of the learners' strategy use and evaluation of the words related to animals	831

List of Tables

Chapter 3	3.1	What is involved in knowing a word	20
	3.2	Prior student states for learning word meanings	22
Chapter 4	4.1	Discovering learning burden	30
	4.2	Vocabulary coverage	31
Chapter 6	6.1	Analysis of the target words for a set of activities – vocabulary related to transportation	64
	6.2	Analysis of the target words for a set of activities – vocabulary related to animals	65-66
	6.3	Summary of the experiment and data collection	76
Chapter 7	7.1	Number and percentage of learners who reported their strategy use on 船 (ship), 新幹線 (bullet train) and 地下鉄 (metro)	111
	7.2	Strategies used for learning target words in katakana for reception	127-130
	7.3a	Strategies used for learning target words in kanji for reception – 車 (car) and 船 (ship)	139-140
	7.3b	Strategies used for learning target words in kanji for reception – 電車 (train), 自転車 (bicycle), 新幹線 (bullet train), 地下鉄 (metro), 飛行機 (airplane) and 水上飛行機 (seaplane)	143-148
	7.4	Examples of the learners' comments on the difficulties in recognising the words in their authentic written form in Phase 2	162-163
	7.5	List of the target words in different orthographic presentation	165

List of Figures

Chapter 7	7.1a	Receptive test: Words used throughout the class (Phase 1~4) – Mean scores	105
	7.1b	Receptive test: Words used throughout the class (Phase 1~4) – Percentage of correct answers (full marks = 3)	105
	7.2a	Receptive test: Words used only in Phase 1 and Phase 2 – Mean scores	109
	7.2b	Receptive test: Words used only in Phase 1 and Phase 2 – Percentage of correct answers (full marks = 3)	110
	7.3a	Receptive test: Words used only in Phase 3 and Phase 4 – Mean scores	113
	7.3b	Receptive test: Words used only in Phase 3 and Phase 4 – Percentage of correct answers (full marks = 3)	113
	7.4a	Productive Test: Words used throughout the class (Phase 1~4) – Mean scores	115
	7.4b	Productive Test: Words used throughout the class (Phase 1~4) – Percentage of correct answers (full marks = 3)	115
	7.5a	Productive Test: Words used only in Phase 1 and Phase 2 – Mean scores	116
	7.5b	Productive Test: Words used only in Phase 1 and Phase 2 – Percentage of correct answers (full marks = 3)	117
	7.6a	Productive Test: Words used only in Phase 3 and Phase 4 – Mean scores	118
	7.6b	Productive Test: Words used only in Phase 3 and Phase 4 – Percentage of correct answers (full marks = 3)	118
	7.7	First receptive test – Retention rate and percentage of the learners who reported their strategy use	120
	7.8	First productive test – Retention rate and percentage of the learners who reported their strategy use	121
	7.9	Comparison of retention rate between the first receptive test and the first productive test	123

List of Abbreviations

EFL	English as a Foreign Language
ESL	English as a Second Language
FL	Foreign Language
JFL	Japanese as a Foreign Language
JLPT	Japanese Language Proficiency Test
JSL	Japanese as a Second Language
L1	First Language/Mother Tongue
L2	Second Language
SA	Self-Assessment
SILK	Strategy Inventory for Learning Kanji
SLA	Second Language Acquisition
TA	Teacher Assessment
VLS	Vocabulary Learning Strategies

Chapter 1 Introduction

1.0 Introductory remarks

It is conventionally assumed that complicated Japanese orthography is too difficult to learn for learners from non-logographic language backgrounds at the early stages of learning. However, this sort of assumption may have negatively affected how both teachers and learners approach the learning of vocabulary in Japanese. The present study investigates how novice English-speaking learners of Japanese, with limited orthographic knowledge, learn new words, including recognising them in their authentic written form. This chapter presents a description of the writing systems in Japanese as this is necessary in order to explain the challenges that learners face in learning vocabulary.

1.1 Japanese orthography

An interesting aspect of the Japanese language is that several writing systems are simultaneously used. In Japanese two writing systems, syllabic kana (hiragana and katakana) and logographic kanji, are mainly used. In addition, the use of rōmaji, the Roman alphabet, is increasing, thus three writing systems (four written scripts) are used in the Japanese language.

1.1.1 Kana syllabaries

Both hiragana and katakana are syllabaries, and are derived from kanji simplification. Each kana syllabary comprises 46 basic symbols, which are extended to 71 with two forms of diacritic marks. Each kana symbol represents a mora, which is a unit composed of either a consonant-vowel combination, a vowel alone, or a single nasal sound (Morton and Sasanuma, 1984). In addition, there are also 33 syllables to represent clusters comprised of consonant plus semi-vowel /y/ plus vowel. As a result, there are 104 configurations¹ in kana to represent various morae (Kess and Miyamoto, 1999). Hiragana are used for grammatical function words such as particles and inflectional endings of verbs and adjectives. In addition, there are words that are not normally written using kanji, and for those words hiragana are also used. Katakana are mainly used for foreign loanwords and foreign names. They are also used for onomatopoeic and other sound-symbolic words, names for some animals and plants, and slang.

¹ The total number of kana configurations varies according to the way of counting, and there are several possible ways. For example, the total number is counted as 108 in Taylor and Taylor (1995), and 116 in Frost (2005).

1.1.2 Kanji

Kanji, which are borrowed from Chinese orthography, are used for content words. Because Japanese originally did not have its own writing system, the Chinese writing system was imported to Japan around the fifth century². Chinese characters were introduced to Japanese over an extended period of time, and this resulted in making the use of kanji complicated, particularly for kanji reading. There are two types of reading of kanji; *kun*-reading (*kun-yomi*) and *on*-reading (*on-yomi*)³. The *kun*-reading is the Japanese reading or native reading whereas the *on*-reading is the original Chinese reading or Sino-Japanese reading. Which reading is to be applied depends on the word or context. For instance, the kanji character 人, which represents the meaning of a person or people, is read 'hito' (e.g., 若い人 *wakai-hito* [young person/people]) in the *kun*-reading, and 'jin' (e.g., 日本人 *nihon-jin* [Japanese person/people]) or 'nin' (e.g., 三人 *san-nin* [three people]) in the *on*-reading. Most kanji characters have multiple pronunciations with both types of readings, although there are some exceptions; some characters have ten or even more possible readings.

Japanese school children are expected to learn all the characters from the list of the *jōyō*-kanji (commonly used kanji) by the end of compulsory education. The *jōyō*-kanji have been selected by the Ministry of Education, Culture, Sports, Science and Technology, and the current list (issued in 2010) contains 2,136 characters. The *jōyō*-kanji list includes 1,006 *kyōiku* kanji (lit. education kanji) which are to be learnt in primary school, and 1,130 more kanji which are to be learnt in secondary school. When it comes to L2 learners of Japanese, the highest level of the JLPT (Japanese Language Proficiency Test)⁴ requires 2,036 kanji characters⁵; they are from the list of the *jōyō*-kanji with the exclusion of 19 low-frequency characters, and extra 110 high-frequency characters used in newspapers (Tanaka, 1994).

One can assume the 2,136 *jōyō*-kanji as essential characters to learn. However, the knowledge of 2,136 characters is not sufficient to read Japanese authentic texts such as

² See Seeley, 1984; Taylor and Taylor, 1995, for a more detailed explanation of the historical background of kanji.

³ The *on*-readings are generally classified into four categories according to when and where in China particular kanji were adopted: *Go-on* (sound of *Go* or the Chinese *Wu* state), *kan-on* (sound of *Kan* or Chinese sound), *tō-on* (sound of Chinese Tang dynasty) or *tō-sō-on* (sounds of Chinese Tang and Song dynasties), and *kanyō-on* (habitual-*on* or idiomatic sound). See Taylor and Taylor, 1995; Coulmas, 1996, for more detail.

⁴ JLPT – Japanese Language Proficiency Test: The level setting was revised, and the new level setting (Level N1–N5) has been applied since 2010. In the previous system, the levels consisted of four levels (Level 1–Level 4).

⁵ There are currently no official lists of the JLPT. This is the number specified in the JLPT content specifications published in 2002 (Japan Foundation and Japan Educational Exchanges and Services).

newspapers⁶ or magazines. It is assumed that the understanding of at least 3,000 kanji characters would be necessary for reading Japanese texts fluently, and at least 90 percent⁷ of the Japanese population is estimated to have this level of knowledge (Morton and Sasanuma, 1984).

1.1.3 Rōmaji

Rōmaji are used for abbreviated acronyms, road signs, railway station designation, exterior signs for companies and stores, and eating places of all kinds. They are frequently used for media advertising; it is probably this use, in mixed scripts with kana and kanji, that gives it prominence (Kess and Miyamoto, 1999).

1.1.4 Learning Japanese writing systems

Learners of Japanese usually start learning hiragana and katakana, and then kanji are introduced after completing the learning of both kana syllabaries. Since learning other aspects of the Japanese language cannot be postponed until learners master kana symbols, rōmaji is sometimes used for transcribing Japanese sounds in order to assist beginners. As for kanji, there is a number of characters to learn and the learning is on-going, and thus furigana, which is a reading support in hiragana, is used according to the level of learners' kanji knowledge.

1.2 Learning Japanese vocabulary for L2 learners of Japanese

One of the difficulties in learning the Japanese vocabulary is attributed to the complicated nature of the Japanese orthographic system. For instance, L2 learners of English from non-alphabetic language backgrounds may first learn the twenty-six letters of the alphabet, and then they can start learning vocabulary. The acquisition of twenty-six letters in Latin script can be fundamental for those learners before they start learning spelling or the pronunciation of words in English. Compared with alphabetic languages such as English, the acquisition of the writing systems in Japanese is not straightforward due to the complex nature of the Japanese orthography. Two writing systems, syllabic kana (hiragana and katakana) and logographic kanji, are used in Japanese, and learners of Japanese are required to learn the vast number of characters in order to understand the written form of vocabulary. Before learners start learning vocabulary in Japanese, it is neither possible nor efficient to acquire knowledge of a few thousand kanji characters in addition to two syllabaries, each comprising 46 basic

⁶ The use of kanji characters that are not listed in the *jōyō*-kanji is regulated by law. Any kanji outside the *jōyō*-kanji list in a newspaper must be provided with furigana, a reading support in hiragana.

⁷ There is no official data.

characters. This is the reason why some teaching/learning materials such as textbooks for beginners are written in rōmaji, or contain words in kana where kanji should be used. One can say that these kinds of treatment are appropriate for beginning learners when considering their levels of language proficiency or orthographic knowledge in Japanese. Also, when considered from the learners' perspective, some support for reading Japanese words according to the level would be helpful and less daunting. At the same time, there are studies which indicate learning Japanese words in inauthentic form would be wasteful in terms of learning process (e.g., Koda, 1992; Steinberg, 1995; Steinberg and Oka, 1978).

1.3 Negative effect of the use of non-authentic writing systems

Let us suppose that English L1 learners of Japanese start learning Japanese written in rōmaji, and then Japanese words or sentences they meet in learning materials can be changed according to their progress of the acquisition of writing systems. For example, the word *Nihongo* (the Japanese language), one of the words which beginners learn at the very beginning stages of learning (perhaps in the first lesson), is written 日本語 in authentic form. If the learners were not exposed to the authentic written form from the very beginning, in the process of their learning, they would possibly see this word as *Nihongo* in rōmaji first, subsequently, にほんご in hiragana, 日本ご in the mixture of kanji and hiragana (語 is a more complicated kanji than the other two, and so this type of written form is sometimes used with consideration of learners' orthographic knowledge) or ^{にほんご}日本語 (in authentic form with the reading help, furigana), and finally 日本語 in real Japanese. Would this process be wasteful?

The common assumption, which has no scientific basis, often leads to the idea that "real Japanese is too difficult" for young Japanese children or beginners of Japanese as a foreign language (Ruddock, 2000, 3). Therefore, inauthentic written forms are often used when young Japanese children or foreign people learn to read Japanese (ibid.). Children's books and textbooks for early elementary school children contain many words written in hiragana where kanji should normally be used in authentic Japanese forms. Steinberg and Oka (1978, 21) assert that "no transition phase where everything is written in hiragana (the usual Japanese teaching practice) is necessary" because the majority of words written in hiragana will never be seen again in that form when the transition phase is terminated and this "hiragana transition phase" is a wasteful process. In opposition to the traditional kana teaching policy, Steinberg and Oka (ibid.) suggest that young Japanese children should be exposed to words written in authentic forms from the very beginning of their learning, regardless of whether the written words are shown in hiragana, katakana, or kanji. It is also suggested that any order is

good in regard to which writing systems, hiragana, katakana, or kanji, should be learnt first (Steinberg, 1995; Steinberg and Oka, 1978).

Similar to how young Japanese children learn to read, JFL (Japanese as a Foreign Language) or JSL (Japanese as a Second Language) learners at the early stages of learning are often exposed to words written in inauthentic Japanese, such as words only written in kana or rōmaji. In favour of the use of authentic texts with JFL beginners in Japanese, Ruddock (2000) criticises learning materials prepared for JFL learners in Japanese. She describes the texts for those learners as “artificial written language consisting of rōmaji, or kana where kanji would normally be used, and artificially produced spaces between words” (ibid., p.3). Recent findings from research on word recognition, lexical processing, orthographic processing, and L1 transfer (L1 effects on word recognition) do not seem to have made much of a direct impact on studies on learning/teaching Japanese. There have been few suggestions made on how we approach helping learners with the learning of new words, with consideration of the findings from these research fields. Particularly when it comes to learning words in written form, a focus is put on kanji learning for intermediate or advanced learners, and little attention has been paid to beginners who need to learn new vocabulary with less orthographic knowledge.

1.4 Vocabulary instruction for JFL learners with limited orthographic knowledge

Needless to say, we need to consider the needs of a group of learners or an individual learner, and adopt an appropriate approach accordingly. Unless a learner needs survival language for a short trip to Japan or some similar reason, the majority of L2 learners acquire words by receiving both spoken and written input, unlike L1 vocabulary acquisition where toddlers start learning words by only receiving spoken input (McCarthy, et al., 2010). Assuming logically, one can say that learners should be provided with words in authentic form with some support system for orthography. For pedagogical implications, Koda (1992, 509) suggests that “if a non-authentic system has to be used, the authentic script should always be presented along with the non-authentic system”, and that “increased exposure will facilitate FL learners to build a strong linkage between the sound and visual image of the words.”

Then, how can we best implement some support system of learning vocabulary for beginning learners who have limited or no knowledge of orthography, with consideration for exposure to the authentic scripts? What is an effective and efficient way of learning vocabulary in order for them to become able to recognise words written in authentic form? There are few experiments involving vocabulary learning for L2 learners of Japanese in the early stages of learning. In addition, the processes involved in L2 vocabulary acquisition and learning are complicated in general (this will be discussed in Chapter 3), and lexical processing in Japanese

is intricate because of the writing systems (this will be discussed in Chapter 4). In the context of L2 Japanese language teaching, learning vocabulary and learning writing systems (hiragana, katakana, kanji) are often considered as two separate issues. In the field of L2 vocabulary acquisition research in Japanese, there are many complex factors we need to consider, but many questions remain unsettled.

1.5 Issues regarding L2 vocabulary learning for beginners: Vocabulary problem or orthographic problem?

It is extremely hard to design an efficient system of vocabulary learning considering the level of kanji difficulty and the level of vocabulary difficulty simultaneously. For instance, the word 飛行機 (*hikōki* - airplane) is considered as a word to be learnt at the beginner's level (previous JLPT level 4 or new JLPT level N5 vocabulary item). When analysing this three-kanji compound word according to the level of kanji difficulty, the first and last kanji (飛 and 機) are characters to be learnt at the post-intermediate or pre-advanced level (previous JLPT level 2 or new JLPT level N2 kanji items), but the kanji in the middle is a character to be learnt at the beginner's level (previous JLPT level 4 or new JLPT level N5 vocabulary item). To put it simply, learners are expected to learn this word as a vocabulary item at the very early stages of learning, but they are not expected to be able to read or write this word in authentic written form. Since kanji characters are used for content words, the majority of the Japanese vocabulary is written in kanji (i.e., kanji compound words - nouns) or a combination of kanji and hiragana (i.e., verbs, adjectives, adverbs). For this reason, in the context of L2 Japanese language learning and teaching, the learning of vocabulary and the learning of written scripts have been conventionally treated as separate issues.

In addition, the majority of students of Japanese studying in Japan are learners from Asian countries (The Agency for Cultural Affairs, 2009; Japan Foundation, 2010), which include many learners from logographic language backgrounds (kanji orthographic backgrounds, e.g., Chinese L1 learners), and not much attention had been given to how we approach the issue of vocabulary and kanji learning, since kanji words are generally presumed to be easier to learn for those learners⁸. However, when considering the recent increase in the number of L2 learners of Japanese from non-logographic language backgrounds (non-kanji orthographic backgrounds, e.g., English L1 learners) (Gamage, 2003a; 2003b), who study Japanese outside

⁸ The issues in relation to learning kanji words for learners from kanji orthographic backgrounds have been pointed out by several scholars (e.g., An, 1999; Chen, 2003; Muraki, 1997; Kato, 2005).

Japan or in Japan with study abroad programmes (Kawaguchi, 2010), it is now crucial for us to seriously face how to tackle issues in vocabulary learning along with kanji learning.

In 1984, J. Charles Alderson, one of the leading scholars in reading research, in the title of a book chapter, raised the question “Reading in a foreign language: a reading problem or a language problem?” The question raised by Alderson posed the issue of whether difficulties for L2 learners are attributable to either their L1 reading abilities or their L2 language proficiency. Using Alderson’s words, one can say “Vocabulary learning in L2 Japanese: a vocabulary problem or an orthographic problem?” Alderson concluded, “The answer, perhaps inevitably, is equivocal and tentative – it appears to be both a language problem and a reading problem, but with firmer evidence that it is a language problem, for lower levels of foreign language competence, than a reading problem” (ibid., 24). For vocabulary learning in L2 Japanese, this is a far from simple question to answer, however, one thing we can say is that we need to consider a more holistic approach towards vocabulary learning, by not separating learning vocabulary from learning writing systems, but rather by aiming for integration in order to assist learners to become able to learn vocabulary more effectively and efficiently.

Chapter 2 The Role of Vocabulary in Second Language Acquisition Research

2.0 Introduction

As an introduction to this study, this chapter explores the role of vocabulary and its importance in second language teaching and learning. Section 2.1 overviews the importance of vocabulary in SLA (Second Language Acquisition), and Section 2.2 contemplates why vocabulary was a neglected area in SLA research. Section 2.3 discusses the position of vocabulary in second language teaching exemplifying three major teaching methodologies. Section 2.4 looks into the recent emphasis on vocabulary in SLA research and the role of vocabulary instruction.

2.1 The importance of vocabulary

Vocabulary plays an important role in second language learning, because it is vital to all the language skills: reading, listening, writing and speaking. If a learner does not have enough vocabulary knowledge, it is difficult for them either to understand or to produce the language he or she is learning. The following quotations exemplify the importance of vocabulary:

“Without grammar very little can be conveyed, without vocabulary *nothing* can be conveyed.” (Wilkins, 1972, 111)

“A large vocabulary is, of course, essential for mastery of a language. Second language acquirers know this; they carry dictionaries with them, not grammar books, and regularly report that lack of vocabulary is a major problem.” (Krashen, 1989, 440)

“No matter how well the student learns grammar, no matter how successfully the sounds of L2 are mastered, without words to express a wider range of meanings, communication in an L2 just cannot happen in any meaningful way.” (McCarthy, 1990, viii)

“There are numerous reasons for believing that lexis is important in second language acquisition. In fact, the lexicon may be the most important component for learners.” (Gass and Selinker, 1994, 270)

“Knowing words is the key to understanding and being understood. Children acquire words first, and next the grammar of a language. The bulk of learning a new language consists of learning new words: grammatical knowledge does not make for great proficiency in a language.” (Vermeer, 1992, 147)

Telegrams of the old style may be a good example to think how important vocabulary is in conveying meaning, although we rarely send or receive a telegram nowadays because of the advent of information technology. Wilkins (1972, 111) remarks that “telegrams often consists of no more than a sequence of lexical items with no grammatical information other than order of words, and yet we have no difficulty in understanding them.” This could apply to communication in a second language. Johansson (1978, as cited in Meara, 1984, 229) found that lexical errors are more disruptive and serious than grammatical errors for a native speaker in understanding an L2 learner’s language. Gass (1988, 92) subscribes to this view, and states that an inappropriate use of vocabulary results in misunderstanding whereas a message can still be conveyed even if a grammatical mistake is made.

It is apparent that both grammar and vocabulary knowledge are necessary to achieve all sorts of communication, but yet we must acknowledge that vocabulary plays a key role in increasing the ability to make sense of the language.

2.2 Research on vocabulary within SLA research

Vocabulary is central to language and of critical importance to the typical language learner. Nevertheless, the teaching and learning of vocabulary have been undervalued in the field of second language acquisition (SLA) throughout its varying stages and up to the present day. (Zimmerman, 1997, 5)

As shown in the above remark by Zimmerman, it has been pointed out by many scholars (e.g., Carter, 1998; Coady, 1993; Gass, 1988; Meara, 1980; Richards, 1976; Stoller and Grabe, 1993) that vocabulary was an area neglected by research into second language acquisition until the early 1990s.

Coady (1997a, 273) notes that Jack C. Richards was the one of the first researchers who called attention to vocabulary as a neglected area in second language teaching and learning. The following citation describes how Richards (1976, 77) observed the lack of studies on vocabulary:

The teaching and learning of vocabulary has never aroused the same degree of interest within language teaching as have such issues as grammatical competence, contrastive analysis, reading, or writing, which have received considerable attention from scholars and teachers. The apparent neglect of vocabulary reflects the effects of trends in linguistic theory, since within linguistics the word has only recently become a candidate for serious theorizing and model building.

The major trends in linguistic theory at that time were “the dusk of Structuralism and the dawn of the Chomskyan school of linguists” (Coady, 1997a, 273) and applied linguists failed to see the importance of L2 vocabulary acquisition. Levenston (1979, as cited in Coady, 1997a) also criticised the fact that SLA research was only concerned with grammar and phonology, and that lexical acquisition was neglected.

In addition to the reason arising from favouritism toward syntax- and phonology-oriented linguistic theory, there is another reason why vocabulary was treated as a subordinate element in second language instruction. Sinclair and Renouf (1988, 143) stress that “it is exceptionally difficult to teach an organized syllabus of both grammar and lexis at the same time.” Coady (1997a, 273) supports this observation, and states “if one’s syllabus is organised around grammar, then it will be unlikely that lexis can be focused on at the same time” since “it is very difficult to do two things at once.”

Vocabulary development was disregarded in SLA research since grammar was seen as a more important element in linguistic theory, and this fact in turn led to overlooking the importance of vocabulary to a real-world classroom situation.

2.3 The position of vocabulary in second language learning

When looking at the transition of language teaching methodologies throughout history, the changes have always indicated what kind of proficiency is necessary for learners to achieve, for instance, oral proficiency rather than reading proficiency, in the conceptual framework of a particular teaching method or approach. It also exhibits how the teaching method or approach views the theory of the nature of language learning (Richards and Rodgers, 2001). Along with the changes in language teaching methodologies, the role of vocabulary has also changed.

2.3.1 Grammar Translation Method

Grammar Translation is described as the method emphasising “the teaching of the second language grammar” and using “translation from and into the target language” as the key practice technique (Stern, 1983, 453). As this method originated in the formal teaching of Latin and Greek, learning the grammar rules is explicitly stressed, and the reading and translation of the texts is the principal practice of learning the language (Rivers, 1981). Consequently the role of vocabulary in this method is viewed as a sort of tool for illustrating a grammar rule (Schmitt, 2000; Zimmerman, 1997). The following citation shows how vocabulary is dealt within the Grammar Translation Method:

Vocabulary selection is based solely on the reading texts used, and words are taught through bilingual word lists, dictionary study, and memorization. In a

typical Grammar-Translation text, the grammar rules are presented and illustrated, a list of vocabulary items is presented with their translation equivalents, and translation exercises are prescribed.

(Richards and Rodgers, 2001, 6)

In a typical lesson of this method, one or two new grammar rules are presented, a list of vocabulary is provided, and some examples to practise translation are given (Howatt, 1984; Howatt and Widdowson, 2004). Since the main objectives of the Grammar Translation Method were to train learners to be able to read and write classical materials (*ibid.*), what learners had to do with vocabulary was to memorise obsolete words of the classics from bilingual word lists (Richards and Rodgers, 2001). In this method, a wide range of literary words was given to learners (Rivers, 1981), but vocabulary was taught directly only when the word was important to illustrate a grammar rule (Kelly, 1969, as cited in Zimmerman, 1997). Therefore learners were in the situation where they had to learn vocabulary by themselves. Yet there was some balance between grammar and vocabulary in this method comparing with the Audio-Lingual Method (Nunan, 1991a).

2.3.2 Audio-Lingual Method

The position of vocabulary was significantly neglected when the Audio-Lingual Method had a major influence on teaching methodology during 1950s and 1960s. It was believed that vocabulary building could come later if the basic grammatical patterns of the language were acquired by learners (Nunan, 1991a). Nunan criticises Charles Hockett (1958), who was one of the leading structural linguists at that time, as arguing that “vocabulary was the easiest aspect of a second language to learn and that it hardly required formal attention in the classroom” (Nunan, 1991a, 117).

The Audio-Lingual Approach views “the acquisition of structural patterns” as “the major object of language teaching” (Zimmerman, 1997, 10-11). Since this method is based on behaviourist theory, there was the belief that “language learning is a process of habit formation,” and attention was paid to “pronunciation and intensive oral drilling of basic sentence patterns” (*ibid.*). Grammar items were explained through examples, and drill and pattern practices were typical of the Audio-Lingual Method¹.

The introduction of new vocabulary was carried out through the drills, however, the main purpose was drilling and therefore only those words necessary to conduct the drills were

¹ See Richards and Rodgers, 2001, 64-65, for a typical audio-lingual lesson.

presented (Larsen-Freeman, 2000). In this method, it was considered that working on too many words at the early stage of learning could give learners “a false sense of security” (Zimmerman, 1997, 11). This view can be explained by the following remark:

Excessive vocabulary learning early in the course gives students the impression that the most important thing about learning a language is accumulating new words as equivalents for concepts which they can already express in their native language. They often fail to realize that meaning is expressed in groups of words and in combinations of language segments, and that the meaning of an individual word is usually difficult to determine when it is separated from a context of other words and phrases. Traditional vocabulary lists rarely provide contexts of this type. Students are thus unprepared to use the words they have learned as isolated units in any approximation to authentic communication. (Rivers, 1981, 254)

2.3.3 Communicative Language Teaching

Unlike the Grammar Translation Method or the Audio-Lingual Method, the Communicative Language Teaching approach values achieving communicative proficiency rather than the rules of grammar or accurate pronunciation. The following is a list of five fundamental features of Communicative Language Teaching:

1. An emphasis on learning to communicate through interaction in the target language
2. The introduction of authentic texts into the learning situation
3. The provision of opportunities for learners to focus, not only on language but also on the learning process itself
4. An enhancement of the learner’s own personal experience as important contributing elements to classroom learning
5. An attempt to link classroom language learning with language activities outside the classroom (Nunan, 1991b, 279)

As these features illustrate, Communicative Language Teaching concerns communicative competence, experience of communicative exposure to the target language, learner-oriented learning, and closer contact with the community of the target language. There are various tasks, including information-gap tasks, language games, simulations, role play, and so on, which have been developed (Nunan, 1988, 87) in order to carry out communication activities for “using language to share information” and “using language to process information” (Littlewood, 1981, 22).

Communicative Language Teaching emphasizes “using language for meaningful communication” (Schmitt, 2000, 14), and focuses on fluency over accuracy (ibid.; Zimmerman, 1997). Schmitt (ibid.) claims that vocabulary was treated as a secondary element in this approach although vocabulary should be given an important status in any meaning-based approach. In communicative language teaching, there was “little guidance about how to handle vocabulary, other than as support vocabulary for the functional language use (e.g., how to make a request, how to make an apology)” (Schmitt, ibid.). It was presumed that L2 vocabulary development would take place naturally, like L1 vocabulary development (Coady, 1993; Schmitt, 2000; Zimmerman, 1997).

As is the case with Grammar Translation and Audio-lingualism, Communicative Language Teaching is also generally claimed to be one of the teaching methodologies that did not pay much attention to vocabulary instruction. However, Nunan (1991a, 117) states that the role of vocabulary was partially enhanced during the 1970s because of the development of communicative approaches, since it was suggested in communicative approaches that “in the early stages of learning and using a second language one is better served by vocabulary than grammar, and that one can, in effect, ‘bypass’ grammar in going for meaning if one has a reasonable vocabulary base.” Similarly, Rivers (1983) argues that acquiring a sufficient vocabulary is indispensable for using a second language successfully since it is not possible to use the structures and functions for comprehensible communication without an extensive vocabulary.

2.3.4 Vocabulary learning and teaching methodologies

The three examples of teaching methodologies discussed above show that vocabulary instruction was not central to second language teaching, though it is necessary to discuss more teaching methods and approaches before making this conclusion². Schmitt (2000, 20) summarises the position of vocabulary in recent teaching methodologies as follows:

In the more than two thousand years of second language instruction, there have been numerous methodologies. Recent ones have included Grammar-Translation (with explicit grammar teaching and translation as language practice), the Direct Method (emphasizing oral skills), the Reading Method (emphasizing reading and vocabulary control), Audiolingualism (building good language habits through drills), and Communicative Language Teaching (with a focus on fluency over

² See Zimmerman, 1997, for full review on the history of language teaching methodologies in relation to vocabulary instruction.

accuracy). A common feature of these methodologies, with the exception of the Reading Method, is that they did not address vocabulary in any principled way.

2.4 The recent emphasis on vocabulary in SLA research and the role of vocabulary instruction

The situation where vocabulary was disregarded in SLA research has changed now. Paul Meara's article in 1980, leading to "Vocabulary acquisition: A neglected aspect of language learning," is viewed as a landmark, published at a time when vocabulary instruction was seriously neglected in language learning (Nation, 2008). Since then, there have been many studies carried out in the field of L2 vocabulary acquisition, and the importance of vocabulary has been recognised. A boom in second language vocabulary studies was seen in the 1990s and early 2000s (Read, 2004b), many influential books concentrating on vocabulary have been published, whilst articles focusing on vocabulary studies also have frequently appeared in academic journals (Schmitt, 2008a).

It is now important to consider how to put what research on vocabulary studies says into practice. Cook (2001, 10) suggests that "more information about how learners actually learn helps the teacher to make any method more effective and can put the teachers' hunches on a firmer basis." When applying this to vocabulary teaching and learning, it is significant to examine how learners learn and acquire vocabulary in order to consider effective vocabulary instruction.

Chapter 3 How Vocabulary is Learnt

3.0 Introduction

As discussed in Chapter 2, the importance of vocabulary was overlooked in SLA research and teaching methodologies. Schmitt (1995a, 34) explains a possible reason and suggests what we need to take into consideration as follows:

Although a number of language teaching methodologies have been used in the last fifty years, none of them really gave satisfying answers about how to deal with vocabulary. This is partially due to the simple fact that we did not have much of an idea of how words are learned.

There are many issues which need to be considered for vocabulary learning, but one of the essential issues is to understand how words are learnt. This can be discussed from various points of view, but in this chapter the following points will be examined in order to view the nature of vocabulary learning:

- 3.1 What it means to know a word
 - 3.1.1 Vocabulary knowledge: Dimension approach
 - 3.1.2 Vocabulary knowledge: Developmental approach
- 3.2. The processes involved in vocabulary acquisition and learning
 - 3.2.1. L1 vocabulary acquisition and learning
 - 3.2.2 L2 vocabulary acquisition and learning
 - 3.2.3 Concluding remarks

3.1 What it means to know a word

Gass (1988, 94) states that “a fundamental question in dealing with issues of the lexicon is what it means to know a word.” One can say ‘I know this word,’ but what aspect of the word does one know when one says so? Even though a learner can answer the meaning of a word or spell out the word when asked, it does not mean that they fully understand the word. It is not simple to explain what it means to know a word, and the mastery of a word is not just learning its meaning or spelling. Schmitt (2000, 22) emphasises the complexity of knowing a word by mentioning that “an adequate answer to the single question ‘what does it mean to know a word?’ would require a book much thicker than this one [a book of 224 pages] .”

It is a complex issue to analyse what is involved in knowing a word, but there are two

major approaches for doing this¹. One of the approaches is a “dimension approach” and the other is a “developmental approach” (Schmitt, 1998, 284). The dimension approach involves “analysing the various aspects of meaning and use that characterise ‘full’ knowledge of a word” (Read, 1997, 315). On the other hand, the developmental approach identifies “levels of knowledge that may be interpreted as stages in the acquisition of the word” (ibid.).

3.1.1 Vocabulary knowledge: Dimension approach

There is considerable amount of work which has been carried out using the dimension approach to define ‘what it means to know a word’ on both L1 and L2 vocabulary studies. From L1 vocabulary research, the following two are examples that are frequently quoted when discussing vocabulary knowledge².

Cronbach (1942, 206-207) describes vocabulary knowledge based on five kinds of behaviour involved in knowing a word, and Phythian-Sence and Wagner (2007, 10) summarise Cronbach’s description of word knowledge as follows:

1. Generalization, or the ability to define a word.
2. Application, or the ability to select or recognize situations appropriate to using a word.
3. Breadth, or knowledge of the multiple meanings of a word.
4. Precision, or the ability to apply a word correctly and to recognize its inappropriate use.
5. Availability, or the ability to actually use a word in thinking and discourse.

(Phythian-Sence and Wagner, 2007, 10)

Nagy and Scott (2000, 270) identify five key aspects of vocabulary knowledge:

- (a) incrementality – knowing a word is a matter of degrees, not all-or-nothing;
- (b) multidimensionality – word knowledge consists of several qualitatively different types of knowledge;
- (c) polysemy - words often have multiple meanings;
- (d) interrelatedness – one’s knowledge of any given word is not independent of one’s knowledge of other words; and

¹ Read (2004a) proposes three approaches: precision of meaning, comprehensive word knowledge and network knowledge. Precision of meaning is the equivalent to the developmental approach, and comprehensive word knowledge is the equivalent to the dimension approach. For network knowledge, see Read, 2004a, 219-220.

² Some other examples are reviewed in Graves, 2006, and Phythian-Sence and Wagner, 2007.

- (e) heterogeneity - what it means to know a word differs substantially depending on the kind of word.

Amongst L2 vocabulary studies, the paper "The role of vocabulary teaching" written by Jack C. Richards (1976) is often considered as an influential article that attempted to define what it means to know a word by describing the different aspects of vocabulary knowledge which are necessary to fully acquire a word. Based on the linguistic theory of the 1960s and 1970s, he proposed the following eight assumptions with reference to the nature of lexical competence:

1. The native speaker of a language continues to expand his vocabulary in adulthood, whereas there is comparatively little development of syntax in adult life.
2. Knowing a word means knowing the degree of probability of encountering that word in speech or print. For many words we also "know" the sort of words most likely to be found associated with the word.
3. Knowing a word implies knowing the limitations imposed on the use of the word according to variations of function and situation.
4. Knowing a word means knowing the syntactic behavior associated with the word.
5. Knowing a word entails knowledge of the underlying form of a word and the derivations that can be made from it.
6. Knowing a word entails knowledge of the network of associations between that word and other words in language.
7. Knowing a word means knowing the semantic value of a word.
8. Knowing a word means knowing many of the different meanings associated with a word.

(Richards, 1976, 83)

With the exception of Assumption 1, these assumptions deal with a variety of vocabulary knowledge to give details of what it means to know a word. This set of assumptions has recurrently been quoted as "a general framework of vocabulary knowledge" (Read, 2000, 25). However, Meara (1996, 2) points out problems associated with each assumption, and claims that "Richards' paper is not really an attempt to provide a systematic account of what it means to know word" and that it is rather "an honest attempt to give an account of contemporary linguistic research with inferences and applications to teaching where appropriate."

It is necessary to bear in mind Meara's counterstatements when giving a full account of

what is involved in knowing a word. Yet Richards’ eight assumptions underline “the complex nature of vocabulary learning, which involves a great deal more than just memorising the meaning of a word” (Read, 2000, 25). Also, these eight assumptions have influenced research and studies on vocabulary acquisition (e.g., Ellis, 1995; Schmitt and McCarthy, 1997; Schmitt and Meara, 1997, as cited in Meara, 1996, 1).

Incorporating Richards’ theoretical framework of vocabulary knowledge, Nation (1990, 31; 2001, 27)³ built on a more detailed list to define what it means to know a word. He divides the aspects involved in knowing a word into three, which are “form,” “meaning” and “use.” As shown in the table below, each aspect of these general knowledge areas for knowing a word is further split into three categories, and both receptive and productive knowledge are described for each category.

Table 3.1: What is involved in knowing a word

Form	spoken	R	What does the word sound like?
		P	How is the word pronounced?
	written	R	What does the word look like?
		P	How is the word written and spelled?
	word parts	R	What parts are recognisable in this word?
		P	What word parts are needed to express the meaning?
Meaning	form and meaning	R	What meaning does this word form signal?
		P	What word form can be used to express this meaning?
	concept and referents	R	What is included in the concept?
		P	What items can the concept refer to?
	associations	R	What other words does this make us think of?
		P	What other words could we use instead of this one?
Use	grammatical functions	R	In what patterns does the word occur?
		P	In what patterns must we use this word?
	collocations	R	What words or types of words occur with this one?
		P	What words or types of words must we use with this one?
	constraints on use (register, frequency...)	R	Where, when, and how often would we expect to meet this word?
		P	Where, when, and how often can we use this word?

Note: In column 3, R = Receptive knowledge, P = Productive knowledge. (Nation, 2001, 27)

³ The list from the book published in 1990 gives a brief description of the most important types of vocabulary knowledge, and the list from the book published in 2001 provides a comprehensive explanation of various types of vocabulary knowledge.

The largest difference in describing the components of vocabulary knowledge between Richards and Nation is that Nation made an explicit distinction between receptive and productive vocabulary knowledge. Nation's list (1990) may be "the most complete and balanced description of word knowledge" (Schmitt, 1998, 285) up till now.

As is obvious from all the lists of componential vocabulary knowledge mentioned here, knowing a word is not merely a matter of understanding spelling, pronunciation, or meaning of the word. There are various kinds of vocabulary knowledge necessary to fully acquire a word. The dimension approach shows that learners need to master a number of different types of word knowledge in order to use vocabulary as native speakers of the language do. However, at the same time, this comprehensiveness can be problematic. Schmitt (*ibid.*) identifies a practical issue by pointing out the fact that focusing on each type of vocabulary knowledge for each individual target word could not be feasible. In a similar way, Laufer (1997, 142) draws attention to the complexities associated with describing the properties of a word by stating "the multiplicity of features to be learned increases the probability of words being problematic and therefore only partially learned, since problems can arise from one or more of the areas."

3.1.2 Vocabulary knowledge: Developmental approach

There are a number of word knowledge aspects involved in full mastery of a word, but all of them cannot be learnt at the same time. It is vital to understand that the nature of vocabulary learning is incremental. Schmitt (1998) notes that the developmental approach has an advantage in raising awareness of the incremental nature of vocabulary acquisition.

Dale (1965, 898) is one of the L1 vocabulary researchers who defined the stages of development in knowing a word in terms of an individual understanding of a word:

Stage 1: "I never saw it before."

Stage 2: "I've heard of it, but I don't know what it means."

Stage 3: "I recognise it in context – it has something to do with ..."

Stage 4: "I know it."

These four basic stages show that the vocabulary knowledge one possesses can be partial and contextually based (Phythian-Sence and Wagner, 2007). Beck and McKeown (1991, 791) state that "knowing a word is not an all-or-nothing proposition; it is not the case that one either knows or does not know a word."

Similar to Dale (1965), but rather in a manner of continuum development, Beck et al. (2002, 10) describe the degrees of an individual knowledge in knowing a word:

1. No knowledge.

2. General sense such as knowing *mendacious* has a negative connotation.
3. Narrow, context bound knowledge, such as knowing that a “radiant bride” is beautiful and happy, but unable to describe an individual in a different context as “radiant.”
4. Having knowledge of a word but not being able to recall it readily enough to use it in appropriate situations.
5. Rich, decontextualized knowledge of a word’s meaning, its relationship to other words, and its extensions to metaphorical uses, such as understanding what someone is doing when they are “devouring” a book.

Graves (1984) presents six different states of what a student knows about a word with learning goals and examples.

Table 3.2: Prior student states for learning word meanings

	Student’s State	Learning Goals	Examples
1.	knows word meaning aurally	decoding for reading	can describe an <i>elephant</i> accurately but cannot read the word
2.	knows word meaning but does not express it	production in writing and speech	can understand <i>chaos</i> but not sufficiently familiar to use it
3.	knows meaning but not word	new label for old concept	knows the idea of fear and hiding but does not know the word <i>cringe</i>
4.	knows partial meaning of word	extend the attributes for a label	knows the word <i>guerrilla</i> means a soldier but does not know the tactics or type of soldier connoted
5.	knows a different meaning for a word	new concept for old label	knows that <i>force</i> means strength but does not know the vector meaning
6.	knows neither the concept nor the label	new concept and new label	knows nothing about atomic structure including the term <i>ion</i>

(as cited in Drum and Konopak, 1987, 76)

There are many other L1 vocabulary researchers who take this kind of approach to define knowing a word⁴, but there are only a few studies using this approach in L2 vocabulary research (Read, 2000). One of the examples is a study by Paribakht and Wesche (1993, 15), who developed “the five-level description Vocabulary Knowledge Scale” in order to ascertain how much knowledge about a given set of target vocabulary L2 learner of English absorbed

⁴ Some other examples are reviewed in Graves, 2006, 12-13.

over a specific period of time. The learners were asked to report their degree of knowledge of each target word using the Vocabulary Knowledge Scale as below:

- I. I have never seen this word.
- II. I have seen this word before, but I don't know what it means.
- III. I have seen this word before, and I think it means _____. (synonym or translation)
- IV. I know this word. It means _____. (synonym or translation)
- V. I can use this word in a sentence: _____.

Paribakht and Wesche (1993, 15)

All the scales mentioned here illustrate the varying degrees of the development of vocabulary knowledge by dividing the stages into four to six. Even though the problem of the developmental approach lies in "oversimplification of the multidimensional construct of vocabulary knowledge" (Read, 1997, 316), the developmental approach clearly highlights a significant feature of vocabulary learning and acquisition, which is "words can be known at various levels, and fully learning a word is a multifaceted task" (Graves, 2006, 13).

Schmitt (1998, 281) remarks "the mechanics of vocabulary acquisition is one of the most intriguing puzzles in second language acquisition." Many vocabulary scholars have been trying to define what it means to know a word using different approaches, but there is still no principled way of measuring either components or degrees of knowledge in the acquisition of vocabulary⁵. Although identifying what is involved in knowing a word by either approach has some difficulties, these studies shed light on the understanding of word knowledge.

3.2 Processes involved in vocabulary acquisition and learning

In previous sections, what is involved in vocabulary learning and acquisition has been observed from the viewpoint of vocabulary knowledge, exemplifying two approaches, the dimension approach that describes the various aspects of word knowledge and the developmental approach that represents the degrees or levels of word knowledge. In the following sections, what is involved in vocabulary learning and acquisition from the perspective of its processes, that is to say, what is happening when learning a new word, or what procedures are necessary for mastery of a word, will be discussed.

⁵ See Schmitt (1998) for detailed discussion on the dimension approach and the developmental approach.

3.2.1 L1 vocabulary acquisition and learning

Aitchison (1994, 170) explains that there are “three different but related tasks” children face with when they learn the meanings of words. These three stages of processes involved in L1 vocabulary acquisition are described as “labelling task,” “packaging task”, and “network building task.”

The first stage, “labelling,” is the process of creating the link between concept, sign and referent (Henriksen, 1999, 308). In this process, young L1 learners find out that a particular sequence of sounds can be used as a name for a certain object. For example, parents point at an object such as a toy duck and say ‘duck,’ and children consequently learn to associate the name ‘duck’ with the object being pointed at, that is, “naming” or “attaching labels” (Aitchison, 1994, 170-172).

The second stage, “packaging,” is the process of discovering which things can be put together under one label, and this process overlaps with the labelling task. In the packaging task, young L1 learners learn that the word they acquired in the labelling task can be used in other situations. They acquire the ability to apply a label, for instance, ‘penguin,’ not only to one penguin toy but also to other instances. Additionally they learn to limit using the label ‘penguin’ only to penguins, and not to use the label for other things such as puffins and pandas, which are also black and white. In this process, young L1 learners grasp an understanding for a wider range of word meaning (ibid., 172-173).

The third stage, “network building,” is the process of constructing connections between related words, that is, building “semantic networks.” In this process, young L1 learners find out how words are related to each other. For example, they come to an understanding that some words are overlapping in meaning, e.g., ‘tall, big, fat, high,’ or that some words are opposite in meaning, e.g., ‘big-small, deep-shallow, tall-short.’ It is suggested that this process of integrating words into the network and building links between words occurs slowly (ibid., 177-180).

These three tasks correspond to the three divisions categorised under “Meaning” in the table “What is involved in knowing a word” by Nation (See Table 3.1); “labelling task” to “form and meaning,” “packaging task” to “concept and referent,” and “network building” to “association.”

3.2.2 L2 vocabulary acquisition and learning

Hatch and Brown (1995), basing their proposals on the work of Brown and Payne (1994, as cited in Hatch and Brown, 1995, 372-391), advocate five essential steps to learning new words

for L2 learners. These steps in L2 vocabulary learning are based upon an analysis of the study which Payne (1988, as cited in Hatch and Brown, 1995, 372-373) conducted on vocabulary learning strategies used by ESL students.

Five essential steps to learning new words

1. Encountering new words
2. Getting the word form
3. Getting the word meaning
4. Consolidating word form and meaning in memory
5. Using the words

(Hatch and Brown, 1995, 374)

Hatch and Brown regard these five steps as necessary processes for learners to fully learn new words⁶, while speculating on the possibility that the steps may be further split into smaller phases.

The first step, encountering new words, is “having sources for words” (ibid., 373). This can happen in many ways. Learners meet new vocabulary items when reading books, listening to the radio, watching television, etc. In the classroom context, the teacher needs to consider how to introduce new words or how to make learners encounter new words, according to the level of the learners.

The second step is getting the word form, in other words, “getting a clear image, either visual or auditory or both, for the forms of the new words” (ibid.). This step was described by the ESL students from Payne’s study (1988, as cited in Hatch and Brown, 1995, 372-373) in their statements such as “associating new words with words that sound similar in my native language,” “writing the sounds of words that are using sound symbols from my native language,” “associating words that are similar to words in other languages I have studied,” “associating a word with a similar sounding English word I know,” and “seeing a word that looks like another word I already know” (Hatch and Brown, 1995, 378). Learners may use different strategies to get the word form, but the important point is to obtain a clear image, because it helps retrieval of words.

The third essential step, getting the word meaning, is the process that is often directly associated with the concept of vocabulary learning. What actually happens in this step, for instance, in the case of a learner of English, can be “asking native English speakers what words

⁶ Payne and Brown note that the acquisition of productive knowledge of a word may not necessarily require step 5.

mean,” “asking people who speak my native language the meaning of new words,” “making pictures of word meanings in my mind,” or “explaining what I mean and asking someone to tell me the English word” (ibid., 382). How well learners need to understand the meaning of a word may depend on the stage of their learning. It seems satisfying for beginner learners to get general meanings, whereas more advanced learners are likely to require more specific meanings in order to distinguish the word from those that have similar meanings.

The fourth step, consolidating word form and meaning in memory, requires the reinforcement of the connection between word form and meaning in memory. The form-meaning connection can be strengthened by “many kinds of vocabulary learning drills, such as flashcards, matching exercises, crossword puzzles, etc.” (ibid., 387). Also, using mnemonic techniques such as the keyword method⁷ can be an effective way of consolidating word forms with meanings.

Using the words is the final essential step in learning new vocabulary. It is arguable whether or not this would be necessary for receptive knowledge, however, this step is indispensable for learners to reinforce the word knowledge they learnt. “If the goal is to help learners move as far along the continuum of word knowledge as they can, word use is essential” (ibid., 390). In addition, the use of a word encourages learners to test their understanding of the word, such as collocation, restrictions on the syntactic features, and appropriateness of register, which in turn leads learners to increased confidence about their vocabulary knowledge.

Learners use different strategies according to different stages of their learning. Strategies used by a learner vary depending on the vocabulary knowledge or language proficiency he or she has at that stage. Hatch and Brown (ibid., 391) conclude as follows:

We have discussed five essential steps which learners take in vocabulary learning. Although there is a broad range of activities, strategies, or techniques that individuals use at each step, the necessity of the steps seems more constant. Learners need all five in order to have a full knowledge of the words they want to learn.

3.3. Concluding remarks

The five essential steps in L2 vocabulary learning advocated by Hatch and Brown (1995) have links to the theory of L1 vocabulary acquisition by Aitchison (1994). When one tries to get the word meaning (Step 3 in the model of Hatch and Brown), he or she is trying to understand the

⁷ The keyword technique will be discussed in more detail in Chapter 7.

meaning of the word by linking the label and the concept, which corresponds to the “labelling task” in Aitchison’s model of L1 vocabulary acquisition. When one tries to consolidate word form and meaning in memory (Step 4 in the model of Hatch and Brown), he or she is trying to consolidate this link between the label and concept but linking this with other labels for concepts by working the labels to fit them into categories based on the concepts. This is the equivalent of the “packaging task” in Aitchison’s model. The third stage of Aitchison’s model of L1 vocabulary acquisition, “network building,” takes place through use of the words (Step 4 in the model of Hatch and Brown).

Both models of L1 and L2 vocabulary acquisition discussed here, by and large, explain the processes of how vocabulary is learned, however, they do not describe what Henriksen (1999, 311) argues for the acquisition of word meaning as below:

In the process of acquiring word meaning, the learner’s knowledge of a certain lexical item moves from mere word recognition (i.e., acknowledging that the word exists in the target language) through different degrees of partial knowledge (Brown, 1994) toward precise comprehension. It is important to stress that no native speaker will ever develop an exhaustive knowledge of a word’s meaning potential. Understanding is gradually changed and increased as experience both of the world and language is expanded.

It is important to understand that a learner can be at the stage where they know the core meaning sense of a word but do not know all of the other possible meaning senses, and then they gradually expand their knowledge of the word. A learner learns various types of vocabulary knowledge at different rates (Schmitt, 2007). This can be highlighted by the remark of Harley (1995, 2) that “learners do not know words on an all-or-nothing basis, and even mature native speakers may often be in a state of partial knowledge.”

It is very difficult to develop a model which describes complex and gradual steps of vocabulary development along the continuum process. In an interview article, Nation replies as follows to the comment by Schmitt that “the area of vocabulary doesn’t seem to have any comprehensive theory of organization or acquisition”:

I agree that there isn’t an overall theory of how vocabulary is acquired. Our knowledge has mainly been built up from fragmentary studies, and at the moment we have only the broadest idea of how acquisition might occur. We certainly have no knowledge of the acquisition stages that particular words might move through. Additionally, we don’t know how the learning of some words affects how other words are learned. There are still whole areas which are

completely unknown.

(Schmitt, 1995b, 5)

Schmitt (2008a, 353) proposes, as one of the issues which needs to be incorporated into vocabulary instruction, that “vocabulary learning is a complex and gradual process, and different approaches may be appropriate at different points along the incremental learning process.” What is important for language teachers is to understand there are various types of knowledge and varying processes which learners face when they learn a new word, and to find an effective way of incorporating vocabulary learning into teaching according to the level of the learners.

Chapter 4 Learning Vocabulary for L2 learners of Japanese

4.0 Introduction

Palmberg (1987, 202) cites the factors that influence second language learning as described by Levenston (1979), and suggests that the following are, in general, the same as the factors that affect the development of L2 vocabulary:

- a Features of the foreign language
- b Features of the native language (and other languages known to the learners)
- c Features of the learners (e.g., personality, motivation, attitudes towards language learning, and previous knowledge)
- d Features of the learning situation (especially input factors)

(Palmberg, 1987, 202)

It is essential to consider both positive and negative aspects that affect vocabulary development of the target group of learners in order to facilitate or assist their vocabulary learning. This chapter examines the factors that affect vocabulary learning of L2 learners of Japanese, with a particular focus on learners from non-logographic language backgrounds. The topics discussed in this chapter in order to understand vocabulary learning for learners of Japanese are learning burden, features of Japanese vocabulary, and lexical access in Japanese.

4.1 Learning burden

Nation (2001, 23) defines “the learning burden of a word” as “the amount of effort required to learn it.” The learning burden of a word varies depending on the learners’ previous experience of the target language and their native language, how the word is learnt or taught, and inherent difficulty of the word (Nation, 1990, 33). Thus, different words can give different learning burden to learners from different language backgrounds (Nation, 2001, 23). The general principle of learning burden is that “the more predictable and regular features of the word, the lighter the learning burden” (Nation, 1990, 35).

Nation (2001, 24) suggests that “teachers should be able to estimate the learning burden of words for each of the aspects of what is involved in knowing a word” in order to assist learners with their vocabulary learning. Teachers need to find out what aspects will be difficult for learners when they learn a particular word. Nation (2008, 100), based on his framework of vocabulary knowledge “what is involved in knowing a word” (see Table 3.1 in

Chapter 3), devises the questions that are useful to find out the learning burden of a word from each aspect of vocabulary knowledge:

Table 4.1: Discovering learning burden

Meaning	Form and meaning	Is the word a loan word in the L1?
	Concept and referents	Is there an L1 word with roughly the same meaning?
	Associations	Does the word fit into the same sets as an L1 word of similar meaning?
Form	Spoken form	Can the learners repeat the word accurately if they hear it?
	Written form	Can the learners write the word correctly if they hear it?
	Word parts	Can the learners identify known affixes in the word?
Use	Grammatical functions	Does the word fit into predictable grammar patterns?
	Collocation	Does the word have the same collocation as an L1 word of similar meaning?
	Constraints on use	Does the word have the same restrictions on its use as an L1 word of similar meaning?

When considering learning vocabulary in Japanese for learners from alphabetical language backgrounds such as English-speaking learners of Japanese, it can be assumed that the learning burden will be heavy because their native language is not related to Japanese and the distance between their L1 and the target language may affect their vocabulary learning, although there are variable factors involved in learning burden and it is not easy to generalise.

4.2 Features of Japanese vocabulary

In order to discover the learning burden for a particular group of learners, and as such facilitate their vocabulary learning by reducing this learning burden, it is important to understand connections and dissimilarities between learners’ L1 and L2, as indicated in the questions for discovering learning burden in the table above. The following sections give a brief account of Japanese vocabulary, addressing the features necessary for the discussion of vocabulary learning in Japanese.

It is generally understood that the Japanese language has a large vocabulary. Tanaka (1994) specifies the number of words as one of the outstanding features of Japanese

vocabulary. “Japanese has relatively broad vocabulary” (ibid., 73), or to put it another way, learners of Japanese need to learn a large number of words. In the study of vocabulary, one of the important learning goals is to determine how many words learners need to know in order to have a good command of the language. The table below shows the comparison of vocabulary coverage in written texts across languages:

Table 4.2: Vocabulary coverage

Number of words	English ¹	French	Spanish	Chinese	Korean	Japanese
1~500				63.1 %	66.4 %	51.5 %
1~1,000	80.5 %	83.5 %	81.0 %	73.0 %	73.9 %	60.5 %
1~2,000	86.6 %	89.4 %	86.6 %	82.2 %	81.2 %	70.0 %
1~3,000	90.0 %	92.8 %	89.5 %	86.8 %	85.0 %	75.3 %
1~4,000	92.2 %	94.7 %	91.3 %	89.7 %	87.5 %	(1~3,500) 77.3 %
1~5,000	93.5 %	96.0 %	92.5 %	91.7 %	89.3 %	81.7 %
...						
1~10,000						91.7 %

(Translated from Sato, 1999, 171)

This table suggests how difficult it is for learners of Japanese to acquire sufficient vocabulary to function in Japanese, although the table has potential issues with quality since there may be discrepancies in the measurement of text-word coverage depending on the language², as Sato (1999) points out. According to this table, learners of Japanese can understand only eighty percent of a text with a vocabulary size of about 5,000 words (lemmas³) whereas learners of

¹ The vocabulary coverage in English shown in this table may be unreliable. It is estimated that a vocabulary size of 4,000-5,000 word families is necessary to attain 95% coverage (Laufer and Ravenhorst-Kalovski, 2010) and a vocabulary size of 8,000-9,000 word families to attain 98% coverage (ibid.; Nation, 2006c). A word family consists of “several individual word forms, including the root form (e.g., inform), its inflections (informed, informing, informs), and regular derivations (information, informative)” (Schmitt et al., 2011, 27). When converting the number of word families into that of individual words, it is estimated that 6,000 word families correspond to approximately 28,000 individual words, and 8,000 word families correspond to approximately 35,000 individual words (Schmitt, 2008b).

² In Sato’s article, the unit of measurement (e.g., words, lemmas, word families) used for each language is not clearly mentioned. With regard to Japanese, it is assumed that the unit of measurement used in this table is lemma or headword from other sources (e.g., National Institute for Japanese Language and Linguistics, 1984).

³ A lemma is defined as “a set of related words that consists of the stem form and inflected forms that are all the same part of the speech” (e.g., approach, approaches, approached, approaching) (Nation and Meara, 2002, 36)

other languages can understand approximately ninety percent of a text with the same vocabulary size. Lexical coverage in Japanese does not seem to be efficient compared to other languages, and hence it can be assumed that learning to read Japanese requires learners to acquire a larger vocabulary.

Vocabulary threshold, which is defined as “the boundary between having and not having sufficient knowledge” (Koda, 2005, 58), is an important concept in the connection between vocabulary knowledge and comprehension. According to Liu and Nation (1985), ninety-five percent lexical coverage is necessary to understand written texts in English for adequate comprehension and inferencing unknown words from context. Laufer (1989) also suggests that ninety-five percent lexical coverage is required for reasonable reading comprehension. However, more recent studies show that the coverage of 95% is not an ideal threshold and the coverage of 98% is necessary to attain sufficient reading comprehension (Hu and Nation, 2000; Laufer and Ravenhorst-Kalovski, 2010; Schmitt et al., 2011). It is important to understand that “the percentage of vocabulary coverage required depends on how much comprehension of the text is necessary” (Schmitt et al., 2011, 28). Schmitt et al. (ibid., 35) indicate that the coverage of 95% may be enough if 60% comprehension is thought to be adequate, but the coverage of 98-99% is necessary if 70% comprehension is required. Furthermore, they suggest that no words should be unknown in order to reach 75% comprehension.

When considering how much vocabulary is needed for optimal comprehension of the language, the vocabulary coverage in Japanese, which does not even reach ninety-two percent with the knowledge of 10,000 words (lemmas), indicates that learning vocabulary for L2 learners is time-consuming and requires hard work. In addition to the vocabulary coverage, it is useful to know the number of words used in authentic texts such as newspapers or magazines and the average vocabulary size of native speakers of the language. According to surveys on vocabulary use conducted by the National Institute for Japanese Language (Kokuritsu Kokugo Kenkyūjo, 1964; 1971, as cited in Mori, 2003b, 176), over 40,000 different types⁴ of words are used in newspapers and magazines in Japan. It is estimated that adult native Japanese speakers know 30,000 to 50,000 different types of words (Akimoto, 2002; Hida and Sato, 2002).

⁴ The number of types is defined as “the total number of the different word forms, so that a word which is repeated many times is counted only once” (Read, 2000, 18). This term is often compared with ‘the number of token.’ The number of token is “the same as the total number of word forms, which means that individual words occurring more than once in the text are counted each time they are used” (ibid.).

Although there has been little study on vocabulary threshold in Japanese⁵, the knowledge of 10,000 different types of words is often considered as a goal or objective that advanced learners need to attain. The Japanese Language Proficiency Test (JLPT) specifies the number of vocabulary necessary for each level, and the knowledge of 10,000 different types of words is required for Level 1 (the highest level)⁶. It is mentioned in the criteria of Level 1 that the examinee has an integrated command of the language sufficient for life in Japanese society (Japan Foundation and Japan Educational Exchange and Services, 2008). This criterion indicates that a learner needs to memorise roughly 10,000 different types of words in order to attain adequate vocabulary knowledge. However, it has been pointed out that non-native students who start studying in Japanese universities find it difficult to keep up with their studies even if they had passed the JLPT Level 1 before entering the university (Akimoto, 2002).

In addition to the fact that “Japanese has a relatively broad vocabulary,” Tanaka (1994, 73-74) points out the following as outstanding features of Japanese vocabulary:

1. Japanese has a rich phonaesthetic vocabulary (onomatopoetic words).
2. Individual words in Japanese often have few sounds, and a simple phonetic structure, which results in a large number of homonyms – words with the same sound and different meanings.
3. Japanese has many devices for adding words to the vocabulary, which results in the inclusion of numerous words of foreign origin.

Firstly, “Japanese has a rich phonaesthetic vocabulary (onomatopoetic words)” (ibid.). Onomatopoetic and other sound-symbolic words are “words that imitate natural sounds or depict manners and states in an expressive fashion” (Iwasaki, 2002, 46). Shibatani (1990, 157) stresses that “onomatopoetic expressions permeate Japanese life.” Sound-symbolic words are sometimes viewed in some languages as slang or a childish use of language, however, these words play a very important role in the Japanese language (Iwasaki, 2002, 46); there are many words classified as sound-symbolic words and dictionaries devoted specifically to this type of words have been published. It is difficult for learners to master these sound-symbolic words, particularly “phenomimes,” words imitating manner or motion, and “psychomimis,” words

⁵ There are ample examples of studies carried out for investigating vocabulary threshold for learners of other languages (e.g., Hazenberg and Hulstijn, 1996; Hirsh and Nation, 1992; Laufer, 1992; Laufer and Ravenhorst-Kalovski, 2010; Nation, 2006c; Schmitt et al., 2011).

⁶ The level setting was revised in 2010, and there is no vocabulary list published for the new level setting. The number of the words necessary for the highest level mentioned here is based on the previous level setting.

representing mental states or sensations. This is because sensitivity to the feel of the words is required in order to understand these expressions (Tanaka, 1994).

Secondly, “Individual words in Japanese often have few sounds, and a simple phonetic structure, which results in a large number of homonyms” (ibid., 74). The Japanese language has a vast number of homonyms or homophones. In listening or speaking they are usually differentiated by their accents (tone patterns⁷). In writing they are written in different kanji, and thus can be disambiguated by the meaning of each kanji. For example, the words ‘*hashi*’ (bridge 橋), ‘*hashi*’ (chopstick 箸) and ‘*hashi*’ (end/tip 端) are homophones, having the same pronunciation (different tone patterns when the word is pronounced in a sentence) but different kanji characters and meanings. This function of discriminating the meaning via different kanji for homophonous words is essential for the reading of Japanese, and this is one of the reasons that is often argued in the case against abolishing kanji in favour of one of the kana syllabaries (Smith, 1996).

Thirdly, “Japanese has many devices for adding words to the vocabulary, which results in the inclusion of numerous words of foreign origin” (Tanaka, 1994, 73-74). The Japanese language has been extremely influenced by loanwords from other languages. Japanese has borrowed words from many languages, not only from neighbouring languages such as Ainu, Chinese, and Korean, but also from European languages and Southeast Asian languages (Shibatani, 1990). Loanwords adopted into Japanese in earlier stages were mainly from Chinese, but recently the number of loanwords being introduced from English has been increasing.

In Japanese there are three major types of vocabulary classified according to origin; they are the native words of Japanese origin (*wago* or *Yamato-kotoba*), the Sino-Japanese, words of Chinese origin (*kango*), and the foreign (mainly Western) vocabulary (*gairaigo*). This characteristic of the Japanese vocabulary, which has various types of words, results in creating many synonyms for a word (Tanaka, 1994, 74). For instance, the word ‘*hayasa*’ which is a native Japanese word, ‘*sokudo*’ which has its origin in Chinese, and ‘*supīdo*’ which is a borrowed word from English, are synonyms which all mean ‘speed,’ but they are used in slightly different ways.

In addition to the complicated orthographic system, which is explained in Chapter 1, the features of the Japanese vocabulary discussed here can increase the learning burden for learners of Japanese in learning vocabulary.

⁷ Homophonous words cannot always be distinguished by accent due to the limited number of tone patterns (See Iwasaki, 2002, 26-28 for more details).

4.3 Lexical access in Japanese

As discussed in Chapter 3, knowing a word is a complex process and involves different aspects of vocabulary knowledge. How are these different types of word knowledge processed in the recognition of printed words? Many models of word recognition have been developed, and what all models have in common is that word recognition involves processing of orthographic, phonological, semantic, and morphological information (Frost, 2005). However, the interplay between phonology and orthography varies across languages since each language displays different orthographic representations (Frost, *ibid.*; Kess and Miyamoto, 1999).

4.3.1 The relationship between phonology and orthography in word recognition

The basic writing systems in the world are usually divided into three: alphabetic, syllabic and logographic. “Syllabic and alphabetic systems are ‘sound-writing’ systems, in which individual characters generally stand for individual sounds within a word’, and ‘logographic systems are ‘word-writing’ systems, in which individual characters generally stand for whole words” (Harris and Coltheart, 1986, 10).

The basic difference between the two writing systems mainly used in Japanese is that kana (hiragana and katakana) are ‘sound-based’ and kanji are ‘meaning-based’ (*ibid.*). In order to understand a word, we need the phonological, orthographic and semantic information of the word contained in the mental lexicon and to gain access to the semantic information of the word (Matthei and Roeper, 1983). In the process of lexical access the relationship between phonology and orthography varies depending on the writing system (Kess and Miyamoto, 1999) and there are two possible routes for gaining access to meaning for visual word recognition. One is the phonological route where the visual representation of a word is directly translated into phonological code before semantic recoding. The other is the visual route in which the visual representation is directly translated into meaning without phonological mediation (Henderson, 1982; Chikamatsu, 1996). In translating the printed words, the phonological route is taken in sound-based writing systems such as English and Japanese kana because there is one-to-one correspondence between the sounds and the written signs (although there are different degrees of phonological recoverability across languages), whereas the visual route is taken in meaning-based writing systems such as Chinese characters and Japanese kanji because there is no correspondence between sounds and written signs (Harris and Coltheart, 1986).

Since the Japanese language uses different writing systems simultaneously, there are many arguments over lexical access in Japanese. Although it is difficult to reach a conclusion when considering word frequency, the degrees of kanji complexity, or context effect (Kess and

Miyamoto, 1999), it is generally agreed that 'kana is read phonologically and kanji is read visually' (Morton and Sasanuma, 1984).

4.3.2 The effects of L1 on learning Japanese words

Many studies show that L1 word processing skills significantly affect L2 word recognition (Koda, 1996; Mori, 2003b). Although two different routes are taken in lexical access in Japanese, many learners use only one route in processing words and they are likely to rely on their L1 word processing skills when recognising Japanese words.

Mori (ibid.) discusses that learners of Japanese from different language backgrounds show different strategies in processing Japanese words. Learners from alphabetic language backgrounds (e.g., English-speaking learners) depend more on phonological information of words than those from logographic language backgrounds (e.g., Chinese learners) in processing kana words, which are sound-based representation. Learners from logographic language backgrounds rely on visual familiarity of words even when words are sound-based representation (kana recognition), whereas learners from alphabetic language backgrounds are more susceptible to sound information even when words are meaning-based representation (kanji recognition) (Mori, 1998). Since these differences attribute to learners' L1 word processing skills, it is necessary to take account of the effect of L1 on L2 word recognition for vocabulary instruction.

Chapter 5 Research into Vocabulary Acquisition and Learning in Japanese as a Second or Foreign Language

5.0 Introduction

As mentioned in Chapter 2, L2 vocabulary acquisition research has exceedingly expanded in the past two decades, and no scholars would claim any more that it is a neglected field of SLA research (Macaro, 2010). Broady (2008, 259) emphasises that “vocabulary can no longer be said to be ‘a Cinderella topic’.” However, this is not the case in SLA research in Japanese.

As represented by Paul Meara’s article “Vocabulary acquisition: a neglected aspect of language learning” in 1980, the disregard of the role of vocabulary in second language learning was claimed by many applied linguists in 1980s and 1990s. In a way somewhat similar to that raised by Meara’s article, one of the leading scholars in SLA research in Japan, Kazuhiko Nagatomo claimed in 1998 that L2 vocabulary acquisition research in Japanese was a neglected area. He stated that L2 vocabulary acquisition research was an unexplored field, and he described this under-researched area as a “hidden pitfall” in SLA research in Japanese (Nagatomo, 1998, 83; 1999, 12).

Since then, the necessity to carry out research on L2 Japanese vocabulary acquisition and learning has been pointed out by other researchers (Kanazawa, 2004; Kano, 2000; Yachi, 2002; Yamauchi, 2004; Yokosuka, 1999), and books and articles published in the English language, which focus on L2 vocabulary acquisition and learning have been quoted in major journals of SLA research in Japan such as the “Journal of Japanese Language Teaching” or “Acquisition of Japanese as a Second Language.” It seems that a boom in L2 vocabulary studies centred mainly in English which started in the 1990s has raised awareness about the importance of vocabulary instruction in the context of L2 Japanese language learning and teaching. What is needed in the current status of JSL/JFL vocabulary pedagogy, utilising applicable findings on vocabulary research from the study of English or other languages, is to conduct more empirical research, which leads to practical pedagogical implications for effective vocabulary instruction.

Although the amount of studies is still insufficient (Yachi, 2002; Yamauchi, 2004), some progress has been made in research on L2 vocabulary acquisition and learning in Japanese in recent years (Yachi, 2007). With a central focus on intermediate and advanced learners, the development can be seen in a varied range of topic areas (*ibid.*), such as the acquisition of polysemous or synonymous words (e.g., Matsuda, 2000, 2002; Mizukuchi, 2002), the acquisition of kanji compound words (e.g., An, 1999; Chen, 2003; Kato, 2005), lexical network structure (e.g., Komori, 2004; Ono, 2001; Taniguchi, 1995; Taniguchi et al., 1994), incidental

vocabulary learning (e.g., Tanabe et al., 2009; Wei, 2006, 2008; Yachi, 2003; Yokoyama, 2001; Yoshizawa, 2005) including extensive reading (e.g., Hitosugi and Day, 2004; Leung, 2002) and lexical inferencing (e.g., Kondo-Brown, 2006a; Matsumoto, 2002; Mori 2002, 2003a, 2004; Mori and Nagy, 1999; Tokuda, 2006; Yachi and Komori, 2009; Yamagata, 2007, 2008), kanji (vocabulary) learning strategies and/or learners' beliefs about the learning of kanji characters/words (e.g., Banno and Ikeda, 2009; Gamage, 2003a, 2003b, 2006; Hashimoto, 2007; Ikeda, 2007; Kondo-Brown, 2006b; Matsumoto, 2004; Mori, 1999a; Mori et al., 2007; Okita, 1995, 1998; Toyoda, 2009; Tsetsegdulum, 2009; Yokosuka, 1999), and so on.

In this chapter, in order to underscore the necessity for research on L2 beginning learners of Japanese from non-logographic language backgrounds, the recent development in Japanese lexical pedagogy will be reviewed. Vocabulary instruction in the context of Japanese learning and teaching will also be overviewed in order to generate additional ideas to supplement the necessity for more vocabulary pedagogy in Japanese. Also, a particular focus goes to L2 vocabulary acquisition at the beginning stages of learning, as the target learner groups of this study are beginners of Japanese.

5.1 The current state of research on L2 vocabulary acquisition and learning in Japanese

Mainly for the study of English, a significant number of books on vocabulary acquisition and learning have been published for the last two decades. Amongst these books, the distinctive books which provide a comprehensible overview of vocabulary research with practical implications for L2 vocabulary learning and teaching would be “Learning Vocabulary in Another Language” by Paul Nation (2001), “Vocabulary in Language Teaching” by Norbert Schmitt (2000), and “Assessing Vocabulary” by John Read (2000). These books are often quoted or reviewed (e.g., Meara, 2002; Read, 2004b) as books for language teachers and others who are interested in issues related to L2 vocabulary learning and teaching. There are also several notable books compiling a selection of papers demonstrating both theoretical and practical issues in L2 vocabulary acquisition and learning/teaching (e.g.; Bogaards and Laufer, 2004; Coady and Huckin, 1997; Huckin et al., 1993; Schmitt and McCarthy, 1997). It is not possible to mention all the books on the study of vocabulary exhaustively here, but quite a few books, which deal with various areas of vocabulary studies, have been continuously published year after year, and furthermore a research manual book specific to the study of vocabulary (Schmitt, 2010b) has been published recently.

To my knowledge, these kinds of books, which have comprehensive references to the research background of L2 vocabulary acquisition and pedagogical implications for L2 vocabulary learning, have not been published in the fields of Japanese language teaching and

applied linguistics¹. Although an abundant research literature is now available, owing to the development of L2 vocabulary acquisition research in EFL/ESL studies, the amount of work demonstrating pedagogical implications for vocabulary learning and teaching in Japanese with the research background is still insufficient. As mentioned earlier, Nagatomo (1998, 1999) is probably the first person who proclaimed that L2 vocabulary acquisition was an unexplored area in SLA research in Japanese, however, only five lines in his thirty-three-page article are devoted to his view regarding the issue of L2 Japanese vocabulary acquisition.

Books available for Japanese language teachers such as vocabulary teachers' handbooks (e.g., Akimoto, 2002; Asano and Japan Foundation Japanese Language Institute, 1981; Hida and Sato, 2002; National Institute for Japanese Language and Linguistics, 1984, 1985) do not usually concern themselves much with L2 vocabulary acquisition/learning process or vocabulary instruction, but rather deal with knowledge about Japanese vocabulary, more from the study of semantics such as rules of word formation or types of Japanese vocabulary. Undoubtedly, we need these kinds of knowledge as language teachers, but we also must understand how we can apply theoretical knowledge to practice. In short, we need to change our standpoint, and focus more on vocabulary pedagogy.

In recent years, books devoting a chapter to L2 vocabulary acquisition and learning in Japanese (e.g., Matsumi, 2002; Mori, 2003b; Yokosuka, 1999) have been published, but the number is limited, topic areas dealt with are narrow, and practical implications suggested are inadequate. For example, Matsumi (2002) explains L2 vocabulary acquisition from the viewpoint of psychology, and deals with the L2 mental lexicon with specific models of lexical structure, working memory, and the keyword method as a mnemonic technique. Although his article could be a concise introduction for people who would like to have a quick sketch of this study area, his account may be too brief. He suggests some implications for the use of the keyword method and the learning of cognates in Japanese language teaching, but most of the research findings mentioned in his article are from the study of English or other languages. Mori's (2003b) article, amongst these three, would probably be the one providing a relatively substantial overview of vocabulary acquisition in Japanese. She approaches the issues related to L2 Japanese vocabulary acquisition from various perspectives, and provides some

¹ For non-native EFL teachers in Japan, many books concerning both theory and practice of L2 vocabulary teaching have been published in the Japanese language (e.g., Hayashi, 2002; Kadota 2003; Kadota and Ikemura, 2006; Mochizuki et al., 2003; Tono, 1997). Since the general principles are applicable to Japanese language teaching, these books are resources currently available for JFL/JSJL teachers who would like to gain extensive knowledge of vocabulary studies from books written in Japanese.

pedagogical suggestions for vocabulary instruction and implications for future vocabulary research in Japanese. It could be a great resource if this kind of article were extended to a book with more comprehensive accounts from both theoretical and practical viewpoints. Yokosuka (1999) explains vocabulary learning strategies based on Rebecca Oxford's (1990) taxonomy of language learning strategies, but the practical research findings she deals with in Japanese are mainly about kanji learning strategies, rather than vocabulary learning strategies.

These articles can be seen as some progress toward the development of vocabulary studies in Japanese as a second or foreign language, nonetheless, the amount of this sort of work is only a handful. A possible explanation for this would be simply because not enough experimental studies have been conducted on L2 learners of Japanese so that it would be difficult to draw some pedagogical suggestions specific to the learning and teaching of Japanese.

Suzuki (2007) suggests that L2 learners of Japanese being required to learn a huge amount of vocabulary with a vast number of kanji characters might have been an underlying cause of vocabulary instruction being a neglected area in SLA research in Japanese. Because learning vocabulary in Japanese means learning words and three different written scripts (hiragana, katakana and kanji) at the same time, it could have been perplexing for people involved in L2 Japanese language education to deal with this intricate issue in vocabulary learning.

5.2 Recent research findings on L2 vocabulary acquisition and learning in Japanese

As discussed in Chapter 1, with the need for vocabulary instruction for learners from non-kanji orthographic backgrounds, amongst the fields of L2 vocabulary acquisition and learning in Japanese, the studies in relation to incidental vocabulary learning and kanji (vocabulary) learning strategies have been drawing considerable attention over the last decade or so. It seems that a growing interest in these two topic areas is related to a concern about how learners can cope with authentic materials. Learners of Japanese are usually exposed to authentic materials after the intermediate level. They frequently encounter unknown or unfamiliar kanji words while reading authentic texts, hence, the ability to guess the meanings of kanji words is considered an important skill (Kondo-Brown, 2006b). Besides, it is regarded as essential to understand how learners handle learning a huge number of kanji characters and kanji words, and to examine individual differences in the use of strategies among learners (Gamage, 2006).

It is also pointed out that learners from non-kanji orthographic backgrounds are inclined to lose their motivation for learning kanji during the intermediate stages (Toyoda, 1998b).

Gamage (2003b) analyses the reasons behind this, and states that the fact that learners still seriously struggle to read authentic texts after the intermediate level can give them cause to build up frustration and to lead to disappointment. These issues are often discussed in the light of incidental vocabulary learning (e.g., guessing unknown word meanings from context, extensive reading including graded readers, etc.), and kanji (vocabulary) learning strategies, including their interrelationship with learners' beliefs. In the following sections, we will look at recent research findings from these fields in relation to L2 vocabulary acquisition and learning in Japanese.

5.2.1 Incidental vocabulary learning: How is incidental vocabulary learning investigated in the context of Japanese language learning?

Incidental vocabulary learning or intentional vocabulary learning², which one is more effective and efficient for L2 vocabulary acquisition? This is probably one of the most repeatedly discussed issues in vocabulary learning and pedagogy. Although the definition of "incidental learning" is debatable as there are some different approaches to view this term and the issue of definitions has been raised (Gass, 1999; Huckin and Coady, 1999; Hulstijn, 2003, 2005; Singleton, 1999; Wesche and Paribakht, 1999), the following explanation helps to understand how incidental learning is interpreted in language learning in general:

Much - if not most - lexical development in both L1 and L2 appears to occur as learners attempt to comprehend new words they hear or read in context. An understanding of how this takes place is thus important to an adequate theory of second language lexical development. Such learning is often referred to as *incidental* in that learners are focused on comprehending meaning rather than on the explicit goal of learning new words.

(Wesche and Paribakht, 1999, 176)

As is explained in the citation above, in many instances in the literature on vocabulary acquisition and learning, incidental vocabulary learning is described as the type of learning that is a by-product of learning something else, that is to say, learners acquire new vocabulary knowledge when they are engaged in a listening, reading, speaking or writing activity without

² In the study of vocabulary acquisition and learning, some other terms, such as implicit/explicit learning (e.g., N. Ellis, 1994), direct/indirect learning (e.g., Nation, 1990), and deliberate/incidental learning (e.g., Nation, 2002, 2006a, 2006b), are used for discussing same or similar features of incidental/intentional vocabulary learning. As they can be used interchangeably in a broad sense, the details of differences in the terminology are not discussed here.

intending to learn vocabulary items (Hatch and Brown, 1995; Hulstijn, 2001; Nation, 1990; Wesche and Paribkht, 1999).

The incidental vocabulary learning hypothesis (Nagy et al., 1985) is based on L1 acquisition. Children naturally learn vocabulary through repeated exposures in a variety of contexts in their native language. L1 vocabulary acquisition research suggests that learning from context has cumulative effects, and that incidental vocabulary learning leads to greater vocabulary growth than being given explicit vocabulary instruction alone (Nagy and Herman, 1987). Following the logical basis for this assumption, many researchers (see, for example, Krashen, 1989; R. Ellis, 1994) have examined whether or not L2 learners acquire most of their vocabulary knowledge through incidental learning. Although there are some issues which need to be considered (e.g., vocabulary threshold for L2 reading comprehension), it is generally agreed that a large amount of vocabulary can be learnt through incidental learning (Coady, 1997b; Pigada and Schmitt, 2006; Read, 2004b). Since incidental learning plays a significant role in L2 vocabulary acquisition, as one of the principles of pedagogical implications for L2 vocabulary learning, it is recommended to “provide opportunities for the incidental learning of vocabulary” (Hunt and Belgar, 2002, 259). The following are the benefits of incidental learning:

Incidental learning:

- can address words which cannot be explicitly taught for time reasons;
- fills out the kinds of contextual word knowledge which cannot easily be explicitly taught;
- provides recycling for words already taught explicitly;
- vocabulary learning occurs while improving other language skill areas (e.g. reading).

Schmitt (2010a, 40)

One of the important points for facilitating incidental vocabulary learning is to provide learners with rich and numerous exposures to the target language, and there are a variety of ways of incorporating incidental vocabulary learning into a language programme (see, for example, Schmitt, 2007, 833-834). The most conventional way of promoting incidental learning is extensive reading, and this is also the most broadly researched topic in incidental learning (see Grabe, 2009, chapter 15 for a review on the research on extensive reading). A number of studies have examined its effectiveness in terms of vocabulary growth (e.g., Coady, 1997b; Hirsh and Nation, 1992; Horst, 2005; Huckin and Coady, 1999; Nation 2001, 2006c; Rott, 1999). It is now acknowledged that incidental vocabulary learning plays a significant role in L2 vocabulary acquisition. At the same time, notwithstanding its effectiveness, it has been

pointed out that “incidental vocabulary acquisition is a time-consuming and unpredictable process and, hence, raise questions about the suitability of the approach for second language (L2) learners” (Pigada and Schmitt, 2006, 1).

With regard to the study of the Japanese language, according to Yachi (2003), there is no study conducted on incidental vocabulary learning in L1 vocabulary acquisition research. In the context of L2 Japanese language learning and teaching, it seems that research on incidental vocabulary learning has started recently. In a review on incidental vocabulary learning by Yachi in 2003, it was reported that there was little research carried out on incidental vocabulary learning for L2 learners of Japanese, and she just refers to three studies (Yachi, 2001 cited in Yachi, 2003; Yokoyama, 2001; Yoshizawa, 2001 cited in Yachi, 2003). Since the three mentioned in Yachi’s review, several more experiments involving incidental vocabulary learning have been done (e.g., Goda et al., 2005; Hitosugi and Day, 2004; Leung, 2002; Tanabe et al., 2009; Wei, 2006; Yoshizawa, 2005). Most of these studies conducted on L2 learners of Japanese examine incidental vocabulary learning in relation to extensive reading³ and lexical inferencing.

5.2.2 Extensive reading and incidental vocabulary learning

In SLA research, conventional studies on incidental vocabulary learning often involve extensive reading. Brown et al. (2008) state that the strong connection between incidental vocabulary learning and extensive reading may be attributed to the definition of extensive reading. Extensive reading is defined as “a pleasurable reading situation where a teacher encourages students to choose what they want to read for themselves from reading materials at a level they can understand” (ibid., 137). As is explained in this definition, as well as being pleasurable, extensive reading provides learners with increased opportunities to the exposure to “large quantities of material that are within their linguistic competence” (Grabe and Stoller, 2002, 259). Therefore, extensive reading is seen as one of the effective approaches for vocabulary development, as it “provides learners with the opportunity to meet words in their context of use, increases sight vocabulary, and could theoretically result in substantial vocabulary learning, which seems difficult to achieve with explicit teaching during the relatively short period of time that L2 learners spend in the language classroom” (Pigada and Schmitt, 2006, 2).

³ There are some exceptions. With regard to incidental vocabulary learning through extensive listening, Tanabe et al. (2009) conducted a study on L2 advanced learners studying the Japanese language at a university in Japan, and examined their vocabulary growth through listening to lectures in Japanese.

There are a number of studies in English language teaching which investigate the role of L2 extensive reading and its effects on vocabulary learning (e.g., Day et al., 1991; Grabe and Stoller, 1997; Horst et al., 1998; Mason and Krashen 1997; Pigada and Schmitt, 2006; Pitts et al., 1989; Saragi et al., 1978; Waring and Takaki, 2003), but there are only a few studies in Japanese language teaching. Although the number is small, there are a couple of studies investigating the role of extensive reading for learners of Japanese in terms of improvement of vocabulary knowledge, reading comprehension and attitudes toward reading (Leung, 2002), and the implementation of extensive reading in formal classroom settings (Hitosugi and Day, 2004). Both the study by Leung and the study by Hitosugi and Day show positive results, but the findings are interpreted in light of some limitations. Leung (2002) investigates the impact of extensive reading conducted on a single subject. Although Leung analyses the data collected from various sources such as a learner diary, tutorial sessions and vocabulary test, it would be difficult to claim that extensive reading is effective for learners of Japanese when considering individual differences in learning. Hitosugi and Day (2004) conducted a study on fourteen learners for ten weeks, and the subjects performed well on the post-tests. When considering the time-consuming nature of extensive reading, it would be difficult to analyse the learners' improvement. However, both studies show significant effects on motivation for learning Japanese. The effects of extensive reading on motivation might be related to the recent development of graded readers in Japanese, which will be discussed later.

There is another study which examines how learners of Japanese at the intermediate level can benefit from learning new words by extensive reading, by comparing the reading plus vocabulary exercise treatment group and the reading alone treatment group (Wei, 2006). The results suggest the importance of explicit vocabulary instruction along with extensive reading, because the learners in the reading plus vocabulary exercise treatment group performed well in both receptive and productive post-reading tasks whereas the reading alone treatment group performed well only in receptive post-reading tasks. The results of this study correspond with the results of the study by Paribakht and Wesche (1997) conducted on ESL learners. Their experimental study was also carried out on two groups, one of which were given a reading activity plus vocabulary instruction, while the other had the reading activity only, in order to investigate whether learners gain knowledge of target words through reading plus vocabulary exercises, or through reading only. They conclude that "although reading for meaning appears to produce significant results in vocabulary acquisition, such reading supplemented with specific vocabulary exercises produce greater gains for the target words" (ibid., 197).

This suggests that the effectiveness of a pedagogical approach that combines incidental learning and explicit teaching can be universal and applicable to any language. Although it is

difficult to draw a general conclusion for the effectiveness of extensive reading or incidental vocabulary learning in L2 Japanese due to the lack of experimental studies so far carried out (Wei, 2008), a combined approach of incidental and intentional learning (e.g., Sökmen 1997) may be important for L2 learners of Japanese.

5.2.3 The use of graded readers for extensive reading

It is generally said that L2 learners who can benefit from extensive reading are those with higher proficiency in the target language. Since learners with lower proficiency do not have enough vocabulary knowledge, it is difficult for them to gain vocabulary knowledge incidentally. Lower proficiency learners can start with graded readers, although graded readers have been criticised (Coady, 1997b; Miura, 2005) because they are “not seen as authentic” and “poorly written, stilted in style, and actually dull to read” (Coady, 1997b, 231), and it is considered by some people that “using simplified material is somehow inferior to using material written for native speakers” (Miura, 2005, 12). However, there are some vocabulary researchers who recommend graded readers (e.g., Laufer et al., 2005; Schmitt, 2007). Nation says “as part of the meaning-focused input strand of a course, there should be a substantial extensive reading program making use of a large number of interesting graded readers” (Laufer et al., 2005, 6), and Schmitt says “modern graded series are generally well written and contain a diverse enough range of titles to engage virtually any student” (2007, 834). For ESL/EFL learners, a large collection of graded readers with a variety of topics have been developed (e.g., see Day and Bamford, 1998, 169-218, Appendix for the list of English graded readers), and the use of graded readers for those learners has been examined (e.g., Nation and Ming-tzu, 1999; Waring, 2011; Waring and Takaki, 2003).

Unlike the status of the development in graded readers for learners of English, the study of graded readers for learners of Japanese has just started recently. An incorporated non-profit organisation called Nihongo Tadoku Kenkyūkai (Society for Research on Extensive Reading in Japanese) has been developing graded readers for beginning and intermediate learners of Japanese since 2002 (NPO Nihongo Tadoku Kenkyūkai, 2011). At the present time, to my knowledge, this is the only organisation that has published graded readers commercially available for learners of Japanese. They have set five different levels (from Level 0 for starter to Level 4 for intermediate or above) for their graded reader series, with reference to

vocabulary and grammar items used in five major textbooks for beginners⁴, and the test content specifications of JLPT (Japanese Language Proficiency Test)⁵ (ibid.). However, the rationale for the development of their graded readers (level setting, the selection and coverage of vocabulary for each level, etc.) is unclear since there are no scholarly papers published explaining the theoretical background, though some practical reports have been published (NPO Nihongo Tadoku Kenkyūkai, 2008; Sakai and Awano, 2010).

There is another group, called JGR (Japanese Graded Readers) project group, who have undertaken research working towards the development of a framework for Japanese graded readers. Based on the literature in graded readers, extensive reading, and incidental vocabulary learning from ESL/EFL studies, they have been working towards the establishment of a clear framework of a Japanese graded reader scale, the construction of a Japanese graded reader vocabulary checker for controlling the vocabulary in the reading material, and the development of Japanese graded readers available for learners of Japanese (Harada et al. 2008, 2009; Nakano et al., 2007; Reynolds et al., 2003).

In the study of vocabulary learning in Japanese, very few studies have conducted research on beginning learners. It would be interesting to see how beginning learners can benefit from graded readers in terms of vocabulary development, and we must await future empirical studies examining the role of graded readers in relation to vocabulary studies. However, the present projects on graded readers raise an issue of concern. One of the difficulties in teaching beginners in Japanese is the consideration of learners' orthographic knowledge. Learning printed words for beginners in Japanese, particularly for learners from non-kanji orthographic backgrounds, is often considered as an extremely daunting task. For that reason, children's books, which contain many words written in kana where kanji should be used, and with artificially made spaces between words, are sometimes used for extensive reading (e.g., Hitosugi and Day, 2004; Leung, 2002). When kanji are used in extensive reading

⁴ The textbooks they refer to are “*Minna no Nihongo Shokyū 1, 2*,” “*Shin Bunka Shokyū Nihongo 1, 2*,” “*Japanese for Busy People 1, 2, 3*,” “*Situational Functional Japanese 1, 2, 3*” and “*Shokyū Nihongo Genki 1, 2*.”

⁵ There are currently no official vocabulary lists of JLPT. JLPT was revised, and the new revised test has been administered since 2010. With the revision of the test, the organizations that have developed JLPT (Japan Foundation and Japan Educational Exchanges and Services) decided not to publish official lists of vocabulary, kanji, and grammar (test content specifications). They have used JLPT content specifications published in 2002 (Japan Foundation and Japan Educational Exchanges and Services).

materials including graded readers, it is often the case that furigana for support in reading kanji words are provided⁶, regardless of the level of the target L2 readers.

When looking at the graded readers developed by NPO Nihongo Tadoku Kenkyūkai, questions which come across one's mind would be "Why do learners at the intermediate level need furigana for a very basic word (and a very basic kanji at the same time) such as *yama* (mountain 山)⁷?" and "Can graded readers with furigana for all the kanji words be helpful for learners who will need to read authentic texts in the near future?" Another project group, JGR (Japanese Graded Readers) has decided to put furigana for all the kanji words (Reynolds et al., 2003), although their graded readers are currently under development. We can apply general pedagogical implications suggested by the study of English to Japanese language pedagogy, but this is a specific issue for the Japanese language.

In Japanese, it is necessary to consider whether or not we should provide furigana reading help for kanji words, or which kanji words we should give furigana for and which kanji words we do not need to give furigana for. If learners were provided with a text with furigana, how would it affect their development of lexical processing or reading fluency? Obviously, furigana can be helpful for learners at the beginning stages as they have not acquired enough kanji knowledge. However, I often hear my students say that furigana gets in the way when they are reading a text with the reading help. It seems that furigana tends to catch their eyes before they see the kanji. How learners learn vocabulary and how teachers present vocabulary to learners is not simple in Japanese. A component of word knowledge, "How is the word written and spelled?" in Nation's (2001, 27) framework (discussed in Chapter 3), is possibly more complicated in Japanese than alphabetical languages such as English. This issue is also involved in many aspects of vocabulary learning in Japanese, not only for incidental learning including extensive reading. To my knowledge, there are few studies examining the impact of furigana in learning of words or developing reading fluency.

5.2.4 Guessing word meanings from context

In line with research on incidental vocabulary learning, a topic often discussed is guessing word meanings from context. It is obviously inevitable for L2 learners, perhaps not so much in the classroom context as in natural communication situations, to encounter unknown or

⁶ For example, all the target words are provided with furigana in the material used for Wei's experiment (2006).

⁷ See, for example, "*Hashire Merosu*" ("Run, Melos, Run," a novel originally written by Osamu Dazai) from Japanese Graded Readers Level 4, Volume 1 (NPO Nihongo Tadoku Kenkyūkai, 2008, 4). The developer defines Level 4 as the intermediate level (Level 2 in previous JLPT, Level N2 in revised JLPT).

unfamiliar words when they are engaged in reading or listening in the target language. Therefore, it is crucial for L2 learners to seek a way to deal with words they do not know in order to get adequate understanding (Read, 2000). In addition, L2 learners need to acquire a large amount of vocabulary, but the number of words they can learn through intentional learning is limited. Hence, “incidental learning via guessing from context” (Nation, 2001, 232) or “guessing an unknown word’s meaning from context” (Schmitt, 1997, 209) is considered one of the vocabulary learning strategies.

When learners meet an unknown or unfamiliar word and attempt to guess the meaning of the word without referring to a dictionary, they utilise available knowledge sources, which are both linguistic (e.g., word morphology, word association, sentence-level grammar, cognates, etc.) and non-linguistic (i.e., world knowledge) (see Paribakht 2005, 2010; Paribakht and Wesche, 1999, for details). There are a number of studies which have examined how L2 learners approach inferencing unknown word meanings from context or their ability to learn novel words from context (q.v., Hulstijn et al., 1996; Mori, 2002; Nation, 2001; Paribakht, 2005, 2010; Read, 2000). It is generally agreed that “a good guesser uses a variety of clues, checks various types of clue against each other, does not let the form of the word play too large a part and does not arrive at a guess prematurely,” and that “proficiency in L2 is a major factor in successful guessing” (Nation, 2001, 247).

In the context of L2 Japanese learning, as with other topic areas, it has been pointed out that the number of empirical research studies investigating the role of context in guessing unknown words is insufficient (Tokuda, 2006; Yamagata, 2007). Recently, however, it seems that this research topic has received scholarly attention. In particular, several studies examining lexical inferencing on university students who are studying the Japanese language as a foreign or second language have appeared in academic journals over the past decade or so (e.g., Kondo-Brown, 2006b; Matsumoto, 2002; Mori 2002, 2003a; Mori and Nagy, 1999; Yachi and Komori, 2009; Yamagata, 2008). As mentioned earlier, interest in this research topic may relate to a pedagogical concern about the ability to read authentic texts for learners of Japanese. Supposedly the recent emphasis on investigating lexical inferencing on L2 Japanese learners, particularly for learners from non-kanji orthographic backgrounds, is due to difficulties that intermediate or advanced learners face in reading authentic texts, that is, how to cope with unknown or unfamiliar kanji words.

When learners of Japanese read authentic texts, the majority of unknown or unfamiliar words they meet are kanji compound words (Mori, 2003a). Japanese words are classified into three general groups by origin: they are native Japanese words, Sino-Japanese words (words of Chinese origin), and borrowed words from western languages. In Japanese vocabulary, the

most typical word formation is two-kanji compound (Nomura, 1988), and the number of kanji compound words (i.e., Sino-Japanese words) accounts for approximately 70 percent of the total lexicon (Yokosawa and Umeda, 1988, cited in Joyce, 2005). In addition, the representation of a native Japanese word is usually either in kanji or in the combination of kanji and hiragana. Therefore, the majority of words learners meet in reading authentic texts are kanji words, and it is inescapable for many learners to encounter a certain number of unknown kanji characters and kanji words, when considering the gap between the number of kanji characters and words a learner has learnt and the number of kanji characters and words actually used in authentic texts.

For L2 learners from logographic language backgrounds such as Chinese L1 learners (learners who use kanji/Chinese characters in their L1), it is often assumed that guessing the meanings of kanji compounds in Japanese is comparatively easier⁸, hence the focus of recent studies has been largely on the strategies of inferencing kanji words used by L2 learners from non-logographic language backgrounds (for studies on English L1 learners, see Kondo-Brown, 2006b; Matsumoto, 2002, Mori 2002, 2003a; Mori and Nagy, 1999), or L2 learners from other non-kanji orthographic backgrounds (for studies on Mongolian L1 learners, see Yachi and Komori, 2009; for studies on Korean L1 learners⁹, see Yamagata, 2008).

From research results from the studies mentioned above, there are two points that correspond to the findings from research on lexical inferencing in general. Firstly, as suggested in the study of English or other languages, guessing unknown words from context can lead L2 learners to learn inaccurate meanings since there is a risk of making the wrong inference (e.g. Hulstijn, 1992; Paribakht and Wesche, 1999), and the same disadvantage has been found among L2 learners of Japanese (e.g. Kondo-Brown, 2006b). Secondly, it is generally agreed that learners with higher L2 proficiency are better at using context for lexical inferencing, and this is mainly because encounters with unknown words are more frequent for less proficient learners, and it is difficult for them to use contextual clues effectively (Nation, 2001; Read, 2000). This general principle can be applied to L2 learners of Japanese (e.g., Kondo-Brown, 2006b; Mori,

⁸ Though, it has been pointed out that guessing from L1 cognates can cause Chinese L1 learners of Japanese to make wrong guesses (e.g., Kato, 2005).

⁹ Opinion concerning Korean L1 learners, whether or not to regard them as learners from kanji orthographic backgrounds, is divided (An, 1999). Although it is compulsory to learn 1,800 basic Hanja (Chinese characters in Korean) in secondary education in South Korea, people have less opportunity to use them since Hangul (phonetic alphabetical script) is the official script and commonly used in their daily lives (Cho, 1994). The use of Hanja in combination with Hangul is very limited, and Hanja characters are typically used in texts for educated adults such as newspapers and scholarly books (Park, 2008).

2002; Mori and Nagy; 1999; Yamagata, 2008). However, an interesting finding is that Japanese language proficiency does not correlate with use of kanji clues (i.e., morphological analyses of kanji characters or kanji compound words) (Mori, 2002, 2003a; Mori and Nagy, 1999).

Word morphology in terms of lexical inferencing generally indicates clues such as word roots, affixes, or inflectional suffixes. Most studies on lexical inferencing in the Japanese language, including the studies of Mori (2002, 2003a), and Mori and Nagy (1999), investigate how L2 learners interpret unknown kanji compound words (words consisting of two or more kanji characters). Since hiragana is used for grammatical function words, morphological information such as inflectional suffixes is excluded as inference clues when discussing morphological analysis of kanji characters or kanji compound words. Mori and Shimizu (2007, 474-478) define morphological analysis in kanji learning as follows:

Morphological analysis in kanji learning refers to semantic and/or phonetic analysis of parts constituting a kanji word. Japanese kanji words, as in Chinese, involve two levels of morphological structure. One level involves the composition of single-character words consisting of sets of less complex parts known as radicals. The other level involves the composition of kanji compounds, words consisting of two or more kanji characters.

As is explained in the citation above, the morphological information that can be used for guessing a kanji character or a kanji compound word is knowledge of kanji radicals (components) or knowledge of each kanji character in a compound. For example, if a learner knows the meaning of the kanji 木 ‘tree’ (this kanji serves as a single kanji character as well as a radical), it is possible to guess the meaning of the kanji 林 as ‘woods’ or the kanji 森 as ‘forest.’ For a compound word, if a learner does not know the meaning of the word 花見, but knows the meaning of each kanji character, 花 as ‘flower’ and 見 as ‘to see’, then it is possible to guess the meaning of this word as ‘flower viewing.’

The study by Mori and Nagy (1999) investigates the roles of contextual information and word morphology (morphological information of kanji in the context of their study) in the process of inferring unknown kanji compound words. In this study, English L1 learners of Japanese at the intermediate or pre-advanced levels were given a task to guess the meanings of novel kanji compound words (semantically semitransparent compounds – the meanings of component characters do not necessarily make a direct contribution to the meaning of the whole word) consisting of kanji characters familiar to them under three different conditions, that is, words in isolation (internal morphological information), contextual clues only, and both of them. The results show that learners can perform best at guessing unknown kanji

compound words when they have access to both types of clues. Also, it is indicated that Japanese language proficiency correlates with the successful use of contextual clues and the integration of multiple clues. These findings correspond to widely accepted assumptions that “a good guesser uses a variety of clues” and “proficiency in L2 is a major factor in successful guessing” (Nation, 2001, 247).

However, the finding that successful morphological analysis of kanji compound words cannot be accounted for by learners’ Japanese language proficiency does not accord with the assumptions above. Based on this finding, Mori and Nagy (1999, 95) surmise that “the ability to interpret unknown words based on morphological information is an independent construct from the ability to infer from context”. Mori (2002, 2003a), in continuing a series of studies, further confirms that contextual information and morphological information play different roles in inferring the meanings of unknown or unfamiliar kanji compound words. This implies that beginning learners can be trained to develop strategies for inferring unknown kanji words, although it may be too early for them to utilise contextual information since they do not have enough linguistic knowledge.

5.2.5 The importance of lower-level processing for L2 learners of Japanese

The study results by Mori (2002, 2003a) and Mori and Nagy (1999) above are associated with findings from L2 Japanese reading research. When discussing models of reading, the most commonly stated models used for explaining generic orientations to reading skills and processes are bottom-up, top-down, and interactive models (Grabe, 2009). Bottom-up approaches focus lower-level (data-driven) processing, where “the reader begins with the printed word, recognises graphic stimuli, decodes them to sound, recognises words and decodes meanings” (Alderson, 2000, 16). On the other hand, top-down approaches emphasise higher-level (reader-driven) processing, where “readers activate what they consider to be relevant existing schemata and map incoming information onto them” (ibid., 17) in text interpretation. Interactive models, combining both bottom-up and top-down approaches, propose that “every component in the reading process can interact with any other component, be it ‘higher up’ or ‘lower down’” (ibid., 18).

When applying the theory of these reading models to lexical inferencing, bottom-up approaches are linked to the use of morphological, phonological and orthographic information in lexical inferencing as such information is a necessary component in decoding form. On the other hand, top-down approaches are associated with the use of contextual information in lexical inferencing as such information is a resource for reconstruction of meaning. As the integration of multiple clues is seen as an important factor for successful guessing in lexical

inferencing research, interactive approaches, integrating both approaches, are considered the most adequate in describing reading processes in general terms (Alderson, 2000; Anderson, 1999; Carrell et al., 1988; Grabe, 1991). This suggests that L2 learners need both lower-level and higher-level skills and strategies for efficient reading in the target language.

Nevertheless, the importance of lower-level processing has been emphasised for L2 learners of Japanese. A considerable number of studies have examined the role of lower-level processing skills or strategies, such as letter identification and word recognition, in L2 Japanese reading comprehension (e.g., Chikamatsu, 1996, 2003, 2006; Horiba, 1996, 2002; Koda, 1989, 1992, 1994, 1996, 1997; Minamisono, 1997; Mori, 1998). For example, in reading Japanese, efficient word processing skills are more significant than for Indo-European languages, and there are findings that L2 learners of Japanese tend to depend heavily on lower-level processing at any level, even at an advanced level after having learnt Japanese for several years (Chikamatsu, 2003). Koda (1992, 508) suggests that “one of the best ways to improve lower-level processing skills is to increase learners’ exposure to print”. She also remarks that Japanese texts written in inauthentic form (the use of rōmaji or hiragana where kanji should be used) could harm the reading performance of learners, and emphasises the importance of exposure to authentic scripts. It is because the reconstruction of the visual-spatial model will be necessary in the later stages when authentic writing systems are introduced if learners are exposed to inauthentic scripts at the beginning stages of learning.

5.2.6 The role of phonological information for L1 English learners of Japanese

Another interesting finding from lexical inferencing research in L2 Japanese is that phonological clues within unknown kanji words, whether the phonological information is full or partial, lead to successful inferencing (Kondo-Brown, 2006b). Kondo-Brown (ibid.) relates this finding to the study of Mori (1998). In Mori’s study, it is observed that English L1 learners of Japanese can learn kanji characters better when phonological input is provided. Also, the role of phonological information in lexical processing or word recognition in Japanese has been extensively examined in different areas of study, such as psycholinguistic studies, L1 effects on L2 word recognition, and kanji learning strategies.

For example, it is indicated that L1 word processing skills significantly affect L2 word recognition (e.g., Koda, 1996; Mori, 2003b). Although two different routes are taken in lexical access in Japanese (discussed in Chapter 4), many L2 learners use only one route in processing words, and they are likely to rely on their L1 word processing skills when recognising Japanese words. Mori (ibid.) discusses how learners of Japanese from different language backgrounds show different strategies in processing Japanese words. In general, learners from alphabetic

language backgrounds (e.g., English L1 learners) depend more on phonological information of words than those from logographic language backgrounds (e.g., Chinese L1 learners). Learners from logographic language backgrounds rely on visual familiarity of words even if words are sound-based representations (kana recognition). On the contrary, learners from alphabetic language backgrounds are more susceptible to sound information even if words are meaning-based representations (kanji recognition) (Mori, 1998). It can be suggested from these findings that vocabulary learning could be facilitated for English L1 learners of Japanese if they are provided with enough phonological information along with the written script.

5.2.7 Kanji learning strategies and learners' beliefs about kanji learning

As has been discussed, many studies relating to vocabulary acquisition and learning in L2 Japanese have placed a strong emphasis on the learning of kanji characters or kanji words. This is most likely because Japanese is often considered as one of the most difficult foreign languages to learn, particularly for learners from non-logographic language backgrounds, and kanji usually receive all the blame for that. In fact, according to Horwitz's survey (1999), L2 learners of Japanese, compared with learners of other languages, believe that Japanese is a very difficult language to learn. Also, they believe in the importance of vocabulary learning more strongly than learners of other languages. However, one thing needed to bear in mind in the context of Japanese language learning is 'vocabulary learning' does not necessarily mean 'the learning of words' in the usual sense, but it could rather mean 'the learning of kanji characters and kanji words', because a kanji character behaves not only as a written symbol but also as a word or a part of a word depending on the context. Many Japanese words are represented in kanji, and therefore 'vocabulary learning' could mean 'kanji learning' to one extent or another.

With a growing interest in research on learners' beliefs about language learning (q.v., Horwitz, 1999; Kalaja et al., 2006; Mori, 1999b), there are several studies which have investigated beliefs of learners of Japanese about their Japanese language (Horwitz, 1999; Mori, 1999b). In particular, the interrelation between learners' beliefs of learning kanji and the ability of learning new kanji words or kanji learning strategies have been substantially studied (e.g., Gamage, 2006; Ikeda, 2007; Kondo-Brown, 2006a; Mori, 1999a; Mori et al., 2007; Mori and Shimizu, 2007; Okita, 1995, 1998). One of the intriguing findings is that "advanced learners of Japanese are more likely to think kanji learning is difficult" (Mori, 1999b, 399). Why do advanced learners, who should be more familiar with kanji characters and have learnt more kanji words, feel more overwhelmed with the difficulty of kanji than beginning learners? Mori (ibid.) explains a possible reason for this by stating "because beginners, who are exposed to a

very limited number of kanji characters, have not yet become aware of the complexity of kanji words,” whereas advanced learners “have more chances to read authentic materials in which kanji use is not controlled for non-native readers and, hence, they more frequently encounter difficulties in interpreting novel kanji words.”

When considering the number of kanji characters and kanji words learners need to learn, and the fact that learners are usually expected to learn kanji independently or autonomously, it is understandable that many scholars have investigated kanji learning strategies, rather than vocabulary learning strategies. Particularly for learners from non-logographic language backgrounds, because of the orthographic distance between their L1 and L2 (Japanese), a lot of attention has been given to examining their kanji learning strategies. Since Yokosuka pointed out in 1999 that the research on kanji (vocabulary) learning strategies for L2 learners of Japanese was insufficient, a significant amount of research on kanji learning strategies (e.g., Anderson and Bourke, 2007; Banno and Ikeda, 2009; Gamage, 2003a, 2003b; Ikeda, 2007; Matsumoto, 2004; Mori and Shimizu, 2007; Mori et al., 2007; Tsetsegdulum, 2009) has been conducted over the past decade, but only a few studies have been conducted on vocabulary learning strategies (e.g., Hashimoto, 2007).

5.3 Pedagogical implications on vocabulary learning for beginners of Japanese

Most of the research findings discussed in this chapter concern L2 learners of Japanese at the levels of intermediate or advanced learners, but the following implications can be drawn for vocabulary acquisition and learning for beginning learners from non-logographic language backgrounds:

1. As Japanese language proficiency does not account for guessing unknown kanji words with the use of morphological clues, it would be important to develop an awareness of semantic analyses of internal kanji word structure from the beginning stages of learning.
2. Learners tend to be demotivated during the stages of intermediate levels when they are exposed to authentic materials and find it difficult to cope with unknown words. In order for learners to maintain their motivation, it is indispensable to support their vocabulary learning and to help them to develop effective and efficient vocabulary learning strategies from the beginning stages of learning.
3. The use of children’s books that contain words written in inauthentic form or graded readers with reading help for all the kanji words for extensive reading is questionable. In order to avoid learners becoming over dependant on furigana, vocabulary learning where

learners can strengthen the connection between the form, sound and meaning of the words needs to be sought from the beginning stages of learning.

4. For learners from alphabetical language backgrounds, phonological input plays an important role in identifying kanji words. It is essential for them to be provided with enough phonological information when they learn new kanji words.
5. Learners of Japanese at any level, even at the advanced level, depend more on lower-level (bottom-up) processing when they read in Japanese. Increasing exposure to print is one of the best ways to improve learners' lower-level processing skills. It is essential to expose learners to words in authentic written form from the beginning stages of learning. It is necessary to consider how learners who have not acquired enough orthographic knowledge can learn new words written in authentic form.

5.4 Concluding remarks

As has been discussed, in SLA research in Japanese, studies on vocabulary acquisition and learning concerning intermediate and advanced learners have been growing, but research seeking for efficient and effective vocabulary instruction for beginners has hardly been done. Since it is strongly believed and generally claimed that the learning of kanji is extremely difficult for learners from non-logographic language backgrounds (Gamage, 2003b; Machida, 2001; Mori, 1999b; Okita, 1997; Toyoda, 1995), a particular emphasis has been placed on kanji learning and little attention has been given to beginners who have not acquired enough orthographic knowledge (i.e., novice JFL learners with no/little knowledge of kanji characters who are at the stages of learning hiragana and/or katakana).

Okita (1998, 42), quoting a comment from one of her students, suggests that the use of rōmaji could deny learners' ability to learn the language. Her student said to her "Do Japanese people think it is impossible for Americans to learn kanji?" when the student was given a test with the use of rōmaji. It is not easy for novice learners from non-logographic language backgrounds, with limited orthographic knowledge, to learn new words in Japanese, including recognising them in their authentic written form. However, we must give them a chance to challenge it, and consider how we can support them, before we decide real Japanese is too difficult. To start with, understanding what challenges or difficulties learners face when they learn new words aiming for recognition in authentic form may lead to an answer to effective and efficient vocabulary instruction.

Chapter 6 The Present Study

6.0 Introduction

In the previous chapters, the findings in the relevant literature were reviewed. In this chapter, the methodology adopted for the present work is outlined.

6.1 Research questions

As discussed in Chapter 5, in SLA research in Japanese, studies on vocabulary acquisition and learning concerning beginners are scarce. A particular emphasis has been placed on kanji learning, and little attention has been given to novice learners with limited orthographic knowledge. In addition, a focus often goes to spoken vocabulary in a typical class for beginners, and hence little research has been conducted on how learners at the beginning stages can cope with the learning of new words and that of new writing systems at the same time. Little investigation has been done, although this is an important issue to be dealt with, particularly for learners from non-logographic language backgrounds. Instead, learners are typically exposed to non-authentic writing systems, since real Japanese is usually considered too difficult for beginners from non-kanji orthographic backgrounds.

Hosenfeld (1976, 128) remarks that “Too often our focus has been what students should be doing; we must begin asking what students are doing.” Before we say that real Japanese is too difficult for novice learners from non-logographic language backgrounds, we must look into how they learn when they are given authentic input. For vocabulary learning, Schmitt (1997) suggests that looking into learners’ vocabulary learning strategies is one way of finding out how they learn words.

With the aim of investigating how JFL learners from non-logographic language backgrounds learn new words in their authentic written form, the following two research questions were formulated for the present study:

1. Is it possible for beginning JFL learners from non-logographic language backgrounds, with limited orthographic knowledge, to learn new words, including recognising them in their authentic written form?

Hypothesis: It is possible, if the learners are given enough support for reading new words in the authentic written form, are given as many opportunities to be exposed to the printed words as possible, and are provided with a step-by-step approach to learning new words.

2. What challenges do beginning JFL learners from non-logographic language backgrounds, with limited orthographic knowledge, face in the process of learning new words in authentic written form?

Sub-questions: How do they deal with those challenges? What strategies do they use?

6.2 Method

6.2.1 Target group of learners

The target group of learners for the present study is English-speaking learners of Japanese at the beginning stages. Considering the main aim of this study mentioned above, it was decided to set detail levels according to learners' orthographic knowledge as follows:

- Beginners 0: learners who have just started learning either hiragana or katakana
- Beginners 1: learners who have learnt either hiragana or katakana and who are at the stage of learning the other type of kana script
- Beginners 2: learners who have learnt both hiragana and katakana (but who are not fluent in reading or processing both types of kana scripts), and have a very little knowledge of kanji characters
- Beginners 3: learners who have acquired hiragana and katakana (who have no problem with reading or processing both types of kana scripts), and have some knowledge of kanji characters

6.2.2 Vocabulary learning approach adopted for the present study

In order to investigate how the target group of learners in the present study learn new words in Japanese, it was decided to adopt Devitt's model of vocabulary learning approach (n.d.). The vocabulary learning approach devised by Devitt is based on theories of both L1 and L2 vocabulary acquisition/learning, which are discussed in Chapter 3. It involves three major types of processes in L1 vocabulary acquisition proposed by Aitchison (1994), which are "labelling," "packaging" and "network building." The set of activities of this approach is also based on L2 vocabulary learning theory; the aspects of word knowledge defined by Nation (2001), and the five steps essential for learners in vocabulary learning advocated by Hatch and Brown (1995). The approach was designed with consideration of the processes involved in vocabulary learning, and hence it provides opportunities for deep processing and natural use.

This approach was used for over ten years in a language learning experience course, which was part of the Higher Diploma in Education, Trinity College Dublin. It was used for learning different languages such as Russian, Chinese, and Czech. The approach enables

learners with little knowledge of the language to learn new vocabulary in the target language. It also illustrates how L2 learners learn new words in the target language, and therefore it was decided to implement this vocabulary learning approach for the present study.

Two different sets of activities based on this approach were prepared for the target group of learners for the present study. One set is designed for learning vocabulary related to transportation, and activities were prepared for learners who have less orthographic knowledge (Beginners 0 and Beginners 1 in this study). The other set is designed for learning vocabulary related to animals, and activities are prepared for learners who have more orthographic knowledge (Beginners 2 and Beginners 3 in this study).

6.2.2.1 Set of target words to be learnt

The following sets of target words were selected for each set of vocabulary learning activities:

[Vocabulary related to transportation]

Twelve main target words: バス (*basu* - bus), タクシー (*takushī* - taxi), トラック (*torakku* - lorry), ヘリコプター (*herikoputā* - helicopter), 船 (*fune* - ship), 車 (*kuruma* - car), 電車 (*densha* - train), 自転車 (*jitensha* - bicycle), 地下鉄 (*chikatetsu* - metro), 新幹線 (*shinkansen* - bullet train), 飛行機 (*hikōki* - airplane), 水上飛行機 (*suijōhikōki* - seaplane)

[Vocabulary related to animals]

Twenty main target words: ゴリラ (*gorira* - gorilla), ライオン (*raion* - lion), ペンギン (*pengin* - penguin), アリ (*ari* - ant), ハチ (*hachi* - bee), ハト (*hato* - pigeon/dove), ヘビ (*hebi* - snake), うさぎ (*usagi* - rabbit), ねずみ (*nezumi* - mouse), にわとり (*niwatori* - chicken), 犬 (*inu* - dog), 猫 (*neko* - cat), 牛 (*ushi* - cow), 馬 (*uma* - horse), 猿 (*saru* - monkey), 人 (*hito* - person/people), 魚 (*sakana* - fish), 鳥 (*tori* - bird), 虫 (*mushi* - insect), 金魚 (*kingyo* - goldfish)

6.2.2.2 Procedures of the vocabulary learning class

The procedures of the two different sets of activities for learning vocabulary have many features in common, and both of them are divided into four phases. The following explains the overall principles of the design:

Phase 1: Presentation - Labelling

1. A teacher presents words in the form of pictures with an overhead transparency (See Appendix A-1a and B-1a). Written scripts are given underneath the pictures with reading support; furigana for kanji words (hiragana on the top of kanji characters) and rōmaji (romanisation for transcribing Japanese sounds) for all the words. Learners repeat the

words after the teacher. Katakana words are presented first since they are loanwords from English and easier for learners to remember. Learners then move to hiragana and/or kanji words. After repetition practice, the teacher points out a picture, and the learners pronounce the word. In getting used to saying the words, rōmaji for reading support and the written form in Japanese are gradually taken away, and the learners say the words with only the pictures (See Appendix A-1c and B-1c) or the pictures with Japanese scripts (See Appendix A-1b and B-1b) as stimulus.

2. The learners are divided into groups and work on remembering the words with flashcards. A set of cards (See Appendix A-2 and B-2) is given to each group; cards with picture on one side and words in the written form (kana or kanji with rōmaji) on the other side. The learners in a group work in pairs, and a set of cards is divided among the group. Each pair works on memorising the words by teaching each other: for instance, one shows the picture and the other says the word. When the pair has finished memorising the words, the learners in a group exchange the cards and/or teach another pair until all the words are learnt.
3. The second set of cards (See Appendix A-3 and B-3) is given to each group. On these cards, the words are written only in kana or kanji. At this stage, rōmaji for support in reading Japanese scripts is taken away but furigana for support in reading kanji characters is provided. The learners use only the picture side of the first set of cards, and match the picture and the words written only in kana or kanji. The learners do this activity by working in a pair and a group as they do in the previous task.

Phase 2: Deep processing - Categorising

1. The learners work only with the second set of cards (words written in only kana or kanji) from this stage. Each group is given different criteria for categorising. Only the group members know the criterion for categorising. Examples of the different criteria given to the groups are as follows:

[Criteria used for learning words related to transportation]

- Categorise the words according to size
- Categorise the words according to speed
- Categorise the words according to the number of wheels
- Categorise the words according to the level of pollution

[Criteria used for learning words related to animals]

- Categorise the words according to size

- Categorise the words according to speed
 - Categorise the words according to the number of legs
 - Categorise the words according to whether wild or domestic
 - Categorise the words according to whether edible or inedible
 - Categorise the words according to whether pet or not
- When the categorising task is finished, each group moves around to the other tables, and tries to find out the criterion for each categorisation.
 - A cloze test (see Appendix A-4 and B-4) is given to the class. The words in three sets intersect land, air, and sea or water. Some words are omitted from the different sets, and the learners figure out which ones are missing. The words are divided as follows:

[Words related to transportation]

Land	バス (<i>basu</i> - bus), タクシー (<i>takushī</i> - taxi), トラック (<i>torakku</i> - lorry), 車 (<i>kuruma</i> - car), 自転車 (<i>jitensha</i> - bicycle), 電車 (<i>densha</i> - train), 地下鉄 (<i>chikatetsu</i> - metro), 新幹線 (<i>shinkansen</i> - bullet train)
Air	ヘリコプター (<i>herikoputā</i> - helicopter), 飛行機 (<i>hikōki</i> - airplane)
Sea	船 (<i>fune</i> - ship)
Air and Sea	水上飛行機 (<i>suijōhikōki</i> - seaplane)

[Words related to animals]

Land	犬 (<i>inu</i> - dog), 猫 (<i>neko</i> - cat), 牛 (<i>ushi</i> - cow), 馬 (<i>uma</i> - horse), 猿 (<i>saru</i> - monkey), 人 (<i>hito</i> - person/people), ライオン (<i>raion</i> - lion), ゴリラ (<i>gorira</i> - gorilla), アリ (<i>ari</i> - ant), にわとり (<i>niwatori</i> - chicken), ねずみ (<i>nezumi</i> - mouse), うさぎ (<i>usagi</i> - rabbit)
Water	魚 (<i>sakana</i> - fish), 金魚 (<i>kingyo</i> - goldfish)
Land and Air	鳥 (<i>tori</i> - bird), 虫 (<i>mushi</i> - insect), ハチ (<i>hachi</i> - bee), ハト (<i>hato</i> - pigeon/dove)
Land and Water	ペンギン (<i>pengin</i> - penguin), ヘビ (<i>hebi</i> - snake)

Phase 3: Creating networks

- For an activity for learning words related to transportation, the learners are given a picture of a street scene (See Appendix A-5). Each member of a group is given different instructions (See Appendix A-6) to colour the different vehicles in the picture (See Appendix A-7 for six different sample products). For an activity for learning words related to animals, the learners are given a picture of a farmhouse scene (See Appendix B-5), animals drawn on sticky notes, and instructions on where to stick them in the picture.

Each member of a group is given different instructions (See Appendix B-6) on where to place the animals in the picture and therefore each group has different end products (See Appendix B-7 for six different sample products). Before starting this task, the words necessary for understanding the given instructions, three colours for a set of activities learning words related to transportation or location words for a set of activities learning words related to animals, are taught or revised.

2. When completing the task colouring different vehicles or placing different animals in the picture, the learners practise the sentences for describing one's own picture and asking about somebody else's picture (See Appendix A-8 and B-8 for sample sentences). After practising the sentences with the teacher, the learners practise in a group until they become reasonably confident with describing their pictures and asking questions about other members' pictures in the group.

Phase 4: Using words in context

1. Each learner moves around the class to find people who have the same picture. The objective of this task is to find others with the picture that has the same colours or animals in the same locations by using the language practised in the previous activity. If there are five groups in the class, there are four other people who have the same picture. The learners find the people who have the same picture as themselves by explaining their picture or listening to the description of others' pictures. This task is done using only Japanese.
2. Once this is complete, the group of people who have the same picture explain it to the class in Japanese.

6.2.2.3 Selection of the target words

The twelve main target words for a set of activities learning vocabulary related to transportation and the twenty main target words for a set of activities learning vocabulary related to animals are chosen in order to include a variety of terms, which can be categorised into land, air and sea/water in activities in Phase 2. In selecting the target words, two series of textbooks for beginners, *Minna no Nihongo* (3A Corporation, 1998a, 1998b) and *Basic Kanji Book* (Kano, et al., 1989, 1992), were consulted. As for kanji characters, the list of *Jōyō kanji*¹ (The National Language Council, 1998), which is the guide to kanji characters selected by the

¹ The list of *Jōyō kanji* (commonly used kanji) was revised in November 2010. For the selection of the target words for the present study, the previous list was consulted.

Japanese Ministry of Education, was referred to. Also, the vocabulary and kanji lists of the JLPT (Japan Foundation and Japan Education Exchanges and Services, 2002) were consulted². In the level setting of the JLPT, Level 4 is the least proficient level, and it is generally considered that Level 3 and 4 are for beginners, Level 2 is for intermediate learners, and Level 1 is for advanced learners. It was sought to include the words listed in for Level 3 and Level 4, which are necessary for beginners to learn, although it is difficult to consider the level of vocabulary difficulty and the level of kanji difficulty at the same time, as explained in Chapter 1.

Table 6.1 and Table 6.2 on the following pages show the analysis of the target words according to the textbooks and the lists mentioned above. The columns of *Minna no Nihongo* and *Basic Kanji Book* display where the word or kanji character is introduced in the textbook (e.g., C5 = Chapter 5), and the columns of JLPT vocabulary and JLPT kanji indicate the level of the word or kanji character (e.g., L4 = Level 4). The words or kanji characters which are not included in the textbooks or the JLPT lists are marked with 'X.' As for the *Jōyō* kanji list, the kanji characters included in the list are marked with '✓,' and those not included are marked with 'with X.'

6.2.2.3.1 Target words for a set of activities - vocabulary related to transportation

The first twelve vocabulary items in Table 6.1 are the main target words for a set of activities prepared for learning vocabulary related to transportation, and they are presented to learners in either katakana or kanji. Means of transportation that are of foreign origin are written in katakana since they are loanwords from English (1~4 in Table 6.1). Others are usually written in kanji (5~12 in Table 6.1), and therefore the words only written in hiragana are not included in the target words. However, furigana, reading support in hiragana for kanji characters, is provided for some activities, and hence learners also need to process hiragana. In addition to these words, there are three other words to learn (13~15 in Table 6.1), which are three colours newly introduced in Phase 3. As is indicated in Table 6.1, most of the target words are basic vocabulary items for novice learners, except for 水上飛行機 (*suijōhikōki* - seaplane). This word is not likely to be a frequent or basic word, but it was decided to adopt this word to increase the variety of transportation included in the target vocabulary items.

² The level setting was revised, and the new level setting has been applied since 2010. In the current system, the levels consist of five levels: N1 (highest proficiency) to N5 (lowest proficiency). There are no vocabulary and kanji lists published for the new level setting. The lists of vocabulary and kanji used for the present study were the ones published for the previous JLPT.

Table 6.1: Analysis of the target words for a set of activities - vocabulary related to transportation

	Authentic written form	Pronunciation	Meaning	Minna no Nihongo	JLPT vocabulary	JLPT kanji	Basic Kanji Book	Jōyō kanji
Main target words	1 バス	<i>basu</i>	bus	C5	L4			
	2 タクシー	<i>takushī</i>	taxi	C5	L4			
	3 ヘリコプター	<i>herikoputā</i>	helicopter	X	L2			
	4 トラック	<i>torakku</i>	lorry	C39	L2			
	5 車	<i>kuruma</i>	car	C8	L4	L4	C1	✓
	6 自転車	<i>jitensha</i>	bicycle	C5	L4	L3-L4-L4	C33-C27-C1	✓-✓-✓
	7 電車	<i>densha</i>	train	C5	L4	L4-L4	C12-C1	✓-✓
	8 地下鉄	<i>chikatetsu</i>	underground	C5	L4	L3-L4-L2	C19-C4-C19	✓-✓-✓
	9 新幹線	<i>shinkansen</i>	bullet train	C5	L2	L3-L1-L2	C8-X-C32	✓-✓-✓
	10 船	<i>fune</i>	ship	C5	L3	L2	X	✓
	11 飛行機	<i>hikōki</i>	airplane	C5	L4	L2-L4-L2	C39-C9-C32	✓-✓-✓
	12 水上飛行機	<i>suijōhikōki</i>	seaplane	X	X	L4-L4-L2-L4-L2	C2-C4-C39-C9-C32	✓-✓-✓-✓-✓
Words used in Phase 3 & 4	13 赤	<i>aka</i>	red	C34	L4	L3	C23	✓
	14 青	<i>ao</i>	blue	C34	L4	L3	C14	✓
	15 緑	<i>midori</i>	green	C16	L4	L2	X	✓

Table 6.2: Analysis of the target words for a set of activities - vocabulary related to animals

	Authentic written form	Pronunciation	Meaning	Minna no Nihongo	JLPT vocabulary	JLPT kanji	Basic Kanji Book	Jōyō kanji
Main target words	1 ライオン	<i>raion</i>	lion	×	×			
	2 ペンギン	<i>pengin</i>	penguin	×	×			
	3 ゴリラ	<i>gorira</i>	gorilla	×	×			
	4 ハチ[蜂]	<i>hachi</i>	bee	×	×	×	×	×
	5 アリ[蟻]	<i>ari</i>	ant	×	×	×	×	×
	6 ハト[鳩]	<i>hato</i>	pigeon/dove	×	×	×	×	×
	7 ねずみ[鼠]	<i>nezumi</i>	mouse	C37 (in hiragana)	L3 (in hiragana)	×	×	×
	8 うさぎ[兎]	<i>usagi</i>	rabbit	×	L3 (in hiragana)	×	×	×
	9 にわとり[鶏]	<i>niwatori</i>	chicken	×	×	L1	×	✓
	10 へび[蛇]	<i>hebi</i>	snake	×	×	L1	×	✓
	11 犬	<i>inu</i>	dog	C10	L4	L3	×	✓
	12 猫	<i>neko</i>	cat	C10	L4	L2	×	✓
	13 牛	<i>ushi</i>	cow	×	L3	L3	C7	✓

³ This kanji was added to the current list that was announced in November 2010, and now it is one of the Jōyō kanji characters.

⁴ This word is not included in the textbook but words using this kanji such as 牛乳 *gyūnyū* – milk (literally ‘cow milk’) or 牛肉 *gyūniku* – beef (literally ‘cow meat’) are introduced.

	Authentic written form	Pronunciation	Meaning	Minna no Nihongo	JLPT vocabulary	JLPT kanji	Basic Kanji Book	Jōyō kanji
Main target words	14 馬	<i>uma</i>	horse	C18	L3	L2	C7	✓
	15 魚	<i>sakana</i>	fish	C6	L4	L3	C7	✓
	16 鳥	<i>tori</i>	bird	C27	L4	L3	C7	✓
	17 猿	<i>saru</i>	monkey	C41	L2	L1	X	✓
	18 人	<i>hito</i>	person/people	C5	L4	L4	C1	✓
	19 虫	<i>mushi</i>	insect	X	L3	L2	X	✓
	20 金魚	<i>kingyo</i>	goldfish	X	L2	L4-L3	C2-C7	✓-✓
Words used in Phase 3 & 4	21 ベンチ	<i>benchi</i>	bench	X	L2			
	22 うち	<i>uchi</i>	house	C3	L4			
	23 木	<i>ki</i>	tree	C10	L4	L4	C1	✓
	24 池	<i>ike</i>	pond	C30	L4	L2	X	✓
	25 上	<i>ue</i>	on, top, above	C10	L4	L4	C4	✓
	26 中	<i>naka</i>	in, inside	C10	L4	L4	C4	✓
	27 下	<i>shita</i>	under, below	C10	L4	L4	C4	✓
	28 前	<i>mae</i>	front	C10	L4	L4	C10	✓
	29 後ろ	<i>ushiro</i>	back, behind	C10	L4	L4	C10	✓

Among the main target words (1~12 in Table 6.1), four words (バス *basu* – bus, タクシー *takushī* – taxi, 車 *kuruma* – car and 自転車 *jitensha* – bicycle) continue to be used for the activities in Phase 3 (colouring the vehicles in the picture according to the given instructions) and Phase 4 (finding people who have the same picture). As for the written scripts in the instructions (See Appendix A-6 for six different instructions), there are no furigana or rōmaji given for reading support of these four words, but furigana reading support for kanji characters is provided for the words indicating colours.

6.2.2.3.2 Target words for a set of activities - vocabulary related to animals

The first twenty vocabulary items in Table 6.2 are the main target words for a set of activities prepared for learning vocabulary related to animals, and these words were chosen in order to include a variety of animals such as mammals, fish, birds, insects and reptiles, which can be categorised into land, water and air, domestic or wild, etc. The number of the target words for this set of activities is larger than the other set of activities, because the target groups of learners for this set of vocabulary learning activities are more proficient in Japanese, and they are expected to know some basic words such as dog or cat.

The target words are presented to learners in three different written scripts, katakana, hiragana, or kanji. Animals that are of foreign origin are written in katakana as they are loanwords from English (1~3 in Table 6.2). All the other animals can be written in the form of kanji, but the names of animals are also written in hiragana or katakana. There are no specific instructions or rules for the written form of animals' names, but hiragana or katakana is usually used if the kanji character is not included in the *Jōyō* kanji list. Therefore, it was decided to present the words (4~8 in Table 6.2) in the form of hiragana or katakana, as the kanji characters used for the words are not included in the *Jōyō* kanji list. In order to balance the number of kana words, it was also decided to present two other words in kana (9 and 10 in Table 6.2), because they are written in relatively complex kanji and are seen in the form of hiragana or katakana more often than other kanji words.

As to which form, either hiragana or katakana, to be used for the words from the forth to the tenth in Table 6.2, it was decided to present *nezumi* – mouse (7 in Table 6.2) and *usagi* – rabbit (8 in Table 6.2) in hiragana, since these two are listed as hiragana words in *Minna no Nihongo* and/or the JLPT vocabulary list. As for *hachi* – bee and *ari* – ant (4 and 5 in Table 6.2), it was decided to present them in the form of katakana, because the names of insects are more often seen in katakana. For other words (6, 9 and 10 in Table 6.2), it was decided to present them in hiragana considering the balance of the total number of hiragana and katakana words. Regarding the other words written in *Jōyō* kanji (10~20 in Table 6.2), most of

them are words included in *Minna no Nihongo* and/or listed as Level 3 or 4 words in the JLPT vocabulary list. Also, among the kanji characters used for these words, more than half of them are presented in Basic Kanji Book or/and listed as Level 3 or 4 words in the JLPT vocabulary.

Among the main target words (1~20 in Table 6.2), eight words (犬 *inu* – dog, 牛 *ushi* – cow, 馬 *uma* – horse, 魚 *sakana* – fish, 鳥 *tori* – bird, 人 *hito* – person/people, にわとり *niwatori* – chicken, アリ *ari* – ant) continue to be used for the activities in Phase 3 (placing the animals drawn on sticky notes in the picture according to the given instructions), and Phase 4 (finding people who have the same picture). Five of these eight words are given to each learner to create their picture, and there are no furigana or rōmaji for reading support given for these five words in the instructions (See Appendix B-6 for six different instructions).

Additionally there are nine other words used for the activities in Phase 3 and Phase 4: four words for the objects described in the picture of a farmhouse scene, and five words necessary for explaining location. As shown in Table 6.2, almost all these words are presented as vocabulary or kanji items in both *Minna no Nihongo* and *Basic Kanji Book*, and also included as Level 4 words or kanji characters in the JLPT lists. They are usually introduced at the very early stages of the beginners' course, and hence it is assumed that the learners know most of these words, with the likely exception of *ike* (pond) and *benchi* (bench), but '*benchi*' may not be difficult to remember for English-speaking learners as it is a loanword from English.

6.2.2.4 Grammar used for each set of vocabulary learning activities

When completing the task of creating one's own picture according to the instructions given in Phase 3, the sentence pattern and particles necessary for the task of finding people who have the same picture in Phase 4 are revised (or taught if new for the learners). In order to explain one's picture or comprehend the description of others' pictures, it is necessary for the learners to be able to understand a particular sentence pattern and some particles. The detailed explanation of the grammar necessary for each set of activities is as follows:

6.2.2.4.1 Grammar necessary for a set of activities - vocabulary related to transportation

The sentence pattern '[Noun 1] *wa* [Noun 2] *desu*' is necessary for describing the colours of different vehicles in the picture. For instance, when completing the task of colouring different vehicles in the picture in Phase 3, the learners practise saying a sentence such as '*Watashi no basu wa aka desu*' (My bus is red) for describing the vehicles in the picture (See Appendix A-8 for sample sentences). Questions in the form of '*~san no basu wa aka desu ka?*' (Is your bus red, Mr/Mrs/Ms~?) and '*~san no basu wa nani iro desu ka?*' (What colour is your bus, Mr/Mrs/Ms~?) are practised for asking about somebody else's vehicles. Answers to those

questions such as '*Hai, aka desu*' (Yes, it is red), '*Īe, aka ja arimasen*' (No, it is not red), '*Watashi no basu mo aka desu*' (My bus is also red), and '*Watashi no basu wa ao desu*' (My bus is blue) are also practised. The particles '*no*,' '*ka*' and '*mo*' are also necessary to understand these sentences. These sentences and particles are usually introduced at the very early stages of Japanese language courses. The detailed explanation of the sentence pattern and the particles is as follows:

[The sentence pattern '[Noun 1] *wa* [Noun 2] *desu*']

The particle '*wa*' indicates that the word before it (= Noun 1) is the topic under discussion. Words/phrases (= Noun 2) used with '*desu*' function as predicates. '*Desu*' indicates judgment or assertion, and also conveys that the speaker is being polite towards the listener. This sentence pattern is usually introduced in the first class of the course for beginners. Example sentences are below:

e.g. 1 *Watashi wa airurando-jin desu.* (*watashi* – I; *airurando-jin* – Irish)

I am Irish.

e.g. 2 *Watashi no basu wa aka desu.* (*watashi* – I; *basu* – bus; *aka* – red)

My bus is red.

[The particle '*no*']

The particle '*no*' is a possessive marker. It is used to connect two nouns and the preceding noun modifies the following one.

e.g. 1 *TCD no gakusē* (*gakusē* – student)

A student of TCD

e.g. 2 *watashi no basu* (*watashi* – I; *basu* – bus)

My bus

[The particle '*ka*']

The particle '*ka*' is a question marker. A question sentence is formed simply by adding the particle '*ka*.'

e.g.1 *Raian-san wa airurando-jin desu ka?* (*~san* – Mr/Ms/Mrs; *airurando-jin* – Irish)

Are you Irish, Mr/Ms Ryan? Or, Is Mr/Ms Ryan Irish?

e.g.2 *Raian-san no basu wa aka desu ka?* (*~san* – Mr/Ms/Mrs; *basu* – bus; *aka* – red)

Is your bus red, Mr/Ms Ryan? Or, Is Mr/Ms Ryan's bus red?

[The particle 'mo']

The particle 'mo' means 'also.' It is used after a topic instead of 'wa' when the statement about the topic is the same as the previous topic.

e.g. 1 *Watashi mo airurando-jin desu.* (*watashi* – I; *airurando-jin* – Irish)

I am also Irish.

e.g. 2 *Watashi no basu mo aka desu.* (*watashi* – I; *basu* – bus; *aka* – red)

My bus is also red.

6.2.2.4.2 Grammar necessary for a set of activities - vocabulary related to animals

The sentence pattern '[Place] *ni* [Object(s)] *ga imasu*' is necessary for the learners to indicate the existence of animals in the picture. For instance, when completing the task of placing the different animals in the picture in Phase 3, the learners practise saying a sentence such as '*Ki no shita ni inu ga imasu*' (There is a dog under the tree) for describing their pictures (See Appendix B-8 for sample sentences). Questions in the form of '*Ki no shita ni inu ga imasu ka?*' (Is there a dog under the tree?), and '*Ki no shita ni nani ga imasu ka?*' (What is under the tree?) are practised for finding the differences between one's picture and the others'. Answers to those questions such as '*Hai, imasu*' (Yes, there is), '*Īe, imasen*' (No, there is not), '*Inu ga imasu*' (There is a dog), and '*Nani mo imasen*' (There is nothing) are also practised. The particles 'no,' 'ka' and 'wa' (See the grammar explanation in 6.2.2.4.1) are also necessary to understand these sentences. These sentences and particles are usually introduced at the early stages of Japanese language courses. The detailed grammar explanation is as follows:

[The sentence pattern '[Location] *ni* [Object(s)] *ga imasu*']

This sentence pattern is used to indicate the existence of (an) animate thing(s) such as (a) person(s) or (an) animal(s). For inanimate things, '*arimasu*' is used instead of '*imasu*.' The Japanese language fundamentally does not distinguish singular and plural in a noun, and hence there is no change in the form of the noun and the verb. When it is necessary to mention the number of the objects, a particular counter for particular things is used. The object(s) in the sentence pattern is (are) considered as the subject(s), and marked with the particle 'ga.' The particle 'ni' is the location marker and hence the place where something or someone exists is marked by 'ni.' This sentence pattern is usually introduced at the early stages of Japanese language courses for beginners. Example sentences are below:

e.g. 1 *Ie no mae ni hito ga imasu.* (*ie* – house; *mae* – front; *hito* – person)

There is a person in front of the house.

e.g. 2 *Tsukue no ue ni hon ga arimasu.* (*tsukue* – desk; *ue* – on; *hon* – book)

There is a book on the desk.

6.3 Implementation of the vocabulary learning classes

Participants were sought in Ireland and the UK where the beginner Japanese classes were available for the experiment of this study. The experiment with classes was conducted in seven different groups of learners of Japanese. The researcher acted as the teacher for all groups of learners. For Class 1, Class 2, Class 3 and Class 4, she was also the teacher for their usual classes. For Class 5, Class 6 and Class 7, she acted as the teacher only for the experiment of this study.

6.3.1 Description of participants

The set of activities for learning vocabulary related to transportation was used for five different groups of learners (Class 1~Class 5). The set of activities learning vocabulary related to animals was used for two different groups of learners (Class 6 and Class 7). Below is a description of participants from each class:

Class 1: Beginners 0

Date of experimental class: 13 January 2004

Number of learners: 22

Nationality: 19 Irish, 1 French, 1 German and 1 Spanish

Gender: 22 females

Age: 22~38 years old

Description of learners: The students were taking the Japanese course (1.5 contact hours weekly) as part of Higher Diploma in Education at Trinity College, Dublin. They were future language teachers and the purpose of the course was to get them to reflect on their learning experience.

Level of language ability: The students had had fifteen contact hours of learning Japanese before the vocabulary learning class. They had been given an explanation of the Japanese writing systems in the class, and they were at the stage of learning katakana. They had no knowledge of hiragana or kanji.

Class 2: Beginners 0

Dates of experimental classes: 11 October 2004 (first session) and 18 October 2004 (second

session)⁵

Number of learners: 21

Nationality: 18 Irish, 2 French and 1 Spanish

Gender: 4 males and 17 females

Age: 22~38 years old

Description of learners: The students were taking the Japanese course (1.5 contact hours weekly) as part of Higher Diploma in Education at Trinity College, Dublin. They were future language teachers and the purpose of the course was to get them to reflect on their learning experience.

Level of language ability: The students had had one session (= 1.5 hours) for introduction of the Japanese language before the vocabulary learning class. They had been given exercise sheets for practising katakana before the course started.

Class 3: Beginners 0

Dates of experimental classes: 10 January 2006 (first session) and 17 January 2006 (second session)⁶

Number of learners: 14 students for the first session; 17 students for the second session

Nationality: 10 Irish, 2 French, 1 Spanish and 1 American students for the first session; 13 Irish, 2 French, 1 Spanish and 1 American students for the second session

Gender: 3 males and 11 females for the first session; 5 males and 12 females for the second session

Age: 24~41 (Average 29)

Description of learners: The students were taking the Japanese course (1.5 contact hours weekly) as part of Higher Diploma in Education at Trinity College, Dublin. They were future language teachers and the purpose of the course was to get them to reflect on their learning experience.

Level of Japanese language ability: The students had had fifteen contact hours of learning Japanese before the experimental class. They had been given an explanation of the Japanese writing systems in the class, and they were at the stage of learning katakana. They had no knowledge of hiragana or kanji.

Class 4: Beginners 1

Date of experimental class: 17 August 2005

⁵ Due to time constraints, the experiment was divided into two sessions.

⁶ Due to time constraints, the experiment was divided into two sessions.

Number of learners: 14

Nationality: 14 Irish

Gender: 13 males and 1 female

Age: 21~29

Description of learners: The students had been learning Japanese on the intensive Japanese course (six hours daily from Monday to Friday for seven weeks) in Dublin as preparation for going to Japan to work for a Japanese company.

Level of language ability: The students had had forty contact hours for learning Japanese before the experiment class. They had finished learning hiragana, and they were at the stage of learning katakana. They had a little knowledge of kanji (They had learnt ten kanji characters).

Class 5: Beginners 1

Date of experimental class: 3 March 2006

Number of learners: 10

Nationality: 6 Irish, 2 German, 1 Italian and 1 Irish-Dutch

Gender: 8 males and 2 females

Age: 21~79 (Average 33)

Description of learners: The students had been learning Japanese at the evening course in Dublin with two contact hours weekly.

Level of language ability: The students had had thirty-two contact hours before the experimental class. They had learnt hiragana, and they were at the stage of learning katakana.

Class 6: Beginners 2

Date of experimental class: 1 March 2006

Number of learners: 6

Nationality: 4 Irish, 1 New Zealander and 1 Chinese (English L1)

Gender: 4 males and 2 female

Age: 27~60 (Average 35)

Description of learners: The students had been learning Japanese at the evening course in Dublin with two contact hours weekly.

Level of language ability: The students had had eighty contact hours before the experiment class. They had learnt both hiragana and katakana but they were not fluent in reading or processing both types of written scripts. They had not learnt kanji characters yet but they were exposed to some characters through class handouts.

Class 7: Beginners 3

Date of experimental class: 4 March 2006

Number of learners: 16

Nationality: 13 British, 1 German and 2 Chinese (Chinese L1)⁷

Gender: 9 males and 7 females

Age: 18~28 (Average 20)

Description of learners: The students had been learning Japanese as part of the degree (students of Japanese and Business Studies or European Studies) in a university in the UK. They were first year students learning Japanese with nine contact hours weekly.

Level of language ability: The students had had 144 contact hours before the experiment class. They did not have any problem with reading or processing both hiragana and katakana. They had learnt approximately two hundred kanji characters.

6.4 Data collection

Three types of data, follow-up vocabulary tests, questionnaires, and video/audio recordings, were collected in order to examine issues in relation to the two research questions set up in earlier in this chapter.

6.4.1 Follow-up vocabulary tests

Two types of tests were given twice, a week (or a day) after the class and a month (or two weeks) after the vocabulary learning class, in order to investigate the learners' retention of the target words. One of the tests was used to measure the learners' retention of receptive knowledge of the words. The learners were asked to write the meaning of the target words, namely, translating from Japanese into English. In the receptive test, the learners were required to recognise the target words in their authentic written form, and to retrieve the word meaning (See Appendix C-3 and C-6 for the samples of testing).

The other type of test was used to measure the learners' retention of productive knowledge of the words. As this was not for testing the learners' ability of writing, the learners were asked to write the pronunciation of the words in rōmaji, namely, translating from English into Japanese (See Appendix C-4 and C-7 for the samples of testing). The two types of test were done at the same time, but the first test paper was collected before the learners started the second one.

⁷ As the target group of learners for the present study was learners from alphabetic language backgrounds, the data collected from these two L1 Chinese students was excluded for the analysis.

In both types of test, the learners were also asked to select an appropriate answer for indicating how well they knew the words; they were asked to choose one from 'perfectly,' 'reasonably easily,' 'with difficulty' and 'not at all.' In addition, the learners were asked to write comments on their knowledge of each target word in a supplementary section provided in the follow-up tests.

6.4.2 Questionnaires

Two different types of questionnaire were given to the learners after the class. One type of questionnaire was to obtain information about how the learners tried to cope with learning vocabulary. The learners were asked to write down problems they had when learning words at each phase in a set of activities and how they tried to solve those problems (See Appendix C-1 for the form of Questionnaire 1).

Another type of questionnaire was to obtain information about how the learners found the vocabulary learning activities. The learners were asked to write whether or not they liked the class, and to explain which particular aspects of the class they liked or did not like, and which aspects they found helpful or unhelpful (See Appendix C-2 for the form of Questionnaire 2).

6.4.3 Elicitation instruments used to record the experiment with classes

It was decided to record the experiment with classes on video camera and audio-tape recorder/MD-disk recorder. Video was used for recording the whole class in order to observe various kinds of interaction taking place through a set of activities (See Appendix D for video transcription). An audio-tape/MD-disk recorder was placed on the table of each group in order to observe interaction among members of each group.

6.4.4 Summary of the experiment and data collection

Table 6.3 on the next page presents a summary of the experiment with classes and data collection. As is shown in Table 6.3, there was some difficulty in collecting data. It was not possible to administer the follow-up tests to all the groups of learners at the same interval. In addition, there were some learners who did not take the tests. It was also difficult to collect questionnaires from all the learners. As for the vocabulary learning classes conducted earlier (Class 1 and Class 2), the second follow-up tests and Questionnaire 2 were not administered since it was decided to give these at the later stages.

Table 6.3: Summary of the experiment and data collection

Target words	Group	Level	Number of learners	Date of experiment	First follow-up tests	Second follow-up tests	Questionnaire 1	Questionnaire 2
Vocabulary related to transportation	Class 1	Beginners 0	22	13 January 2004	14 January 2004 18 learners took the tests	Not administered	Collected from 10 learners	Not given
	Class 2	Beginners 0	21	11 October 2004 (1st session) 18 October 2004 (2nd session)	19 October 2004 21 learners took the tests	Not administered	Not collected	Not given
	Class 3	Beginners 0	18	10 January 2006 (1st session) 14 learners attended 17 January 2006 (2nd session) 17 learners attended	18 January 2006 17 learners took the tests	15 February 2006 12 learners took the test	Collected from 17 learners	Collected from 16 learners
	Class 4	Beginners 1	14	17 August 2005	18 August 2005 13 learners took the test	1 September 2005 12 learners took the test	Collected from 14 learners	Collected from 14 learners
	Class 5	Beginners 1	10	3 March 2006	10 March 2006 8 learners took the tests	7 April 2006 7 learners took the tests	Collected from 10 learners	Collected from 10 learners
	Class 6	Beginners 2	6	1 March 2006	8 March 2006 6 learners took the tests	5 April 2006 6 learners took the tests	Collected from 6 learners	Collected from 6 learners
	Class 7	Beginners 3	16	4 March 2006	11 March 2006 15 learners took the tests	11 April 2006 15 learners took the tests	Collected from 16 learners	Collected from 16 learners
Vocabulary related to animals								

In order to answer the first research question; whether or not the learners of the present study were able to learn the target words including recognising them in their authentic written form, the results of the first follow-up tests were mainly used for the analysis. In order to examine the challenges the learners faced in the process of learning new words in the authentic written form, which relates to the second research question, the learners' comments on each target word written in the first follow-up tests were used for eliciting the strategy use and its analysis. Other types of collected data were also used for analysing the findings from various perspectives.

6.5 Analysis and evaluation of data

6.5.1 Evaluation of test results

Although this study is designed based on qualitative research methods, the tests of target vocabulary items, which were administered to the learners after the vocabulary learning class, are analysed in numerical terms (See Appendix F-1 and F-2 for the test results). Two types of tests, Test 1 which was used to measure the learners' retention of receptive knowledge of the target words (See Appendix C-3 and C-6 for the samples of testing), and Test 2 which was used to measure the learners' retention of productive knowledge of the target words (See Appendix C-4 and C-7 for the samples of testing), were given twice to the learners. Along with these test results, the learners' self-assessment of knowledge on the target vocabulary items, for which the learners were asked to select an appropriate answer indicating how well they knew the word, was also converted into numerical terms for analysis. This section explains evaluation methods of the follow-up vocabulary tests and the learners' self-assessment on the target vocabulary items.

6.5.1.1 Self-assessment on the target words

As part of Test 1 and 2, the learners evaluated how well they knew the target words by choosing from 'Perfectly,' 'Reasonably easily,' 'With difficulty,' and 'Not at all.' In order to analyse their self-assessment and compare it with the teacher's assessment, these descriptive rating scales were converted into numerical rating scales as follows:

Perfectly = 3

Reasonably easily = 2

With difficulty = 1

Not at all = 0

There were some learners who did not choose any of these descriptive rating scales. In

such case, if there is no answer written, it can be assumed that the learner did not understand the word at all, and therefore their self-assessment of the word was rated as 'zero' (0 = Not at all). If the answer is written, whether it is correct or not, it is difficult to determine how well the learner thought they knew the word. Therefore, in such case, there is no choice but to consider the data as 'not rateable.' When a learner was not able to choose one of the descriptive rating scales and marked off between two of scales, the numeric value between the two was employed for the rating, for instance, between 'Perfectly' (= 3) and 'Reasonably easily' (= 2) was converted to '2.5.'

6.5.1.2 Teacher assessment on the target words

As discussed above, in order to evaluate the answers the learners wrote both in Test 1 and 2 in the same scale as their self-assessment, their answers were marked on a scale of zero to three. As discussed in Chapter 3, it is important to understand the incremental nature of vocabulary acquisition, and that knowledge of a vocabulary item is not on an 'all-or-nothing' basis. There are different degrees or stages entailed in the development of vocabulary knowledge, and it is important to analyse different states of what learners know about a word.

For example, in this study, it was observed that some learners used the number of kanji characters as a clue for retrieving the meaning of a target word, and this can lead to the explanation that knowing the composition of a word from the number of kanji characters can be a partial knowledge. Although it is not simple to examine and categorise the learners' answers according to the degrees of error, the means of giving partial marks was sought by analysing the common patterns of the errors that the learners share.

This section explains in detail how Test 1 and 2 for two different sets of target vocabulary items were marked.

6.5.1.2.1 Marking criteria for Test 1 (Receptive Test: Japanese → English)

In Test 1, the learners were asked to write the meanings of all the words they learnt or used in the vocabulary learning class by looking at the words written in authentic Japanese form. The following is the marking criteria for Test 1, and this applies to assess knowledge of vocabulary items for both transportation and animal related words.

[Common marking criteria for Test 1]

When looking at a target word written in authentic Japanese scripts,

- 3 A student can recall the meaning of the word without problem and correctly write the translation of the word in English.

- 2 A student can somehow recall the meaning of the word, but cannot write the correct translation of the word in English. The translation written as the answer is a similar word to the correct answer.
- 1 A student cannot recall the meaning of the word, but has some sort of idea about the word.
- 0 A student cannot recall the meaning of the word at all. The student wrote an answer completely different from the correct one or left the answer blank.

There were several students who wrote the pronunciation in rōmaji and a few students who wrote the reading of kanji in hiragana instead of the meaning for some words. It is difficult to judge if they just misunderstood the instructions or they did not remember the meaning of the words since all of those learners wrote the meaning in English for some other words. Given the fact that they wrote the meanings in English for some other words, and thus it can be inferred that they did not misunderstand the instructions, and that they were asked to write the pronunciation of the words in Test 2, the answer was regarded as ‘not rateable’⁸ in such a case, even if the pronunciation in rōmaji or the reading of kanji in hiragana was correct.

6.5.1.2.2 Detailed marking scheme for Test 1

The following defines the marking scheme for Test 1 in terms of sample answers and example answers qualifying for partial marks; and these are set out separately for two different sets of target vocabulary items.

6.5.1.2.2.1 Marking scheme for Test 1 assessing knowledge of vocabulary related to transportation

Sample answers qualifying for full marks (= 3/3)

	Target words in authentic form	Meaning
1	新幹線	Bullet train, high-speed train, speed train, fast train, <i>shinkansen</i> ⁹
2	トラック	Lorry, truck

⁸ There was a student who used drawings for her answers instead of the meaning in English when she did not know how to say the word in English (her L1 was not English). In this case, the answer is also regarded as ‘not rateable,’ as it was difficult to judge if the answer is correct or not from drawings.

⁹ The word ‘*shinkansen*’ in Japanese (romanisation) is sometimes used in English, and hence it was decided to give full marks for this answer.

3	車	Car
4	船	Ship
5	自転車	Bicycle, bike
6	タクシー	Taxi, cab
7	飛行機	Airplane, plane, aeroplane
8	バス	Bus
9	水上飛行機	Seaplane, water plane, hydroplane, hydro avion, plane (lands) on water
10	電車	Train, electric train
11	ヘリコプター	Helicopter
12	地下鉄	Metro, underground (train), subway (train), tube
13	赤	Red
14	緑	Green
15	青	Blue

Examples of answers qualifying for two marks out of three (= 2/3)

Example A: Write a meaning similar to the correct answer

- e.g. 1: Write 'train' instead of 'bullet train' for '新幹線(*shinkansen*)'
- e.g. 2: Write 'ferry' or 'boat' instead of 'ship' for '船(*fune*)'¹⁰
- e.g. 3: Write 'airplane,' 'jumbo jet' or 'small plane' instead of 'seaplane' for '水上飛行機(*suijō-hikōki*)'
- e.g. 4: Write 'bullet train' instead of 'train' for '電車(*densha*)'
- e.g. 5: Write 'train' instead of 'metro (underground train)' for '地下鉄(*chikatetsu*)'
- e.g. 6: Write 'wheel' instead of 'car' for '車(*kuruma*)'

¹⁰ Considering that 'ferry' is a type of 'ship' for conveying passengers and goods, not awarding full marks to the answer 'ferry' for the word 船(ship) might be considered too strict. However, the meaning of 船(*fune*) was introduced as 'ship' in the class, 'ship' and 'ferry' (フェリー *ferī*) are distinguished in Japanese in the same way as in English, and therefore it was decided to give partial marks (= 2) to the answer 'ferry.' For the same reason, 'boat' is generally a smaller vessel than 'ship,' 'ship' and 'boat' (ボート *bōto* or 小舟 *kobune*) are distinguished in Japanese in the same way as in English, and therefore it was decided to give partial marks (= 2) to the answer 'boat.'

Example B: Write two (or three) possible answers and the one is correct

e.g. 1: Write 'either bullet train or metro' for '新幹線 (bullet train - *shinkansen*)'

e.g. 2: Write 'either ship or boat' for '船 (ship - *fune*)'

e.g. 3: Write 'either bicycle or train,' 'either bicycle or bullet train' or 'either bicycle or train/bullet train' for '自転車 (bicycle - *jitensha*)'

e.g. 4: Write 'either train or bullet train' for '電車 (train - *densha*)'

Examples of answers qualifying for one mark out of three (= 1/3)

Example A: Write two possible answers and neither of them is correct but one or both of them is/are similar in meaning to the correct answer

e.g. 1: Write 'either train or metro' for '新幹線 (bullet train - *shinkansen*)'

e.g. 2: Write 'either boat or bicycle' for '船 (ship - *fune*)'

e.g. 3: Write 'either bullet train or bicycle' for '電車 (train - *densha*)'

Example B: Know the word is three-kanji-character word and write the meaning of another three-kanji-character word

e.g. 1: Confusing '新幹線 (bullet train)' and '自転車 (bicycle)'

e.g. 2: Confusing '新幹線 (bullet train)' and '飛行機 (airplane)'

e.g. 3: Confusing '新幹線 (bullet train)' and '地下鉄 (metro)'

e.g. 4: Confusing '自転車 (bicycle)' and '飛行機 (airplane)'

e.g. 5: Confusing '自転車 (bicycle)' and '地下鉄 (metro)'

e.g. 6: Confusing '飛行機 (airplane)' and '地下鉄 (metro)'

Example C: Know the word is one-kanji-character word and write the meaning of another one-kanji-character word

e.g. 1: Confusing '船 (ship)' and '青 (blue)'

e.g. 2: Confusing '赤 (red)' and '青 (blue)'

e.g. 3: Confusing '緑 (green)' and '青 (blue)'

e.g. 4: Confusing '赤 (red),' '緑 (green)' and '青 (blue)'

Example D: Know a kanji character used in the word (Confusing with a word which shares the same kanji character)

e.g. 1: Confusing '車 (car)' and '自転車 (bicycle)'

e.g. 2: Confusing '車 (car)' and '電車 (train)'

e.g. 3: Confusing '自転車 (bicycle)' and '電車 (train)'

6.5.1.2.2.2 Marking scheme for Test 1 assessing knowledge of vocabulary related to animals

Sample answers qualifying for full marks (= 3/3)

	Target words in authentic form	Meaning
1	犬	Dog
2	ハト	Pigeon, dove
3	猫	Cat
4	にわとり	Chicken, hen, rooster
5	鳥	Bird
6	ペンギン	Penguin
7	うさぎ	Rabbit
8	ハチ	Bee, wasp
9	猿	Monkey
10	牛	Cow, ox
11	魚	Fish
12	ゴリラ	Gorilla
13	へび	Snake
14	馬	Horse
15	人	Person, people, man
16	アリ	Ant
17	ねずみ	Mouse, rat
18	金魚	Goldfish
19	ライオン	Lion
20	虫	Insects
21	池	Pond, pool
22	うち	House, home
23	木	Tree
24	ベンチ	Bench
25	前	Front, in front (of), [before ¹¹]
26	上	On, top, up
27	下	Under, underneath, below, beneath, down
28	後ろ	Behind, back
29	中	In, inside, [centre, middle] ¹²

¹¹ The meaning of 前 (*mae*) used for the vocabulary learning class was ‘front’ (e.g., うちの前 *uchi no mae* – in front of the house), but 前 (*mae*) has another meaning, which is ‘before’ (e.g., *ichi-nen mae* – one year ago (= literally ‘before’), and some students wrote it as the answer. As there was no context given in the test, it was decided to give full marks for the answer ‘before.’

¹² The meaning of 中 (*naka*) used for the vocabulary learning class was ‘in/inside’ (e.g., うちの中 *uchi no naka* – in the house), but the kanji 中 has other meanings such as ‘centre’ or ‘middle,’ and some students wrote these as the answer. As there was no context given in the test, it was decided to give full marks for the answer ‘centre’ and ‘middle.’

Examples of answers qualifying for two marks out of three (= 2/3)

Example A: Write a meaning similar to the correct answer

- e.g. 1: Write 'bird' instead of 'pigeon/dove' for 'ハト (*hato*)'
- e.g. 2: Write 'bird,' 'dove/pigeon,' or 'goose' instead of 'chicken' for 'にわとり (*niwatori*)'
- e.g. 3: Write 'beetle' or 'bug' instead of 'bee' for 'ハチ (*hachi*)'
- e.g. 4: Write 'ape' instead of 'gorilla' for 'ゴリラ (*gorira*)'
- e.g. 5: Write 'bee' instead of 'insect' for '虫 (*mushi*)'
- e.g. 6: Write 'lake' instead of 'pond' for '池 (*ike*)'

Example B: Write two possible answers and one is correct

- e.g. 1: Write 'either bee or insect' for 'ハチ (bee - *hachi*)'
- e.g. 2: Write 'either horse or cow' for '馬 (horse - *uma*)'
- e.g. 3: Write 'either ant or insect' for 'アリ (ant - *ari*)'

Examples of answers qualifying for one mark out of three (= 1/3)

Example A: Know the word is one-kanji-character word and write the meaning of another one-kanji-character word

- e.g. 1: Confusing '猫 (cat)' and '鳥 (bird)'
- e.g. 2: Confusing '猫 (cat)' and '牛 (cow)'
- e.g. 3: Confusing '鳥 (bird)' and '牛 (cow)'
- e.g. 4: Confusing '鳥 (bird)' and '魚 (fish)'
- e.g. 5: Confusing '鳥 (bird)' and '猿 (monkey)'
- e.g. 6: Confusing '鳥 (bird)' and '馬 (horse)'
- e.g. 7: Confusing '牛 (cow)' and '馬 (horse)'
- e.g. 8: Confusing '前 (front)' and '上 (on/top/up)'

Example B: Know how the word starts

- e.g. 1: Confusing ハト (*hato* – pigeon/dove) and ハチ (*hachi* – bee)
- e.g. 2: Confusing ^{うし}牛 (*ushi* – cow) and ^{うち} (*uchi* – house)
- e.g. 3: Confusing ^{うし}牛 (*ushi* – cow) and ^{うし}後ろ (*ushiro* – behind/back)
- e.g. 4: Confusing ^{うま}馬 (*uma* – horse) and ^{うち} (*uchi* – house)

Example C: Confusing with a similar kanji which a learner already knew

e.g. 1: Confusing 池 (*ike* – pond) and 地 (*chi* – ground)

e.g. 2: Confusing 木 (*ki* – tree) and 本 (*hon* – book)

6.5.1.2.3 Marking criteria for Test 2 (Productive Test: English → Japanese)

In Test 2, the learners were asked to write the pronunciation of all the words they learnt or used in the vocabulary learning class by looking at the translation in English. Following the same methods applied to Test 1, common marking criteria for assessing knowledge of both sets of target vocabulary items, and detailed marking scheme with sample answers and examples of answers qualifying partial marks are set out.

[Common marking criteria for Test 2]

In the same way as Test 1, the answers were marked on a scale of zero to three according to how well the learners knew the pronunciation of the target words. However, it was decided to divide the marking scale for Test 2 into five levels (= 0, 0.5, 1, 2 and 3) as the answers the learners wrote were varied and it was difficult to fit into four levels (= 0, 1, 2 and 3). When the learners took Test 2, they were given a chart of rōmaji spelling (See Appendix C-5 and C-8), which illustrates pronunciation of Japanese in Romanisation, with a note of how to transcribe special sounds such as long vowels and double consonants. Therefore, full marks were awarded when a learner was able to write the pronunciation of the word according to the chart of Romanisation. However, minor errors in rōmaji spelling which do not significantly affect pronunciation (e.g., *li* [= *ri*], *la* [= *ra*], *co* [= *ko*], *ca* [= *ka*], *hu* [= *fu*], *si* [= *shi*])¹³ were seen as exceptions, and marks were not deducted for those mistakes. Below is common marking criteria set out for Test 2:

When looking at the translation of a target word in English,

- 3 A student can recall the pronunciation of the word without problem and produce/transcribe the sound of the word correctly in Romanization.
- 2 A student can recall the pronunciation of the word at a certain level although the student cannot accurately produce/transcribe the sound in Romanization. The sound produced by the student is easily understood despite its error.

¹³ For example, the learners should write '*herikoputā*' for 'helicopter' following the rōmaji chart they were given, but transcribing as '*helikoputā*' instead of '*herikoputā*' is an understandable minor error. The distinction between 'l' and 'r' does not exist in Japanese, and 'r' is used for rōmaji transcription but the sound is not either 'l' or 'r' in English (rather closer to 'l').

- 1 A student cannot accurately recall the pronunciation of the word, but has some sort of idea how the word is pronounced. The sound produced/transcribed by the student is still at an understandable level.
- 0.5 A student cannot accurately recall the pronunciation of the word, but it is guessable which word the student attempts to produce/transcribe. The sound produced/transcribed by the student is very difficult to comprehend.
- 0 A student cannot recall the pronunciation of the word at all. The student leaves the answer blank, writes a completely different answer, or the sound produced/transcribed by the student is impossible to comprehend (far from the correct answer).

There were a few students who wrote the words in Japanese characters (hiragana or katakana) instead of the pronunciation in Romanisation for some words or all the words. Following the same principle as Test 1, the answers were regarded as ‘not rateable’ in such a case even if the Japanese characters they wrote were correct.

6.5.1.2.4 Detailed marking scheme for Test 2

The following defines the marking scheme for Test 2 in terms of sample answers and example answers qualifying for partial marks; and these are set out separately for two different sets of target vocabulary items.

6.5.1.2.4.1 Marking scheme for Test 2 assessing knowledge of vocabulary related to transportation

Sample answers qualifying for full marks (= 3/3)

	English translation	Pronunciation
1	Train	<i>densha</i>
2	Bus	<i>basu</i>
3	Seaplane	<i>suijō hikōki, suijoo hikooki</i>
4	Helicopter	<i>herikoputā, herikoputaa</i>
5	Metro	<i>chikatetsu</i>
6	Bicycle	<i>jitensha</i>
7	Ship	<i>fune</i>
8	Car	<i>kuruma</i>
9	Taxi	<i>takushī, takushii</i>

10	Airplane	<i>hikōki, hikooki</i>
11	Bullet train	<i>shinkansen</i>
12	Lorry	<i>torakku</i>
13	Red	<i>aka</i>
14	Green	<i>midori</i>
15	Blue	<i>ao</i>

Examples of answers qualifying for two marks out of three (= 2/3)

Example A: Problems with distinguishing long vowels and short vowels

- e.g. 1: Write '*denshā*' instead of '*densha*' (train)
- e.g. 2: Write '*bāsu*' or '*basū*' instead of '*basu*' (bus)
- e.g. 3: Write '*suijō hikoki*,' '*suijō hikoki*,' or '*suijō hikōki*' instead of '*suijō hikōki*' (seaplane)
- e.g. 4: Write '*herikoputa*' or '*hērikoputā*' instead of '*herikoputā*' (helicopter)
- e.g. 5: Write '*fūne*' or '*funē*' instead of '*fune*' (ship)
- e.g. 6: Write '*kurumā*' instead of '*kuruma*' (car)
- e.g. 7: Write '*takushi*' instead of '*takushī*' (taxi)
- e.g. 8: Write '*hikoki*' instead of '*hikōki*' (airplane)
- e.g. 9: Write '*midōri*' instead of '*midori*' (green)
- e.g. 10: Write '*aō*' instead of '*ao*' (blue)

Example B: Problem with the position of long vowels

- e.g. 1: Write '*sūijo hikoki*' instead of '*suijō hikōki*' (seaplane)
- e.g. 2: Write '*herikopūta*' or '*herikōputa*' instead of '*herikoputā*' (helicopter)
- e.g. 3: Write '*takūshi*' instead of '*takushī*' (taxi)

Example C: Problems with the sound of double consonants

- e.g. 1: Write '*toraku*' instead of '*torakku*' (lorry)

Example D: Confusing long vowels and double consonants

- e.g. 1: Write '*suijō hikokki*' instead of '*suijō hikōki*' (seaplane)
- e.g. 2: Write '*hikokki*' instead of '*hikōki*' (airplane)

Example E: Mistakes in romanisation due to the influence of L1 (English), which could lead to incorrect pronunciation

- e.g. 1: '*ji*' vs '*gi*' – Write '*gītensha*' instead of '*jītensha*' (bicycle)

- e.g. 2: 'ki' vs 'kee' – Write '*hikō**kee***' or '*suijō hikō**kee***' instead of '*hikōki*' (airplane) or '*suijō hikō**ki***' (seaplane)
- e.g. 3: 'ki' vs 'key' – Write '*hikō**key***' instead of '*hikōki*' (airplane)
- e.g. 4: 'ku' vs 'coo' – Write '***coo**ruma*' instead of '*kuruma*' (car)
- e.g. 5: 'ku' vs 'coo' – Write '*tac**oo**shi*' instead of '*takushi*' (taxi)
- e.g. 6: 'shi' vs 'she' – Write '*takush**ē***' instead of "*takushi*" (taxi)
- e.g. 7: 'shi' vs 'she' – Write '***shen**kansen*' instead of '*shinkansen*' (bullet train)
- e.g. 8: 'su' vs 'swee' – Write '***swee**jō hikōki*' instead of '*suijō hikōki*' (seaplane)
- e.g. 9: 'tā' vs 'tar' – Write '*herikoput**ar***' instead of '*herikoputā*' (helicopter)
- e.g. 10: 'who' vs 'fu' – Write '***whone***' instead of '*fune*' (ship)

Examples of answers qualifying for one mark out of three (= 1/3)

Example A: Not distinguishing voiced and voiceless sounds (kana with or without diacritic mark)

- e.g. 1: Write '*denja*' instead of '*densha*' (train)
- e.g. 2: Write '*bazu*' instead of '*basu*' (bus)
- e.g. 3: Write '*chikatezu*' or '*chikadetsu*' instead of '*chikatetsu*' (metro)
- e.g. 4: Write '*shitensha*' or '*jidensha*' instead of '*jitensha*' (bicycle)
- e.g. 5: Write '*shingansen*' instead of '*shinkansen*' (bullet train)
- e.g. 6: Write '*mitori*' instead of '*midori*' (green)

Example B: Making a mistake on the consonant in the mora formation of CV (Consonant-Vowel)

- e.g. 1: Write '***ch**ensha*' instead of '*densha*' (train)
- e.g. 2: Write '***k**une*' or '***j**une*' instead of '*fune*' (ship)
- e.g. 3: Write '*kurud**a***' or '*kurun**a***' instead of '*kuruma*' (car)
- e.g. 4: Write '*shikatetsu*,' '*chikaketsu*' or '*chikatesu*' instead of '*chikatetsu*' (metro)
- e.g. 5: Write '*jitens**a***' instead of '*jitensha*' (bicycle)
- e.g. 6: Write '*mishor**i***' or '*mior**i***' instead of '*midori*' (green)

Example C: Making a mistake on the vowel in the mora formation of CV (Consonant-Vowel)

- e.g. 1: Write '*busu*,' '*bas**a***' or '*bas**e***' instead of '*basu*' (bus)
- e.g. 2: Write '*herikoput**u***,' '*herikoput**o***,' '*herikoput**e***,' '*herikopit**ā***' or '*herekoput**ā***' instead of '*herikoput**ā***' (helicopter)
- e.g. 3: Write '*funa*' or '*fun**i***' instead of '*fune*' (ship)
- e.g. 4: Write '*karuma*,' '*koruma*,' '*kurama*' or '*kuroma*' instead of '*kuruma*' (car)

e.g. 5: Write '*takoshī*' instead of '*takushī*' (taxi)

e.g. 6: Write '*shinkansen*' instead of '*shinkansen*' (bullet train)

e.g. 7: Write '*turakku*,' '*torekku*' or '*torukku*' instead of '*torakku*' (lorry)

Example D: Remember a part of the word correctly (minimal morpheme)

e.g. 1: Write correctly either '*suijō*' (on water)" or '*hikōki*' (plane) in '*suijō hikōki*' (seaplane)

e.g. 2: Write correctly either '*chika* (underground)' or '*tetsu* (*tetsudō* – railway)' in '*chikatetsu*' (literary 'underground railway') (metro)

e.g. 3: Write correctly either '*shin* (new)' or '*sen*' (route/line) in '*shinkansen*' (literary 'the new trunk route') (bullet train)

Example E: Problems with the sound /N/

e.g. 1: Drop the sound [N], and write '*shikansen*' instead of '*shinkansen*' (bullet train)

e.g. 2: Insert an unnecessary vowel after the sound [N], and write '*denesha*' instead of '*densha*' (train)

Example F: Problems with the cluster of consonant plus semi-vowel /y/ plus vowel

e.g. 1: Write '*dencha*,' '*denscha*' or '*densa*' instead of '*densha*' (train)

e.g. 2: Write '*jitencha*' instead of '*jitensha*' (bicycle)

Example G: Mix up the words which share the common word

e.g. 1: Mix up '*suijō-hikōki*' (seaplane) and '*hikōki*' (airplane)

Examples of answers qualifying for a one-half mark out of three (= 0.5/3)

A student made more than two of the mistakes listed above or other types of mistakes:

Example: Some attempt to produce the sound of a target word is observed

e.g. 1: Write '*denshin*' instead of '*densha*' (train)

e.g. 2: Write '*busa*' or '*baus*' instead of '*basu*' (bus)

e.g. 3: Write '*shujo hikoki*,' '*shijo hikoki*,' '*soiko hekoki*,' '*suhijo hikoki*,' '*suijo heikoki*,' '*suijo ikoki*,' '*suijo hijoshi*,' '*suijo hikogi*,' '*suiji hikoki*,' '*suiji kōki*,' '*suijiho hikoki*,' '*suiji ?ijō?i*,' '*sui hikoki*,' '*swejo hikoki*,' '*sweejo hikoki*,' '*sweejoe hikōkey*,' '*siu_ hikoki*,' '*sueejo hikoki*,' '*dojo hikoki*' or '*josui hikoki*' instead of '*suijō hikōki*' (seaplane)

e.g. 4: Write '*heikopeta*,' '*heikoputa*,' '*herikopetu*,' '*herikopota*,' '*herikoptoru*,' '*herikotoru*,' '*herichopata*,' '*herikopita*,' '*herikpotar*,' '*herikopuda*,' '*herikōta*,'

- 'hair e cop pu tar,' 'erikoputa' or 'erikopturā' instead of 'herikoputā' (helicopter)
- e.g. 5: Write 'shikadesu,' 'shikattsu,' 'shikatettsu,' 'shikatasue,' or 'chichantsu' instead of 'chikatetsu' (metro)
- e.g. 6: Write 'gitensa,' 'gintensha,' 'gintenscha,' 'geetensha,' 'geethensha,' 'chidencha,' 'shitencha,' 'jidesan,' 'jishensa,' 'jinsha,' 'jinedensha,' 'jitadensha' instead of 'jitensha' (bicycle)
- e.g. 7: Write 'fuone' or 'whoone' instead of 'fune' (ship)
- e.g. 8: Write 'karama,' 'karurma,' 'coorama,' 'korruma,' 'korume,' 'kuramu,' or 'kuroima' instead of 'kuruma' (car)
- e.g. 9: Write 'tacoshe,' 'tacooshi,' 'takōshi,' 'takusa,' 'takusai,' 'takuse,' 'takuchi,' 'takuri,' 'takashi,' 'tahkashī,' 'takashu,' 'takeshi,' 'takeschi,' 'takisu,' 'taishi,' 'tāshi' or 'thakushi' instead of 'takushī' (taxi)
- e.g. 10: Write 'hekoki,' 'heikoki,' 'hikokū,' 'hikogi' or 'kōki' instead of 'hikōki' (airplane)
- e.g. 11: Write 'chinkanzin' instead of 'shinkansen' (bullet train)
- e.g. 12: Write 'taraku,' 'tarakū,' 'tarakuu,' 'taruka,' 'turaku,' 'turake,' 'toreku,' 'toraka,' 'torake,' 'toruka,' 'toruku,' 'torukka,' 'toeraku,' 'tarukku,' 'tarukka,' 'tiruka,' 'truckka' or 'trukka' instead of 'torakku' (lorry)
- e.g. 13: Write 'au' instead of 'ao' (blue)

6.5.1.2.4.2 Marking scheme for Test 2 assessing knowledge of vocabulary related to animals

Sample answers qualifying for full marks (= 3/3)

	English translation	Pronunciation
1	Bird	tori
2	Lion	raion
3	Dog	inu
4	Bee	hachi
5	Monkey	saru
6	Cat	neko
7	Penguin	pengin
8	Goldfish	kingyo
9	Cow	ushi

10	Gorilla	<i>gorira</i>
11	Ant	<i>ari</i>
12	Person, people	<i>hito</i>
13	Chicken	<i>niwatori</i>
14	Snake	<i>hebi</i>
15	Insects	<i>mushi</i>
16	Rabbit	<i>usagi</i>
17	Pigeon, dove	<i>hato</i>
18	Horse	<i>uma</i>
19	Fish	<i>sakana</i>
20	Mouse	<i>nezumi</i>
21	Bench	<i>benchi</i>
22	Pond	<i>ike</i>
23	Front	<i>mae</i>
24	Under	<i>shita</i>
25	On, top, up	<i>ue</i>
26	House	<i>uchi, ie</i> ¹⁴
27	In, inside	<i>naka</i>
28	Tree	<i>ki</i>
29	Behind, back	<i>ushiro</i>

Examples of answers qualifying for two marks out of three (= 2/3)

Example A: Problems with distinguishing long vowels and short vowels

- e.g. 1: Write '*rāion*' instead of '*raion*' (lion)
- e.g. 2: Write '*kingyō*' instead of '*kingyo*' (goldfish)
- e.g. 3: Write '*gorīra*' instead of '*gorira*' (gorilla)
- e.g. 4: Write '*hāto*' instead of '*hato*' (pigeon/dove)

Example B: Mistakes in romanisation due to the influence of L1 (English), which could lead to incorrect pronunciation

- e.g. 1: '*rai* (*lai*)' vs '*li*' – Write '*riion* (*lion*)' instead of '*raion* (*laion*)' (lion)

¹⁴ The word used for the vocabulary learning class was '*uchi*,' but '*ie*' is also a word for 'house' and so it was decided to give full marks for the answer '*ie*.'

Examples of answers qualifying for one mark out of three (= 1/3)

Example A: Not distinguishing voiced and voiceless sounds (kana with or without diacritic mark)

e.g. 1: Write '*gingyo*' instead of '*kingyo*' (goldfish)

e.g. 2: Write '*usaki*' instead of '*usagi*' (rabbit)

e.g. 3: Write '*penchi*' instead of '*benchi*' (bench)

Example B: Making a mistake on the consonant in the mora formation of CV (Consonant-Vowel)

e.g. 1: Write '*itsu*' instead of '*inu*' (dog)

e.g. 2: Write '*penjin*' instead of '*pengin*' (penguin)

e.g. 3: Write '*uchi*' instead of '*ushi*' (cow)

e.g. 4: Write '*achi*' instead of '*ari*' (ant)

e.g. 5: Write '*muchi*' instead of '*mushi*' (insects)

e.g. 6: Write '*uyagi*' instead of '*usagi*' (rabbit)

e.g. 7: Write '*mezumi*' instead of '*nezumi*' (mouse)

Example C: Making a mistake on the vowel in the mora formation of CV (Consonant-Vowel)

e.g. 1: Write '*pingin*' or '*pengen*' instead of '*pengin*' (penguin)

e.g. 2: Write '*kingyu*' instead of '*kingyo*' (goldfish)

e.g. 3: Write '*usha*' instead of '*ushi*' (cow)

e.g. 4: Write '*aru*' instead of '*ari*' (ant)

e.g. 5: Write '*hebe*' instead of '*hebi*' (snake)

e.g. 6: Write '*moshi*' instead of '*mushi*' (insect)

e.g. 7: Write '*hata*' or '*heto*' instead of '*hato*' (pigeon/dove)

e.g. 8: Write '*nizumi*' instead of '*nezumi*' (mouse)

e.g. 9: Write '*bencha*' instead of '*benchi*' (bench)

e.g. 10: Write '*shito*' instead of '*shita*' (under)

e.g. 11: Write '*nako*' instead of '*naka*' (in/inside)

e.g. 12: Write '*ushiru*' instead of '*ushiro*' (behind/back)

Example D: Remember a part of the word correctly (minimal morpheme)

e.g. 1: Write correctly '*kin*' (gold) in '*kingyo*' (goldfish)

e.g. 2: Write correctly either '*niwa*' (garden) or '*tori*' (bird) in '*niwatori*' (chicken)

Example E: Drop the consonant of the mora formation of CV (Consonant-Vowel)

e.g. 1: Write '*achi*' instead of '*hachi*' (bee)

Example F: Insert an unnecessary (semi-) vowel

e.g. 1: Write '*penigin*' or '*penguin*' instead of '*pengin*' (penguin)

e.g. 2: Write '*ouma*' instead of '*uma*' (horse)

e.g. 3: Write '*yike*' instead of '*ike*' (pond)

e.g. 4: Write '*maei*' instead of '*mae*' (front)

e.g. 5: Write '*oue*' instead of '*ue*' (on/top/up)

e.g. 6: Write '*ouchi*' or '*uichi*' instead of '*uchi*' (house)

e.g. 7: Write '*oushiro*' instead of '*ushiro*' (behind/back)

Examples of answers qualifying for a one-half mark out of three (= 0.5/3)

A student made more than two of the mistakes listed above or other types of mistakes:

Example A: Some attempt to produce the sound of a target word is observed

e.g. 1: Write '*rayon*' or '*rairyon*' instead of '*raion*' (lion)

e.g. 2: Write '*hato*' instead of '*hachi*' (bee)

e.g. 3: Write '*sagi*,' '*sawa*' or '*satoro*' instead of '*saru*' (monkey)

e.g. 4: Write '*kone*' instead of '*neko*' (cat)

e.g. 5: Write '*peigin*,' '*pengeen*' or '*penguin*' instead of '*pengin*' (penguin)

e.g. 6: Write '*ginjō*' instead of '*kingyo*' (goldfish)

e.g. 7: Write '*uru*,' '*oshi*' or '*hashi*' instead of '*ushi*' (cow)

e.g. 8: Write '*ato*' instead of '*ari*' (ant)

e.g. 9: Write '*uniwagi*,' '*nisagi*,' '*ousabi*' or '*osaki*' instead of '*usagi*' (rabbit)

e.g. 10: Write '*ushi*' or '*hima*' instead of '*uma*' (horse)

e.g. 11: Write '*mitsumi*' or '*setsumi*' instead of '*nezumi*' (mouse)

e.g. 12: Write '*bensyu*' instead of '*benchi*' (bench)

e.g. 13: Write '*ita*' instead of '*ike*' (pond)

e.g. 14: Write '*uma*' instead of '*uchi*' (house)

e.g. 15: Write '*ashita*' instead of '*shita*' (under)

e.g. 16: Write '*oshiro*' instead of '*ushiro*' (behind/back)

6.5.2 Analysis on the use of vocabulary learning strategies

As is described earlier in this chapter, the learners were asked to comment on their knowledge of each target word in a supplementary section in the follow-up tests. Most of their comments were categorised into either the use of vocabulary learning strategies or the evaluation (easiness or difficulty) of the target words.

In order to prepare an inventory for examining the strategies used by the learners of the present study, the studies of vocabulary learning strategies by Gu and Johnson (1996) and Schmitt (1997, 2000) were consulted. As taxonomies of vocabulary learning strategies developed by both of them are organised around Oxford's (1990) classifications, her detailed taxonomy of general language learning strategies was also reflected. For the strategies specific to the Japanese language (i.e., kanji learning strategies), the kanji learning strategies in SILK (Strategy Inventory for learning Kanji) website (Anderson and Bourke, 2007; Bourke, 2006) were considered. Based on taxonomies developed in these studies, the following classifications were made for the present study to analyse the learners' comments of each target word on the first follow-up tests and to draw out common strategies employed by the learners.

6.5.2.1 Four main categories for vocabulary learning strategies

Most of the vocabulary learning strategies elicited from the learners' comments are related to memory strategies. It can be considered that the proliferation of memory strategies can be attributed to the nature of the data collection method. The learners wrote their comments on the target words in the test situation where they needed to recall the meaning or the pronunciation of each target word, and hence many learners probably related their knowledge of the target words to memory strategies. However, other types of vocabulary learning strategies were also observed. Therefore, it was decided to broadly categorise the vocabulary learning strategies employed by the learners of the present study into four, and then to further divide the four main categories into subcategories. The four main categories are memory strategies, cognitive strategies, social strategies and affective strategies, and the items which fall into these four main categories are listed under each heading.

6.5.2.1.1 Classification for memory strategies

There are various types of memory strategies specific to vocabulary learning identified by VLS (Vocabulary Learning Strategies) researchers (e.g., Gu, 2003; Gu and Johnson, 1996; Schmitt 1997, 2000; Takač, 2008), and they are labelled under different categories. For instance, Gu

and Johnson (1996, 677-679) divide memory strategies into two, "memory strategies: rehearsal" (further divided into twelve items under three different types of memory strategies: "using word lists," "oral repetition," and "visual repetition,") and "memory strategies: encoding" (further divided into twenty-four items under seven different types of memory strategies: "association/elaboration," "imagery," "visual encoding," "auditory encoding," "word-structure," "semantic encoding," and "contextual encoding").

Another VLS researcher, Schmitt (1997, 206-217; 2000; 132-136) broadly groups all the vocabulary learning strategies into two categories, which are "strategies for the discovery of a new word's meaning (discovery strategies)" (further divided into fourteen strategies under two different types of vocabulary learning strategies: "determination strategies" and "social strategies") and "strategies for consolidating a word once it has been encountered (consolidation strategies)" (further divided into forty-four strategies under four different types of vocabulary learning strategies: "social strategies," "memory strategies," "cognitive strategies" and "metacognitive strategies"). In his VLS classification, twenty-seven items are listed as memory strategies.

Many VLS researchers have attempted to develop a taxonomy of vocabulary learning strategies based on Oxford's (1990) general classifications of language learning strategies. In her taxonomy, strategies are broadly divided into two: direct strategies and indirect strategies, and these are the basis of further detailed subdivisions under six major types of strategy (memory strategies, cognitive strategies, compensation strategies, metacognitive strategies, affective strategies and social strategies). Memory strategies, which are defined as "helping students store and retrieve new information" (ibid., 37), are listed as direct strategies, and further divided into "using imagery," "semantic mapping," "using keywords" and "representing sounds in memory" (ibid., 41-42).

In order to analyse the memory strategies employed by the learners of the present study, the following classification was prepared:

A. Imagery

A1: Use the image obtained from the shape of (a) kanji character(s)

A2: Use the image obtained from part (radical) of a kanji character

A3: Use the image obtained from the shape of (a) kana symbol(s)

A4: Use the image obtained from the shape of (a) kana symbol(s) → Create a story

A5: Use the image obtained from the shape of (a) kanji character(s) → Recall part of the sound in the target word

A6: Use the image obtained from the shape of (a) kana symbol(s) → Recall part of the sound in the target word and/or associate it with an alphabet letter

A7: Use a visual image of the target word used in class

A8: Associate a mental image with the pronunciation of the target word

B. Visual encoding

B1: Recognise the target word as a 'short' word in terms of orthography

B2: Recognise the target word as a 'long' word in terms of orthography

B3: Recognise the target word as a 'simple' word in terms of orthography

B4: Recognise the target word as a 'complex' word in terms of orthography

B5: Use the number of kana symbols in the target word

B6: Use the number of kanji characters in the target word

B7: Visualise the target word

B8: Recognise the target kanji word as 'distinctive' in terms of orthography

B9: Associate/compare the target kanji word with another target kanji word that looks similar

B10: Associate (a) kanji character(s) in the target word with (a) known kanji character(s) that look(s) similar

C. Auditory encoding

C1: Perceive the target word as a 'short' word in terms of pronunciation

C2: Perceive the target word as a 'long' word in terms of pronunciation

C3: Perceive the target word as a 'simple' word in terms of pronunciation

C4: Perceive the target word as a 'complex' word in terms of pronunciation

C5: Use the number of morae (syllables) in the target kana word

C6: Use the number of morae (syllables) in the target kanji word

C7: Associate the target word with a word in English or other European languages that sounds similar

C8: Associate the target word with a word in English or other European languages that sounds similar → Create a story

C9: Associate/compare the target word with another target word that sounds similar

C10: Associate the target word with a known word in Japanese that sounds similar

C11: Associate the target word with lyrics of a song that sounds similar

C12: Associate the target word with onomatopoeia

C13: Use rhythm/rhyme to remember the target word

C14: Study the rōmaji spelling of the target word

D. Keyword technique

D1: Keyword technique - Use an English keyword

D2: Keyword technique - Use an Irish keyword

D3: Keyword technique - Use a French keyword

D4: Keyword technique - Use an onomatopoeic keyword

D5: Keyword technique - Use a Japanese keyword

D6: Keyword technique - Use a Welsh keyword

E. Word structure: Analysis of word formation of the target words

E1: Identify the target words that share the same kanji character(s)

E2: Analyse a kanji character in the target kanji compound

E3: Analyse the meaning of each kanji character in the target kanji compound in order to get the word meaning

E4 Analyse word formation of the target kana word

F. Compensation strategies: Make use of partial existing knowledge

F1: Make use of some katakana knowledge

F2: Make use of some kanji knowledge

F3: Know or have some idea about the pronunciation of the target word

F4: Make use of morphological information (word formation knowledge)

F5: Make use of non-linguistic information

G. Cognate

G1: Japanese loanwords from English (or other European languages): Recognise the target katakana word as a loanword

G2: Japanese loanwords from English (or other European languages): Decipher the target katakana word in order to get the word meaning

G3: Japanese loanwords from English (or other European languages): Perceive the target word as a loanword and produce the Japanese pronunciation

G4: English or (other European languages') loanwords from Japanese: Perceive the target word as a loanword

G5: Non-loanwords written in katakana: Perceive the target katakana word as a non-loanword

H. Connect to a (personal) experience

H1: Connect to a language learning experience

H2: Connect to an episodic memory

H3: Connect to something that reminds one of the target word

I. Use physical action when learning the target word

6.5.2.1.2 Classification for cognitive, social and affective strategies

In addition to various types of memory strategies listed above, some other types of strategy fall into the categories of cognitive strategies, social strategies and affective strategies were observed among the learners of the present study. The following is the classification prepared for the analysis of cognitive, social and affective strategies for the present study:

J. Cognitive strategies

J1: Learn through practice/activities in general

J2: Learn through repetition

J3: Learn through flashcards

J4: Learn through colouring

J5: Learn/remember kanji

J6: Learn/remember katakana

K. Social strategies

K1: Cooperate with peers

K2: Interact with native speakers (teacher)

L. Affective strategies: Attitude/feeling/perception toward the target word

L1: Positive attitude/feeling toward the target word

L2: Find (the sound of) the target word funny, strange, odd, unusual, etc.

L3: Find (the sound of) the target word different from other target words

L4: Have a particular feeling/perception toward the target word

L5: Have a personalised feeling/perception toward the target word

6.5.3 Analysis on easiness and difficulty in learning the target words

Difficulties that the learners had to face in learning the target words in Japanese were elicited from both types of questionnaires and the comments on knowledge of the target words written in the follow-up vocabulary tests. Also, easiness that the learners felt in learning the target words was reported. The following classification was prepared in order to analyse easiness and difficulty in learning the target words reported on the learners' comments of each target word in the follow-up vocabulary tests, but easiness and difficulties that the learners felt will be analysed in the next chapter from their comments written in both questionnaires and follow-up tests. The following is the classification prepared for the analysis on easiness and difficulty in learning target words that were elicited from the learners' comments written in the first follow-up tests:

M. Reporting easiness

- M1: Reporting easiness (Not specific) – easy to remember the target word
- M2: Reporting easiness in recognising the target word in any context
- M3: Reporting easiness in recognising kana
- M4: Reporting easiness in recognising kanji
- M5: Reporting easiness in producing the target kana word
- M6: Reporting easiness – explaining why it was easy to remember/retain the target word
(factors not included in other M categories)
- M7: Reporting easiness in pronouncing the target word
- M8: Reporting easiness in distinguishing the target word from other target words

N. Reporting difficulty

- N1: Reporting difficulty (Not specific) – difficult to remember the target word
- N2: Reporting difficulty in recognising the target word in another context
- N3: Reporting difficulty in recognising kana
- N4: Reporting difficulty in recognising kanji
- N5: Reporting difficulty - Pronunciation related problems
- N6: Reporting difficulty - explaining why it was difficult to remember/retain the target word
(factors not included in other N categories)
- N7: Reporting difficulty in rōmaji spelling
- N8: Reporting difficulty in distinguishing the target word from other target words
- N9: Reporting difficulty - Guessing the meaning of the target word (by process of elimination)

N10: Reporting difficulty - Guessing the pronunciation of the target word

N11: Reporting difficulty - Needed time to retrieve the target word

N12: Reporting difficulty - More difficult to remember the target word compared with other target words

N13: Reporting difficulty - More difficult to recognise the target word (retrieving the meaning when looking at the target word in authentic script) than to produce the target word (retrieving the pronunciation)

N14: Reporting difficulty - More difficult to produce the target word (retrieving the pronunciation) than to recognise the target word (retrieving the meaning when looking at the target word in authentic script)

N15: Reporting difficulty - explaining what had to be done in order to overcome the specified difficulty

6.5.4 Analysis of the learners' strategy use and evaluation of the target words

In order to examine the challenges the learners faced in learning the target words, the learners' comments on knowledge of the target words collected from the first follow-up tests were categorised using an inventory for this study, which has been explained in the previous sections. According to the inventory, the learners' comments were categorised into a relevant strategy or evaluation type. For the learners' comments for which it was not possible to classify into any of the categories (A~N in the previous sections), the following were used:

X. Cannot be categorised (The learner's comment cannot be categorised into any of A~N above)

Y. Reported as a known word/kanji (The learner had known the target word/kanji at the time of the experiment)

Y1: Reported as a known word/kanji - Know only the word/kanji meaning, not the pronunciation

After examining all the learners' comments, a database was created for analysis (See Appendix G-1 and G-6).

6.5.5 Constraints on the analysis of the data

After categorising the learners' comments from all the groups of learners, it was decided not to use the data from Class 6 and Class 7 for the discussion in Chapter 7. A set of activities for learning vocabulary related to animals was used for these two groups of learners whereas a set of activities for learning vocabulary related to transportation was used for the other groups

(Class 1~5). The two different sets of activities were prepared according to the learners' orthographic and vocabulary knowledge, but it was found difficult to compare the data obtained from different sets of activities for the following reasons/due to the following constraints.

Firstly, the number of learners who participated in the experiment with the classes learning vocabulary related to animals was small. The set of activities learning animal related vocabulary was prepared for a group of learners who can be categorised as Beginners 2 and Beginners 3 for the present study (See 6.2.1 for the description of the target group of learners), but it was very difficult to find a group of learners who could participate in the experiment as learners at Beginners 2 and Beginners 3 levels. When considering the numbers who participated in the transportation related vocabulary experiment (N = 85) and those who participated in the animal related vocabulary experiment (N = 22), it was decided not to include the data collected from the animal related vocabulary groups (Class 6 and Class 7) in analysis, and focus on the groups who participated in the transportation related vocabulary experiment (Class 1~5).

Secondly, there were large differences in terms of general the learning conditions between the learners from Class 1~6 (Beginners 0~2) and those from Class 7 (Beginners 3). Generally speaking, in Ireland or the UK, learners who have already acquired hiragana and katakana and have some knowledge of kanji characters (Beginners 3 in this study) are first year students who study Japanese as (part of) their degree at university (e.g., Class 7 in this study). These students are usually expected to learn both types of kana scripts before the course starts or in the first few weeks of the first semester/term, and then start learning kanji characters immediately after finishing learning kana scripts. Their contact hours are usually around ten hours a week and the development of all the skills (listening, reading, speaking and writing) is equally emphasised in their Japanese courses. On the other hand, learners who fall into the category of Beginners 0~2 in this study are students who study Japanese as an elective subject at university, students who study Japanese for leisure purposes in adult education or lifelong learning courses (e.g., Class 5~6 in this study), or students who study Japanese for some other purposes (e.g., Class 1~3 in this study – experiential learning for future language teachers). Their contact hours are usually one and a half or two hours a week, and the development of speaking ability is often emphasised in their courses. It is usually difficult for these learners to recognise or read kana scripts fluently even after having learnt Japanese for a substantial period of time. When considering the differences in the general learning conditions between the participants of the experiment for transportation related vocabulary and animal related vocabulary, it did not seem appropriate to compare the data from the two different

sets of vocabulary learning activities. Also, there were differences in the general learning conditions between the two groups of learners who participated in the experiment with classes for learning vocabulary related to animals (the learners from Class 6 were studying Japanese at the evening course while the learners from Class 7 were studying Japanese at university as part of their degree).

Thirdly, there were differences in terms of the features (e.g., word length, word structure, etc.) of the target words between transportation related vocabulary and animal related vocabulary. In selecting target words for both sets of vocabulary learning activities, it was necessary to include a variety of vocabulary items, which can be workable for each phase (e.g., can be categorised into some groups in Phase 2), and it was difficult to consider the features of all the target words at the same time. For example, vocabulary related to animals does not include many words whose word structure can be analysed from the shared kanji, except for 魚 (*sakana* – fish) and 金魚 (*kingyo* – goldfish). On the other hand, the target items for vocabulary related to transportation include more of this type of word (e.g., 車 (*kuruma* – car), 電車 (*densha* – train) and 自転車 (*jitensha* – bicycle); 飛行機 (*hikōki* – airplane) and 水上飛行機 (*suijō-hikōki* – seaplane)). Also, the majority of kanji words for animal related vocabulary are one-kanji-character words whereas vocabulary related to transportation includes target items with one-kanji-character, two-kanji-character, three-kanji-character and five-kanji-character words. Since these differences in the features of the target words could affect analysing the use of vocabulary learning strategies, it seemed more sensible to use the data collected from just one set of vocabulary learning activities.

For these reasons, it was decided to concentrate on analysing the data obtained from Class 1~5 in order to put forward a concrete argument in relation to the research questions.

Chapter 7 Findings of the Experiment and Discussion

7.0 Introduction

Chapter 7 presents the results of the follow-up vocabulary tests and data analysis based on the information collected from the learners' comments on knowledge of the target words and from the questionnaires, and develops discussions to answer two research questions that are set out in Chapter 6. The chapter is divided into three main sections. In the first section (7.1), the results of the follow-up vocabulary tests are presented, and whether or not the learners of the present study were able to learn new words in their authentic written form is discussed. In the second section (7.2), the analysis of vocabulary learning strategies elicited from the learners' comments is presented, and the use of vocabulary learning strategies employed by the learners is discussed. In the third section (7.3), the challenges the learners faced in the process of learning new words, with particular attention to issues regarding orthographic knowledge, are discussed.

7.1 Results of the follow-up vocabulary tests

In order to answer the first research question; whether or not the learners of the present study were able to learn new Japanese words including recognising them in their authentic written form, the results of follow-up vocabulary tests are presented and discussed in this section. The results of the first receptive test are mainly used for discussions in relation to this research question. The results of the first productive test are presented in order to discuss differences between the learning of written vocabulary for recognition and that of oral vocabulary for pronunciation.

As is explained in Chapter 6, the experiment with classes for learning vocabulary related to transportation was conducted in five different groups with very limited orthographic knowledge (Class 1~5). The learners of Class 1, Class 2 and Class 3 were those who had just started learning katakana, and had no knowledge of hiragana and kanji (Beginner 0 in this study). Among these groups of learners, the learners of Class 2 had had only one and half contact hours of Japanese before the experimental class, and therefore they had almost no knowledge of Japanese orthography. The learners of Class 1 and Class 3 had had fifteen contact hours of Japanese before the experiment class and they were at the stage of learning katakana. The learners of Class 4 and Class 5 had had more contact hours, had already learnt hiragana, and were at the stage of learning katakana (Beginner 1 in the study). In addition, the learners of Class 4 had just learnt their first ten kanji characters.

The first follow-up tests were given to the learners of Class 1, Class 2, Class 3, Class 4 and Class 5 either a day or a week after (the first session of) the experiment, and the second follow-up tests were given to the learners of Class 3, Class 4 and Class 5 either two weeks or a month after (the first session of) the experiment (see Chapter 6 for more details). Two types of test were given: one was a test to measure the learners' retention of receptive knowledge of the target words (recognising the words in their authentic written form and writing their meaning in English), and the other was a test to measure the learners' productive knowledge of the target words (writing the pronunciation of the words in rōmaji).

The results of the follow-up tests are presented in two types of graph in this section (See also Appendix F-1a and F-1b for the detailed test results of each class): one shows the mean score of each target word (See 6.5.1 for marking criteria), and the other shows the percentage of the learners who obtained correct answers (= full marks of three) from each group of learners. These figures are presented according to the phase of the vocabulary learning class where the target words were used for practice: the words used throughout the class (Phase 1~4), the words used only in Phase 1 and Phase 2, and the words used only in Phase 3 and Phase 4 (See 6.2.2.2 for the procedures of the vocabulary learning class).

In these graphs, the learners whose answers were graded as 'not rateable' (See 6.5.1 for details) are included, and their answers were calculated with zero. As is explained in Chapter 6, it is difficult to say that those students who wrote the pronunciation in rōmaji for the receptive tests did not understand the word meaning; Because they wrote the word meaning in English as instructed for some words but wrote the pronunciation in rōmaji or both the word meaning and the pronunciation for some other words, it cannot simply be concluded that they misunderstood the instructions or that they were trying to show that they had more knowledge than they were asked for. If some marks were given to their 'not rateable' answers, the numbers shown as the mean scores in those graphs could be generally higher.

The test results are presented and discussed mainly in the following two sub-sections: the results of the first receptive test (7.1.1) and the results of the first productive test (7.1.2).

7.1.1 Results of the first receptive test

In this section, the results of the first receptive test are examined and discussed.

7.1.1.1 Retention of the words used throughout the vocabulary learning class (Phase 1~4)

Figure 7.1a: Receptive test: Words used throughout the class (Phase 1~4) – Mean scores

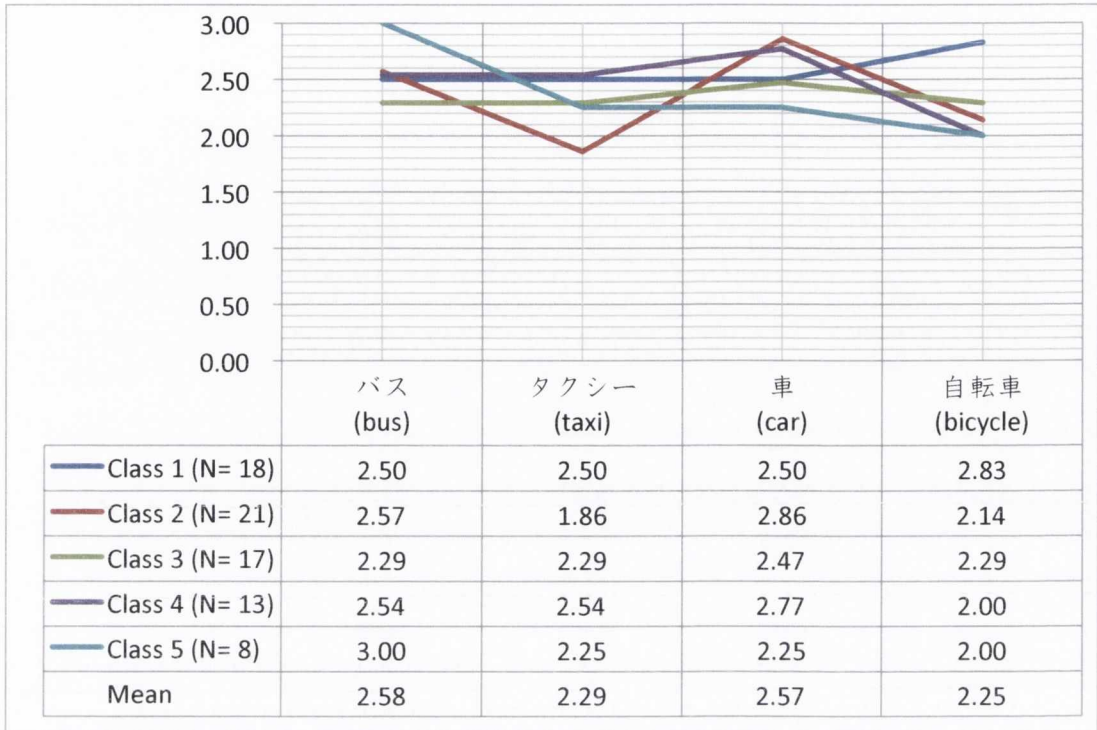
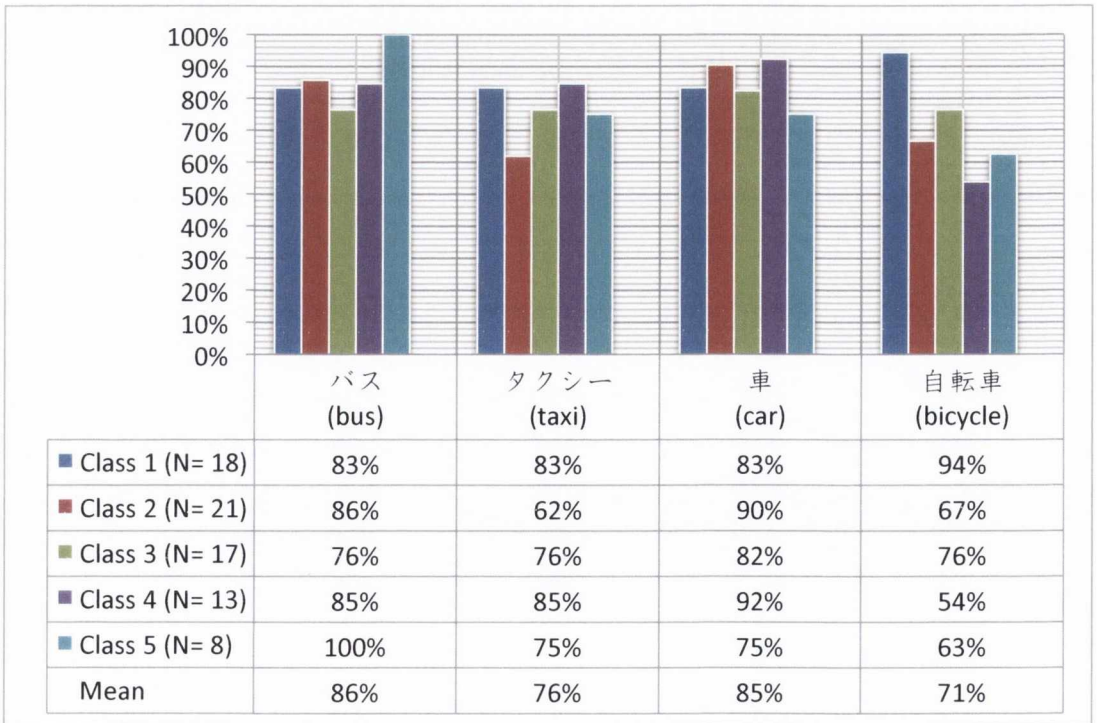


Figure 7.1b: Receptive test: Words used throughout the class (Phase 1~4) – Percentage of correct answers (full marks = 3)



There were four target words used from the beginning (Phase 1) until the end (Phase 4) of the vocabulary learning class: they were two katakana words, バス (bus) and タクシー (taxi), and two kanji words, 車 (car) and 自転車 (bicycle). As Figure 7.1a and Figure 7.1b show, the retention of these four words was remarkably good. All these words were kept at the high retention rate of the mean scores over 2.25 out of three, and over seventy percent of the learners (N = 77) attained full marks (= 3 marks) for all the four words.

These four target words were repeatedly practised and used in different types of activities throughout the experiment. The learners not only learnt these four target words as oral vocabulary aiming to remember their pronunciation, but they also had many opportunities to see the words as written vocabulary and learn them with the objective of recognising them in their authentic written form. In Questionnaire 2 (See Appendix E-3, E-4 and E-5), some learners commented that they found repetition helpful in learning the target words. Therefore, it can be said that repeated exposure to the target words in their authentic written form through various learning/teaching materials such as overhead transparencies, flashcards, handouts at different phases of the vocabulary learning class led the learners with limited orthographic knowledge to retain these four words in their authentic written form.

Interestingly, there was no difference between the retention of the two katakana words and that of the two kanji words. Except Class 4, the learners had never learnt or been taught kanji explicitly although they had been exposed to some kanji characters through the handouts used in their usual Japanese classes. The learners from Class 4 were at the stage of having finished learning their first ten kanji characters, and hence it is not too much to say that the general population had no knowledge of kanji. As for katakana, all the learners were at the stage of learning katakana symbols although they had differences in Japanese language learning experience (the number of classroom contact hours) and knowledge of hiragana orthography.

Given the fact that the learners were more familiar with katakana than kanji, one could easily speculate that it would be easier for the learners to learn katakana words than kanji words. Also, as discussed in Chapter 1 and 5, it is generally considered that learning kanji is more difficult than learning kana. However, as the results shown in Figure 7.1a and Figure 7.1b indicate, two kanji words were equally well retained as two katakana words.

For English-speaking JFL learners who have acquired all the katakana symbols and are fluent in reading katakana words, it can be assumed that it is easier to recognise a new katakana word and understand or guess its meaning if it is a loanword from English. However, the results of the present study indicate that there is no significant difference in learning new

katakana words and kanji words for English-speaking JFL learners with limited orthographic knowledge. The results also suggest that some knowledge of kana orthography does not necessarily give an advantage the learning of kana words over the learning of kanji words for learners who are at the stage of learning kana symbols and have little or no knowledge of kanji.

As is shown in Figure 7.1a, the mean scores of both katakana and kanji target words were equally high, albeit with slight differences in the retention rate. The average score of these four words from all the groups was between 2.25 and 2.58 out of three, and one of the kanji words - 車 (car) - was better retained, with the mean score of 2.57, than one of the katakana words - タクシー (taxi) - with the mean score of 2.29. In addition, the kanji word 車 (car) was the best retained among these four words for three groups of learners (Class 2, Class 3 and Class 4), as is indicated in Figure 7.1a and Figure 7.1.b.

Among five groups of learners, the results of Class 2 particularly show some interesting implications in terms of the learning of words in different scripts. As is explained earlier, the learners from Class 2 had the least orthographic knowledge as they had this vocabulary learning class when they just started learning Japanese. It may be no exaggeration to say that they had no orthographic knowledge at all. For such learners who have no knowledge of either kana or kanji, the retention of one of the kanji words 車 (car) was exceptionally good. The mean score of Class 2 for this word was 2.86 out of three, which was the highest score among the five groups, and ninety percent of the learners from Class 2 attained full marks for this word, which was the second highest percentage among the five groups¹. On the other hand, the retention of one of the katakana words タクシー (taxi) for the learners from Class 2 was relatively poorer compared with the other three target words. As is indicated in Figure 7.1a and Figure 7.4b, the mean score of this word for Class 2 was 1.86 out of three, which was the lowest score among the five groups, and the percentage of the learners who scored full marks was sixty-two percent, which was also the lowest among the five groups.

From the results of Class 2, it can be assumed that some kanji words can be easier to learn than some katakana words for JFL learners from non-logographic language backgrounds with limited orthographic knowledge. This corresponds with some experimental findings in Japanese L1 word processing research (Steinberg and Oka, 1978; Steinberg 1995), which is discussed in Chapter 1. According to the study of Steinberg and Oka (ibid.), kanji characters or kanji words are easier for Japanese children to learn than kana symbols or kana words. Although it is difficult to argue the difference between the learning of kanji words and that of

¹ Ninety-two percent of the learners from Class 4 scored full marks for this word, which was the highest percentage among the five groups. However, it can be argued as a corollary to the fact that they had already learnt this kanji character at the time of the experiment.

kana words in an L2 classroom context because of lack of empirical research in this area for Japanese L2 learners, the results of this study indicate that the general conception, which is that the learning of kanji words for JFL learners from non-logographic language backgrounds is too difficult or more difficult than that of kana words, is not necessarily true.

7.1.1.2 Retention of the words used only in Phase 1 and Phase 2

As is shown in Figure 7.2a and Figure 7.2b on the next page, the test results of the target words used only in Phase 1 and Phase 2 also suggest that kanji words cannot always be more difficult to learn than kana words for JFL learners from non-logographic language backgrounds. Among the eight target words used only in Phase 1 and Phase 2, the best-retained word was in kanji for four groups of learners except for Class 3. The retention rate of either 電車 (train) or 水上飛行機 (seaplane) was the highest for the learners from Class 1, Class 2, Class 4 and Class 5.

Because the learners were less exposed to these eight words compared to the four target words used throughout the experiment (discussed in the previous section), the retention rate of these eight words was slightly lower in general. It is also observed that the gap between the highest number and the lowest number in retention is wider among these eight target words. As is indicated in Figure 7.2a and Figure 7.2b, the retention of three kanji words, 船 (ship), 新幹線 (bullet train) and 地下鉄 (metro), was notably lower than the five other target words. However, this does not lead to a simple conclusion that kanji words are more difficult. As mentioned earlier, some target words in kanji such as 電車 (train) or 水上飛行機 (seaplane) were retained better than katakana words. It seems that the differences in retention lie in whether or not a learner was able to use strategies effectively in order to retrieve the word meaning.

Two katakana words, トラック (lorry) and ヘリコプター (helicopter), were retained well even though the learners from all the groups had not fully learnt katakana symbols and lacked fluency in reading katakana words. From their comments, it was observed that the majority of the learners first perceived these two words as loanwords from English because of katakana symbols (they did not have a problem in distinguishing between katakana words and kanji words), and then they used some secondary strategies in order to compensate for their partial knowledge of katakana.

Figure 7.2a: Receptive test: Words used only in Phase 1 and Phase 2 – Mean scores

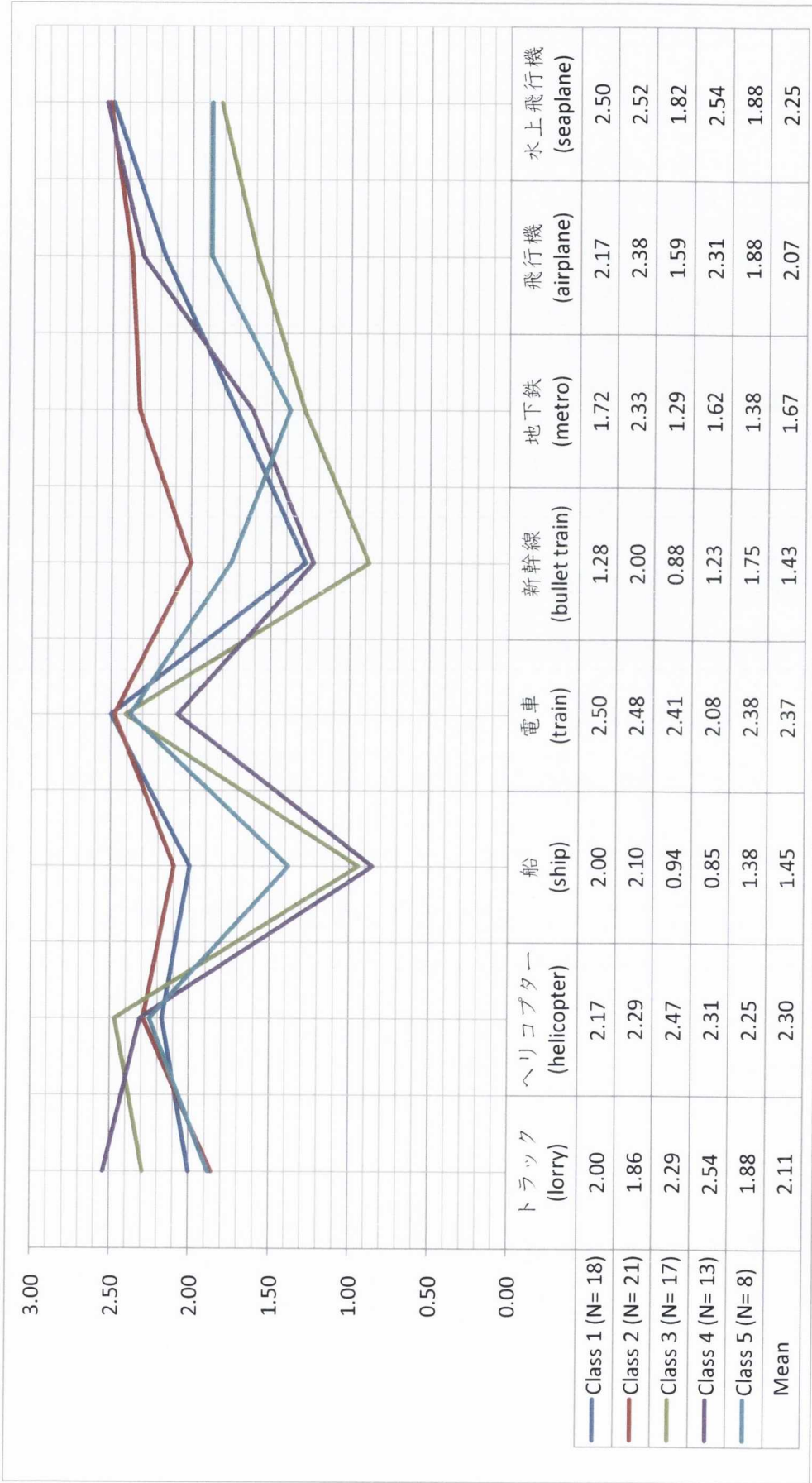
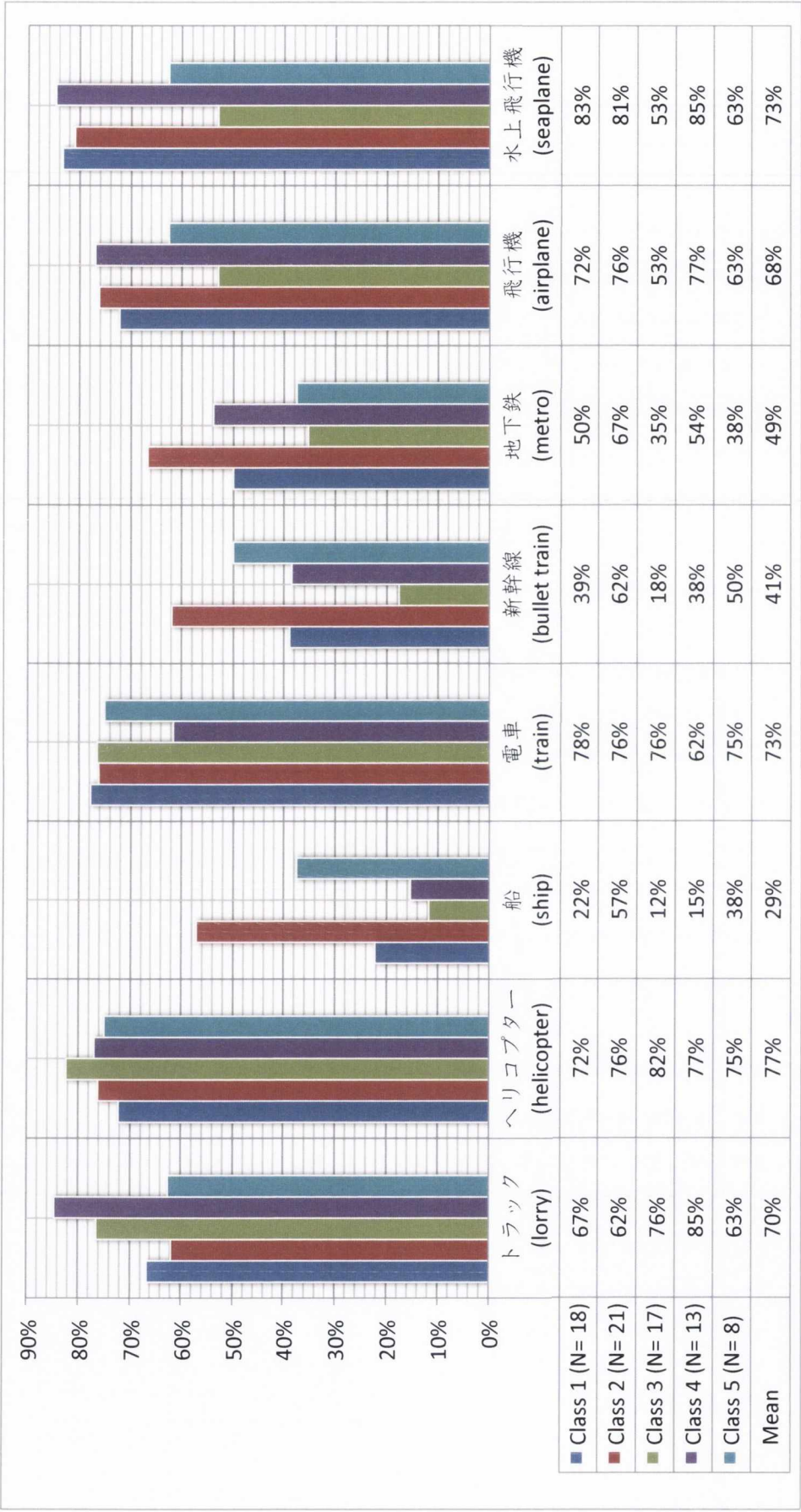


Figure 7.2b: Receptive test: Words used in Phase 1 and Phase 2 – Percentage of correct answers (full marks = 3)



The relationship between higher retention rate and strategy use was also observed among three target kanji words that were retained well: they were 電車 (train), 飛行機 (airplane) and 水上飛行機 (seaplane). When the learners' comments on the word 電車 (train) were analysed, it was observed that many learners linked this word to two other words that were used throughout the experiment: they are 車 (car) and 自転車 (bicycle). Since these three words share the same kanji-車 (car), many learners recognised 電車 (train) and 自転車 (bicycle) as an extension of the kanji word 車 (car). In a similar way, many learners saw the link between 飛行機 (airplane) and 水上飛行機 (seaplane) that were used only in Phase 1 and Phase 2. These two words share the word 飛行機 (airplane), and this link seemed to contribute to higher retention rate for both of the words.

Three target words in kanji used only in Phase 1 and Phase 2 demonstrated lower strategy use by the learners: they were 船 (ship)², 新幹線 (bullet train) and 地下鉄 (metro). These words were the least well-retained among the eight target words used only in Phase 1 and Phase 2. Fewer than thirty out of seventy-seven learners reported their strategy use for these three words, whereas more than thirty learners reported their strategy use for those well-retained kanji words mentioned earlier. The table below shows the number of learners who commented on their strategy use on these three kanji words that were not retained well.

Table 7.1: Number and percentage of learners who reported their strategy use on 船 (ship), 新幹線 (bullet train) and 地下鉄 (metro)

	船 (ship)	新幹線 (bullet train)	地下鉄 (metro)
Class 1 (N= 18)	10 (56%)	4 (22%)	6 (33%)
Class 2 (N= 21)	12 (57%)	7 (33%)	15 (71%)
Class 3 (N= 17)	2 (12%)	1 (6%)	1 (6%)
Class 4 (N= 13)	2 (15%)	1 (8%)	6 (46%)
Class 5 (N= 8)	2 (25%)	1 (13%)	2 (25%)
Total (N= 77)	28 (36%)	14 (18%)	30 (39%)

² One of the reasons why the retention rate of the word 船 (ship) was lower could be because of the strict marking (See 6.5.1 for marking criteria). The learners who wrote either 'boat' or 'ferry' as their answers for this word did not receive full marks but obtained two out of three marks. If those learners who wrote 'boat' or 'ferry' were included as the learners who answered correctly, the percentage would be higher with sixty-one percent (among the total of seventy-seven learners, twenty-three learners wrote 'ship,' twenty learners wrote 'boat' and four learners wrote 'ferry'), but this percentage is still lower than that of the five other target words that were retained well.

When comparing this table with Figure 7.2a and Figure 7.2b, the relationship between strategy use and the retention rate can be clearly seen. Although the retention rate of these three words was generally low, the learners from Class 2 retained these three words distinctly better than the other four groups of learners. As is shown in Table 7.1, the number of learners from Class 2 who reported their strategy use on these three words was significantly higher than the other four groups of learners. This implies that the use of strategies for these three target words contributed to a higher retention rate.

7.1.1.3 Retention of the words used only in Phase 3 and Phase 4

There were three kanji words which were newly introduced in Phase 3, and practised in Phase 3 and Phase 4: they were three colours, 赤 (red), 青 (blue) and 緑 (green). As these three words were not included in the follow-up tests for the experiment with classes (Class 1, Class 2 and Class 4) that were conducted earlier, it is not possible to provide comprehensive analysis from all the groups of learners. If discussed to a limited extent, however, the retention of these three kanji words was extremely good. As is shown in Figure 7.3a and Figure 7.3b on the next page, the retention of these words was as good as, or even better than, the four words used throughout the experiment (See Figure 7.1a and Figure 7.1b).

In Phase 3 and Phase 4, the learners were exposed to these three colours as written vocabulary through overhead transparencies and flashcards that the teacher used for practice (See Appendix A-9 and A-10), and the handout of instructions to colour the different vehicles in the picture (See Appendix A-6). When considering how much the learners were exposed to the four words used from the beginning until the end of the vocabulary learning class, the exposure to these three colours as the printed words was not enough. Despite less exposure to the printed words, the learners learnt these three colours well, and were able to recognise the words in their authentic written form and retrieve the word meaning in the follow-up test.

When comparing the test results of these three colours with the target words used throughout the experiment, it can be argued that exposure to the printed words is not the only factor that enhanced learners' retention in recognising the target words in their authentic written form. From the learners' comments on these three colours, it was observed that many learners perceived these three target words as one-kanji-character words, and used the number of kanji or the length of the word as a strategy to distinguish from other target words that consist of more than two kanji characters. All three colours are one-kanji-character words, alongside 車 (car) and 船 (ship), the other words made up of a single kanji character.

Figure 7.3a: Receptive test: Words used only in Phase 3 and Phase 4 – Mean scores

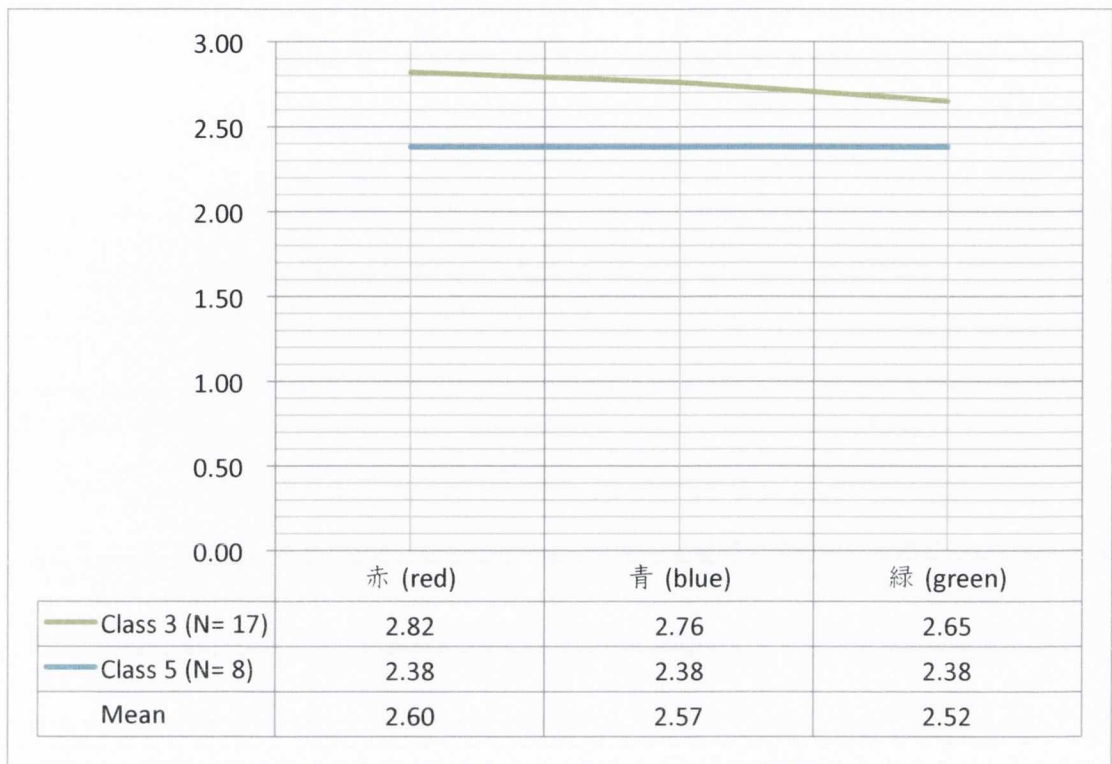
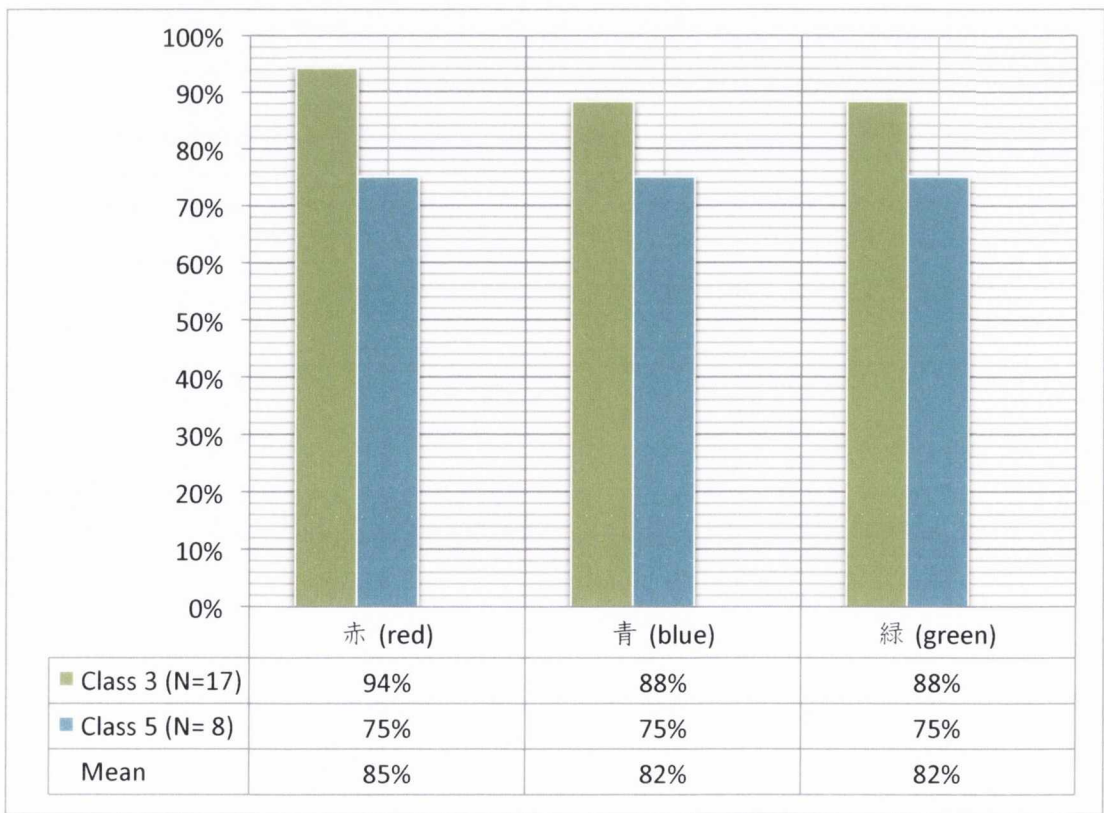


Figure 7.3b: Receptive test: Words used only in Phase 3 and Phase 4 – Percentage of correct answers (full marks = 3)



The learners used some further strategies to distinguish the target kanji words that consist of one character. However, there were five out of twenty-three learners who confused these words with other one-kanji-character words and answered incorrectly.

As has been discussed, the use of vocabulary learning strategies can be considered as a key factor that enables English-speaking JFL learners with limited orthographic knowledge to learn new words in their authentic written form. The vocabulary learning strategies employed by the learners of this study will be discussed in the later sections (7.2).

7.1.2 Results of the first productive test

In the follow-up productive test, the learners of this study were asked to write the pronunciation of the words in rōmaji because the learners' orthographic knowledge was limited and the writing of pronunciation in rōmaji was sought as an appropriate method of measuring their productive knowledge of the target words. In addition, the learners had seen the rōmaji spelling in the earlier stages of the vocabulary learning class (in Phase 1) as a means of reading support for the target words written in their authentic form. In order to make sure that the knowledge of rōmaji spelling rules did not affect the learners' performance on the productive test, the rōmaji chart (See Appendix C-5), which includes the guidance of how to write long vowels and double consonants, was given to the learners along with the test papers. However, the problems regarding rōmaji spelling were observed in the learners' answers. As is described in Chapter 6, the marking criteria for the productive test were carefully prepared in order to measure the learners' knowledge on the word pronunciation as fairly as possible, but it cannot be denied that the learners' familiarity with rōmaji spelling might have affected the correctness of their answers. Taking the difficulty of rōmaji spelling into consideration, the results of the first productive test are discussed here.

As is shown in the figures on the following pages, the results of the productive test were also fairly good. If given a broad overview, a similar tendency to the results of the receptive tests can be observed when taking a look at the retention rates according to the phase where the target words were practised. Similar to the results of the receptive test, the target words used throughout the vocabulary learning class (Phase 1~4) were generally better retained than the target words used only in Phase 1 and Phase 2 although there were some exceptions. Also, the target words used only used in Phase 3 and Phase 4 were retained as well as, or even better than, the target words used from the beginning until the end of the vocabulary learning class.

Figure 7.4a: Productive test: Words used throughout the class (Phase 1~4) – Mean scores

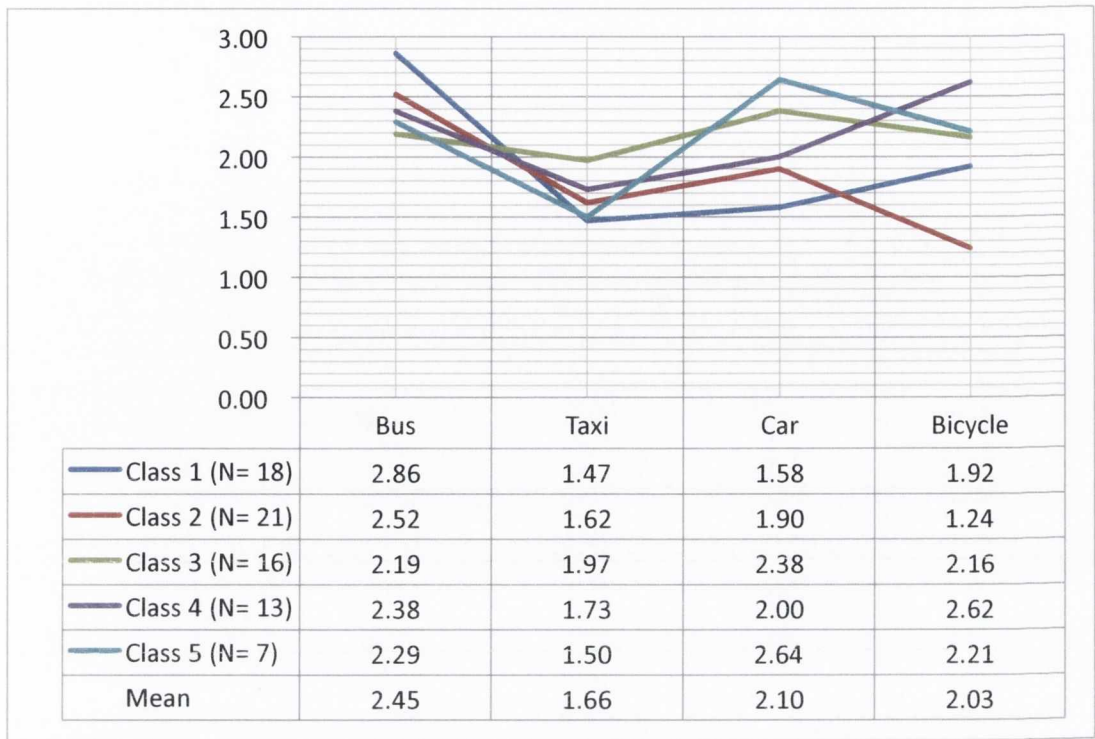


Figure 7.4b: Productive test: Words used throughout the class (Phase 1~4) – Percentage of correct answers (full marks = 3)

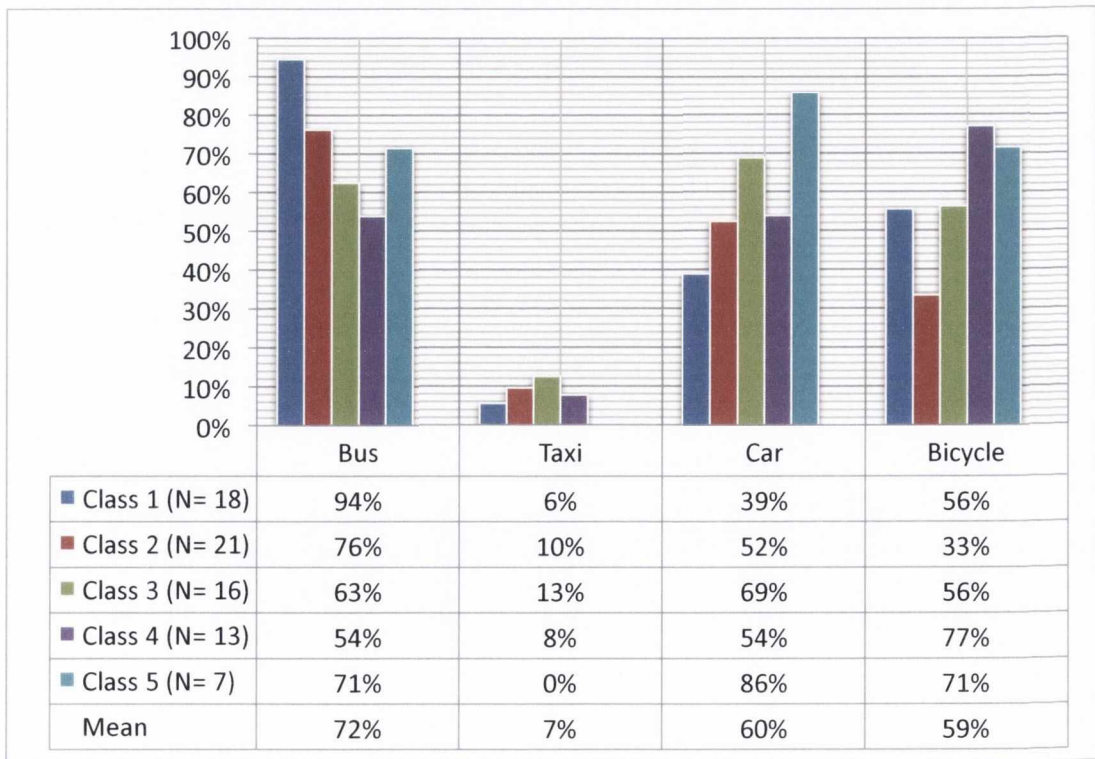


Figure 7.5a: Productive test: Words used only in Phase 1 and Phase 2 – Mean scores



Figure 7.5b: Productive test: Words used only in Phase 1 and Phase 2 – Percentage of correct answers (full marks = 3)

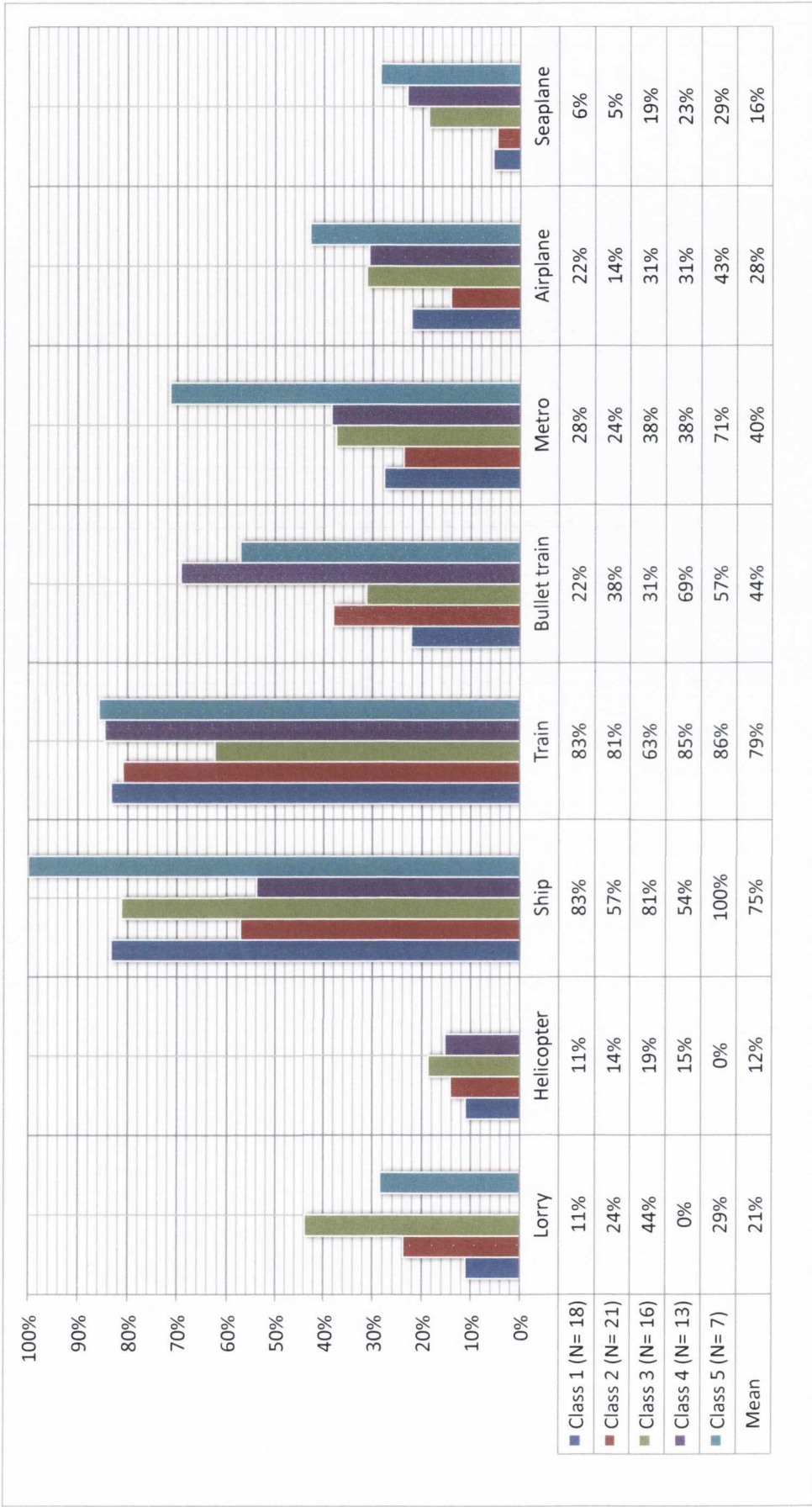


Figure 7.6a: Productive test: Words used only in Phase 3 and Phase 4 - Mean scores

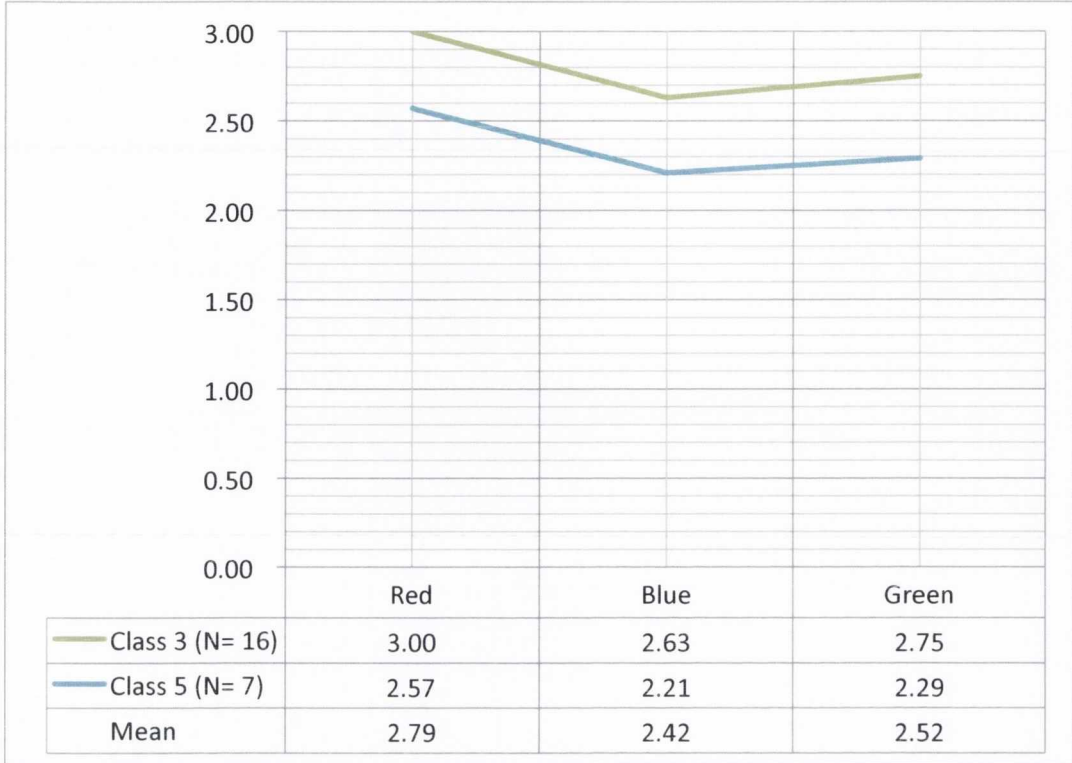
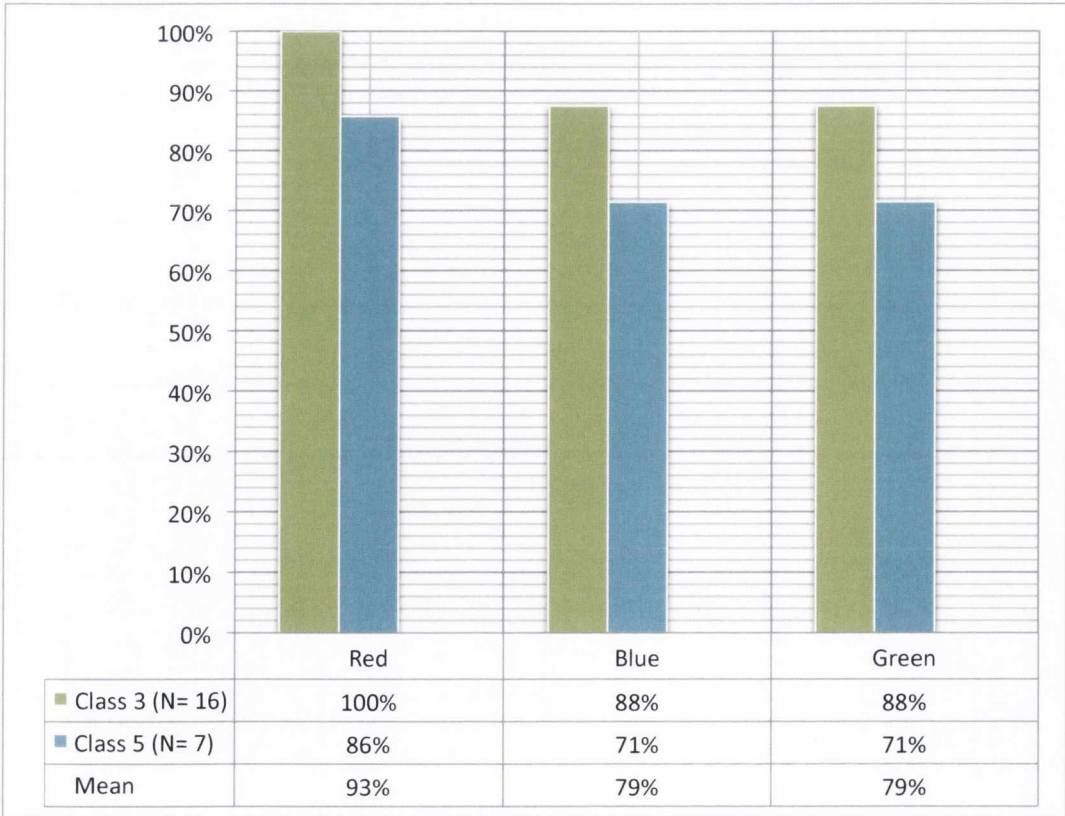


Figure 7.6b: Productive test: Words used only in Phase 3 and Phase 4 – Percentage of correct answers (full marks = 3)



However, there are some differences in the results observed between the receptive test and the productive test, when comparing them in detail. One of the primary differences between them is the relationship between retention rates and strategy use. As is shown in Figure 7.7 on the next page, the retention rates (the percentage of the learners who obtained full marks and the mean score) of the first receptive test are proportionate to the percentage of the learners who reported their strategy use. That is to say, the higher the number of the learners who reported their strategy use, the higher the retention rates. However, this is not always the case regarding the results of the productive test. As is indicated in Figure 7.8 on the following page, for example, the number of the learners who reported their strategy use for the word taxi (*takushī*) was higher, but the retention rates of the word contrarily were lower. The same can be said for another two words: helicopter (*herikoputā*) and seaplane (*suijō-hikōki*). In the opposite way, for example, the number of the learners who reported their strategy use for the word car (*kuruma*) was lower, but the retention rates of the word were extremely higher. Again, the same can be said for another two target words: bicycle (*jitensha*) and train (*densha*).

For productive knowledge of the target words as oral vocabulary, the difficulty in the pronunciation of the target words appeared to be a factor that affected the correctness of the learners' answers. As is indicated in Figure 7.4a, 7.4b, 7.5a and 7.5b, all the target words with the mean score below two are the words that contain long vowels or double consonants, or long words with four or more morae. In learning pronunciation of Japanese words, special attention needs to be paid to the distinction between short and long vowels, and how to pronounce double consonants. Among the target words with lower mean scores, taxi (*takushī*), helicopter (*herikoputā*), airplane (*hikōki*) and seaplane (*suijō-hikōki*) contain long vowels (vowels with macron). When analysing the learners' answers of these words, not distinguishing short and long vowels was the most common source of the errors. Similarly, lorry (*torakku*) contains double consonants, and many learners who did not obtain full marks for this word did not pay conscious attention to double consonants.

In addition to long vowels and double consonants as the source of the errors, the length of the words can be seen as a factor that contributed to lower retention rates. All the five target words mentioned above are the words with four or more morae: taxi (*ta-ku-shi-i*), airplane (*hi-ko-o-ki*) and lorry (*to-ra-k-ku*) have four, helicopter (*he-ri-ko-pu-ta-a*) has six, and seaplane (*su-i-jo-o-hi-ko-o-ki*) has eight morae. Additionally, metro (*chi-ka-te-tsu*) has four and bullet train (*shi-n-ka-n-se-n*) has six morae, and the retention rates of these two words were also lower than other target words.

Figure 7.7: First receptive test – Retention rate and percentage of the learners who reported their strategy use

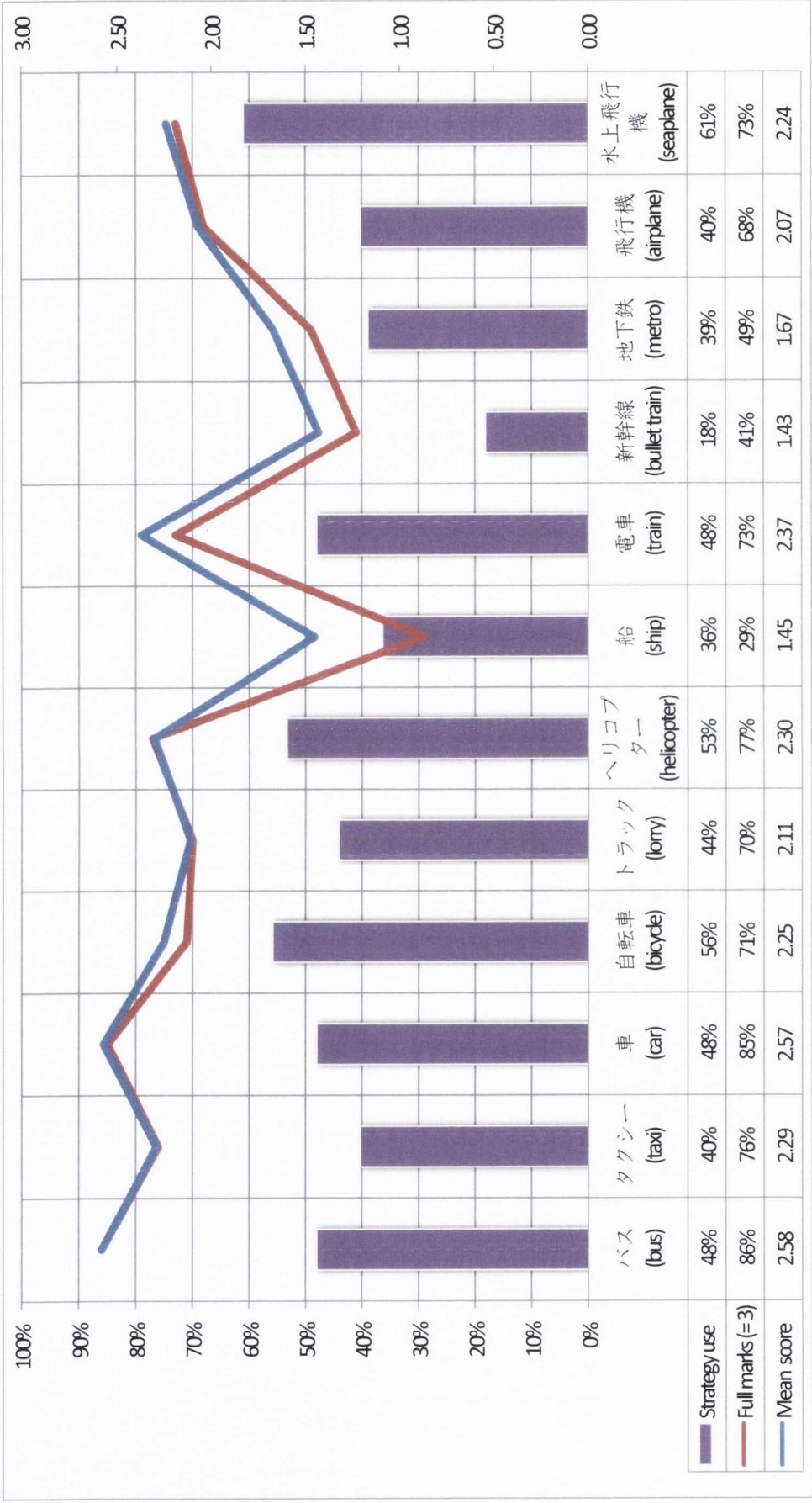
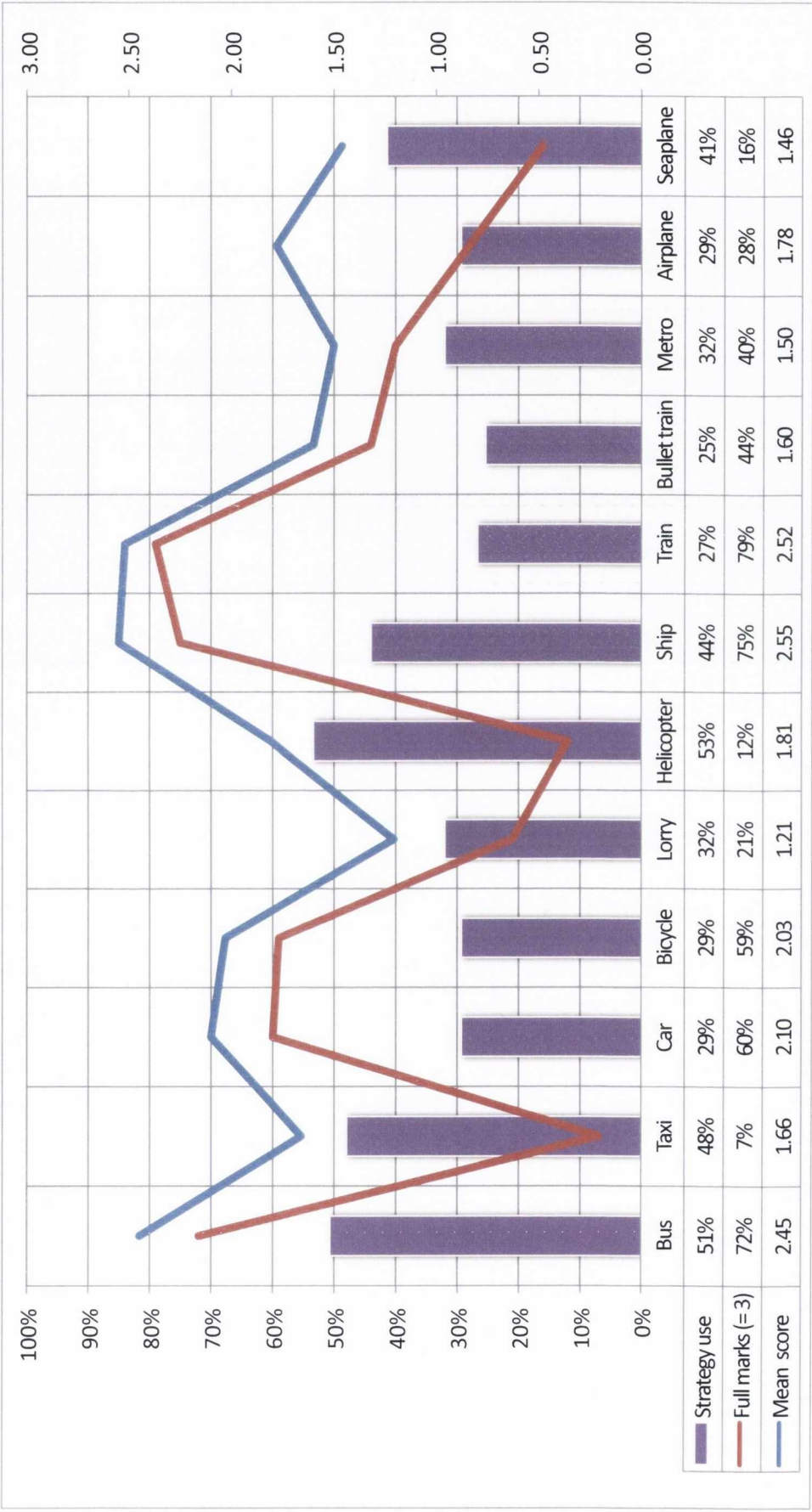


Figure 7.8: First productive test – Retention rate and percentage of the learners who reported their strategy use

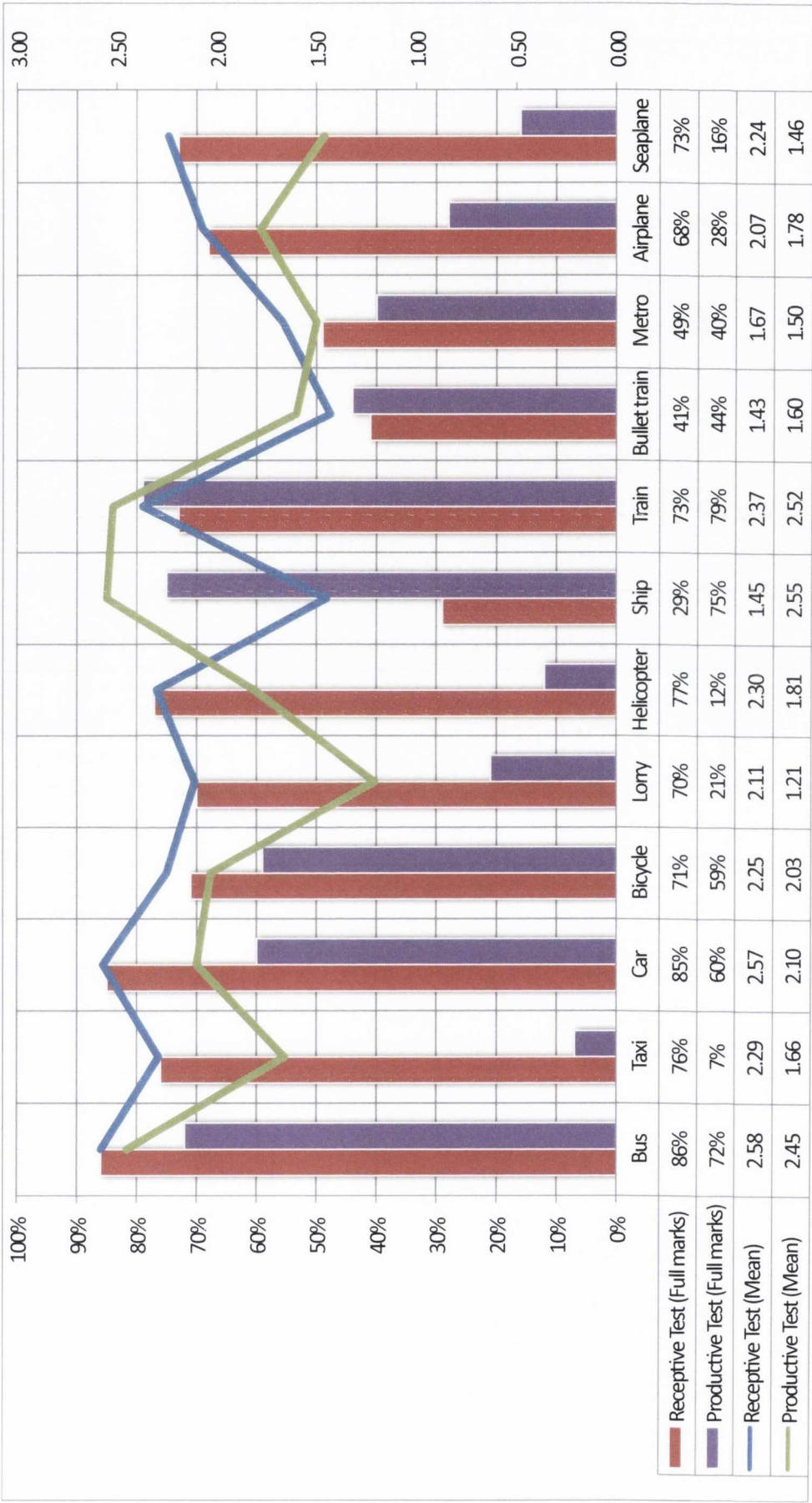


Bicycle (*ji-te-n-sha*) is also a word with four morae, but this word was practised and used throughout the class, and hence it appeared that the retention of this word was better than other longer target words. Taxi (*ta-ku-shi-i*) is also one of the words with four or more morae used throughout the experiment, and this word was retained poorly compared to bicycle (*ji-te-n-sha*). The fact that taxi (*takushī*) contains long vowel would probably be the reason for lower retention rates.

When one compares the results of the productive test with the receptive test, one of the prominent differences is that the retention of katakana words was much better in the receptive test. As is indicated in Figure 7.9 on the next page, the gap in retention of the target katakana words between the receptive test and productive test is considerably wider than other target words except for bus (*basu*). The retention rates (mean score and the number of the learners who obtained full marks) of taxi (*takushī*), helicopter (*herikoputā*) and lorry (*torakku*) were significantly lower in the productive test than in the receptive test. This corresponds with what Shibatani (1990, 153) claims. He points out that it is difficult for L1 speakers of the language to understand “Japanized” borrowed words because the original pronunciation of foreign words is altered when they are rendered in katakana. All the katakana target words used for the vocabulary learning experiment to learn vocabulary related to transportation are Japanese loanwords from the English language. The test results of this study suggests that it is easier for English-speaking JFL learners with limited kana knowledge to recognise written katakana loanwords despite having difficulty in identifying them in their authentic form. As Shibatani argues, it was probably more difficult for the learners of this study to correctly produce the sounds that are altered from the original pronunciation in English.

At the same time, as is discussed earlier, the fact that these three katakana words are the longer target words, which contain long vowels or double consonants, needs to be considered as a source of the errors. The wider gap in retention rates between the receptive test and the productive test can also be observed in longer target words in kanji that contain long vowels. As is indicated in Figure 7.9, the retention rates of airplane (*hikōki*) and seaplane (*suijō-hikōki*) were notably better in the receptive test than in the productive test. On the other hand, the retention rates of ship (*fune*) were remarkably better in the productive test than in the receptive test. These tendencies suggest that there are differences in difficulty between written and oral vocabulary, and difficulty of pronunciation in longer words and special sounds such as long vowels or double consonants can be the main factors that affect learners’ ability to produce the sounds correctly.

Figure 7.9: Comparison of retention rate between the first receptive test and the first productive test



7.1.3 Results of the second follow-up tests

As is explained earlier, the second follow-up tests were given to the learners from Class 3, Class 4 and Class 5 either two weeks or a month after (the first session of) the vocabulary learning class. The test results are not discussed here in detail for the following three reasons. First of all, there were differences in the learners' contact hours of their usual Japanese class after the vocabulary learning experiment depending on the group. Also, it was not possible to give the second follow-up tests at the same interval to the learners of those groups. Therefore, it is likely that these differences could have affected their performance on the second follow-up tests. Secondly, it is difficult to analyse the test results comprehensively because the second follow-up tests were not given to all the groups of learners. Thirdly and finally, the main purpose of the present study is not to investigate the learners' long-term retention of the target words. Although these difficulties need to be considered, general tendencies exhibited by the results of the second follow-tests (See the figures in Appendix F-1c) seem to be similar to the results of the first follow-up tests which are discussed in the previous section.

7.1.4 Is it possible for beginning JFL learners from non-logographic language backgrounds, with limited orthographic knowledge, to learn new words, including recognising them in their authentic written form?

As has been presented, the test results of the present study show that it is possible for beginning JFL learners from non-logographic language backgrounds, with limited orthographic knowledge, to learn new Japanese words, including recognising them in their authentic written form. As has been discussed, there are various factors that affect the learners' retention of the target words: the exposure to the target words, the use of vocabulary learning strategies, the types of orthography used in the target words, the differences between written and oral vocabulary, including the word length and the difficulties of pronunciation, and so on. Amongst these factors, in particular the use of vocabulary learning strategies seems to have an impact on the learners' performance on the receptive test. The use of vocabulary learning strategies employed by the learners of this study will be discussed in detail in the next section.

7.2 Analysis of the learners' comments on the target words

As is explained in Chapter 6, the learners were asked to comment on their knowledge of each target word in a supplementary section provided in the follow-up tests. Most of their comments were categorised into either the use of vocabulary learning strategies or the evaluation (easiness or difficulty) of the target words. In this section, the use of strategies in learning target words elicited from the learners' comments are analysed and discussed in relation to the second research question: What challenges do beginning JFL learners from non-logographic language backgrounds, with limited orthographic knowledge, face in the process of learning new words in authentic written form? How do they deal with those challenges? What strategies do they use?

7.2.1 Analysis of the vocabulary learning strategies used for learning target words for reception

As is illustrated in Chapter 6, the use of vocabulary learning strategies elicited from the learners' comments are divided into twelve categories (A~H), and then they are broken down into two to fourteen subcategories depending on the category except for Strategy Type I. Among these twelve main categories, the first seven categories (A~G) were the strategy types that were elicited from many learners (See Appendix G-2 for the number of learners who used each strategy type; See also Appendix G-4 for the comprehensive list of the learners' strategy use classified according to subcategories).

Since the main purpose of the present study was to investigate how beginning JFL learners from non-logographic language backgrounds deal with the challenges in recognising the target words written in their authentic form, the vocabulary learning strategies that the learners used for learning or retrieving the meaning from the printed words are primarily argued in this section. The analysis of the strategies employed by the learners for learning or retrieving pronunciation of the target words is presented as a basis for discussion on the differences in acquiring receptive knowledge (recognising the word form and understanding the meaning) and productive knowledge (knowing how the word is pronounced).

In the previous section, the results and analysis of the first follow-up tests are presented according to the phase where the target words were used in the vocabulary learning class. In this section, the analysis of strategy use is presented according to the type of orthography used for the target words. For analysing the learners' strategy use, the target words are broadly divided into katakana words and kanji words, and kanji words are further divided into one-character kanji words and kanji compound words (kanji words consisting of more than two characters).

7.2.1.1 Strategies used for learning target words in katakana

Among the total of twelve target words related to transportation (fifteen including vocabulary items for colours), there were four katakana words: they were バス (bus – *basu*), タクシー (taxi – *takushī*), トラック (lorry - *torakku*), and ヘリコプター (helicopter – *herikoputā*). Table 7.2 on the following pages shows the classification results of the learners’ strategy and their results on the receptive test. As is indicated in the table, except for the word バス (bus – *basu*), Strategy Type F (Compensation strategies: Make use of partial knowledge) and Strategy Type G (Cognate) were the two types of strategies which were most frequently used by the learners. Below are some examples of the learners’ comments that illustrate how they tried to learn the target words in katakana. The following examples are presented with the learners’ class, ID, comment, teacher assessment (TA) and self-assessment (SA) out of three marks (See 6.5.1 for details):

Examples of the learners’ comments that were classified as F1 (Make use of some katakana knowledge)

Example 1: バス (bus)–Recognise the second katakana ス ‘su’

Class	ID	Comment	TA	SA
3	50	ス is su, ba-su.	3	3

Example 2: タクシー (taxi)–Recognise ー at the end as the symbol for long vowel

Class	ID	Comment	TA	SA
2	40	I remember because of final symbol.	3	1

Example 3: トラック (lorry)–Recognise the first ト ‘to’ and third katakana ツ ‘tsu’ (small *tsu* for double consonants)

Class	ID	Comment	TA	SA
5	77	I recognise to and tsu – for double consonant.	3	1

Example 4: ヘリコプター (helicopter) –Recognise some katakana

Class	ID	Comment	TA	SA
4	71	Again not all the katakana is recognisable but the overall word is.	3	1

Table 7.2: Strategies used for learning target words in katakana for reception

[Number = Number of the learners who reported their strategy use (out of 77); TA = Teacher Assessment (out of 3)]

Target Word	Strategy Type	Number	Detail of Strategy Use	Number	TA = 3	TA = 2	TA = 1	TA = 0	Not Rateable	Note
バス (bus)	A	10	A4	7	7	0	0	0	0	
			A7	3	3	0	0	0	0	
	B	12	B1	5	4	0	0	0	1	
			B5	3	3	0	0	0	0	Total number of B5 = 6
			B3	1	0	0	0	0	0	
			B5 + G1	2	2	0	0	0	0	
			B3 + B5 + H1	1	1	0	0	0	0	
			F1	6	6	0	0	0	0	
	G	11	G1	2	2	0	0	0	0	Total number of G1= 4
			G2	6	6	0	0	0	0	Total number of G2 = 7
	J	1	G2 + J6	1	0	0	0	0	1	
Total Number		41		37	35	0	0	0	2	

Target Word	Strategy Type	Number	Detail of Strategy Use	Number	TA = 3	TA = 2	TA = 1	TA = 0	Not Rateable	Note
タクシー (Taxi)	A	6	A3	2	2	0	0	0	0	
			A4	1	1	0	0	0	0	
			A6	1	1	0	0	0	0	
			A7	1	1	0	0	0	0	
			A4 + F1	1	1	0	0	0	0	
	B	3	B4	2	2	0	0	0	0	
	C	1	B5 + C5	1	1	0	0	0	0	
	F	13	F1	12	10	0	0	2	0	Total number of F1 = 13
	G	9	G1	1	1	0	0	0	0	
			G2	8	7	0	0	0	1	
	L	1	L5	1	0	0	0	0	1	
Total Number		33		31	27	0	0	2	2	

Target Word	Strategy Type	Number	Detail of Strategy Use	Number	TA = 3	TA = 2	TA = 1	TA = 0	Not Rateable	Note
トラック (Lorry)	A	5	A6	3	2	0	0	0	1	
			A7	2	2	0	0	0	0	
	B	2	B5	2	2	0	0	0	0	
	F	15	F1	15	13	0	0	0	2	
	G	10	G1	4	3	0	0	1	0	
			G2	6	6	0	0	0	0	
	J	2	J1	1	1	0	0	0	0	
			J6	1	0	0	0	0	1	

Target Word	Strategy Type	Number	Detail of Strategy Use	Number	TA = 3	TA = 2	TA = 1	TA = 0	Not Rateable	Note
ヘリコプター (Helicopter)	A	8	A3	6	4	0	0	0	2	
			A6 + F1	1	1	0	0	0	0	
			A3 + B2 + G1	1	1	0	0	0	0	
			B2	5	4	0	0	1	0	
	B	8	B5	1	1	0	0	0	0	
			B2 + G1	1	1	0	0	0	0	
			C7	1	1	0	0	0	0	
	C	1	F1	10	9	0	0	0	1	Total number of F1 = 15
	F	15	F1 + G2	1	1	0	0	0	0	
			F1 + J1	1	1	0	0	0	0	
			F1 + J6	1	0	0	0	1	0	
			F1 + G1 + L5	1	1	0	0	0	0	
	L	1	G1	2	2	0	0	0	0	Total number of G1 = 5
	G	13	G2	7	7	0	0	0	0	Total number of G2 = 8
			J1	1	1	0	0	0	0	
	J	3	K1	1	1	0	0	0	0	
	K	1								
Total Number				41	36	0	0	2	3	

These examples show that the learners who had not fully acquired katakana orthography were able to recognise the target words in katakana. As is explained in Chapter 1, learners of Japanese are usually expected to learn individual kana scripts first. Many learners of the present study used their partial katakana orthographic knowledge to compensate for lack of reading fluency in katakana. This implies that there is no need to wait to start learning katakana words in authentic form until learners acquire individual katakana symbols. This is evident from the fact that the learners from Class 2 who had almost no knowledge of Japanese orthography became able to recognise the target katakana words and retrieve their meanings without reading help of rōmaji by the end of the vocabulary learning class.

The other strategy type used by many learners was Strategy Type G (Cognate). When looking at subcategories of this strategy type, the use of Strategy G1 (Japanese loanwords from English: Recognise the target katakana word as a loanword) and Strategy G2 (Japanese loanwords from English: Decipher the target katakana words in order to get the word meaning) were elicited from the learners' comments. Although it is not easy to distinguish these two strategies, it is important to consider the possibility that there are some different developmental stages in recognising katakana words at the initial stage of learning. As indicated in some examples of the learners' comments below, some differences between Strategy G1 and Strategy G2 in terms of recognising the target words in katakana can be observed.

Examples of the learners' comments that were classified as G1 (Japanese loanwords from English: Recognise the target word as a loan word)

Example 1: バス (bus)

Class	ID	Comment	TA	SA
2	33	I remembered it because it using [sic] the symbols for words borrowed into English.	3	3

Example 2: タクシー (taxi)

Class	ID	Comment	TA	SA
2	29	Alphabet for foreign words.	3	2

Example 3:トラック (lorry)

Class	ID	Comment	TA	SA
2	23	Derives from truck in English.	3	1

Example 4: ヘリコプター (helicopter)

Class	ID	Comment	TA	SA
2	27	Because it's a foreign word.	3	3

Examples of the learners' comments that were classified as B2 and B5 (Visual encoding)

Example 1: バス (bus)

Class	ID	Comment	TA	SA
4	66	Translated katakana.	3	2

Example 2: タクシー (taxi)

Class	ID	Comment	TA	SA
3	61	I can decipher it from the katakana characters.	3	3

Example 3:トラック (lorry)

Class	ID	Comment	TA	SA
5	82	I remember it easily because I could read the katakana.	3	3

Example 4: ヘリコプター (helicopter)

Class	ID	Comment	TA	SA
3	53	I read the katakana.	3	3

The possibility cannot be ignored that the learners who wrote comments classified as Strategy G1 might have deciphered each katakana symbol in the target word in order to obtain the meaning after they perceived the katakana word as a loanword from English. However, the average score of self-assessment for the learners who used Strategy G2 was higher than those who used Strategy G1. The average score of self-assessment for the learners who employed Strategy G1 was 2.36, and the average score of self-assessment for the learners who employed Strategy G2 was 2.82 out of three. Furthermore, the number of learners who used Strategy G1 and chose 'perfectly (= 3)' for their self-assessment was six out of fourteen (= 43%), and the learners who used Strategy G2 and chose 'perfectly (= 3)' for their self-assessment was twenty four out of twenty nine (= 83%). It can be said at least that the learners whose comments have been categorised as Strategy G2 were more confident in their knowledge of the target words in katakana. That could mean in terms of developmental stages that the learners who used Strategy G2 were in more advanced stages than those who used Strategy G1.

It is also worth noting that the use of Strategy Type B (Visual encoding) as in the examples below explains how learners could develop their receptive knowledge of katakana words in the early stages of learning.

Examples of the learners’ comments that were classified as Strategy Type B (Visual encoding)

Example 1: バス (bus) – B1 (Recognise the target word as a ‘short’ word in terms of orthography)

Class	ID	Comment	TA	SA
2	28	It’s the shortest.	3	1

Example 2: ヘリコプター (helicopter) – B2 (Recognise the target word as a ‘long’ word in terms of orthography)

Class	ID	Comment	TA	SA
2	41	Longest katakana word.	3	2

Example 3: タクシー (taxi) – B3 (Recognise the target word as a ‘simple’ word in terms of orthography)

Class	ID	Comment	TA	SA
1	7	I would have a better chance of recognizing this as it is ‘less complicated’ than a kanji character.	3	2

Example 4: バス (bus) – B5 (Use the number of kana symbols in the target word)

Class	ID	Comment	TA	SA
2	38	2 symbols and because of this alphabet.	3	1

As is observed from these examples, some learners used their visual perception as their strategies in recognising the target words in katakana. Kavale and Forness (2000, 256-257) claim that visual discrimination skill, which is defined as “ability to perceive dominant feature in visual stimuli,” is identified as the most important predictor of reading performance. To put it simply, discriminating *b* and *d* in the alphabet is an example of visual discrimination skill. Some learners of this study used word length, simplicity or complexity, and the number of katakana symbols in order to recognise the target words in katakana. This could not have happened if the learners did not learn the target words in their authentic written form. Also, it could have delayed or given negative effects to the development of vocabulary knowledge in learning katakana words.

As has been discussed, different types of strategy or different degrees of vocabulary knowledge in the target katakana words were observed from the learners' comments on the target words. Applying these findings to speculate the stages of learning new katakana words using the developmental approach discussed in Chapter 3, the following developmental stages or degrees of knowledge can be described in learning new katakana words for recognition of the written form and understanding the meaning:

Stages	States of what a learner knows about a katakana word
1	I think this word is a loanword because it is written in simpler writing system.
2	I know this word is a loanword because it is written in katakana, but I am not sure of the meaning because I have not learnt katakana symbols.
3	I think I can guess the meaning of this katakana word. Because it is a short word, I think this word means _____.
3	I think I can guess the meaning of this katakana word. Because it is a long word, I think this word means _____.
3	I think I can guess the meaning of this katakana word because I can read some symbols.
4	I understand the meaning of this word because I can read all the katakana symbols and easily guess the meaning.
5	I know how to read this word and understand the meaning because I have no problem in reading katakana symbols and have learnt this word.

Although further investigation is needed to fully speculate the stages of development in learning new katakana words, this could be the first step in finding out how learners learn new katakana words.

Other than strategy types which have been discussed so far, the number of learners who used Strategy Type A (Imagery) was relatively higher. Because katakana are phonetic-based scripts and they are used for foreign words, it was interesting to discover that some learners used the image obtained from the shape of (a) katakana symbol(s). It would probably be because the learners of this study were at the stage of learning katakana and lacked fluency in reading the symbols used in the target words. It can be considered that some of the learners had difficulty in deciphering each katakana symbol, and therefore they associated their visual image with the word meaning by making use of visual information they obtained from the shape of (a) kana symbol(s) in the target word.

The following are some examples of learners' comments that illustrate the use of Strategy A3 (Use the image obtained from the shape of (a) kana symbol(s)), Strategy A4 (Use

the image obtained from the shape of (a) kana symbol(s) → Create a story) and Strategy A6 (Use the image obtained from the shape of (a) kana symbol(s) → Recall part of the sound in the target word and/or associate it with an alphabet letter):

Examples of the learners’ comments that were classified as A3, A4 and A6 (Imagery)

Example 1: ヘリコプター (helicopter)

There were five learners who used the image of ‘propeller’ obtained from the shape of the first katakana ヘ, the fourth katakana プ, or the symbol for the long vowel ー at the end in order to get the word meaning ‘helicopter.’

Class	ID	Comment	TA	SA
1	6	The first symbol [= ヘ] in this word looks exactly like the propeller on top of the helicopter.	3	3
1	10	プ → [drawing of propeller] .	NR	3
1	20	The last symbol [= ー] is like the propeller on a helicopter.	3	NR

Example 2: バス (bus)

There were seven learners who used the image ‘two people’ or ‘two people and sweat’ obtained from the shape of the first katakana バ (‘two people’ from ハ and ‘sweat’ from diacritic marks for voiced sounds [ッ], or both katakana symbols バス, and create a story of ‘(two) people running for/walking to a bus.’

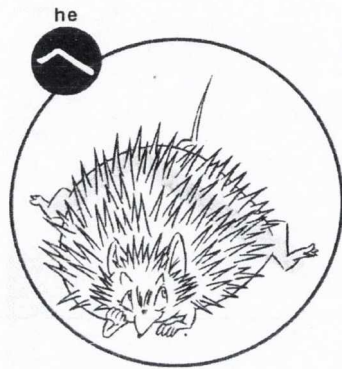
Class	ID	Comment	TA	SA
1	17	This symbol = 2 people running for a bus, バ ← this person [ッ] is sweating as he runs!	3	3
1	21	Like people walking to bus.	3	3
2	36	It looks like someone running after a bus, therefore I remembered it perfectly.	3	3

Example 3: トラック (lorry) torakku

There was three learners who used the image of the alphabet letter ‘T (t)’ obtained from the shape of the first katakana ト, and recall the beginning sound of the target word and/or associate with the first letter of the translated word in English (= truck).

Class	ID	Comment	TA	SA
1	6	I remembered this one easily because the first katakana symbol as I think it resembles a ‘t’ and I associate this with the first letters of truck.	3	3
1	19	Remember easily because the shape of the first character is a T.	NR	NR

Some textbooks for learning kana syllabaries have been developed with the intention of assisting L2 learners of Japanese through visual images. They introduce a method of remembering each kana symbol through pictorial association or visual memory devices (e.g., Batt, 1994; Ogawa, 1990; Rowley, 1995). The following are examples of pictorial images for memorising the katakana symbol $\he$ (*he*), which are introduced in those books;

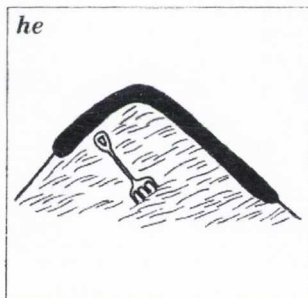


hedgehog
(Batt, 1994, 68)

This way to **heaven**.



(Rowley, 1995, 44)



He is a haystack.

(Ogawa, 1990, 92)

This katakana symbol, $\he$ (*he*), is the one which some learners of this study saw as the ‘propeller’ on a ‘helicopter’ for one of the katakana target words, ヘリコプター *herikoputā* (helicopter). Between an ‘individual-katakana-symbol’ approach or a ‘whole-katakana-word’ approach, it can be arguable which approach to learning to read in Japanese works better for L2 learners of Japanese, but it might be comparable to the controversy between the phonic approach and the whole language approach to learning to read in English.

7.2.1.2 Strategies used for learning target words in kanji

In addition to the four target words in katakana which have been discussed, there were eight target words in kanji: 車 (car), 船 (ship), 電車 (train), 自転車 (bicycle), 新幹線 (bullet train), 地下鉄 (metro), 飛行機 (airplane) and 水上飛行機 (seaplane). Three colours, which were the vocabulary items newly introduced in Phase 3, were also kanji words: they were 赤 (red), 青

(blue) and 緑 (green). As mentioned earlier, these three colours were not included in the follow-up tests for the experiment with classes that were conducted earlier, and the comments on these words were not collected from the learners from Class 1, Class 2 and Class 4. Since it is difficult to discuss the strategy use based on the comments collected from a smaller number of learners compared to the comments collected from a larger number of learners, the analysis of the strategy use for these three colours is not discussed here. However, the classification results of the strategy use elicited from the total of twenty-five learners (Class 3 and Class 5) are summarised in Appendix G-4.

Table 7.3a and Table 7.3b on the following pages show the classification results of the learners' strategy use for the target words in kanji and their results on the receptive test. As is indicated in these tables, the overall tendency of the strategy use for the eight main target words in kanji was seen in Strategy Type A (Imagery), Strategy Type B (Visual encoding), Strategy Type E (Word structure: Analysis of word formation of the target words) and Strategy Type F (Compensation strategies: Make use of partial existing knowledge), albeit with some differences depending on the type of kanji characters or the formation of kanji compounds. In this section, the use of these strategies is analysed and discussed by dividing the target kanji words into two: one-kanji-character words and kanji compound words.

7.2.1.2.1 Strategies used for learning one-kanji-character words

For two target kanji words that consist of one character, 車 (car) and 船 (ship), Strategy Type A (Imagery) and Strategy Type B (Visual encoding) were most frequently used by the learners. As explained earlier, most of the learners had never learnt or been taught kanji explicitly. Also, there was no particular guidance or instructions regarding learning kanji characters in the vocabulary learning class. The learners just had to work on recognising these kanji words in their authentic written form and remembering the meaning. That would probably be why many learners used Strategy Type A (Imagery), and linked the meaning to the visual image they obtained from these kanji words. As is indicated in Table 7.3a on the following pages, among Strategy Type A (Imagery), the use of Strategy A1 (Use the image obtained from the shape of a kanji character) for the word 車 (car) and Strategy A2 (Use the image obtained from part of a kanji character) for the word 船 (ship) was most commonly observed. Below are some examples of the learners' comments that exemplify the use of those strategies:

Examples of the learners’ comments that were classified as A1 for the word 車 (car)

There were eleven learners who used the image of ‘parking,’ ‘fender’ or ‘cart’ obtained from the shape of the kanji character 車 in order to get the word meaning ‘car.’

Example 1: Use the image of ‘parked car’

Class	ID	Comment	TA	SA
1	15	This was the first word I recognised because it looks like a car parked in a space.	3	3
2	41	Looks like a car in garage.	3	3

Example 2: Use the image of ‘car fender’

Class	ID	Comment	TA	SA
1	20	Like the fender on a US car.	3	NR

Example 3: Use the image of ‘cart’

Class	ID	Comment	TA	SA
5	3	I remember the kanji for car because it looks like a cart.	3	3

As is described in Example 1, the majority of the learners who reported Strategy A1 used the image of ‘car park.’ This can be explained from the fact that the kanji 車 is classified as a pictograph, a character which represents an object and which was made from a primitive picture as in below.



(Kano, et al., 1989, 2)

This is a typical example of pictorial support in remembering kanji that is often introduced in a kanji textbook for pictographs. Some learners of this study were able to think of their own ideas on how to remember this target kanji.

Table 7.3a: Strategies used for learning target words in kanji for reception – 車 (car) and 船 (ship)

[Number = Number of the learners who reported their strategy use (out of 77); TA = Teacher Assessment (out of 3)]

Target Word	Strategy Type	Number	Detail of Strategy Use	Number	TA = 3	TA = 2	TA = 1	TA = 0	Not Rateable	Note
車 (car)	A	12	A1	10	10	0	0	0	0	Total number of A1 = 11
			A1 + B6	1	1	0	0	0	0	
			A7 + B7	1	1	0	0	0	0	
	B	9	B1	1	1	0	0	0	0	
			B6	4	4	0	0	0	0	
			B6 + E2	2	2	0	0	0	0	
	D	2	D2	2	2	0	0	0	0	
	E	12	E1	9	7	0	1	0	1	
			E2	1	1	0	0	0	0	
	J	5	J3	1	1	0	0	0	0	
			J5	4	4	0	0	0	0	
	K	1	K2	1	1	0	0	0	0	
Total Number		41		37	35	0	1	0	1	

Target Word	Strategy Type	Number	Detail of Strategy Use	Number	TA = 3	TA = 2	TA = 1	TA = 0	Not Rateable	Note
船 (ship)	A	14	A2	11	6	4	0	0	1	Total number of A2 = 13
			A7	1	1	0	0	0	0	
	D	2	A2 + D1	1	1	0	0	0	0	
			A2 + D1 + D3	1	1	0	0	0	0	
	B	13	B1	4	2	2	0	0	0	
			B6	8	4	4	0	0	0	Total number of B6 = 9
			B6 + J1	1	1	0	0	0	0	
Total Number	J	2	J5	1	1	0	0	0	0	
		31		28	17	10	0	0	1	

On the other hand, the kanji 船 is a character classified as a phonetic-ideograph, which is typically made up of two components; one part represents meaning and the other part represents the sound. It is usually not as easy as pictographs to assign a visual image to this type of kanji character. However, as is indicated in Table 7.3a, thirteen learners used Strategy A2 (Use the image obtained from part of a kanji character) for this kanji word, the following are their comments on this word:

Examples of the learners’ comments that were classified as A2 for the word 船 (ship)

There were thirteen learners who used the image of ‘funnel’ or ‘home’ obtained from part of the kanji character 船 in order to get the word meaning ‘ship.’

Example 1: Use the image of ‘funnel’ obtained from either the left radical [舟], the right part [舩], or the top-right part [舩]

Class	ID	Comment	TA	SA
1	15	I remembered this straight away as I think about the funnel on a boat – the second symbol [= top-right part] looks like a funnel 舩.	2	3
1	20	Last symbol [= right part] reminds me of the funnel on a ship.	3	NR
2	28	I remember the shape 舩 is like the chimney on the boat.	3	3
5	77	The first part [= left radical] of the kanji reminds me of a funnel.	3	1

Example 2: Use the image of ‘home’ obtained from the right part [舩]

Class	ID	Comment	TA	SA
1	10	舩 home – home to France.	NR	3

As is described in these comments, some learners used the visual image that they obtained from part of the kanji character to link the word meaning. Although the learners were not yet aware of the significance of radicals in learning kanji, paying attention to a component of a kanji character could serve as an important skill when they start learning kanji characters explicitly. Radicals are components of kanji characters which convey meaning, and hence the knowledge of kanji radicals can be a good predictor for unknown kanji characters/words.

For the kanji 船 (ship), the left part 舟 (small boat) is the semantic radical which suggests the meaning of the kanji. Because the learners of the present study had no knowledge of kanji, there was no way of knowing the meaning of this radical for them. Also, there were no learners who asked the meaning of each component in a kanji character as they

had not been taught kanji and did not know about kanji radicals. It is worth noting that such learners paid attention to either the left or the right component of this kanji and used their visual image obtained from the shape of the component in order to connect the word meaning. The use of Strategy A2 (Use the image obtained from part (radical) of a kanji character) employed by the learners could imply that they were at the stage of developing graphemic awareness, which is defined as “an awareness that grapheme can be the unit of analysis” (Toyoda, 1998a, 72), and which is considered as an important awareness for JFL learners from non-logographic language backgrounds in order to develop efficient kanji processing skills (ibid.).

In addition to Strategy Type A (Imagery), the use of Strategy Type B (Visual encoding) was reported by a relatively higher number of learners. Since these two target kanji words are made up of one character, the use of Strategy B1 (Recognise the target word as a ‘short’ word in terms of orthography) and Strategy B6 (Use the number of kanji characters in the target word) was commonly observed. Furthermore, as for the word 車 (car), the use of Strategy Type E (Word structure: Analysis of word formation of the target words) was elicited from the comments of thirteen learners. As the use of this strategy is related to two other target kanji words, 電車 (train) and 自転車 (bicycle), it will be discussed in the next section.

7.2.1.2.2 Strategies used for learning kanji compound words

Among the twelve main target words, there were six kanji compound words: they were 電車 (train), 自転車 (bicycle), 新幹線 (bullet train), 地下鉄 (metro), 飛行機 (airplane) and 水上飛行機 (seaplane). As is indicated in Table 7.3b on the following pages, except for the word 新幹線 (bullet train), the use of Strategy Type E (Word structure: Analysis of word formation of the target words) and Strategy Type F (Compensation strategies: Make use of partial existing knowledge) was predominantly observed. It was interesting and unexpected to find out that the learners who had no knowledge of kanji were able to employ these types of strategies and to successfully link the written form in kanji and the word meaning.

Table 7.3b: Strategies used for learning target words in kanji for reception – 電車 (train), 自轉車 (bicycle), 新幹線 (bullet train), 地下鉄 (metro), 飛行機 (airplane) and 水上飛行機 (seaplane)

[Number = Number of the learners who reported their strategy use (out of 77); TA = Teacher Assessment (out of 3)]

Target Word	Strategy Type	Number	Detail of Strategy Use	Number	TA = 3	TA = 2	TA = 1	TA = 0	Not Rateable	Note
電車 (train)	A	1	A1 + F2	1	1	0	0	0	0	
	B	3	B6 + C6	1	1	0	0	0	0	
			B6 + C6 + F2	1	1	0	0	0	0	
			B6 + E1 +F2	1	1	0	0	0	0	
	C	3	C6	1	1	0	0	0	0	
	E	22	E1	12	10	0	1	1	0	Total number of E1 = 16
			E3	6	5	1	0	0	0	
F	14	E1 + E3	3	3	0	0	0	0		
				11	9	0	0	0	2	Total number of F2 = 14
Total Number		43		37	32	1	1	1	2	

Target Word	Strategy Type	Number	Detail of Strategy Use	Number	TA = 3	TA = 2	TA = 1	TA = 0	Not Rateable	Note
自転車 (bicycle)	A	15	A1	9	9	0	0	0	0	Total number of A1 = 14
	C	1	A1 + C6	1	1	0	0	0	0	
			A1 + F2	4	4	0	0	0	0	
			A7 + F2	1	1	0	0	0	0	
	B	3	B 6+ E1	2	2	0	0	0	0	
			B6 + F2	1	1	0	0	0	0	
			E1	7	5	0	2	0	0	Total number of E1 = 10
	E	16	E3	2	2	0	0	0	0	
			E1 + E3	1	1	0	0	0	0	
			E2 + H1	1	1	0	0	0	0	
	J	1	E3 + J1	1	1	0	0	0	0	
	K	2	E3 + K2	1	1	0	0	0	0	
			E3 + F2 + K2	1	1	0	0	0	0	
	F	18	F2	10	6	0	0	2	2	Total number of F2=18
	L	1	F2 + L5	1	1	0	0	0	0	
Total Number		58		43	37	0	2	2	2	

Target Word	Strategy Type	Number	Detail of Strategy Use	Number	TA = 3	TA = 2	TA = 1	TA = 0	Not Rateable	Note
新幹線 (bullet train)	A	7	A1	1	1	0	0	0	0	
			A2	6	6	0	0	0	0	
	B	6	B4	2	2	0	0	0	0	Total number of B4 = 6
			B4 + B6	1	0	0	0	1	0	
			B4 + C6	1	0	0	1	0	0	
	F	1	B4 + B6 + F2	1	1	0	0	0	0	
	G	1	B4 + B6 + G4	1	1	0	0	0	0	
C		2	C7	1	1	0	0	0	0	
Total Number		16		14	12	0	1	1	0	

Target Word	Strategy Type	Number	Detail of Strategy Use	Number	TA = 3	TA = 2	TA = 1	TA = 0	Not Rateable	Note
地下鉄 (Metro)	A	5	A1	1	1	0	0	0	0	
			A5	1	1	0	0	0	0	
			A7	1	1	0	0	0	0	
			A1 + F2	2	2	0	0	0	0	
	B	3	B6	1	0	0	1	0	0	
			B6 + C6	1	0	0	1	0	0	
			B6 + E1	1	0	0	1	0	0	
	C	2	C12	1	0	0	1	0	0	
	E	3	E2 + F2	2	2	0	0	0	0	
	F	23	F2	19	18	1	0	0	0	Total number of F2 = 23
Total Number		36		30	25	1	4	0	0	

Target Word	Strategy Type	Number	Detail of Strategy Use	Number	TA = 3	TA = 2	TA = 1	TA = 0	Not Rateable	Note
飛行機 (airplane)	A	6	A1	5	4	0	0	0	1	
			A7	1	1	0	0	0	0	
	B	1	B6	1	0	0	0	1	0	
	E	23	E1	23	21	0	0	0	2	
	F	1	F2	1	1	0	0	0	0	
	Total Number		31	31	27	0	0	1	3	

Target Word	Strategy Type	Number	Detail of Strategy Use	Number	TA = 3	TA = 2	TA = 1	TA = 0	Not Rateable	Note
水上飛行機 (seaplane)	A	2	A1	1	1	0	0	0	0	
			A1 + B2	1	1	0	0	0	0	
	B	6	B2	2	1	0	0	1	0	
			B2 + E1	3	3	0	0	0	0	
	C	1	C2	1	1	0	0	0	0	
	E	20	E1	15	13	2	0	0	0	Total number of E1 = 20
			E1 + F2	2	2	0	0	0	0	
	F	24	F2	21	19	0	0	1	1	Total number of F2 = 24
	K	1	F2 + K1	1	1	0	0	0	0	
Total Number		54		47	42	2	0	2	1	

As explained briefly in 7.1.1.2, three target words in kanji, 車 (car), 電車 (train) and 自転車 (bicycle), share the same kanji character, which is 車 (car). This led many learners to develop a strategy such as Strategy E1 (Identify the target words that share the same kanji character). The use of Strategy E1 was elicited from the total of thirty-five comments, and the following are some examples that illustrate how the learners linked these three words:

Examples of the learners’ comments that were classified as E1 for 車 (car), 電車 (train) and 自転車 (bicycle)

Example 1: 車 (car)

Class	ID	Comment	TA	SA
1	11	I remember this well as well as bike and train because they are extensions of ‘car’.	3	3
2	23	Remember this very well and the 3 other words. All contain it, well it was a guideline!	3	3

Example 2: 電車 (train)

Class	ID	Comment	TA	SA
3	53	I compared this sign with the other signs containing 車. Knew "train" had another sign.	3	2
3	61	From the last symbol - it looks familiar and seems to appear in car and bicycle too.	3	2

Example 3: 自転車 (bicycle)

Class	ID	Comment	TA	SA
2	35	Remembered third same symbol as car.	3	2
4	63	I remember the connection with car and the symbols.	3	3

The majority of the learners who used Strategy E1 (Identify the target words that share the same kanji character) for these words answered correctly and obtained full marks, however, the single use of Strategy E1 was sometimes observed as a source of the errors. The confusion between 電車 (train) and 自転車 (bicycle) was observed from some learners’ written answers and/or comments on the word. In a similar way, the use of Strategy B6 (Use the number of kanji characters in the target word) was also observed as a source of the errors. Since 自転車 (bicycle) is the word that consists of three kanji characters, some learners seemed to be confused 自転車 (bicycle) with other target words with three kanji characters such as 新幹線 (bullet train), 地下鉄 (metro) and 飛行機 (airplane). The following learners’

comments and written answers display the use of Strategy E1 and Strategy B6 as a source of the errors:

Examples of the learners’ comments and written answers that exhibit the use of E1 and B6 as a source of the errors

Example 1: Answer and comment for 電車 (train) – Unable to answer–the use of Strategy E1

Class	ID	Answer	TA	Comment	SA
4	68	[blank]	0	It has something to do with 車, could also be <i>gitensa</i> .	0

Example 2: Answer and comment for 自転車 (bicycle) – Confusing the target word 自転車 (bicycle) with 電車 (train) – the use of Strategy E1

Class	ID	Answer	TA	Comment	SA
2	42	train	1	Last symbol – car – bicycle	2

Example 3: Answer and comment for 地下鉄 (metro) – Confusing the target word 地下鉄 (metro) with 自転車 (bicycle) – the use of Strategy B6

Class	ID	Answer	TA	Comment	SA
2	43	bike	1	3 symbols?	1

These examples alert that the use of a particular strategy can have a reverse effect on remembering words, however, we must not forget that knowing a word is not all-or-nothing. As discussed in Chapter 2, the nature of vocabulary learning is incremental, and these learners’ comments tell us that they have partial knowledge of the target word. These learners would have probably been at the initial stage of acquiring the knowledge of the target word.

The errors caused by the use of these strategies can be avoided by employing a secondary strategy. The use of multiple strategies was observed from some learners’ comments. For the target words 電車 (train) and 自転車 (bicycle), in addition to Strategy E1 (Identify the target words that share the same kanji character), some learners employed a secondary strategy such as Strategy B6 (Use the number of kanji characters in the target word), or Strategy E3 (Analyse the meaning of each kanji character in the target kanji compound in order to get the word meaning). The following examples show the use of multiple strategies employed by some learners:

Examples of the learners’ comments that were classified as E1 + B6 for 電車 (train) and 自転車 (bicycle), and as E1 + E3 + B6 for 電車 (train)

Example 1: E1 + B6 for 自転車 (bicycle)

Class	ID	Comment	TA	SA
3	50	Three syllables - same last symbol as car 車.	3	3

Example 2: E1 + B6 for 電車 (train)

Class	ID	Comment	TA	SA
5	77	The second kanji is the kanji for car and train has 2 kanji.	3	2

Example 3: E1 + E3 + B6 for 電車 (train)

Class	ID	Comment	TA	SA
1	18	Car and sign for electric. Only one symbol beside car symbol.	3	3

As is in Example 3 above, some learners reported their use of Strategy E3 (Analyse the meaning of each kanji character in the target kanji compound in order to get the word meaning) for the word 電車 (train), which is composed of two characters, 電 ‘electric’ and 車 ‘car.’ In the vocabulary learning class, the meaning of each kanji character in the target words was not taught to any group of learners. The teacher explained briefly only when a learner asked for the meaning. Some learners, particularly when working on remembering the target words with flashcards in Phase 1, asked the meaning of some kanji characters used for the target words to the teacher. Interestingly, the use of Strategy E3 was observed from the learners’ comments only for two kanji words, 電車 (train) and 自転車 (bicycle). Although the teacher was also asked for the meaning of some other kanji characters, it seems that the formation of these two kanji compound words was particularly noticeable for those learners. It could be because these two words share 車 (car), which is one of the words that was best-retained among all the target words in the receptive test. A possible explanation might be that 車 (car) served as a known word/kanji for some learners and they needed some more applied knowledge in remembering the compound words which contain 車 (car). Fifteen comments for the use of E3 were collected, and the following examples show how those learners perceived 電車 (train) and 自転車 (bicycle):

Examples of the learners’ comments that were classified as E3 for 電車 (train) and 自転車 (bicycle)

Example 1: 電車 (train) – Analyse each kanji character in the compound; the first kanji 電 as ‘electricity’; the second kanji 車 as ‘car’; and then associate each kanji meaning in order to retrieve the word meaning (electric car → train)

Class	ID	Comment	TA	SA
2	28	I remember from explanation, electric car.	3	2
4	71	This first symbol is electricity and the second is car.	3	1

Example 2: 自転車 (bicycle) – Analyse each kanji character in the compound; the first kanji 自 as ‘self’; the second kanji 転 as ‘rotate/roll’; the last kanji 車 as ‘car’; and then associate each kanji meaning in order to retrieve the word meaning (self-propelled car → bicycle)

Class	ID	Comment	TA	SA
1	18	[name of the teacher] explained that 自 was one person + the 車 car and the other is self-propelled = bike.	3	3
2	36	I knew the symbol for a car + remembered [the name of teacher] told us it was a self-rolling vehicle.	3	2

For 電車 (train) and 自転車 (bicycle), other than strategy types which have been discussed so far, a large number of learners wrote comments which were classified as Strategy Type F (Compensation strategies: Make use of partial existing knowledge). For these two words, it was difficult to distinguish the use of Strategy E1 (Identify the target words that share the same kanji character) and Strategy F2 (Make use of some kanji knowledge). Strategy E1 was assigned to the comments that clearly displayed the identification of the same character among the target words. Strategy F2 was assigned to the comments that demonstrated the general use of kanji knowledge for a particular character used in the target word. Below are some examples of the learners’ comments that display the use of Strategy F2:

Examples of the learners’ comments that were classified as F2 for 電車 (train) and 自転車 (bicycle)

Example 1: 電車 (train) – Know or have some idea about the kanji character 車 ‘car’

Class	ID	Comment	TA	SA
2	40	This is a guess because 車 is wheel.	3	1
4	66	Remembered it, because it contains the kanji word car in it.	3	2

Example 2: 自転車 (bicycle) – Know or have some idea about the kanji character 車 ‘car’

Class	ID	Comment	TA	SA
2	32	The symbol 車 alerted me to what it was.	3	2
4	75	It has the kanji for car in it.	3	2

The use of Strategy F2 (Make use of some kanji knowledge) was elicited from comments of fourteen learners for the word 電車 (train), and eighteen learners for the word 自転車 (bicycle). Again, the use of this strategy indicates the contribution of the word/kanji 車 (car) in the retrieval of the word meaning for the relevant target words. Also, it underpins the importance of repeated exposure and recycling words (kanji characters) in vocabulary learning.

The same can be said to the learning of the two other target words that share the same kanji characters: they are 飛行機 (airplane) and 水上飛行機 (seaplane). The use of Strategy E1 (Identify the target words that share the same kanji character) was observed in the comments of twenty-three learners for the word 飛行機 (airplane) and twenty learners for the word 水上飛行機 (seaplane). As for the word 水上飛行機 (seaplane), the use of Strategy F2 (Make use of some kanji knowledge) was elicited from the comments of twenty-four learners. As is shown in the examples below, some learners used the kanji 水 (water) and/or the kanji 上 (on/above/up) as a clue to the meaning of this target word. Again, the meaning of these kanji characters was never explicitly taught during the vocabulary learning class, however, the learners made best use of the information they received, and used it for retrieving the meaning of the target word.

Examples of the learners’ comments that were classified as F2 for 水上飛行機 (seaplane)

Example 1: Know or have some idea about the first kanji 水 ‘water’

Class	ID	Comment	TA	SA
2	27	Because it begins with the water symbol.	3	3
4	74	I knew 水 means water.	3	1

Example 2: Know or have some idea about the second kanji 上 ‘on/above/up’

Class	ID	Comment	TA	SA
1	19	Quite easy. 上 = symbol of over – opposite to 下 for under.	3	NR
2	35	Symbol 上 for over.	3	1

Example 3: Know or have some idea about the first kanji 水 ‘water’ and the second kanji 上 ‘on/above/up’ (→ ‘on water’)

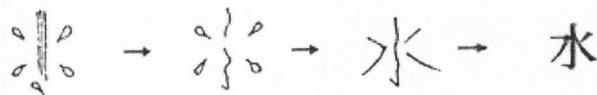
Class	ID	Comment	TA	SA
1	18	Water symbol and sign for above pointing upwards.	3	2
4	64	Remembered ‘above water’ part and guessed rest.	3	2

Among twenty-four learners who commented their partial kanji knowledge on this target word, there were thirteen learners who recognised the kanji 水 (water), six learners who recognised the kanji 上 (on/above/up), and five learners who recognised both of these kanji characters. A possible explanation why those learners were able to remember and recognise these two particular kanji characters in the target word might be that the kanji 水 (water) is classified as a pictograph (mentioned earlier in this chapter for explaining the kanji 車 ‘car’) and the kanji 上 (on/above/up) is classified as a simple ideograph (kanji characters which represent abstract concepts by symbols). Among six categories³ of kanji characters, it is generally considered that pictographs and simple ideographs are types of kanji that are relatively easier to learn because they are originally made from pictures or signs, although they are a minority of the total number of kanji.

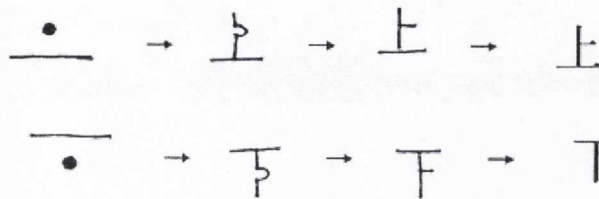
As shown in one of the learners’ comments above (learner’s ID = 19), there were some learners who compared the kanji 上 (on/above/up) in the word 水上飛行機 (seaplane) and the kanji 下 (under/below) in the word 地下鉄 (metro). For the word 地下鉄 (metro), there were twenty-three learners whose comments were classified as Strategy F2 (Make use of some kanji knowledge) because they mentioned that they utilised the meaning of the kanji 下 ‘under’ in order to retrieve the word meaning 地下鉄 ‘underground.’ Again, because the kanji 下 is classified as a simple ideograph, it might have been relatively easier for those learners to recognise this kanji and make use of the knowledge for retrieving the word meaning.

As has been shown earlier as an example of pictorial support used for the kanji 車 (car) in a kanji textbook, the three kanji characters which are discussed here, 水 (water), 上 (on/above/up) and 下 (under/below) are often introduced with pictorial support such as below:

³ The formation of kanji is traditionally classified into four groups, which are pictographs, simple ideographs, compound ideographs and phonetic-ideographs. In addition, there are two other types of characters, which are derivative characters and phonetic loans.



(Kano, et al., 1989, 11)



(Kano, et al., 1989, 30)

Once again, without this type of pictorial support or explicit explanation, the learners were able to utilise the knowledge of a particular kanji character, which was obtained incidentally, as a clue to the meaning of the relevant target word.

In addition to two pictographs, 車 (car) in a number of target words and 水 (water) in the word 水上飛行機 (seaplane), and two simple ideographs, 上 (on/above/up) in the word 水上飛行機 (seaplane) and 下 (under/below) in the word 地下鉄 (metro), there were learners who took notice of the kanji 自 (oneself) in 自転車 (bicycle), which is a kanji character categorised as a pictograph. There were eighteen learners who commented about this kanji character, and whose strategies were classified as A1 (Use the image obtained from the shape of a kanji character). The following are some examples that illustrate how those learners perceived the kanji character 自 (oneself) in the word 自転車 and linked it to the word meaning ‘bicycle’:

Examples of the learners’ comments that were classified as A1 for 自転車 (bicycle)

Example 1: Use the image of ‘spokes of a bicycle’ obtained from the shape of the kanji 自

Class	ID	Comment	TA	SA
1	1	The first symbol looks like the spokes of a bicycle.	3	3

Example 2: Use the image of ‘ladder’ obtained from the shape of the kanji 自

Class	ID	Comment	TA	SA
1	15	This I remember because the first symbol looks like a ladder – makes me think of fitness – going on a bicycle.	3	3

Example 3: Use the image of ‘steps’ obtained from the shape of the kanji 自

Class	ID	Comment	TA	SA
2	28	I remember the 自 symbol – like steps to hop up on the bike.	3	3

Example 4: Use the image of ‘horizontal lines’ obtained from the shape of the kanji 自

Class	ID	Comment	TA	SA
2	27	Because it's connected to machine and because of the first symbol with horizontal line.	3	2

As is shown in these examples, it could be easier for learners to associate the written form with the meaning if a pictograph was contained in the target word, even though learners' explanation of the character might be different from the original interpretation of the primitive picture.

As has been discussed, the target kanji words, which include a character categorised as either pictographs or simple ideographs, seemed to help the learners to strengthen the association between the written form and the meaning, and to lead them to develop strategies such as A1 (Use the image obtained from the shape of a kanji character) or F2 (Make use of some kanji knowledge). For the kanji compound words, we have chiefly overviewed the use of Strategy Type E and Strategy Type F as they were two types of strategy that were frequently reported by the learners, but many other strategy types were also elicited from the learners' comments.

7.2.2 Analysis of the vocabulary learning strategies used for learning target words for production

As one of the main purposes of the present study is to examine how novice JFL learners from non-logographic language backgrounds, with limited orthographic knowledge, deal with the challenges in recognising the target words in their authentic form, the analysis of the strategies used by the learners for learning or retrieving pronunciation of the target words is not discussed in detail here. The classification results of the learners' strategies and their results on the productive test are summarised in Appendix G-5. As is indicated in the tables in Appendix G-5, the use of Strategy Type C (Auditory encoding) was predominantly observed in the learners' comments in the productive test (writing the pronunciation in rōmaji). Although this is apparent from the nature of learning since they needed to learn or retrieve the sound of the target words, it is certainly worthy of note that the learners used various types of strategy and the use of fourteen subcategories (see Appendix G-2 for the summary of the learners' strategy use) was necessary for Strategy Type C in analysing and categorising the learners' comments.

7.2.3 Summary of the vocabulary learning strategies used by the learners

In learning target words, the majority of learners used different strategies for the recognition of the written form and the retrieval of the sound. The following provide a brief overview of the overall tendency of the vocabulary learning strategies employed by the learners of this study:

Most frequently used strategies

1. Receptive mode (Recognising the target words in their authentic written form in order to retrieve the meaning of the word)

[Katakana words]

- Strategy Type F (Compensation strategies: Make use of partial existing knowledge)

F1: Make use of some katakana knowledge

- Strategy Type G (Cognate)

G1: Japanese loanwords from English (or other European languages)

– Recognise the katakana target word as a loanword

G2: Japanese loanwords from English (or other European languages)

– Decipher the target katakana word in order to get the word meaning

[One-kanji-character words]

- Strategy Type A (Imagery)

A1: Use the image obtained from the shape of (a) kanji character(s)

A2: Use the image obtained from part (radical) of a kanji character

- Strategy Type B (Visual encoding)

B6: Use the number of kanji characters in the target word

[Kanji compound words]

- Strategy Type E (Word structure: Analysis of word formation of the target words)

E1: Identify the target words that share the same kanji character(s)

- Strategy Type F (Compensation strategies: Make use of partial existing knowledge)

F2: Make use of some kanji knowledge

2. Productive mode (Retrieving the target words in spoken form – writing rōmaji in the follow-up productive test)

[Katakana words]

- Strategy Type G: Cognate

G3: Japanese loanwords from English (or other European languages)

– Perceive the target word as a loan word and produce the Japanese pronunciation

[Kanji words]

- Strategy Type C (Auditory encoding)

C7: Associate the target word with a word in English or other European languages that sounds similar

C9: Associate/compare the target word with another target word that sounds similar

- Strategy Type D: Keyword technique

D1: Keyword technique: Use an English keyword

As indicated above, for recognising the target words in their authentic written form, the frequent use of Strategy Type F was commonly observed for both katakana and kanji compound words. The frequent use of Strategy Type G for katakana words, that of Strategy Type A and B for one-kanji-character words, and that of Strategy Type E for kanji compound words were also observed. For retrieving the sound of the target words, the general tendency was seen in the use of Strategy Type C, although the frequent use of Strategy Type G for katakana words was observed in a similar manner to the recognition of the written form. Also, the frequent use of Strategy Type D for kanji words was observed.

These results suggest that the processes of learning new words for learners of Japanese is very complicated, even at the very beginning stages of learning, where learners are most likely to rely simply on L1 translation of the word in the target language. In learning a new word, learners need to become able to recognise a word in the written form, retrieve the meaning of the word when they see the written form or hear the sound, to produce the word in spoken or written form, and so on. Among various types of knowledge involved in learning a new word, the learners of the present study were expected to become able to do two things: the recognition of the target words in their authentic written form in order to retrieve the meaning of the word, and the retrieval of the target words in spoken form (writing rōmaji in the follow-up productive test). Even for acquiring these two types of vocabulary knowledge, the learners used a variety of strategies, depending on the target words, orthographic types, learning mode (receptive or productive), and so on.

The majority of learners used different strategies for receptive retrieval and productive retrieval, and this implies difficulties of connecting the written form, the meaning and the sound in the learning of a new word. The following extract from a learner's comments on the target word 船 – *fune* (ship) from both receptive and productive tests illustrates a successful strategy use in connecting the written form, the meaning and the sound:

Example: Learner ID 17 – Strategy use and comment on the word 船 – *fune* (ship)

Receptive test: 船 → ship

TA	SA	Comment	Strategy
3	3	<i>Fumer</i> = to smoke, smoke coming out of funnel. Smoke coming out of funnel 舟. Imagine this to be the funnel (<i>funne</i>) on the ship [drawing of a ship with smoke].	A2; D1; D3

Productive test: Ship → *fune*

TA	SA	Comment	Strategy
3	3	<i>Fumer</i> = to smoke in French, (<i>fune</i>) funnel [drawing of an Irish ferry].	D1; D3

As indicated above, this learner used the following three different strategies in order to connect the written form, the meaning and the sound:

- ① Strategy A2: Use the image of ‘funnel’ obtained from the left radical 舟 of the kanji 船 in order to associate the written form with the meaning
- ② Strategy D1: Choose an English word ‘funnel’ as the keyword, which sounds similar to the target word, and associate the pronunciation ‘*fune*’ with the meaning ‘ship’ by using mental image of ‘the **funnel** on the **ship**’
- ③ Strategy D3: Choose a French word ‘*fumer*’ (to smoke) as the keyword, which sounds similar to the target word, and associate the pronunciation ‘*fune*’ with the meaning ‘ship’ by using mental image of ‘**fumer** – smoke coming out of **ship funnel**’ (Reinforcing the association between ‘funnel’ and ‘ship’ at the same time)

One type of strategy elicited from the learner’s comments above is the keyword technique, which is often considered as an effective way of remembering words at the beginning stages of learning. The keyword technique involves creating an image that associates the word form and its meaning in an unusual way (Nation, 1990, 166-167; 2001, 311-312). Nation defines the keyword technique as follows:

The keyword technique is primarily a way of making a strong link between the form of an unknown word and its meaning. It involves two steps after the learner has met the unknown word and has found or been provided with its meaning. The first step is to think of a first language word (the keyword) which sounds like the beginning or all of the unknown word. The second step is for the learner to think of a visual image where the meaning of the unknown word and the meaning of keyword is combined.

(Nation, 2001, p.311)

As is described in the citation above, “learners process more than one feature of a word” (Nation, 2008, 112) by employing the keyword technique, and hence it helps learners to link the spoken form and the meaning. However, it is difficult to link to the written form, particularly in the case of words written in kanji. Therefore, the combination of Strategy Type A (Imagery) and Strategy Type D (Keyword technique), as in the example above, could be an effective strategy use of connecting the written form, the meaning and the sound at the early stage of learning.

In the present study, the use of the keyword technique (Strategy Type D) was elicited from thirty-six comments on seven different target words, but the combination of Strategy Type A (Imagery) and Strategy Type D (Keyword technique) was found only from eight comments on two different words (ship and bicycle) by four learners. This implies a larger gap between the learning of written form and that of spoken form in vocabulary acquisition for learners of Japanese.

7.3 What challenges did the learners face in the process of learning new words?

As has been discussed, the majority of the learners were able to successfully learn new words in Japanese, including recognising their authentic written form. They employed a variety of strategies to compensate for their limited orthographic knowledge, and dealt with the challenges in recognising the target words in their authentic written form. Having said that, the difficulties the learners faced in recognising words in their authentic written form, particularly in kanji, cannot be ignored.

In Appendix G-3, the easiness and difficulty elicited from the learners’ comments on knowledge of the target words are summarised. A type of difficulty that was most frequently reported by the learners was N9 (Reporting difficulty - Guessing the meaning of the target word (by process of elimination)). Guessing the word meaning can be considered as a strategy, but N-7 was assigned when the learners commented on knowledge of the target words in a manner such as ‘pure guess’ or ‘process of elimination,’ and chose ‘not at all’ (= 0) or ‘with difficulty’ (= 1) for their self-assessment. The difficulty of learning new words in their authentic form can be indicated by the difference in number between N-9 (Reporting difficulty - Guessing the meaning of the target word (by process of elimination)) and N-10 (Reporting difficulty – Guessing the pronunciation of the target word). Forty-seven comments (fifty-seven including the words for three colours) were elicited for N-9 whereas only four comments were elicited for N-10 (Reporting difficulty – Guessing the pronunciation of the target word).

In Questionnaire 1 (See Appendix C-1, E-1, E-3, E-4 and E-5), the learners mentioned a range of difficulties that they experienced such as pronouncing the target words, confusing

them with other target words, poor memory, the word order in making sentences in Phase 4, and so forth. In comparison, difficulties in recognising kana or kanji were mentioned by a relatively larger number of learners. Also, from Questionnaire 2 (See Appendix C-2, E-3, E-4 and E-5), the use of Japanese scripts was most frequently elicited as an aspect that the learners did not like or found unhelpful regarding the vocabulary learning class.

Particularly in relation to the activities in Phase 2, difficulties regarding recognising the target words in their authentic written form were frequently reported. Phase 2 was the stage where reading support for the target words (rōmaji for all the words, and furigana – reading help in hiragana for kanji words) was completely taken away. Table 7.4 on the following pages illustrates difficulties that some learners faced in recognising the target words in their authentic written form in Phase 2, and how they dealt with those difficulties.

From the comments of some learners in Table 7.4, it is observed that the dependence on rōmaji can cause problems recognising authentic written scripts. This corresponds with what Koda (1992) emphasises in relation to the use of non-authentic scripts, which is discussed in Chapter 1 and 5. Koda (ibid.) claims that the reconstruction of the visual-spatial model will be necessary in the later stages when authentic writing systems are introduced if learners are exposed to non-authentic texts written only in kana or rōmaji. Rōmaji may be necessary for JFL learners from alphabetic language backgrounds at the very beginning stages of learning, but it is very important to consider when to and how to take reading support away. When analysing the comments from two learners (ID = 15 and 83) in Table 7.4, it can be considered that they had depended on rōmaji in their study of the Japanese language, and that they might not have paid attention to authentic written scripts when provided with rōmaji. This implies that it is necessary for learners to understand why they need to learn written scripts in Japanese, and to develop an awareness of the importance of authentic written form while they are using rōmaji for reading support in the early stage of learning.

This vocabulary learning class, which is designed to support learners' limited orthographic knowledge in learning new words, seemed to raise awareness to the necessity of learning Japanese scripts. It can be observed from the following comment of Learner 83 (mentioned above) in Questionnaire 2:

The only part I did not like was where we had to match all the Japanese words in order – the reason why – because my Japanese written [sic] is so poor. I now know I need to learn the Japanese symbols!

Table 7.4: Examples of the learners' comments on the difficulties in recognising the words in their authentic written form in Phase 2

Class	ID	Comment		
		Problems/difficulties I am having after this phase	What I need to do to solve the problem/overcome the difficulty	How did I fare in relation to the problems I listed at the top of this page?
1	15	I was very familiar with the words in romaji, but not with all the symbols, especially the Chinese symbols – they are so complex that I can't associate them with little pictures.	It was partly my own fault because I had revised the romaji/pronunciation at home and not the symbols. The Chinese symbols really daunt me and I don't know how to memorize them – more <u>time</u> need.	I was able to remember all the romaji words, although some of my spelling was wrong as I tended to write phonetically. Having reinforced the words through all the activities today (the colour exercises), I feel very confident in comprehending and producing them independently now. The proper scripts are more of a struggle + I feel frustrated.
3	48	Still experiencing difficulties with kanji.	Spend more time, perhaps do another categorisation.	A little better, but still finding difficulties.
3	49	Still find it hard to remember how to recognise the words with katakana symbols.	Write the symbols.	I found it hard to remember all the symbols.
3	52	Fine, but wasn't interested in working with the kanji.	See a positive reason for learning the sentences. Basically I didn't see a reason for retaining the information beyond today.	OK but I know I could have done better if I had taken that decision.
3	56	Easy to recognise words in romaji, but not in hiragana/kanji.	Not a clue!	No improvement.
4	64	Difficulty when pictures were removed and had to rely on kanji.	Learn off kanji	Attempted to find connection between the word such as 車 [= car] being used in bike [= 自転車] and train [= 電車].
4	68	Remembering kanji + we haven't done all the katakana yet either.	Learn all the katakana first and revise.	Guessing the other groups' orders was an effective revision/learning technique.

Class	ID	Comment		
		Problems/difficulties I am having after this phase	What I need to do to solve the problem/overcome the difficulty	How did I fare in relation to the problems I listed at the top of this page?
4	71	It takes a lot of time to recognise each symbol and make them into words.	Knowledge of the hiragana, katakana and kanji.	The task took a bit of time but was achievable.
4	72	Associating kanji with objects when it seems easier and faster to write in hiragana/katakana	Time/patience/acceptance	I haven't fared at all. To develop my language skills will take time and hard work which I'm prepared to put in.
4	74	Fully remembering the kanji symbols for some of the words	Repetition of flashcard usage	Quite well
5	77	Recognising the kana and kanji characters	Try to remember the characters	I could recognise some characters and could guess the words from these.
5	81	Recognising words in kanji for some items	① Trying to memorise simple aspects of kanji ② Some help from the group	Struggled with recognition [sic] of some items
5	82	Recognising kanji (although the few basic kanji I know helped a lot, e.g. for <i>kuruma</i> [= 車] recurred in <i>jiten</i> sha [= 自 転 車] and <i>densha</i> [= 電 車], <i>mizu</i> [水] occurred in <i>suijō-hikōki</i> [= 水上飛行機], making it more recognisable, etc.)	Try to learn more kanji and become more practised with the kana.	Fine
5	83	My written Japanese is very poor!	Study!	Poorly. While I was in a good group, I was able to quickly learn a few things, but not as much – if my written Japanese was better, I would have been better.

7.4 Concluding remarks

As has been discussed, the results of the present study show that the majority of the learners was able to learn the target words, including their authentic written form. Therefore, the following hypothesis of the present study (discussed in Chapter 6) was confirmed:

Research Question 1: Is it possible for beginning JFL learners from non-logographic language backgrounds, with limited orthographic knowledge, to learn new words, including recognising them in their authentic written form?

Hypothesis: It is possible if the learners are given enough support for reading new words in the authentic written form, are given as many opportunities to be exposed to the printed words as possible, and are provided with a step-by-step approach to learning new words.

This chapter has also dealt with the second research question below:

Research Question 2: What challenges do beginning JFL learners from non-logographic language backgrounds, with little orthographic knowledge, face in the process of learning new words in authentic written form? How do they deal with those challenges? What strategies do they use?

As has been discussed, the learning of new words in their authentic written form is challenging for novice JFL learners from alphabetic language backgrounds with limited orthographic knowledge such as the learners of the present study. However, the findings of the present study suggest that they can tackle the difficulty using various strategies in order to compensate for their limited orthographic knowledge.

Many of the strategies that the learners of the present study employed for recognising the target words and retrieving the meaning would never have been developed if they were given the target words only in non-authentic written form. As is shown in Table 7.5 on the next page, the visual image that the learners received from the written form could have been different if authentic written form was not presented. Most of the strategies from Strategy Type A (Imagery) and Strategy Type B (Visual encoding), which are discussed in 7.2.1, were developed because the learners were given the target words with authentic written form. Many of the strategies from Strategy Type E (Word structure: Analysis of word formation of the target words) and Strategy Type F (Compensation strategies: Make use of partial existing knowledge) can be seen as a first step of the development of kanji learning strategies. The learners would certainly need these types of strategies in the future when they proceed to the intermediate level, where they meet many unknown kanji characters/words and need to have efficient guessing strategies.

The learning of new words in their authentic written form from the very early stage can provide learners with a lot of benefits, and exert learners’ potential in the development of orthographic processing skills.

Table 7.5: List of the target words in different orthographic presentation

[Katakana words]

	Rōmaji	Kana
	Non-authentic writing system	Authentic writing system
Bus	<i>basu</i>	バス
Taxi	<i>takushī</i>	タクシー
Lorry	<i>torakku</i>	トラック
Helicopter	<i>herikoputā</i>	ヘリコプター

[Kanji words]

	Rōmaji	Kana	Kanji
	Non-authentic writing system		Authentic writing system
Car	<i>kuruma</i>	くるま	車
Ship	<i>fune</i>	ふね	船
Train	<i>densha</i>	でんしゃ	電車
Bicycle	<i>jitensha</i>	じてんしゃ	自転車
Bullet train	<i>shinkansen</i>	しんかんせん	新幹線
Metro	<i>chikatetsu</i>	ちかてつ	地下鉄
Airplane	<i>hikōki</i>	ひこうき	飛行機
Seaplane	<i>suijōhikōki</i>	すいじょうひこうき	水上飛行機

Chapter 8 Discussion and Conclusion

8.0 Introduction

In Chapter 1, we identified the issues regarding learning vocabulary for JFL learners from non-logographic language backgrounds. In Chapter 2 and 3, we reviewed the relevant literature on L2 vocabulary acquisition and learning in SLA research. In Chapter 4 and 5, specific to the target language of the present study, we reviewed the relevant literature on L2 Japanese vocabulary acquisition and learning. In Chapter 6, the research questions were presented, and the methodology adopted for the present study was outlined. In Chapter 7, the results of the present study were discussed. In this chapter, the summary of the main findings is presented, followed by the section where we discuss the limitations of the present study and provide suggestions for further research.

8.1 Summary of findings and discussion

In this section, the findings of the present study will be summarised and discussed, in relation to the research findings from the previous studies based on the literature review presented in earlier chapters. Important issues that need to be considered for L2 vocabulary learning in Japanese will also be suggested.

8.1.1 Key findings of the study

As explained in Chapter 1, conventionally, there has been a strong belief among both learners and teachers that real Japanese, its complicated orthographic system in particular, is too difficult to learn for L2 learners from non-logographic language backgrounds. Very few scholars have explored whether L2 learners of Japanese from non-logographic language backgrounds, with limited orthographic knowledge, can learn new words including recognising them in their authentic written form. This study investigated how novice JFL learners from alphabetical language backgrounds faced the challenges of learning new words in their authentic written form. It questioned how we could support learners with the learning of new words in authentic written form from the very early stages of learning. Although this work is an exploratory study, the following findings suggest some important directions for future research with regard to vocabulary learning for Japanese L2 beginners from non-logographic language backgrounds:

1. The majority of learners were able to learn new words in Japanese successfully, including recognising them in their authentic written form. They used a variety of strategies to compensate for their limited orthographic knowledge, and dealt with the challenges of

learning new words written in authentic form. As discussed in Chapter 7 (7.1), the results of the follow-up receptive test indicate high overall retention rates of target words. However, the words used throughout the class (Phase 1~4) and the words used only in Phase 3 and 4 are better retained than the words used only in Phase 1 and 2. This suggests that it is important to expose learners to the printed words repeatedly and to use these words in context.

2. For learners who had little or no knowledge of kanji characters and who were more familiar with kana symbols, there was no significant difference between the retention of target katakana words and that of target kanji words in the follow-up receptive test. This suggests that knowledge of kana orthography does not necessarily offer an advantage of learning kana words over learning of kanji words.
3. The test results from some groups of learners (e.g., Class 2) indicate that some kanji words can be easier to learn than some katakana words. This corresponds with some experimental findings in Japanese L1 word processing research (e.g., Steinberg and Oka, 1978; Steinberg, 1995), and undermines the prevailing view that the learning of kanji words for L2 learners from non-logographic language backgrounds is too difficult or more difficult than that of kana words.
4. Learners who had not fully acquired katakana orthography were able to recognise the target words in katakana. Many of them used their partial katakana orthographic knowledge to compensate for lack of reading fluency in katakana. This suggests that there is no need to wait to start learning katakana words in authentic written form until learners acquire individual katakana symbols.
5. The analysis of some learners' comments suggests that the dependence on rōmaji can negatively affect the recognition of authentic written scripts in Japanese. Rōmaji may be necessary for JFL learners from alphabetical language backgrounds at the very early stages of learning, however, it is very important to consider when and how to remove this support.
6. Most of the strategies that the learners used for recognising target words and retrieving their meaning would never have been developed if they were given the target words only in non-authentic written form. This suggests the pedagogical importance of exposing learners to authentic written scripts from the very early stages of learning.
7. As discussed in Chapter 7 (7.2), the use of some strategies (e.g., Strategy Type E – Word structure: Analysis of word formation of the target words, Strategy Type F –

Compensation strategies: Make use of partial existing knowledge) can be seen as a first step of kanji learning strategies for the foundation of learners' future learning. The learners were able to analyse the word structure in kanji words without explicit explanation or prior knowledge of kanji characters. This suggests that learning new words in their authentic form from the very early stages can exert learners' potential in the development of orthographic processing skills.

8. From the results of the follow-up tests, some differences were observed between the learning of written vocabulary and that of oral vocabulary. One of the primary differences is the relationship between retention rate and strategy use. The retention rates of the receptive test were proportionate to the percentage of learners who reported their strategy use. That is to say, the higher the number of learners who reported their strategy use, the higher the retention rates. On the other hand, the difficulty in the pronunciation of the target words appeared to be a major factor that affected the correctness of the learners' answers in the follow-up productive test.
9. The majority of learners employed different strategies for receptive retrieval and productive retrieval, and this implies difficulties in connecting the written form, the meaning and the sound in the learning of a new word. This leads to an important pedagogical issue; it is indispensable to consider the large gap between the learning of written form and that of spoken form in vocabulary acquisition for L2 learners of Japanese.
10. There are various factors that affected the learners' retention of the target words: the exposure to the target words, the use of vocabulary learning strategies, the types of orthography used in the target words, learning mode (receptive or productive), the word length, the difficulties in pronunciation, and so forth. Amongst these factors, the use of vocabulary learning strategies seemed to have the greatest impact on the learners' performance on the follow-up receptive test. This suggests that the use of strategies can be a key factor that enables L2 learners from non-logographic language backgrounds with limited orthographic knowledge to learn new words in their authentic written form.

8.1.2 Learning new words including recognising them in their authentic form for JFL learners with limited orthographic knowledge

The main purpose of this study was to investigate whether or not beginning JFL learners from non-logographic language backgrounds, with limited orthographic knowledge, were able to learn new words, including recognising them in their authentic form. As discussed in Chapter 7, from the results of the follow-up vocabulary tests and the analysis on strategy use, it was

confirmed that the learners of this study, who were at the stage of learning katakana and had no knowledge of kanji characters, were able to learn the target words either in katakana or kanji.

It is usually not expected that JFL learners at the beginning stages, particularly those from alphabetic language backgrounds, will be able to learn new words, including recognising them in their authentic form. They will be expected to recognise katakana words and understand the meaning after mastery of all the katakana symbols. After they have learnt both kana symbols, they will start learning kanji but the learning of kanji is always on-going and hence some support for reading kanji words is provided accordingly, as explained in Chapter 1.

Although learners have the potential to learn new words including recognising them in their authentic form, as it was possible for the learners of the present study, learners from alphabetic language backgrounds are often exposed to the language in inauthentic written form. As discussed in Chapter 1, it has been pointed out by some scholars (e.g., Koda, 1992; Steinberg, 1995; Steinberg and Oka, 1978) that learning Japanese words in inauthentic form could be wasteful in terms of learning process, however, it is still strongly believed that real Japanese is too difficult for beginners from non-logographic language backgrounds. This probably comes from misconceptions regarding L1 Japanese vocabulary acquisition or reading education.

Steinberg (1995) reveals eight common misconceptions concerning how Japanese children learn to read, which are believed by many people including reading educators. These misconceptions have not only affected Japanese language education for native Japanese speakers, but they have also had impacts on Japanese language education for JFL or JSL learners. Particularly the following four misconceptions appear to have cast influence on the issues relating to the learning of writing systems (hiragana, katakana and kanji) and vocabulary for learners of Japanese at the beginning stages:

- (1) Kanji (Chinese style characters) such as 自動車 (*jidosha* - car), 橋 (*hashi* - bridge), 薬 (*kusuri* - medicine), 乾電池 (*kandenchi* - battery) are more difficult for a child to learn to read than single kana (Japanese syllabic script) such as い (*i*), ク (*ku*), ら (*ra*).
- (2) Single kana such as イ (*i*), く (*ku*), and ラ (*ra*) are easier for a child to read than whole kana words such as テレビ (*terebi* television set), うどん (*udon* noodles), パンダ (*panda*).

- (3) Single kana should be taught first so that children will then be able to read kana words.
- (4) Children should be taught to read words in kana before they learn to read words in kanji.

(Steinberg, 1995, 199)

The underlying notion, which leads to these negative assumptions, is that kana (hiragana and katakana) are easier to learn than kanji. Therefore, it is erroneously assumed that the learning of writing systems and vocabulary for young Japanese children should happen in the order of (1) individual kana symbols, (2) kana words, (3) individual kanji characters, and (4) kanji words. Although the cognitive processes involved in word recognition are more complicated than this, there are many people, including people who are involved in the teaching of Japanese as a foreign or second language, who simply believe that kana are easier to learn than kanji. This is probably because Japanese children learn kana first and they assume based on their learning experience that kanji are more difficult (Kaiser, 2000).

The tradition, whereby Japanese children start with the learning of hiragana, began after World War II by the command of the General Headquarters of the Allied Forces, but the reason for this decision is unclear. Japanese children learnt katakana first before World War II, but the fact that the learning of kana comes before kanji is unchanged (Steinberg and Oka, 1978). In the same manner as Japanese children learn, learners of Japanese are generally introduced to Japanese writing systems in the order of (1) hiragana, (2) katakana, and (3) kanji. Consequently the orthographic representation of words changes according to the learners' progress of the acquisition of writing systems, and therefore the use of non-authentic writing systems is often seen while learners are at the beginner's level.

Although further investigation is necessary, the following types of strategy use elicited from the learners of this study, which have been discussed in Chapter 7, imply that learners can benefit from learning words in their authentic written form even though their orthographic knowledge is limited:

Strategy A1: Use the image from the shape of (a) kanji character(s)
(e.g.) Use the image of 'parking,' 'fender' or 'cart' obtained from the shape of the kanji character/word 車 'car' (See the examples in page 138)

Strategy A3: Use the image obtained from the shape of (a) kana symbols

(e.g.) Use the image of 'propeller' obtained from the shape of the first or fourth katakana symbol, or the symbol for the long vowel at the end in learning the katakana word ヘリコプター 'helicopter' (See the examples in page 135)

Strategy E1: Identify the target words that share the same kanji character(s)

(e.g.) Use the knowledge of the kanji character 車 'car' in order to get the meaning of 電車 'train' and 自転車 'bicycle' (See the examples in page 149)

The use of these strategies suggests that vocabulary learning in the authentic written form does not have to be postponed until learners have become fluent in reading in kana symbols or have acquired adequate kanji knowledge. As Steinberg and Oka (1978) argue, 'rōmaji transition phase' or 'kana transition phase' may not be necessary for L2 beginners of Japanese.

8.1.3 Reading support for authentic writing systems at the beginning stages of learning

Although it is important to expose learners to words in their authentic form from the very early stage of learning, some support system is necessary at this stage when considering the total number of kana symbols and kanji characters as well as orthographic distance between the learners' L1 and Japanese. As Koda (1992, 509) suggests, it is necessary to bear in mind that "the authentic script should always be presented along with the non-authentic system." This is an important pedagogical implication, however, it is difficult to be sure when to stop providing a non-authentic system for reading support.

As discussed in Chapter 7, the dependence on rōmaji was observed from the comments of some learners in learning the target words. From my experience as a teacher, learners' dependence on rōmaji at the beginning stages of learning, or their dependence on furigana even at the advanced level, is often observed. From my personal experience of having lived in countries where two official languages are used (seven years in Ireland and five years in Wales), I must say that I have become good at ignoring the language I do not understand when I need to pick up information from written texts. For learners of Japanese, if they are provided with rōmaji or furigana, they can be over-dependent on this reading support.

As pointed out in Chapter 5, learners should be encouraged to engage in extensive reading in order to increase their vocabulary, however, the use of children's books which contain words written in inauthentic form or graded readers with reading help for all the kanji words is questionable. If learners always depend on reading support, they will not be able to

become efficient and independent L2 users of Japanese. Further study may be necessary for investigating the use of reading support in relation to vocabulary learning in terms of recognising words written in their authentic written form. For beginners, in order to avoid learners becoming over-dependent on reading support, it is indispensable to consider how to strengthen the connection between the form, sound and the meaning in vocabulary learning. The combination of Strategy Type A (Imagery) and Type D (Keyword technique), which is discussed in Chapter 7 (See page 159), can be effective in connecting the written form, the meaning and the sound when learning new words.

Also, the use of Strategy Type C (Auditory encoding) in variety was observed among many learners of the present study. This supports one of the research findings discussed in Chapter 5, which is that phonological input plays an important role for English L1 learners in identifying kanji words. Many of the learners in this study used a strategy connecting the sound familiar to them with the sound of the target word. This suggests that it is important for learners from alphabetic language backgrounds to utilise phonological information even when they receive written input and processing information, which is not phonologically transparent, such as kanji. When relating this issue with the five essential steps to learning new words advocated by Hatch and Brown (1995), which has been discussed in Chapter 3, it is not easy for learners to “consolidate word form and meaning in memory” (ibid., 372-373). As mentioned earlier, it may be necessary to develop skills in combining some different types of strategy (e.g., imagery and keyword technique).

8.1.4 The importance of an early emphasis on the development of vocabulary learning strategies

As presented in Chapter 7, the learners of the present study used a variety of strategies despite their insufficient orthographic knowledge. Most of the learners had not yet acquired kana and had not even started learning kanji, however, they employed various strategies for recognising the target words written in the authentic form, and successfully retrieved the word meaning. As discussed in Chapter 5 from the research findings in SLA in Japanese, Japanese language proficiency does not account for inferencing unknown kanji words with the use of morphological clues. This suggests that learners cannot automatically develop strategies for guessing unknown kanji words with the increasing number of kanji characters. Since the ability to analyse kanji words utilising the knowledge of radicals or word structure has been found important for learners of Japanese (Kubota and Toyoda, 2001; Yokosuka, 1999), it is critical to develop an awareness of analysing kanji words from the beginning stages of learning. As it was possible for the learners of this study, who had not explicitly been taught kanji characters, to

analyse the word structure of some target kanji words, I would strongly suggest raising an awareness to the development of vocabulary learning strategies from the very early stages of learning.

8.1.5 The importance of exposure to authentic writing systems from the early stages of learning

As discussed in Chapter 7, many of the strategy types employed by the learners of this study would not have been developed if the learners were given the target words only in non-authentic writing systems. From the research findings discussed in Chapter 5, the following two points need to be considered in relation to the importance of exposure to authentic written scripts from the early stages of learning:

- Learners of Japanese at any level have a tendency to depend on lower-level processing when reading in Japanese.
- Learners at intermediate level tend to be demotivated when they are exposed to authentic texts and find it difficult to cope with unknown words.

These findings suggest that it is indispensable to expose learners to words in authentic written form from the early stages of learning. I would suggest that learners would feel more comfortable in learning kanji, and could tackle the interpretation of unknown or unfamiliar kanji words in authentic texts using appropriate strategies if they were more exposed to words in authentic written form from the beginning of their learning.

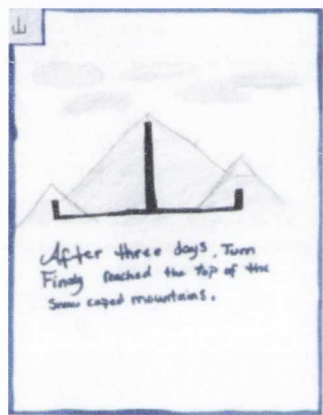
8.1.6 The importance of an emphasis on the establishment of a holistic approach to vocabulary learning in Japanese

Gamage (2003a, 2) argues for the distinction between kanji learning strategies and vocabulary learning strategies as follows:

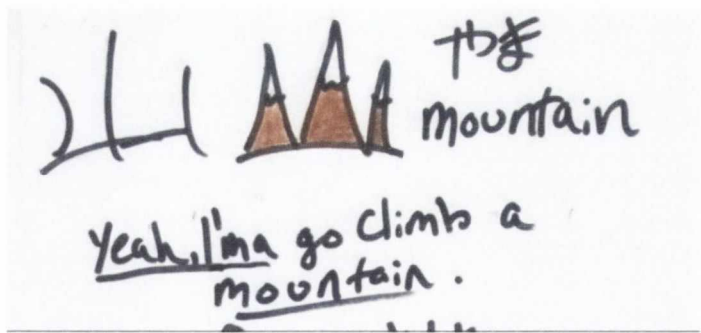
Kanji is defined as a morphographic (meaning + symbol) or a logographic (logo + symbol) system of writing in which a unit of representation signifies a meaning or a word (Taylor and Taylor, 1995: p.88). In this sense, kanji learning strategies can be equated to Japanese vocabulary learning strategies. However, the complexity of certain characters, the opaque sound-to-shape relationship, the multiple pronunciations and meanings attributed to one kanji and the vast number of kanji to be learnt, all mean that kanji learning strategies should be treated as separate from general vocabulary learning strategies.

As is explained in the citation above, Gamage (ibid.) advocates that kanji learning strategies should be separated from vocabulary learning strategies, however, it has some limitations because kanji is still “a unit of representation [that] signifies a meaning or a word” (ibid.) as she explains, even if considering the complicated nature of kanji. The following examples show a difficulty in distinguishing kanji learning strategies and vocabulary learning strategies. These examples are mnemonic ideas for remembering the kanji/word 山 (mountain - *yama*) extracted from the website called Kanji Wiki (TELL Center, Purdue University), where both learners and teachers can post their ideas for remembering kanji:

Example 1: After *three* (image: three vertical line of the kanji character) days, Tom finally reached the top of the snow capped *mountains* (meaning).



Example 2: Yeah, I' ma (sound: = *yama*) go climb a *mountain* (meaning).



Example 1 is an idea linking two kinds of information, that is, the meaning and the image of the kanji as a symbol, whereas Example 2 is an idea linking three kinds of information, that is, the meaning, the image and the sound (reading) of the kanji as a word. Example 2 can be categorised as a typical vocabulary learning strategy (memory strategy) using the keyword technique. The learner who created this idea chose ‘Yeah, I’ma’ (L1) as the keyword, based on acoustic similarity with the target word/kanji ‘*yama*’ (L2), and then created a visual/mental image of ‘Yeah, I’ma go climb a mountain’ in order to construct the association between the

target word/kanji and the keyword. It can be analysed that Example 1 is a mnemonic approach to remember 山 as a kanji character, because no phonological cue is involved in this mnemonic method, and the focus is on the link between the symbol and the meaning. This kanji 山 can be read either 'yama' (*kun*-reading), 'san' or 'zan' (*on*-reading) depending on the context. When this kanji is used by itself, it is read 'yama' (e.g., 山の写真 *yama no shashin* [noun] no [particle] *shashin* [noun] – photograph of mountain), but it can be read 'san' or 'zan' when used as a component of a compound word (e.g., 富士山 *fujisan* [proper noun] Mt. Fuji, 登山 *tozan* [noun] – mountain-climbing). On the other hand, Example 2 is a mnemonic approach to remember 山 as a word (and also a kanji character because it seems that the learner uses the shape of the kanji in his or her mental representation), since the pronunciation should be 'yama' when this kanji is used solely as a word. It is possible that the learner who created Example 1 used 'three' in 'after three days' as a cue for retrieving the *on*-reading of this kanji, because 'three' in Japanese is 'san,' which is the same pronunciation as the *on*-reading of this kanji. However, the meaning as 'mountain' cannot be conveyed if the reading 'san' is used instead of 'yama' when saying this word in the context such as 'go to the mountains' (山に行 *yama ni iku*).

Although memory strategies for kanji characters or kanji words cannot be generalised as they would depend on the type of kanji symbols (e.g., pictograph, simple ideograph, compound ideograph, phonetic-ideograph, derivative, phonetic loan), it would not be ideal to distinguish kanji learning strategies and vocabulary learning strategies. Some learners of the present study were able to learn the target words in kanji, using a similar strategy as Example 2 above (See the example of strategy use on page 159), without explicit kanji knowledge. The notion separating kanji learning from vocabulary learning might be a possible cause of the trends that Japanese language pedagogy lacks a holistic approach to vocabulary learning due to too much attention on kanji learning.

8.2 Limitations of the present study and suggestions for future research

Some limitations of the present study are recognised. First, the learners of the present study, compensating for their limited orthographic knowledge, were able to learn new Japanese words including recognising them in their authentic form. This is perhaps because the vocabulary learning approach used for the present work is designed to scaffold insufficient orthographic knowledge. This type of vocabulary learning approach would not be applicable for regular use because of its time-consuming nature. However, the findings from this study explore pedagogical implications for novice JFL-learners from non-logographic language

backgrounds. The results of the present work suggest the possibility of learning vocabulary in the authentic written form from the very early stages of learning, and the importance of effective strategy use in order to compensate for insufficient orthographic knowledge. Further investigation on the use of vocabulary learning strategies is necessary for effective and efficient vocabulary instruction.

Second, the analysis on the strategy use, which was presented for discussing how the learners dealt with the challenges they faced in learning new Japanese words including recognising them in their authentic written form, was based on the learners' comments, which were elicited from open-ended questions. For some learners, it seemed difficult to write comments in general. Even for the learners who did not find it difficult to comment on their knowledge of the target words, there were a few target words that they found difficult to write their comments on. It might have been easier for the learners to answer if they were given self-report questionnaires with the list of vocabulary learning strategies.

In the context of SLA research in Japanese, to my knowledge, a comprehensive list of strategies has not been developed yet. As discussed in Chapter 5, a number of studies on kanji learning strategies have been conducted in recent years, however, an inventory of kanji learning strategies from these studies would not be suitable for learners with limited orthographic knowledge, particularly for those who have not learnt kanji yet. An existing inventory of vocabulary learning strategies from the studies on L2 English learners (e.g., Gu, 2003; Gu and Johnson, 1996; Schmitt, 1997; Takač, 2008) can be applicable to L2 Japanese learners, however, a problem can be expected when analysing the strategy use in relation to orthographic knowledge due to the difference between English and Japanese in terms of writing systems. The results of this study presented some patterns of strategy use, which in turn, suggest a possibility of developing a vocabulary learning strategies taxonomy for learners of Japanese at the beginning stages.

Third, the analysis on the test results, including relationship between the test results and the strategy use, would not be adequate from a statistical point of view. Although the findings of the present exploratory work suggest an important direction for the future research, a more comprehensive survey is necessary in order to compare types of strategies and to integrate research results into the classroom for effective vocabulary instruction. In relation to the second issue raised above, the development of a comprehensive list of vocabulary learning strategies applicable for L2 learners of Japanese is indispensable for further study.

8.3 Concluding remarks

The following remark of Schmitt (2010a, 40) tells us how we should approach the issues related to L2 vocabulary learning in Japanese:

Learning a sufficient amount of vocabulary is one of the biggest challenges facing language learners. Teachers should face this challenge squarely, and provide their students with plenty of vocabulary to learn and use right from the beginning. Although some may say this is too difficult, I believe most students expect to have to learn a lot of vocabulary in their language studies. Keith Folse made this point forcefully in his 2007 presentation at the American Association of Applied Linguistics (AAAL) conference, remarking that if he was a student and was told that he would only be learning 50 or 60 words over a several-week-long course, he would be insulted. It is important for L2 teachers to challenge their students by emphasizing vocabulary, and by doing so giving them a fighting chance to learn the vocabulary they need to function in their second language.

For a learner who has just started learning Japanese, it would be insulting if he was told that real Japanese was too difficult for him to learn and was given all the words in rōmaji or kana. For a learner who has studied Japanese over a period of years, it would be insulting if children's books containing many words written in kana with artificially made spaces were provided as reading material. As Schmitt (*ibid.*) says, we need to give learners "a fighting chance to learn the vocabulary they need to function" in Japanese. The results of the present study can shed some light on the issues in relation to L2 Japanese vocabulary learning for learners at the beginning stages, who have not yet acquired enough orthographic knowledge to process authentic written scripts.

References

- Aitchison, Jean (1994) *Words in the Mind: An Introduction to the Mental Lexicon*. 2nd ed., Oxford: Blackwell.
- Akimoto, Miharuru (2002) *Yokuwakaru Goi* [Vocabulary]. Tokyo: ALC.
- Alderson, J. Charles (1984) 'Reading in a Foreign Language: A Reading Problem or a Language Problem?'. In: *Alderson and Urquhart*, 1-27.
- Alderson, J. Charles and Urquhart, A. H. (eds.) (1984). *Reading in a Foreign Language*. London and New York: Longman.
- Alderson, J. Charles (2000) *Assessing Reading*. Cambridge: Cambridge University Press.
- An, Yongsu (1999) 'Language Transfer in Acquisition of Kango: A Comparison of Korean and Chinese Learners of Japanese'. *Acquisition of Japanese as a Second Language*, 3, 5-18.
- Anderson, Neil, J. (1999) *Exploring Second Language Reading: Issues and Strategies*. Boston and London: Heinle and Heinle.
- Anderson, Susan and Bourke, Barbara (2007) Beyond the classroom: SILK for promoting autonomous kanji learning. *Proceeding of the Independent Learning Association 2007 Japan Conference: Exploring Theory, Enhancing Practice: Autonomy Across the Disciplines* [Internet]. Available from: <http://independentlearning.org/ILA/ila07/files/ILA2007_002.pdf> [Accessed March 24th, 2011]
- Arnaud, Pierre J. L., and Béjoint, Henri (eds.) (1992) *Vocabulary and Applied Linguistics*. Houndmills, Basingstoke, Hampshire and London: Macmillan Academic.
- Asano, Yuriko, and Japan Foundation Japanese Language Institute (1981) *Goi* [Vocabulary]. Tokyo: Bonjinsha.
- Banno, Eri and Ikeda, Yoko (2009) 'Students' Attitudes and Strategies toward Learning Kanji: A Survey of Learners from Non-Kanji Background.' *Journal of International Students Education*, 14, 13-21.
- Batt, Deleece (1994) *Katakana Gambatte!* Tokyo: Kodansha International.
- Barr, Rebecca, Kamil, Michael L., Mosenthal, Peter, and Pearson, P. David (eds.) *Handbook of Reading Research: Volume II*. Mahwah, New Jersey: Lawrence Erlbaum Associates.
- Beck, Isabel and McKeown, Margaret (1991) 'Conditions of Vocabulary Acquisition'. In: *Barr, Kamil, Mosenthal and Pearson*, 789-814.
- Beck, Isabel L., McKeown, Margaret G., and Kucan, Linda (2002) *Bringing Words to Life: Robust Vocabulary Instruction*. New York: Guilford Press.

- Bogaards, Paul, and Laufer, Batia (2004) *Vocabulary in a Second Language: Selection, Acquisition, and Testing*. Amsterdam and Philadelphia: John Benjamins Publishing Company.
- Bourke, Barbara (2006) *Strategy inventory for learning kanji (SILK)* [Internet]. Available from: <<http://kanji-silk.net/strategies/index.html>> [Accessed July 2nd, 2011]
- Broady, Elspeth (2008) 'Fragmentation and Consolidation: Recent Articles on Vocabulary Acquisition'. *Language Learning Journal*, 36: 2, 259-265.
- Brown, Keith (ed.) (2006) *Encyclopaedia of Language and Linguistics*. 2nd ed., Oxford: Elsevier.
- Brown, Ronan, Waring, Rob and Donkaewbua, Sangrawee (2008) Incidental vocabulary acquisition from reading, reading-while-listening, and listening to stories. *Reading in a Foreign Language* [Internet] 20 (2), pp. 136-163. Available from: <<http://nflrc.hawaii.edu/rfl/October2008/brown/brown.pdf>> [Accessed February 14th, 2011]
- Carrell, Patricia L., Devine, Joanne and Eskey, David E. (eds.) (1988) *Interactive Approaches to Second Language Reading*. Cambridge: Cambridge University Press.
- Carter, Ronald (1998) *Vocabulary: Applied Linguistic Perspective*. 2nd ed., London and New York: Routledge.
- Carter, Ronald, and McCarthy, Michael (eds.) (1988) *Vocabulary and Language Teaching*. London and New York: Longman.
- Center for Technology-Enhanced Language Learning and Instruction, Purdue University (n.d.) *Kanji wiki* [Internet]. Available from: <<http://tell.fll.purdue.edu/KanjiWiki/>> [Accessed March 25th, 2011]
- Chacón-Beltrán, Rubén, Abello-Contesse, Cristián and Torreblanca López, María del Mar (eds.) (2010) *Insights into Non-native Vocabulary Teaching and Learning*. Bristol, Buffalo and Toronto: Multilingual Matters.
- Chen, Yumin (2003) 'Learning the Meaning and Usage of Kanji Compound Words: A Review of Japanese Compound Words as Acquired by Native Chinese Speakers'. *Japanese Language Education: The State of the Art in Second Language Acquisition and Instruction Research*, November 2003 Special Issue, 96-113.
- Chikamatsu, Nobuko (1996) 'The Effects of L1 Orthography on L2 Word Recognition: A Study of American and Chinese Learners of Japanese'. *Studies in Second Language Acquisition*, 18, 403-432.
- Chikamatsu, Nobuko (2003) 'Recent Research in Reading Japanese as a Foreign Language.' In: *Hatasa*, 187-205.

- Chikamatsu, Nobuko (2006) 'Developmental Word Recognition: A Study of L1 English Readers of L2 Japanese'. *The Modern Language Journal*, 90: 1, 67-85.
- Cho, Hee Chul (1994) 'Kanji Teaching to Kanji Area students: Focusing on Korean Students Studying Japanese'. *Japanese-Language Education around the Globe*, 4, 61-73.
- Coady, James (1993) 'Research on ESL/EFL Vocabulary Acquisition: Putting it in Context'. In: *Huckin, Haynes and Coady*, 3-23.
- Coady, James (1997a) 'L2 Vocabulary Acquisition: A Synthesis of the Research'. In: *Coady and Huckin*, 273-290.
- Coady, James (1997b) 'L2 Vocabulary Acquisition through Extensive Reading'. In: *Coady and Huckin*, 225-237.
- Coady, James and Huckin, Thomas (eds.) (1997) *Second Language Vocabulary Acquisition: A Rationale for Pedagogy*. Cambridge: Cambridge University Press.
- Cook, Vivian (2001) *Second Language Learning and Language Teaching*. 3rd ed., London and New York: Arnold.
- Cook, Maruko M., Hijirida, Kyoko and Tahara, Mildred (1997) *New Trends and Issues in Teaching Japanese Language and Culture*. Honolulu: University of Hawai'i Press.
- Coulmas, Florian (1996) *The Blackwell Encyclopedia of Writing Systems*. Oxford and Malden, Massachusetts: Blackwell Publishers.
- Cronbach, Lee J. (1942) 'An Analysis of Techniques for Diagnostic Vocabulary Testing'. *Journal of Educational Research*, 36, 206-217.
- Cummins, Jim, and Davison, Charis (eds.) (2007) *International Handbook of English Language Teaching*. New York: Springer.
- Dale, E. (1965) 'Vocabulary Measurement: Techniques and Major Findings'. *Elementary English*, 42, 82-88.
- Daniels, Peter T., and Bright, William (eds.) (1996) *The World's Writing Systems*. New York and Oxford: Oxford University Press.
- Day, Richard R., and Bamford, Julian (1998) *Extensive Reading in the Second Language Classroom*. Cambridge: Cambridge University Press.
- Day, Richard R., Omura, Carole and Hiramatsu, Motoo (1991) 'Incidental EFL vocabulary learning and reading'. *Reading in a Foreign Language* [Internet] 7 (2), pp. 541-551. Available from: <<http://nflrc.hawaii.edu/rfl/PastIssues/rfl72day.pdf>> [Accessed February 15th, 2011]
- Davies, Alan, Criper, C., and Howatt, A. P. R. (eds.) (1984) *Interlanguage*. Edinburgh: Edinburgh University Press.

- Devitt, Seán (n.d.) *Vocabulary knowledge: Word knowledge as a key to reading* [Internet]. Available from: <http://www.upf.edu/dtf/alpme/cases/case_02/analisi.htm>. [Accessed August 23rd, 2009]
- Doughty, Catherine, and Long, Michael H. (eds.) (2003) *Handbook of Second Language Acquisition*. Oxford: Blackwell.
- Drum, Priscilla A. and Konopak, Bonnie C. (1987) 'Learning Word Meanings from Written Context'. In: *McKeown and Curtis*, 73-87.
- Ellis, Nick (1994) 'Vocabulary Acquisition: The Implicit Ins and Outs of Explicit Cognitive Mediation'. In: *Ellis*, 211-282.
- Ellis, Nick (ed.) (1994) *Implicit and Explicit Learning of Languages*. London: Academic Press.
- Ellis, Rod (1994) 'Factors in the Incidental Acquisition of Second Language Vocabulary from Oral Input: A Review Essay'. *Applied Language Learning*, 5: 1, 1-32.
- Ellis, Rod (1995) 'Modified Oral Input and the Acquisition of Word Meanings'. *Applied Linguistics*, 16: 4, 409-441.
- Frost, Ram (2005) 'Orthographic Systems and Skilled Word Recognition Processes in Reading'. In: *Snowling and Hulme*, 272-295.
- Gamage, G. Haththoutuwa (2003a) Issues in strategy classifications in language learning: A framework for kanji learning strategy research. *ASAA E-journal of Asian Linguistics and Language Teaching* [Internet] 5. Available from <<http://ro.uow.edu.au/artspapers/68/>> [Accessed March 10th, 2011]
- Gamage, G. Haththoutuwa (2003b) 'Perceptions of Kanji Learning Strategies: Do They Differ among Chinese Character and Alphabet Background Learners?' *Australian Review of Applied Linguistics*, 26: 2, 17-30.
- Gamage, Gayathri Haththoutuwa (2006) 'Perceptions of Kanji Learning by Non-Native Learners of Japanese as a Foreign Language: Data from Sri Lankan Learners'. *Japanese Linguistics*, 20, 67-78.
- Gass, Susan (1988) 'Second Language Vocabulary Acquisition'. *Annual Review of Applied Linguistics*, 9, 92-106.
- Gass, Susan (1999) 'Discussion: Incidental Vocabulary Acquisition'. *Studies in Second Language Acquisition*, 21, 319-333.
- Gass, Susan M. and Selinker, Larry (1994) *Second Language Acquisition: An Introductory Course*. Hillsdale, New Jersey, Hove and London: Lawrence Erlbaum Associates.

- Goda, Sumire, Iijima, Hitomi, Noda, Yoshie and Yoshida, Masayuki (2005) 'Conducting Extensive Reading Lessons to Intermediate to Advanced-Level Learners Using Short Stories'. *Journal of Japanese Language Teaching*, 126, 74-83.
- Grabe, William (1991) 'Current Developments in Second Language Reading Research'. *TESOL Quarterly*, 25: 3, 375-406.
- Grabe, William (2009) *Reading in a Second Language: Moving from Theory to Practice*. Cambridge: Cambridge University Press.
- Grabe, William and Stoller, Fredrika L. (1997) 'Reading and Vocabulary Development in a Second Language'. In: *Coady and Huckin*, 98-124.
- Grabe, William and Stoller, Fredrika L. (2002) *Teaching and Researching Reading*. Harlow: Longman.
- Graves, Michael F. (2006) *The Vocabulary Book: Learning and Instruction*. New York, Newark, DE and Urbana, IL: Teachers College Press.
- Gu, Peter Yongqi (2003) Vocabulary learning in a second language: Person, task, context and strategies. *The Electronic Journal for English as a Second Language* [Internet] 7 (2). Available from: <<http://www.tesl-ej.org/wordpress/issues/volume7/ej26/ej26a4/>> [Accessed March 17th, 2011]
- Gu, Yongqi and Johnson, Robert Keith (1996) 'Vocabulary Learning Strategies and Language Learning Outcomes'. *Language Learning*, 46: 4, 634-679.
- Harada, Teruko, Yamagata, Mihoko, Nakano, Teiko, Sakai, Machiko, Miyazaki, Taeko and Mikami, Kyoko (2008) 'Tadoku no tame no Nihongo-ban Graded Reader Kaihatsu e no Torikumi: JGR Vocabulary Checker no Tokuchō to Sakuhin Seisaku ni okeru Yūyōsei'. [Development of Japanese Graded Readers for Extensive Reading: Features of JGR Vocabulary Checker and Effectiveness of Reading Materials] *Obirin Daigaku Gengo Kyōiku Ronsō* [Obirin University Language Education Journal], 4, 57-63.
- Harada, Teruko, Yamagata, Mihoko, Nakano, Teiko, Sakai, Machiko, Miyazaki, Taeko and Mikami, Kyoko (2009) 'Nihongo-ban Graded Reader Kaihatsu e no Torikumi: Tadoku-yō Kyōzaitō no Keyword no Tokutei to Sono Shutsugen Keikō'. [Development of Japanese Graded Readers for Extensive Reading: Features of Keywords and Their Frequency in Reading Materials for Extensive Reading] *Obirin Daigaku Gengo Kyōiku Ronsō* [Obirin University Language Education Journal], 5, 71-85.
- Harley, Birgit (1995) 'The Lexicon in Language Research'. In: *Harley*, 1-28.
- Harley, Birgit (ed.) (1995) *Lexical Issues in Language Learning*. Amsterdam: John Benjamins.

- Harris, Margaret, and Coltheart, Max (1986) *Language Processing in Children and Adults: An introduction*. London and Boston: Routledge and Kegan Paul.
- Hashimoto, Yukari (2007) 'The Relationship between Vocabulary Learning Strategy and Receptive and Productive Vocabulary Size in the Hungarian JFL Context'. *ICU Studies in Japanese Language Education*, 4, 21-36.
- Hatasa, Yukiko A. (ed.) (2003) *An Invitation to Second Language Acquisition Research in Japanese: In Honor of Seiichi Makino*. Tokyo: Kuroshio Publishers.
- Hatch, Evelyn and Brown, Cheryl (1995) *Vocabulary, Semantics, and Language Education*. Cambridge: Cambridge University Press.
- Hayashi, Hirokazu (2002) *Eigo no Goi Shidō: Riron to Jissen no Tōgō o Mezashite* [English Vocabulary Instruction: Aiming to Combine Theory and Practice]. Hiroshima: Keisuisha.
- Hazenbergh, Suzanne and Hulstijn, Jan H. (1996) 'Defining a Minimal Receptive Second-Language Vocabulary for Non-Native University Students: An Empirical Investigation'. *Applied Linguistics*, 17: 2, 145-163.
- Henderson, Leslie (1982) *Orthography and Word Recognition in Reading*. London: Academic Press.
- Henderson, Leslie (ed.) (1984) *Orthographies and Reading: Perspectives from Cognitive Psychology, Neuropsychology, and Linguistics*. London: Lawrence Erlbaum.
- Henriksen, Birgit (1999) 'Three Dimensions of Vocabulary Development'. *Studies in Second Language Acquisition*, 21, 303-317.
- Hida, Yoshifumi, and Sato, Takeyoshi (2002) *Gendai Nihongo Kōza Volume 4: Goi* [Modern Japanese Teaching Volume 4: Vocabulary]. Tokyo: Meijishoin.
- Hirsh, David and Nation, Paul (1992) What vocabulary size is needed to read unsimplified texts for pleasure? *Reading in a Foreign Language* [Internet] 8 (2), pp.689-696. Available from: <<http://nflrc.hawaii.edu/rfl/PastIssues/rfl82hirsh.pdf>> [Accessed February 16th, 2011]
- Hitosugi, Claire Ikumi and Day, Richard R (2004) Extensive reading in Japanese. *Reading in a Foreign Language* [Internet] 16 (1), pp.20-39. Available from: <<http://nflrc.hawaii.edu/rfl/April2004/hitosugi/hitosugi.pdf>> [Accessed February 16th, 2011]
- Hockett, Charles Francis (1958) *A Course in Modern Linguistics*. New York: Macmillan.
- Horiba, Yukie (1996) 'Comprehension Processes in L2 Reading: Language Competence, Textual Coherence, and Inferences'. *Studies in Second Language Acquisition*, 18: 4, 433-474.
- Horiba, Yukie (2002) 'Research on Reading in Japanese as a Second Language: Contexts and Possibilities for the Future'. *Acquisition of Japanese as a Second Language*, 5, 108-132.

- Horst, Marlise (2005) 'Learning L2 Vocabulary through Extensive Reading: A Measurement Study'. *The Canadian Modern Language Review*, 61: 3, 355-382.
- Horst, Marlise, Cobb, Tom and Meara, Paul (1998) Beyond a Clockwork Orange: Acquiring second language vocabulary through reading. *Reading in a Foreign Language* [Internet] 11 (2), pp.207-223. Available from: <<http://nflrc.hawaii.edu/rfl/PastIssues/rfl112horst.pdf>> [Accessed February 16th, 2011]
- Horwitz, Elaine K. (1999) 'Cultural and Situational Influence on Foreign Language Learners' Beliefs about Language Learning: A Review of BALLI Studies'. *System*, 27: 4, 557-576.
- Hosenfeld, Carol (1976) 'Learning about Learning: Discovering Our Students' Strategies'. *Foreign Language Annals*, 9: 2, 117-129.
- Howatt, Anthony P. R. (1984) *A History of English Language Teaching*. Oxford: Oxford University Press.
- Howatt, Anthony P. R. and Widdowson, H. G. (2004) *A History of English Language Teaching*. 2nd ed., Oxford: Oxford University Press.
- Hu, Marcella Hsueh-chao and Nation, Paul (2000) Unknown vocabulary density and reading comprehension. *Reading in a Foreign Language* [Internet] 13 (1), pp.403-429. Available from: <<http://nflrc.hawaii.edu/rfl/PastIssues/rfl131hsuehchao.pdf>> [Accessed February 17th, 2011]
- Huckin, Thomas and Coady, James (1999) 'Incidental Vocabulary Acquisition in a Second Language: A Review'. *Studies in Second Language Acquisition*, 21, 181-193.
- Huckin, Thomas, Haynes, Margot and Coady, James (1993) (eds.) *Second Language Reading and Vocabulary Learning*. Norwood, New Jersey: Ablex Publishing Corporation.
- Hulstijn, Jan H. (1992) 'Retention of Inferred and Given Word Meanings: Experiments in Incidental Vocabulary Learning'. In: *Arnaud and Béjoint*, 113-125.
- Hulstijn, Jan H. (2001) 'Intentional and Incidental Second Language Vocabulary Learning: A Reappraisal of Elaboration, Rehearsal and Automaticity'. In: *Robinson*, 258-286.
- Hulstijn, Jan H. (2003) 'Incidental and Intentional Learning'. In: *Doughty and Long*, 349-381.
- Hulstijn, Jan H. (2005) 'Theoretical and Empirical Issues in the Study of Implicit and Explicit Second-Language Learning'. *Studies in Second Language Acquisition*, 27, 129-140.
- Hulstijn, Jan H., Hollander, Merel and Greidanus, Tine (1996) 'Incidental Vocabulary Learning by Advanced Foreign Language Students: The Influence of Marginal Glosses, Dictionary Use, and Reoccurrence of Unknown Words'. *The Modern Language Journal*, 80: iii, 327-339.

- Hunt, Alan and Beglar, David (2002) 'Current Research and Practice in Teaching Vocabulary'. In: *Richards and Renandya*, 258-266.
- Ikeda, Yoko (2007) 'What Do Students Think of Kanji? : A Case Study of a Student from Non-Kanji Background'. *Research Bulletin of International Student Center, Ibaraki University*, 5, 31-40.
- Iwasaki, Shoichi (2002) *Japanese*. Amsterdam and Philadelphia: John Benjamins Publishing Company.
- Japan Foundation (2010) *Results (provisional figures) of survey on Japanese-language education abroad 2009* [Internet] 29th July, pp.1-5. Available from <http://www.jpff.go.jp/e/japanese/survey/result/dl/news_2009_01e.pdf> [Accessed August 15th, 2010]
- Japan Foundation and Japan Educational Exchanges and Services Foundation (2002) *Japanese-Language Proficiency Test: Test Content Specifications (Revised Edition)*. Tokyo: Bonjinsha.
- Japan Foundation and Japan Educational Exchanges and Services Foundation (2008) *The Japanese-Language Proficiency Test (JLPT)* [Internet]. Available from <<http://www.jlpt.jp/e/index.html>> [Accessed August 9th, 2009]
- Joyce, Terry (2005) Two-kanji compound words in the Japanese mental lexicon. *The 6th International Forum on Language, Brain, and Cognition: Cognitive Psychology of East Asian Languages: Cognitive Studies and their Application to Second Language Acquisition* [Internet], pp.37-45. Available from: <<http://www.valdes.titech.ac.jp/~terry/Tohoku05.pdf>> [Accessed March 17th, 2011]
- Kadota, Shuhei (2003) *Eigo no Mentaru Rekishikon: Goi no Kakutoku, Shori, Gakushū* [English Mental Lexicon: Acquisition, Processing and Learning of Vocabulary]. Tokyo: Shohakusha.
- Kadota, Shuhei, and Ikemura, Daiichiro (2006) *Eigo Goi Shidō Handobukku* [Handbook of English Vocabulary Instruction]. Tokyo: Taishukan.
- Kaiho, Hiroyuki, and Kashiwazaki, Hideko (eds.) (2002). *Nihongo Kyōiku no tame no Shinrigaku* [Educational Psychology for Japanese Language Teaching]. Tokyo: Shinyosha.
- Kaiser, Stefan. 2000 'Considering a Kanji/Vocabulary Syllabus for Learners of Japanese from Non-Kanji Using Backgrounds: Based on Experimental Findings in Cognitive Psychology'. *Journal of Japanese Language Teaching, University of Tsukuba*, 15, 25-34.
- Kalaja, Paula, and Ferreira Barcelos, Ana Maria (2006) *Beliefs about SLA: New Research Approach*. New York: Springer.

- Kamil, Michael L., Mosenthal, Peter B., Pearson, P. David, and Barr, Rebecca (eds.) (2000) *Handbook of Reading Research Volume III*. Mahwah, New Jersey and London: Lawrence Erlbaum Associates.
- Kanazawa, Hiroyuki (2004) 'Report on the 14th Annual Meeting of the Japanese Association of Second Language Acquisition: Panel Discussion - Vocabulary Discussion'. *Acquisition of Japanese as a Second Language*, 7, 254-256.
- Kano, Chieko (2000) 'Kanji Vocabulary Development for Intermediate and Advanced Learners'. *Journal of Japanese Language Teaching: International Student Center, University of Tsukuba*, 15, 35-46.
- Kano, Chieko, Shimizu, Yuri, Takenaka, Hiroko and Ishii, Eriko (1989) *Basic Kanji Book Vol. 1*. Tokyo: Bonjinsha.
- Kano, Chieko, Shimizu, Yuri, Takenaka, Hiroko and Ishii, Eriko (1992) *Basic Kanji Book Vol. 2*. Tokyo: Bonjinsha.
- Kato, Toshihiko (2005) 'Acquisition of Japanese Kanji Compounds by Chinese Native Speakers: Differences in the Acquisition Process from Speakers of Other Languages'. *Journal of Japanese Language Teaching*, 125, 96-105.
- Kavale, Kenneth A. and Forness, Steven R. (2000) 'Auditory and Visual Perception Processes and Reading Ability: A Quantitative Reanalysis and Historical Reinterpretation'. *Learning Disability Quarterly*, 23:4, 253-270.
- Kawaguchi, Sachiko (2010) 'Teaching and Learning Kanji in Europe: Some Efforts to Develop Learners' Autonomy'. *The Journal of Seigakuin University*, 22: 1, 121-137.
- Kess, Joseph F. and Miyamoto, Tadao (1999) *The Japanese Mental Lexicon: Psycholinguistic studies of Kana and Kanji processing*. Philadelphia & Amsterdam: John Benjamins Publishing Company.
- Koda, Keiko (1989) 'The Effects of Transferred Vocabulary Knowledge on the Development of L2 Reading Proficiency'. *Foreign Language Annals*, 22: 6, 529-540.
- Koda, Keiko (1992) 'The Effects of Lower-Level Processing Skills on FL Reading Performance: Implications for Instruction'. *The Modern Language Journal*, 76: iv, 502-512.
- Koda, Keiko (1994) 'Second Language Reading Research: Problems and Possibilities'. *Applied Psycholinguistics*, 15, 1-28.
- Koda, Keiko (1996) 'L2 Word recognition Research: A Critical Review'. *The Modern Language Journal*, 80:iv, 450-460.
- Koda, Keiko (1997) 'Orthographic Knowledge in L2 Lexical Processing: A Cross-Linguistic Perspective'. In: *Coady and Huckin*, 35-52.

- Koda, Keiko (2005) *Insights into Second Language Reading: A Cross-Linguistic Approach*. Cambridge: Cambridge University Press.
- Koda, Keiko, and Zehler, Annette M. (eds.) (2008) *Learning to Read Across Languages: Cross-Linguistic Relationships in First- and Second-Language Literacy Development*. New York and London: Routledge.
- Komori, Kazuko (2004) 'Semantic Network Structures among Japanese Non-Native Speakers: A Comparison with Japanese Native Speakers'. *Papers of the Japanese Language Teaching Association in Honor of Professor Fumiko Koide*, 12, 7-24.
- Kondo-Brown, Kimi (2006a) Affective variables and Japanese L2 reading ability. *Reading in a Foreign Language* [Internet], 18 (1), pp.56-71. Available from: <<http://nflrc.hawaii.edu/rfl/April2006/kondobrown/kondobrown.pdf>> [Accessed March 17th, 2011]
- Kondo-Brown, Kimi (2006b) 'How do English L1 Learners of Advanced Japanese Infer Unknown Kanji Words in Authentic Texts?' *Language Learning*, 56: 1, 109-153.
- Krashen, Stephen (1989) 'We Acquire Vocabulary and Spelling by Reading: Additional Evidence for the Input Hypothesis'. *The Modern Language Journal* 73: iv, 440-464.
- Kubota, Mariko and Toyoda, Etsuko (2001) 'Learning Strategies Employed for Learning Words Written in Kanji Versus Kana'. *Australian Review of Applied Linguistics*, 24, 1-16.
- Larsen-Freeman, Diane (2000) *Techniques and Principles in Language Teaching*. 2nd ed., Oxford: Oxford University Press.
- Laufer, Batia (1989) 'What Percentage of Text-Lexis is Essential for Comprehension?' In: *Laurén and Nordman*, 316-323.
- Laufer, Batia (1992) 'How Much Lexis is Necessary for Reading Comprehension?' In: *Arnaud and Béjoint*, 126-132.
- Laufer, Batia (1997) 'What's in a Word That Makes It Hard or Easy: Some Intralexical Factors That Affect the Learning of Words'. In: *Schmitt and McCarthy*, 140-155.
- Laufer, Batia, Meara, Paul and Nation, I.S.P. (2005) 'Ten Best Ideas for Teaching Vocabulary'. *The Language Teacher*, 3-6.
- Laufer, Batia and Ravenhorst-Kalovski, Geke C. (2010) Lexical threshold revisited: Lexical text coverage, learners' vocabulary size and reading comprehension. *Reading in a Foreign Language* [Internet], 22 (1), pp.15-30. Available from <<http://nflrc.hawaii.edu/rfl/April2010/articles/laufer.pdf>> [Accessed February 14th, 2012]
- Laurén, Christer, and Nordman, Marianne (eds.) (1989) *Special Language: From Humans Thinking to Thinking Machines*. Clevedon and Philadelphia: Multilingual Matters Ltd.

- Leung, Ching Yin (2002) Extensive reading and language learning: A diary study of a beginning learner of Japanese. *Reading in a Foreign Language* [Internet] 14 (1), pp.66-81. Available from <<http://nflrc.hawaii.edu/RFL/April2002/leung/leung.pdf> > [Accessed February 21st, 2011]
- Levenston, E. A. (1979) 'Second Language Acquisition: Issues and Problems'. *Interlanguage Studies Bulletin Utrecht*, 4, 147-160.
- Littlewood, William (1981) *Communicative Language Teaching: An Introduction*. Cambridge: Cambridge University Press.
- Liu, Na and Nation, I.S.P. (1985) 'Factor Affecting Guessing Vocabulary in Vontext'. *RELJ Journal*, 16, 33-42.
- Macaro, Ernesto (2010) 'Second Language Acquisition: The Landscape, the Scholarship and the Reader'. In: *Macaro*, 3-28.
- Macaro, Ernesto (ed.) (2010) *The Continuum Comparison to Second Language Acquisition*. London and New York: Continuum International Publishing Group.
- Machida, Sayuki (2001) 'Japanese Text Comprehension by Chinese and Non-Chinese Background Learners'. *System*, 29, 103-118.
- Mason, Beniko and Krashen, Stephen (1997) 'Extensive Reading in English as a Foreign Language'. *System*, 25: 1, 91-102.
- Matsuda, Fumiko (2000) 'Lexical Acquisition by Learners of Japanese: From the Perspectives of Differentiation, Generalization and Typicalization'. *Japanese-Language Education around the Globe*, 10, 73-89.
- Matsuda, Fumiko (2002) 'Lexical Acquisition of the V1+komu by Highly Advanced Learners of Japanese'. *Japanese-Language Education around the Globe*, 12, 43-62.
- Matsumi, Norio (2002) 'Dai-ni Gengo no Goi o Shūtoku Suru [Acquisition of Second Language Vocabulary]'. In: *Kaiho and Kashiwazaki*, 97-110.
- Matsumoto, Junko (2002) 'Investigating the Effects of Context on Kanji Recognition among Native English Speaking Learners of Japanese'. *Journal of Japanese Language Teaching* 115, 71-80.
- Matsumoto, Junko (2004) 'Investigating Kanji Recognition Strategies among English-Speaking Learners of Japanese'. *Studies in Language Sciences, Kanda University of International Studies*, 10, 67-85.
- Matthei, Edward, and Roeper, Thomas (1983) *Understanding and Producing Speech*. London: Fontana.
- McCarthy, Michael (1990) *Vocabulary*. Oxford: Oxford University Press.

- McCarthy, Michael, O'Keeffe, Anne, and Walsh, Steve (2010) *Vocabulary Matrix: Understanding, Learning, Teaching*. Hampshire: Heinle Cengage Learning.
- McKeown, Margaret G., and Curtis, Mary E. (eds.) (1987) *The Nature of Vocabulary Acquisition*. Hillsdale, New Jersey and London: Lawrence Erlbaum Associates.
- Meara, Paul (1980) 'Vocabulary Acquisition: A Neglected Aspect of Language Learning'. *Language Teaching and Linguistics: Abstracts*, 13: 4, 221-226.
- Meara, Paul (1984) 'The Study of Lexis in Interlanguage'. In: *Davies, Criper and Howatt*, 225-235.
- Meara, Paul (1996) *The vocabulary knowledge framework* [Internet]. Available from: <<http://www.lognostics.co.uk/vlibrary/meara1996c.pdf>> [Accessed July 21st, 2009]
- Meara, Paul (2002) 'The Rediscovery of Vocabulary'. *Second Language Research*, 18: 4, 393-407.
- Minamisono, Hiromi (1997) 'A Survey on the Relationship between Strategy Use and Reading Comprehension: The Case of Reading Japanese as a Foreign Language'. *Japanese-Language Education around the Globe*, 7, 31-44.
- Miura, Teruyuki (2005) 'Interview with Paul Nation: The Past, Present, and Future of Second Language Vocabulary Acquisition'. *The Language Teacher*, 29: 7, 11-14.
- Miyazaki, Satoshi, and Neustupny, J.V. (eds.) (1999) *Nihongo Kyōiku to Nihongo Gakushū: Gakushū Sutorateji-ron ni Mukete* [Japanese Language Teaching and Learning: Theory of Learning strategies]. Tokyo: Kuroshio Publishers.
- Mizukuchi, Rika (2002) 'The Role of Metalinguistic Knowledge in Choosing Japanese Synonyms'. *Journal of Japanese Culture*, 14, 149-152.
- Mochizuki, Masamichi, Aizawa, Kazumi and Tono, Yukio (2003) *Eigo Goi Shidō no Manyuaru* [English Vocabulary Instruction Manual]. Tokyo: Taishukan.
- Mori, Yoshiko (1998) 'Effects of First Language and Phonological Accessibility on Kanji Recognition'. *The Modern Language Journal*, 82: i, 69-82.
- Mori, Yoshiko (1999a) 'Beliefs about Language Learning about Their Relationship to the Ability to Integrate Information from Word Parts and Context in Interpreting Novel Kanji Words'. *The Modern Language Journal*, 83: iv, 534-547.
- Mori, Yoshiko (1999b) 'Epistemological Beliefs and Language Learning Beliefs: What Do Language learners Believe about Their Learning?' *Language Learning*, 49: 3, 377-415.
- Mori, Yoshiko (2002) 'Individual Differences in the Integration of Information from Context and Word Parts in Interpreting Unknown Kanji Words'. *Applied Psycholinguistics*, 23, 375-397.

- Mori, Yoshiko (2003a) 'The Roles of Context and Word Morphology in Learning New Kanji Words'. *The Modern Language Journal* 87: iii, 404-420.
- Mori, Yoshiko (2003b) 'Vocabulary Acquisition in Japanese'. In: *Hatasa*, 172-186.
- Mori, Yoshiko (2004) 'Individual Difference in Word Inference Strategies'. *Japanese Language Education: The State of the Art in Second Language Acquisition and Instruction Research*, November 2004 Special Issue, 12-37.
- Mori, Yoshiko and Nagy, William (1999) 'Integration of Information from Context and Word Elements in Interpreting Novel Kanji Compounds'. *Reading Research Quarterly*, 34: 1, 80-101.
- Mori, Yoshiko, Sato, Kumi and Shimizu, Hideko (2007) 'Japanese Language Students' Perceptions on Kanji Learning and Their Relationship to Novel Kanji Word Learning Ability'. *Language Learning*, 57: 1, 57-85.
- Mori, Yoshiko and Shimizu, Hideko (2007) 'Japanese Language Students' Attitudes toward Kanji and Their Perceptions on Kanji Learning Strategies'. *Foreign Language Annals*, 40: 3, 472-490.
- Morton, J. and Sasanuma, S. (1984) 'Lexical Access in Japanese'. In: *Henderson*, 25-42.
- Muraki, Shinjiro (1997) 'Teaching Vocabulary'. *Journal of Japanese Language Teaching*, 94: 75-79.
- Nagatomo, Kazuhiko (1998) 'Dai-ni-Gengo toshite no Nihongo no Shūtoku Kenkyū [Acquisition of Japanese as a Second Language]'. *Jidō-Shinrigaku no Shimpo* [Annual Review of Japanese Child Psychology], 37, 79-110.
- Nagatomo, Kazuhiko (1999) 'Dai-ni-Gengo toshite no Nihongo no Shūtoku Kenkyū: Gaikan, Tenbō, Honkaken-Kenkyū no Ichizuke [Acquisition of Japanese as a Second Language: Overview, Observation, Purpose of Study]'. *Dai-ni-Gengo toshite no Nihongo no Shūtoku Kenkyū ni kansuru Sōgō-kenkyū* [Comprehensive Research on Acquisition of Japanese as a Second Language], 9-41.
- Nagy, William and Herman, Patricia A (1987) 'Breadth and Depth of Vocabulary Knowledge: Implications for Acquisition and Instruction'. In: *McKeown and Curtis*, 19-36.
- Nagy, William, Herman, Patricia A. and Anderson, Richard C. (1985) 'Learning Words from Context'. *Reading Research Quarterly*, 20: 2, 233-253.
- Nagy, William E. and Scott, Judith A. (2000) 'Vocabulary Processes'. In: *Kamil, Mosenthal, Pearson and Barr*, 269-284.
- Nakano, Teiko, Harada, Teruko, Yamagata, Mihoko, Miyazaki, Taeko Sakai, Machiko and Mikami, Kyoko (2007) 'The Development of Japanese Graded Readers: The Construction

- and Evaluation of a Vocabulary Checker'. *Technical Report of IEICE (The Institute of Electronics, Information and Communication Engineers), Thought and Language*, 107: 323, 31-36.
- Nation, I. S. P. (1990) *Teaching and Learning Vocabulary*. Boston, Massachusetts: Heinle and Heinle Publishers.
- Nation, I. S. P. (2001) *Learning Vocabulary in Another Language*. Cambridge: Cambridge University Press.
- Nation, Paul (2002) 'Best Practice in Vocabulary Teaching and Learning'. In: *Richards and Renandya*, 267-272.
- Nation, Paul (2006a) 'Vocabulary: Second Language'. In: *Brown*, 448-454.
- Nation, Paul (2006b) 'Language Education - Vocabulary'. In: *Brown*, 494-499.
- Nation, I. S. P. (2006c) 'How Large a Vocabulary is Needed for Reading and Listening?' *The Canadian Modern Language Review*, 63: 1, 59-82.
- Nation, I. S. P. (2008) *Teaching Vocabulary: Strategies and Techniques*. Boston: Heinle Cengage Learning.
- Nation, Paul and Meara, Paul (2002) 'Vocabulary'. In: *Schmitt*. 35-54.
- Nation, Paul and Wang Ming-tzu, Karen (1999) Graded readers and vocabulary. *Reading in a Foreign Language* [Internet], 12 (2), pp.355-380. Available from: <<http://nflrc.hawaii.edu/rfl/PastIssues/rfl122nation.pdf>> [Accessed February 21st, 2011]
- National Institute for Japanese Language and Linguistics (1984) *Goi no Kenkyū to Kyōiku 1* [Vocabulary Research and Instruction 1]. Tokyo: National Institute for Japanese Language and Linguistics.
- National Institute for Japanese Language and Linguistics (1985) *Goi no Kenkyū to Kyōiku 2* [Vocabulary Research and Instruction 2]. Tokyo: National Institute for Japanese Language and Linguistics.
- Nomura, Masaaki (1988) 'Niji-Kango no Kōzō [Structure of Two-Kanji Compound Words]'. *Nihongogaku* [Japanese Linguistics], 7: 5, 44-55.
- NPO Nihongo Tadoku Kenkyūkai (2008) *Japanese Graded Readers: Level 4, Volume 1*. Tokyo: Ask Publishing.
- NPO Nihongo Tadoku Kenkyūkai (2011) *NPO Nihongo Tadoku Kenkyūkai* [NPO Japanese Graded Readers] [Internet]. Available from: <<http://www.nihongo-yomu.jp/index.html>> [Accessed March 23rd, 2011]
- Nunan, David (1988) *The Learner-Centred Curriculum: A Study in Second Language Teaching*. Cambridge: Cambridge University Press.

- Nunan, David (1991a) *Language Teaching Methodology: A Textbook for Teachers*. Englewood Cliffs, N. J.: Prentice Hall.
- Nunan, David (1991b) 'Communicative Tasks and the Language Curriculum'. *TESOL Quarterly*, 25: 2, 279-295.
- Ogawa, Kunihiro (1990) *Kana Can Be Easy*. Tokyo: The Japan Times.
- Okita, Yoko (1995) 'Kanji Learning Strategies and Student Beliefs on Kanji Learning'. *Japanese-Language Education around the Globe*, 5, 105-124.
- Okita, Yoko (1997) 'Students' Beliefs about Learning Japanese Orthography: Beyond the Textbooks'. In: *Cook, Hijirida and Tahara*, 61-75.
- Okita, Yoko (1998) 'The Influence of Introductory Textbooks on Kanji Learning Strategy Use and Beliefs about Kanji Learning'. *Japanese-Language Education around the Globe*, 8, 31-45.
- Ono, Masaki (2001) 'Lexical Network: A Comparative Research of Native Speakers and Non-Native Speakers'. *Journal of Japanese Language Teaching, International Student Center, University of Tsukuba*, 16, 11-19.
- Oxford, Rebecca L. (1990) *Language Learning Strategies: What Every Teacher Should Know*. Boston: Heinle.
- Palmberg, Rolf (1987) 'Patterns of Vocabulary Development in Foreign-Language Learners'. *Studies in Second Language Acquisition*, 9: 2, 201-220.
- Paribakht, T. Sima (2005) 'The Influence of First Language Lexicalization on Second Language Lexical Inferencing: A Study of Farsi-Speaking Learners of English as a Foreign Language'. *Language Learning*, 55: 4, 701-748.
- Paribakht, T. Sima (2010) 'The Effect of Lexicalization in the Native Language on Second Language Lexical Inferencing: A Cross-Linguistic Study'. In: *Chacón-Beltrán, Abello-Contesse and Torreblanca López*, 61-82.
- Paribakht, T. Sima and Wesche, Marjorie Bingham (1993) 'Reading Comprehension and Second Language Development in a Comprehension-Based ESL Program'. *TESL Canada Journal*, 11: 1, 9-29.
- Paribakht, T. Sima and Wesche, Marjorie (1997) 'Vocabulary Enhancement Activities and Reading for Meaning in Second Language Vocabulary Acquisition'. In: *Coady and Huckin*, 174-200.
- Paribakht, Sima and Wesche, Marjorie (1999) 'Reading and "Incidental" L2 Vocabulary Acquisition: An Introspective of Lexical Inferencing'. *Studies in Second Language Acquisition*, 21: 2, 195-224.

- Park, Eunyong Christine (2008) 'Literacy Experience in Korean: Implications for Learning to Read in a Second Language'. In: *Koda and Zehler*, 201-221.
- Phythian-Sence, Caroline and Wagner, Richard K. (2007) 'Vocabulary Acquisition: A Primer'. In: *Wagner, Muse and Tannenbaum*, 1-14.
- Pigada, Maria and Schmitt, Norbert (2006) Vocabulary acquisition from extensive reading: A case study. *Reading in a Foreign Language* [Internet], 18 (1), 1-28. Available from <<http://nflrc.hawaii.edu/rfl/April2006/pigada/pigada.pdf>> [Accessed February 18th, 2011]
- Pitts, Michael, White, Howard and Krashen, Stephen (1989) Acquiring second language vocabulary through reading: A replication of the Clockwork Orange study using second language acquirers. *Reading in a Foreign Language* [Internet], 5 (2), 271-275. Available from <<http://nflrc.hawaii.edu/rfl/PastIssues/rfl52pitts.pdf>> [Accessed February 18th, 2011]
- Read, John (1997) 'Vocabulary and Testing'. In: *Schmitt and McCarthy*, 303-320.
- Read, John (2000) *Assessing Vocabulary*. Cambridge: Cambridge University Press.
- Read, John (2004a) 'Plumbing the depths: How Should the Construct of Vocabulary Knowledge be Defined?' In: *Bogaards and Laufer*, 209-227.
- Read, John (2004b) 'Research in Teaching Vocabulary'. *Annual Review of Applied Linguistics* 24, 146-161.
- Reynolds, Brett, Harada, Teruko, Yamagata, Mihoko and Miyazaki, Taeko (2003) 'Towards a Framework for Japanese Graded Readers: Initial Research Findings'. *Papers of the Japanese Language Teaching Association in Honor of Professor Fumiko Koide*, 11, 23-38.
- Richards, Jack C. (1976) 'The Role of Vocabulary Teaching'. *TESOL Quarterly*, 10: 1, 77-89.
- Richards, Jack C., and Renandya, Willy A. (eds.) (2002) *Methodology in Language Teaching: An Anthology of Current Practice*. Cambridge: Cambridge University Press.
- Richards, Jack C. and Rodgers, Theodore S. (2001) *Approach and Methods in Language Teaching*. 2nd ed., Cambridge: Cambridge University Press.
- Rivers, Wilga M. (1981) *Teaching Foreign-language Skills*. 2nd ed., Chicago and London: The University of Chicago Press.
- Rivers, Wilga M. (1983) *Communicating Naturally in a Second Language: Theory and Practice in language teaching*. Cambridge, London, New York, New Rochelle, Melbourne and Sydney: Cambridge University Press.
- Robinson, Peter (ed.) (2001) *Cognition and Second Language Instruction*. Cambridge: Cambridge University Press.

- Rott, Susanne (1999) 'The Effect of Exposure Frequency on Intermediate Language Learners' Incidental Vocabulary Acquisition and Retention through Reading'. *Studies in Second Language Acquisition*, 21: 4, 589-619.
- Rowley, Michael (1995) *Kana Pict-o-Graphic: Mnemonics for Japanese Hiragana and Katakana*. Berkeley, California: Stone Bridge Press.
- Ruddock, Karen (2000) 'An Argument for the Use of Authentic Texts with Beginners of Japanese as a Foreign Language'. *CLCS Occasional Paper*, 58.
- Sakai, Kunihide and Awano, Makiko (2010) 'Tadoku Jugyō to wa?: Reberu-betsu Yomimono to Shihanbon o Tsukatta Tadoku Jugyō no Susume'. [Extensive Reading Lessons?: Recommendation of Extensive Reading Lessons Using Learner-Specific Graded Reading Materials]. *Japanese Language Education in Europe*, 14, 257-264.
- Saragi, T., Nation, I.S.P. and Meister, G.F. (1978) 'Vocabulary Learning and Reading'. *System* 6: 2, 72-78.
- Sato, Masamitsu (1999) 'On vocabulary Acquisition by Learners of Japanese: Several Problems with Fundamental Vocabulary'. *Memoirs of the Institute of Humanities Meiji University*, 44, 169-180.
- Schmitt, Norbert (1995a) 'A Brief Perspective on Vocabulary'. *The Language Teacher*, 19: 2, 34-35.
- Schmitt, Norbert (1995b) 'The Word on Words: An Interview with Paul Nation'. *The Language Teacher*, 19: 2, 5-7.
- Schmitt, Norbert (1997) 'Vocabulary Learning Strategies'. In: *Schmitt and McCarthy*, 199-227.
- Schmitt, Norbert (1998) 'Tracking the Incremental Acquisition of Second Language Vocabulary: A Longitudinal Study'. *Language Learning*, 48: 2, 281-317.
- Schmitt, Norbert (2000) *Vocabulary in Language Teaching*. Cambridge: Cambridge University Press.
- Schmitt, Norbert (2002) *An Introduction to Applied Linguistics*. London: Arnold.
- Schmitt, Norbert (2007) 'Current Perspectives on Vocabulary Teaching and Learning'. In: *Cummins and Davison*, 827-841.
- Schmitt, Norbert (2008a) 'Instructed Second Language Vocabulary Learning'. *Language Teaching Research*, 12: 3, 329-363.
- Schmitt, Norbert (2008b) *Teaching vocabulary* [Internet] Pearson Longman. Available from <<http://longmanhomeusa.com/content/FINAL-HIGH%20RES-Schmitt-Vocabulary%20Monograph%20.pdf>> [Accessed February 14th, 2012]

- Schmitt, Norbert (2010a) 'Key Issues in Teaching and Learning Vocabulary'. In: *Chacón-Beltrán, Abello-Contesse, and Torreblanca López*, 28-40.
- Schmitt, Norbert (2010b) *Researching Vocabulary: A Vocabulary Research Manual*. Basingstoke: Palgrave Macmillan.
- Schmitt, Norbert, and McCarthy, Michael (1997) *Vocabulary: Description, Acquisition and Pedagogy*. Cambridge: Cambridge University Press.
- Schmitt, Norbert and Meara, Paul (1997) 'Researching Vocabulary through a Word Knowledge Framework: Word Associations and Verbal Suffixes'. *Studies in Second Language Acquisition*, 19: 1, 17-36.
- Schmitt, Norbert, Jiang, Xiangying and Grabe, William (2011) 'The Percentage of Words Known in a Text and Reading Comprehension'. *The Modern Language Journal*, 95: i, 26-43.
- Seeley, Chris (1984) 'Aspects of the Japanese Writing System: Introduction'. *Visible Language*, XVIII: 3, 213-218.
- Shibatani, Masayoshi (1990) *The Languages of Japan*. Cambridge: Cambridge University Press.
- Sinclair, John McH. and Renouf, Antoinette (1988) 'A Lexical Syllabus for Language Learning'. In: *Carter and McCarthy*, 140-160.
- Singleton, David (1999) *Exploring the Second Language Mental Lexicon*. Cambridge: Cambridge University Press.
- Smith, Janet S. (1996) 'Japanese Writing'. In: *Daniels and Bright*, 209-217.
- Snowling, Margaret J., and Hulme, Charles (eds.) (2005) *The Science of Reading: Handbook*. Oxford: Blackwell.
- Sökmen, Anita A. (1997) 'Current Trends in Teaching Second Language Vocabulary'. In: *Schmitt and McCarthy*, 237-257.
- Steinberg, Danny D. and Oka, Naoki (1978) 'Learning to Read Kanji is Easier than Individual Kana'. *The Japanese Journal of Psychology*, 49: 1, 15-21.
- Steinberg, Miho T. (1995) 'Teaching Japanese Toddlers to Read Kanji and Kana'. In: *Taylor and Olson*, 119-214.
- Stern, H. H. (1983) *Fundamental Concepts of Language Teaching*. Oxford: Oxford University Press.
- Stoller, Fredricka L. and Grabe, William (1993) 'Implications for L2 Vocabulary Acquisition and Instruction from L1 Vocabulary Research'. In: *Huckin, Haynes and Coady*, 24-45 .
- Suzuki, Yoshiaki (2007) 'A Note on Kanji-Education'. *Bulletin of Center for Japanese Language, Waseda University*, 20, 53-70.

- Takač, Višnja Pavičić (2008) *Vocabulary Learning Strategies and Foreign Language Acquisition*. Clevedon, Buffalo and Toronto: Multilingual Matters.
- Tanabe, Kazuko, Ito, Seiko, Tokuda, Megumi and Chujo, Kiyomi (2009) 'The Studies of Vocabulary Teaching in the Subjects for Foreign Students'. *Memoirs of the Japan Women's University, Faculty of Literature*, 58, 17-40.
- Tanaka, Nozomi (1994) *Japanese Language Teaching: Methods and Practices*. Tokyo: Bonjinsha.
- Taniguchi, Sumiko (1995) 'The Importance of Self-Generated Processing in Vocabulary Learning'. *The Language Teacher*, 19: 2, 31-33.
- Taniguchi, Sumiko, Akahori, Kanji, Nitoguri, Shin and Sugimura, Kazue (1994) 'Vocabulary Acquisition of JSL Learners: Development of Semantic Networks'. *Journal of Japanese Language Teaching*, 84, 78-91,
- Taylor, Insup, and Olson, David R. (eds.) (1995) *Scripts and Literacy: Reading and Learning to Read Alphabets, Syllabaries and Characters*. Boston: Kluwer Academic Publishers.
- Taylor, Insup, and Taylor, M. Martin (1995) *Writing and Literacy in Chinese, Korean and Japanese*. Amsterdam and Philadelphia: John Benjamins Publishing Company.
- The Agency for Cultural Affairs (2009) Kokunai no nihongo kyōiku no gaiyō [Overview of Japanese language education for foreign nationals in Japan] [Internet]. Available from: <http://www.bunka.go.jp/kokugo_nihongo/jittaichousa/h21/pdf/h21_hanrei_ver02.pdf> [Accessed March 21st, 2011]
- The National Language Council (1998) *Atarashī Kokugo Hyōki Handobukku* [New National Orthographical Handbook]. 4th ed., Tokyo: Sanseido.
- 3A Corporation (1998a) *Minna no Nihongo Shōkyū I Honsatsu* [Minna no Nihongo Beginner I Main Textbook]. Tokyo: 3A Corporation.
- 3A Corporation (1998b) *Minna no Nihongo Shōkyū II Honsatsu* [Minna no Nihongo Beginner II Main Textbook]. Tokyo: 3A Corporation.
- Tokuda, Megumi (2006) 'Inferring the Meanings of Unknown Words and Vocabulary Learning in Reading'. *Japanese Language Education: The State of the Art in Second Language Acquisition and Instruction Research, November 2004 Special Issue*, 11-30.
- Tono, Yukio (1997) *Eigo Goi Shūtoku Riron: Bokyaburari o Kagaku-suru* [English Vocabulary Acquisition Theory: Science of Vocabulary Learning]. Tokyo: Kagensha.
- Toyoda, Etsuko (1995) 'Kanji Gakushū ni Taisuru Gakushūsha no Ishiki [Students' Perceptions of Kanji Learning]'. *Journal of Japanese Language Teaching*, 85, 101-113.
- Toyoda, Etsuko (1998a) 'Cognitive Processes of Kanji in Reading'. *Papers of the Japanese Language Teaching Association in Honor of Professor Fumiko Koide*, 6, 59-72.

- Toyoda, Etsuko (1998b) 'Teaching Kanji by Focusing on Learners' Development of Graphemic Awareness'. *Australian Review of Applied Linguistics*, 15, 155-168.
- Toyoda, Etsuko (2009) An analysis of L2 readers' comments on kanji recognition. *Electronic Journal of Foreign Language Teaching* [Internet], 6 (1), pp.5-20. Available from: <<http://e-flt.nus.edu.sg/v6n12009/toyoda.pdf>> [Accessed March 17th, 2011]
- Tsetsegdulum, Ulambayar (2009) 'Current State and Issues of Research on Learning Strategy of Kanji: The Effective Kanji Strategy for a Learner's with no Kanji Background'. *Journal of Japanese Language and Culture*, 5, 43-52.
- Verhoeven, Ludo, and de Jong, John H. A. L. (eds.) (1992) *The Construct of Language Proficiency: Application of Psychological Models of Language Assessment*. Amsterdam and Philadelphia: John Benjamins Publishing Company.
- Vermeer, Anne (1992) 'Exploring the Second Language Learner Lexicon'. In: *Verhoeven and de Jong*, 147-162.
- Wagner, Richard K., Muse, Andrea E., and Tannenbaum, Kendra R. (eds.) (2007) *Vocabulary Acquisition: Implication for Reading Comprehension*. New York and London: The Guilford Press.
- Waring, Rob (2011) 'Extensive Reading in English Teaching'. In: *Widodo and Cirocki*, 69-80.
- Waring, Rob and Takaki, Misako (2003) At what rate do learners learn and retain new vocabulary from reading a graded reader? *Reading in a Foreign Language*, [Internet] 15 (2), pp.130-163. Available from: <<http://nflrc.hawaii.edu/rfl/October2003/waring/waring.pdf>> [Accessed February 15th, 2011]
- Wei, Mariko Moroishi (2006) 'Reading for Meaning and Incidental Vocabulary Acquisition: The Case of Japanese'. *Acquisition of Japanese as a Second Language*, 9, 5-22.
- Wei, Mariko Moroishi (2008) 'Acquisition of Japanese as Foreign Language in a Content-Based Classroom'. *The 2nd Consortium on Japanese Studies in a Global Perspective "Present and Future of Japanese Studies: Building and Utilizing an International and Interdisciplinary Network"*, 32-43.
- Wesche, Marjorie and Paribakht, T. Sima (1999) 'Incidental L2 Vocabulary Acquisition: Theory, Current Research, and Instructional Implications - Introduction'. *Studies in Second Language Acquisition*, 21, 175-180.
- Widodo, Handoyo Puji, and Cirocki, Andrzej (eds.) (2011) *Innovation and Creativity in ELT Methodology*. New York: Nova Publishers.
- Wilkins, David Arthur (1972) *Linguistics in Language Teaching*. London: Edward Arnold.

- Yachi, Michiko (2002) 'A Review of Second Language Vocabulary Acquisition Research: Vocabulary Learning Style and Strategies'. *Japanese Language Education: The State of the Art in Second Language Acquisition and Instruction Research: A Guidepost to Japanese Language Education for the New Century*, 155-169.
- Yachi, Michiko (2003) 'An Overview of Incidental Vocabulary Learning Research'. *Japanese Language Education: The State of the Art in Second Language Acquisition and Instruction Research*, November 2003 Special Issue, 78-95.
- Yachi, Michiko (2007) 'Learning Vocabulary in Japanese as a Second Language Through Writing and Its Error Correction'. *The Bulletin of Yamamura Gakuen College*, 18, 53-68.
- Yachi, Michiko and Komori, Kazuko (2009). 'Effects of Context on Inference of the Meaning of Unknown Lexical Compound Verbs'. *Journal of Japanese Language Teaching* 142, 113-122.
- Yamagata, Junko (2007) 'An Overview of Research on Lexical Inferencing in L2 Reading Comprehension: Focusing on Use of Low Level Strategies'. *Studies in Language Science, Kanda University of International Studies*, 13, 37-51.
- Yamagata, Junko (2008) 'Japanese Learners' Lexical Inferencing in Text Comprehension: The Effects of L2 Linguistic Knowledge and Native Language Background'. *Journal of Japanese Language Teaching*, 139, 42-51.
- Yamauchi, Hiroyuki (2004) 'Research Methods of Second Language Vocabulary Acquisition - Chasen and N-gram Statistics'. *Acquisition of Japanese as a Second Language*, 7, 141-161.
- Yokosuka, Ryuko (1999) 'Goi Oyobi Kanji Gakushu Sutorateji no Kenkyū [Study on Vocabulary and Kanji Learning Strategies]'. In: *Miyazaki and Neustupny*, 97-116.
- Yokoyama, Noriko (2001) 'The Role of Input and Output in the Acquisition of Word Meanings'. *Urawa Bulletin, Japan Foundation Japanese-Language Institute*, 11, 1-12.
- Yoshizawa, Mayumi (2005) 'Incidental Vocabulary Learning and Comprehension in L2 Reading: The Effects of Dictionary and Marginal Glosses as a Function of Japanese Proficiencies'. *Acquisition of Japanese as a Second Language*, 8, 24-41.
- Zimmerman, Cheryl Boyd (1997) 'Historical Trends in Second Language Vocabulary Instruction'. In: *Coady and Huckin*, 5-19.