Tackling the *Kanji* Hurdle:

An investigation of *kanji* order and its role in facilitating the *kanji* learning process

by

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ABSTRACT

Learning *kanji*, the Chinese characters that make up part of the Japanese script, presents a seemingly insurmountable task for learners of Japanese from non-*kanji* backgrounds. *Kanji* are generally introduced in an order determined by the teacher or in the order in which they are set out in the textbook. In the field of Japanese language education, very little research has examined the order in which *kanji* are introduced and the role that *kanji* order plays in facilitating the *kanji* learning process. This research seeks to determine the role of *kanji* order from the perspective of Japanese language textbooks, teachers of Japanese, and learners of Japanese.

Three central research questions were identified:

1. How are Japanese language textbooks different from each other from the perspective of *kanji* selection and ordering?

2. What beliefs are held by Japanese teachers at universities in Australia, New Zealand, Canada, the UK and the US, in regard to teaching *kanji* to non-*kanji* background students of Japanese?

3. Which *kanji* clusters do non-*kanji* background learners perceive as easy or difficult to learn?

Three stages of research were conducted to answer my research questions:

1. A textbook analysis was conducted on four Japanese language textbooks in order to compare the *kanji* selected for inclusion in different textbooks and the order in which they are introduced.

2. A survey of *kanji* learning and teaching beliefs was conducted to ascertain how

teachers perceive the teaching and learning process of *kanji* and whether they regard the order in which *kanji* are introduced as an important factor in facilitating the *kanji* learning process.

3. A survey of Japanese language learners regarding *kanji* clusters was conducted to determine whether Japanese language learners perceive different *kanji* clusters, groups of *kanji* with a common property, as easier to learn or more difficult to learn than others.

As for the first research question, results showed that the selection of *kanji* for the four textbooks analysed were unique and significantly different from each other. However, *kanji* orders found within the analysed textbooks were similar. As for the second research question, results showed that a large proportion of Japanese language teachers believe that the order in which *kanji* are introduced plays a role in facilitating the *kanji* learning process but they are unsure as to how to implement those beliefs in their teaching. As for the third research question, participants indicated that they perceived certain *kanji* clusters as easier than others.

STATEMENT OF CANDIDATE

I certify that the work in this thesis entitled "Tackling the *Kanji* Hurdle: An investigation of *kanji* order and its role in facilitating the *kanji* learning process" has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree to any other university or institution other than Macquarie University.

I also certify that the thesis is an original piece of research and it has been written by me. Any help and assistance that I have received in my research work and the preparation of the thesis itself have been appropriately acknowledged.

In addition, I certify that all information sources and literature used are indicated in the thesis. The research presented in this thesis was approved by Macquarie University Ethics Review Committee, reference numbers: 5201200847 (approved on 4/12/12) and 5201400387 (approved on 19/05/2014).

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DEDICATION

For Kale and Kia

With love and affection

CHAPTER 1: INTRODUCTION

The aim of this study is to examine whether the order in which *kanji* are introduced to non-*kanji* background learners of Japanese as a foreign language (JFL) facilitates the *kanji* learning process. The study investigates *kanji* order from three different perspectives (1) Japanese language textbooks, (2) Japanese language teachers, and (3) JFL learners.

This chapter presents a statement of the problem to be investigated followed by an explanation of the aim and significance of the study. Finally, an overview of the thesis and an explanation of conventions used in this thesis are provided.

1.1   Statement of the problem

According to a survey by the Japan Foundation (2012, p. 2), the number of Japanese language learners outside of Japan reached 3,985,669 in 2012, an increase of 9.2% since the previous survey in 2009. The number of examinees sitting the Japanese Language Proficiency Test (JLPT), a standard test of Japanese language ability, has also increased from 4,473 overseas examinees in 1984 when the test was first offered to 441,244 overseas examinees in 2013. Although slight declines in the number of students studying Japanese in some countries is reported, the popularity of JFL overall is indisputable.

Although popular, the Japanese language has long been regarded as one of the most difficult languages to learn, particularly for those learners whose native language (L1) does not incorporate the use of *kanji*, the Chinese characters that make up part of the Japanese script (Bourke, 1992; Douglas, 1992). *Kanji* number in the thousands and present a multitude of difficulties for JFL learners due to the sheer number required to

be learned as well as their inherent complexity. For non-*kanji* background JFL learners, acquiring proficiency in the reading and writing of *kanji* is perhaps the greatest obstacle to overcome in mastering the language (Tollini, 1994).

Research in the field of Japanese language education has increased in line with the increase in popularity of JFL, and unsurprisingly *kanji* has been the subject of several studies. In particular, learning strategies (Bourke, 1992) have attracted a lot of attention as efforts are made to find ways in which *kanji* can be learned efficiently by JFL learners. *Furigana* as a means to facilitate *kanji* learning has also been explored (Kirwan, 2003); motivation and self-regulation (Rose, 2010) are but two other approaches that have been taken in research on *kanji*. To date, however, no study has examined the order in which *kanji* are taught and its role in facilitating the *kanji* learning process.

There is no standard approach to teaching *kanji* to JFL learners and therefore *kanji* are generally introduced in an order determined by the teacher or in the order in which they are set out in the textbook. For the most part, the *kanji* teaching methodology for learners of Japanese is the same as for native speakers of Japanese (Tollini, 1994). This approach, however, may not be the most efficient means for introducing *kanji* to the non-native learner of Japanese as the order the *kanji* are introduced seems to be random and lacking any sort of logical progression in which one *kanji* builds upon the next. In cognitive psychology, it is well established that information in general is better retained when organised in a logical fashion. The selection and order that *kanji* are introduced to students from non-*kanji* backgrounds is of vital importance and central to the teaching methodology of *kanji*.

1.2   Aim of the study

The aim of this study is to determine the role of *kanji* order in facilitating the *kanji* learning process for beginner level non-*kanji* background JFL learners. In order to achieve this, three central research questions were identified:

1. How are Japanese language textbooks different from each other from the perspective of *kanji* selection and ordering?

2. What beliefs are held by Japanese teachers at universities in Australia, New Zealand, Canada, the UK and the US, in regard to teaching *kanji* to non-*kanji* background learners of Japanese?

3. Which *kanji* clusters do non-*kanji* background learners perceive as easy or difficult to learn?

Three stages of research were conducted to answer my research questions:

1. A textbook analysis was conducted on four Japanese language textbooks in order to compare the *kanji* selected for inclusion in different textbooks and the order in which they are introduced.

2. Fifty-four Japanese language teachers participated in a survey of *kanji* learning and teaching beliefs conducted to ascertain how teachers perceive the teaching and learning process of *kanji* and whether they regard the order in which *kanji* are introduced as an important factor in facilitating the *kanji* learning process. This survey serves as background to the state of Japanese language education at the undergraduate level as well as providing valuable insight into the beliefs held by Japanese language teachers.

3. A survey of forty-seven Japanese language students regarding *kanji* clusters was conducted to determine whether JFL learners perceive different *kanji* clusters, groups of *kanji* with a common property, as easier to learn or more difficult to learn than others.

This study calls upon theories of cognitive processing, constructivist learning and teaching, and research related to second language acquisition and *kanji* education for its theoretical framework. In traditional approaches to learning, emphasis is frequently placed on repetition. In a constructivist approach to learning, new knowledge builds on the knowledge the student already possesses, known as schema.

The three stages of research were implemented to answer the research questions and ascertain a deeper more holistic insight into JFL *kanji* education by combining insights from research related to (1) Japanese language textbooks, (2) Japanese language teachers, and (3) JFL learners.

1.3   Significance of the study

This study into the role of *kanji* order in facilitating the *kanji* learning process is important for three primary reasons. This study:

1. Makes a contribution to the field of Japanese language education by expanding knowledge of how JFL learners perceive different *kanji* clusters in respect to their ease of learnability.

2. Facilitates teachers in curriculum development.

3. Contributes to studies of teaching *kanji* to non-*kanji* background learners.

One intended outcome of the study was to identify different *kanji* clusters that JFL

learners perceive as easy and difficult. On a practical level, insights gained from this study will enable teachers of Japanese to facilitate *kanji* learning for non-*kanji* background learners by enabling teachers to foresee which types of *kanji* may cause problems for JFL learners. This may have implications in the way teachers choose to teach *kanji* and more specifically, the order in which they teach them. A significant aspect of this study, then, is its potential to provide better *kanji* education to JFL learners from non-*kanji* backgrounds.

Secondly, greater awareness among teachers of the impact of the order *kanji* have on learning *kanji* will contribute to curriculum design. While it is generally accepted that *kanji* are difficult for non-*kanji* background JFL learners, teachers lack any guidelines as to how to select and order *kanji*. This study of *kanji* orders will create greater awareness of the role the order in which *kanji* are introduced plays to facilitate struggling JFL learners in the *kanji* learning process.

Lastly, this thesis is the first major study on *kanji* order. Although learning strategies have been a focal point for *kanji*-related studies, this study offers an alternative approach to *kanji* education and therefore makes an original contribution to the literature. A greater understanding of *kanji* order contributes to our knowledge and provides an opportunity to advance *kanji* teaching methods, thereby reducing the burden on students and facilitating the learning of *kanji*.

1.4   Overview of the study

This study challenges traditional methods of teaching *kanji* with respect to the orders in which *kanji* are introduced, and investigates the merits of various criteria-based *kanji* orders. The pedagogical implications of introducing *kanji* with consideration for these criteria and the impact it has on the learners of Japanese from non-*kanji*

backgrounds is explored. This thesis is organised into seven chapters and consists of six further chapters as follows:

Chapter 2: Background

In Chapter 2, a complete background study into the Japanese writing system is provided. This provides a necessary overview of key developments and the nature of *kanji* and explores reasons why they pose such a hurdle for JFL learners from non-*kanji* backgrounds. Different criteria for ordering *kanji* and their respective advantages and disadvantages as tools for facilitating the *kanji* learning process are also examined in this chapter.

Chapter 3: Literature review

In Chapter 3, the relevant literature is reviewed in relation to cognitive psychology and second language acquisition (SLA) and its application to *kanji* acquisition, as well as unique aspects of learning *kanji* that affect non-*kanji* background learners, and *kanji* learning and teaching. Self-study *kanji* textbooks are also examined to determine the approaches adopted to ordering *kanji*. Finally, the research questions are reiterated and an overview of the research methods adopted in this thesis is presented.

Chapter 4: Textbook analysis

In Chapter 4, research procedures and results from Stage 1 of the research – textbook analysis – are presented and discussed.

Chapter 5: Survey of *kanji* teaching and learning beliefs

In Chapter 5, research procedures and results from Stage 2 of the research – a

survey of teachers' *kanji* teaching and learning beliefs – are presented and discussed.

Chapter 6: Survey of JFL learners' perceptions of *kanji* clusters

In Chapter 6, research procedures and results from Stage 3 of the research – student survey on the perception of *kanji* clusters – are presented and discussed.

Chapter 7: Conclusions

Finally, in Chapter 7, significant outcomes, recommendations, limitations and suggestions for future research are presented, as well as conclusions and pedagogical implications of the study.

1.5   Conventions used in this thesis

To ensure ease of readability, specific conventions have been adopted in this thesis. Japanese terms in this thesis will be written using the revised Hepburn system of Romanisation, unless quoting from sources using a different form of Romanisation, in which case the original Romanisation will be maintained. Japanese terms will be italicised in their Romanised form first, followed by the term in Japanese script and followed with its English meaning. Australian English is used in spelling throughout this thesis except when quoting from non-Australian sources.

CHAPTER 2: BACKGROUND

2.1   Introduction

In Chapter 1, the introductory chapter to this study, the aim and research questions were described and an overview of the study was presented. Pursuant to the research aim of this study, this chapter takes an in-depth look at the Japanese writing system. The purpose of this chapter is to present an overview of the Japanese writing system and illustrate important developments and unique aspects of the writing system that provide a background to this study. An examination of the development of the Japanese writing system reveals how it has evolved into a unique and complex system. Many of the difficulties in learning and teaching *kanji* are due to this inherent complexity; therefore, an understanding of the Japanese writing system is essential in considering approaches to how *kanji* can be effectively learned by and taught to JFL learners from non-*kanji* backgrounds. Finally, several ways in which *kanji* can be ordered are also examined.

The reasons the Japanese writing system poses problems for JFL learners becomes much more apparent when we consider the adoption and adaption of the Chinese writing system to the Japanese language. It is not the purpose of this chapter to propagate the uniqueness of the Japanese writing system, nor will it be suggested that *kanji* have an irreplaceable quality that makes them essential to the Japanese writing system. Clearly, there are convincing arguments that suggest that the Japanese writing system would function equally as well without *kanji*, and in some respects it could even be argued that *kanji* impede the accessibility of the Japanese language (Ezaki, 2010). Nevertheless, the process of adapting the Chinese written script to the Japanese language has produced some unique elements to the language that will be perceived by

JFL learners from non-*kanji* background learners to be difficult. Consequently, the usage and education of *kanji* for both native and non-native learners of Japanese present many questions such as the importance of *kanji* and the order in which they should be learned. This chapter seeks, therefore, to place *kanji* in context from which we can more objectively consider their place in the education of JFL learners.

The chapter consists of six thematic sections with relevant subsections. The first section of this chapter is an overview of the origins and history of the Japanese language and its writing system. In this section, several important developments of the writing system from its arrival in Japan to its adaption and evolution into its contemporary form are considered. This highlights one important feature of the Japanese writing system, that is, the Japanese writing system has evolved into a system that utilises more than one script. In the subsequent section, we consider the function, characteristics and usage of the scripts from which the Japanese writing system is comprised. Next, the focus of the discussion turns to consider why the *kanji* themselves are both difficult but yet important to learn. We consider aspects about *kanji* that make them difficult for non-*kanji* background learners but consider why they are required study for the serious JFL student. Important aspects related to the teaching and learning of *kanji* are then discussed and several criteria-based *kanji* ordering strategies are examined. Finally, the key points of this chapter will be summarised in the final section.

2.2   The origins and history of the Japanese writing system

At first view, the Japanese writing system may seem to be unduly complex; however, its complexity is deeply tied to its historical development and is much better understood when we consider it in its historical context.

2.2.1　Origins of the writing system

The *Nihon Shoki* (日本書記、Chronicles of Japan, 720) and *Kojiki* (古事記、Chronicles of Ancient Matters, 712) are the two oldest chronicles in Japan. According to *Nihon Shoki*, Chinese books were first brought to Japan between the late third and early fifth centuries A.D. (Hannas, 1997, p. 32). The exact date Chinese entered Japan, however, is unknown. Unger (2006, p. 99) asserts that Chinese writing probably first came to Japan in the fifth century by way of visitors from an area located in the south-west quadrant of the Korean peninsula known as the kingdom of Paekche. Until the fifth century Japan didn't have a writing system of its own and Chinese became the written language used in Japan. The Chinese language therefore also became the language employed for centuries for literary composition and bureaucratic documentation (Miller, 1986, p. 66). As Miller (1986) notes, writing as an invention has only occurred a few times in the history of mankind, and borrowing is more the norm than an exception. What is therefore of greater significance in respect to the Japanese writing system is not that the Japanese borrowed the Chinese writing system but the way in which they adapted it to fit their own language. Due to the differences between the Chinese and Japanese languages, the process of adapting the written language occurred over several centuries and was somewhat of an awkward process, which has resulted in the unique and complex system in use today.

Although it is generally accepted that Japan had no written language prior to borrowing Chinese, one theory that has been espoused by linguists is that Japan's first native script was the *jindai moji* (神代文字) or 'divine-age script,' with Hirata Atsutane (1778-1843) being one proponent of this script. Nevertheless, evidence to support the existence of this script is lacking, and it is now generally believed that *jindai moji* is a fabricated script based upon Korean *hangul*.

2.2.2 History and development

As the Japanese did not have their own script, the natural progression was for them to use the Chinese writing to write their own language as well. The Chinese characters, *hanzi* in Chinese and *kanji* in Japanese, were used for their phonetic function in writing Japanese. From this, the *manyōgana* (万葉仮名), a phonetic system of the *kanji*, was developed. The *manyōgana* were used in the writing of the *Manyōshu* (万葉集 /Collection of Myriad Leaves) (759 A.D.), which was an anthology of Japanese poems.

Initially *kanji* were used to write all Japanese, including particles. However, this was awkward due to the difference between Chinese and Japanese languages. Japanese verb inflections and the polysyllabic nature of the language made writing Japanese in *kanji* alone somewhat clumsy. Around the 9th century, *hiragana*（平仮名）and *katakana*（片仮名）, phonetic scripts based upon the *kanji*, were developed to augment *kanji* (See Gottlieb (2005, p. 79)). *Hiragana* and *katakana*, collectively referred to as *kana*, are syllabaries and therefore ideally suited to writing verb inflections and other parts of the language. This evolutionary process of adapting the Chinese writing into syllabaries is an impressive historical development. Crowley (1968) goes so far as to say:

> This further development of the syllabaries, which included the organization of the Man'yoogana was, to my mind, one of the most versatile and sophisticated, linguistically significant adaptions of writing in the history of language (p. 3).

As impressive as this adaption of the Chinese writing system to the Japanese language is, it is also arguably one of the reasons why the Japanese writing system has a reputation for being complex and challenging to learn. In Section 2.3 we will turn to examine the nature and characteristics of the individual writing scripts that make up the Japanese writing system.

2.2.3   The impact of technology on the Japanese writing system

Some scholars believed that the advent of technological inventions such as computers might cause *kanji* to fall into misuse. However, this was not to be the case, and the Japanese writing system has been able to transition to technology-based communication. This successful transition means that for the JFL learner and teacher, *kanji* are still an important part of learning and teaching the Japanese language. With the widespread use of computers and mobile phones there is, however, less opportunity to handwrite *kanji* in everyday life. When using *kanji* on a computer, the alphabet is used to input the syllable; this is then displayed in *hiragana*. One is then required to convert the *hiragana* character into the correct *kanji* from a number of homophones. As noted by Chikamatsu (Cook, 2005, p. 91), writing *kanji* on computer requires recognition skills rather than production skills and suggests the importance of recognition skills over production skills. With less opportunity to actually write *kanji* in everyday life, from the perspective of a JFL learner at least, more emphasis should be placed on improving recognition skills. Chikamatsu suggests that one possible solution is to encourage students to concentrate on a limited number of *kanji* for writing and a much broader variety for recognition, noting that there is a wide gap between L2 *kanji* recognition and production skills.

Rapid technological advancements may affect the necessity of *kanji* in the future as increased use of computerised technology minimises the need to handwrite *kanji*. Nevertheless, as the present research focuses on adult learners (primarily university level students) of Japanese, not teaching *kanji*—an integral part of the language—is neither desirable nor practical. Students of Japanese therefore require better learning strategies and teaching methodologies to assist them in the *kanji* learning task. Furthermore, it would be much more beneficial to focus attention on how technology

can be used to help students improve their knowledge and understanding of *kanji* rather than focusing attention on the negative impact of technology upon *kanji*.

Recent developments in technology have also added another dimension to Japanese language teaching, with the development of Computer Assisted Language Learning (CALL) and the emergence of learning tools such as online flash cards. Traditional flash cards consisted of *kanji* written on one side of a card and the meaning and the pronunciation on the back. Such tools, however, are frequently being replaced by simulated flash cards on personal computers and phones. Online tools offer a convenient and practical way to assist in the study of the Japanese language. Such developments are of great interest to Japanese language teachers, and it is expected that technology will have even bigger and more important implications for Japanese language education in the future. Technology, although still largely underused, offers many possibilities with regard to language teaching and learning. Properly utilised, technology has the potential to offer exciting developments in the arena of Japanese language teaching and to make the student learning process both enjoyable and more practical. Technology and its role in *kanji* education will be considered in more depth from the perspective of Japanese language teachers in stage 2 of the research.

2.3   The Japanese writing scripts

The Japanese writing system consists of three distinctly different scripts: *hiragana*, *katakana,* and Chinese characters known as "*kanji*". Japanese also uses the English alphabet known as *rōmaji* and is sometimes, therefore, said to consist of four different scripts (Kess, 1999). The Japanese writing system is unique in that it combines ideographs in the form of *kanji* with both *hiragana* and *katakana* which are syllabaries. This in itself means that it is very different from the written language of English in

which the written language is comprised solely of phonemes in the form of the letters of the alphabet.

Firstly, the orientation of Japanese writing can vary, as Japanese can be written both horizontally and vertically. When Japanese is written vertically, it is read from top to bottom and going from right to left. When it is written horizontally, it is read from left to right. Japanese is written vertically in newspapers, novels, formal letters, calligraphy, etc. It is generally written horizontally from left to right in most textbooks and business documents. This may seem awkward for those not familiar with Japanese writing but in actual fact it does not present many difficulties and most JFL learners will soon become accustomed to both orientations of writing.

Hiragana and *katakana* are combined with *kanji* in everyday writing. The sentence below is a good example of how *hiragana*, *katakana*, and *kanji* are used in unison.

猫がテーブルの上に座っています。

Neko ga tēburu no ue ni suwatteimasu.

The cat is sitting on the table.

The example Japanese sentence has *kanji* in bold font, *katakana* is underlined and *hiragana* is in its normal format. The second sentence is in *rōmaji*. The history, function and usage of these different scripts will be covered in the next section. Briefly, however, the table below illustrates the functions of the individual scripts.

Table 2.1: Function of scripts in Japanese writing system

Script	Usage
Kanji	Nouns, adjective stems, and verb stems.
Katakana	Foreign words, loan words, onomatopoeia, also used to communicate emphasis.
Hiragana	Grammatical terms, particles, verb endings, for where no suitable *kanji* exists.
Rōmaji	Used for writing Japanese words in English and when the target audience is not Japanese.

As can be seen in the example Japanese sentence above, all scripts are not used in equal proportion. Depending on the target audience of the written material, the proportions of the different scripts will vary. In some cases, such as for children's books, *hiragana* will be used exclusively as children will not yet have learnt sufficient *kanji* to be able to read the text if it were to include *kanji*. In the case of beginner textbooks for JFL students, the Japanese component of the textbook will be written in *rōmaji* and later as the student progresses, textbooks will begin to introduce *hiragana* and then *katakana* and finally *kanji*. For everyday written material aimed at Japanese adults, the proportion of usage for each of the scripts will be as depicted in the table below.

Table 2.2: Proportion of script usage (Taylor, 1981)

Script	Proportion
Kanji	30%
Katakana	4%
Hiragana	65%
Rōmaji	1%

The scripts that comprise the Japanese writing system will now be examined separately

and in order, true to their chronological development, commencing with a look at *kanji*.

2.3.1   *Kanji*

Earlier, an overview of the history and development of the Japanese writing system was presented. In this section, a more specific account of the history and development of *kanji* as well as their modern usage and function will be covered.

Chinese characters in traditional Chinese are called *hanzi,* and in traditional Chinese they are written as 漢字. In Japanese, Chinese characters are called *kanji* but share the same Chinese characters and are also written as 漢字. One of the unique aspects about *kanji* is that they are used to represent both meaning and a phonetic sound. It is this aspect of *kanji* that distinguishes it from *hiragana* and *katakana* which are syllabaries and represent only sounds. Furthermore, as *kanji* represent meaning as well as sounds, this results in a script that has many characters and characters which are much more visually complex. If we examine the actual meaning of the characters that form the word "*kanji*," it reveals more about their history. If we look at the two characters separately, we see that, the first character 漢 actually means "Han Dynasty" and the second character, 字 means character or letter. Logically, *kanji* then translates as characters from the Han dynasty.

Some dictionaries contain up to 50, 000 *kanji* but most scholars agree that somewhere between 2000 and 3000 *kanji* are sufficient to read most things in Japanese (Seeley, 1991). In Japan, the writing system has been subject to a number of orthographic reforms of which *kanji* usage has in some way been affected. One of the most significant developments from the perspective of this study is the introduction on a limitation of the number of *kanji*. Native Japanese are expected to learn the 2136 *kanji*

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that make up the *jōyō kanji* (常用漢字) or "everyday *kanji*" designated by the Japanese Ministry for Education. This is important as it clearly establishes a set number of *kanji* that native Japanese students are expected to learn while at school in Japan. As we will see, the number of *kanji* included in the everyday *kanji* has changed at various times. In all cases the number of *kanji* has gone up, suggesting that *kanji* are treated as an integral part of the writing system and are unlikely to drop out of use.

In the history of the Japanese writing system, a number of important script reforms and movements have emerged that relate to *kanji* specifically. Considering the complex nature of *kanji* and the effort required to master them, it is not surprising that they have given rise to controversy. In this section, a number of important events in the development of *kanji* will be considered.

Efforts were made during the post-war occupation of Japan to reduce the number of *kanji*; some Japanese have advocated against studying *kanji* altogether. *Kanji fuyōron* (漢字不要論) was the movement that took the stance that *kanji* were unnecessary while *kanji haishiron* (漢字廃止論) was the movement that advocated for the abolishment of *kanji* altogether (Gottlieb, 1995). Neither of these movements took hold and *kanji* are still treated as a major component of the Japanese writing system. There are various merits for and against the ongoing use of *kanji* and this debate will be considered in more depth in Section 2.5, where we consider it in light of the importance of learning *kanji*.

For the purpose of this study, the most significant *kanji* reforms are those that relate to the restriction on the number of *kanji* to be taught in the education system. Several developments have taken place in the establishment of the everyday *kanji*, the most recent being the amendment on 30 November, 2010, which saw five *kanji* removed and

196 added. The table below outlines the major stages in the post-war development of the everyday *kanji*.

Table 2.3: Outline of major events in the development of the everyday *kanji* (*jōyō kanji*)

Year	Development
1946	In the early post-war period, there was support for script reform. Governmentally authorised list of 1850 characters, *tōyō kanji* (当用漢字), capped the number to be used in official documents, educational curricula, and to a large extent in the public media. (Unger, 2006, p. 97)
1981	The policy of limiting the number of *kanji* in general use was greatly weakened, and a modified list of 1945 characters, the *jōyō kanji* (everyday *kanji*) was released. (Unger, 2006, p. 97)
2010	Everyday *kanji* amended. Five *kanji* were removed and one hundred and ninety six *kanji* were added. The total number of *jōyō kanji* now stands at 2136

The post-war development of the everyday *kanji* clearly illustrates that the number of *kanji* included in the everyday *kanji* has consistently been increased. *Kanji* themselves will now be considered.

The *kanji* themselves vary in visual complexity, with some *kanji* consisting of just one stroke, such as the *kanji* 一 (*ichi*) meaning "one" or *kanji* with upwards of thirty strokes such as the *kanji* 鬱 (*utsu*) meaning "depression."

Kanji can have multiple readings and most *kanji* will have both *on* and *kun* readings. "*On*" readings being the reading of the *kanji* taken from the Chinese and "*kun*" readings being a reading allocated to that *kanji* from Japanese. For example, the *kanji* for house in Japanese is "家" and the *kun* reading for the *kanji* is "*ie*" while the *on* reading is "*ka*." *Kanji* can also be used to form compound words where two or more *kanji* are used together. For example, if we use the *kanji* from the previous example, the word "家庭" (*katei*/household) can be formed. Notice that when the *kanji* is used in

a compound word, it takes the *on* reading, which is how it will mostly occur.

There are six different categories of *kanji*, referred to as *rikusho* (六書). Table 2.4 below outlines the characteristics of each of these categories.

Table 2.4: The six categories of *kanji* (*Rikusho*) (Henshall, 1988)

Pictographs (*shōkeimoji*/象形文字)	These characters are *kanji* which have developed from pictures of the objects they represent. Many of these characters bear little resemblance to the objects they represented. Examples of pictographs: 人 - person, 口 - mouth, 目 - eye
Ideograph (*shijimoji*/指示文字)	These characters are *kanji* that represent abstract concepts such as numbers and directions. Examples: 一 - one, 上 - above, 下 – below
Semantic Composite (*kaiimoji*/会意文字)	These characters are a combination of two or more existing *kanji* to make a single character. Examples: 森 – *mori*/forest (a combination of the *kanji* 木), 鳴く *na*ku/animal cry (a combination of 鳥 *tori*/bird and 口 – *kuchi*/mouth)
Semantic-phonetic composite (*keiseimoji*/形声文字)	These characters are the most common of the *rikusho* categories. In these *kanji* one part represents meaning and the other part represents sound. Example: 詩 *shi*/poem (a combination of 言 and 寺)
Derivative characters (*tenchūmoji*/転注文字)	This group of *kanji* refers to *kanji* that have taken on a new meaning related to and derived from their original meaning. For example, the *kanji*, 楽 used for music, ease, etc, has also taken on the new meaning of "fun," and is therefore used for both music and fun.
Loan *Kanji* (*kashamoji*/仮借文字)	These characters are called loan characters and are used for their phonetic quality and no longer for their original intended meaning. For example, the *kanji* 我 was borrowed to phonetically express *ga/ware* meaning "I," or "oneself".

In addition to the categories of *kanji* outlined above, there are several other types of *kanji*. Some of these *kanji* may also fall within one of the *rikusho* categories but have a special form of usage or characteristic that warrants mentioning. Some of these categories are examined below.

Kokuji (国字)

In addition to the Chinese characters borrowed from China, some *kokuji*, or 'national characters', (characters native to Japan) have also been developed. One example of *kokuji* is 峠 (*tōge*) (Unger, 2006, p. 97). *Kokuji* have no *on* reading (Chinese reading). One exception to this is the *kanji* 働く(*dō /hataraku*) formed in Japan on the basis of the *kanji* 動く（*dō/ugoku*）(Pye, 1971, p. 255).

Ateji (当て字)

Ateji are those *kanji* which are used for their phonetic value only, without reference to its meaning (Pye, 1971, p. 255). One example is the *kanji* for the word "coffee": 珈琲 (usually written in *katakana* as コーヒー).

Jukujikun (熟字訓)

Jukujikun is a type of *kanji* where the word is generated from the meaning of the *kanji* used and the actual phonetic values of the characters are ignored. For example, the word 煙草 combines the *kanji* 煙（*kemuri*/smoke）and 草 (*kusa*/grass) to make 煙草 meaning "tobacco."

Jinmeiyō kanji （人名用漢字）

Jinmeiyō kanji are those *kanji* that are used for writing Japanese names. There are currently 861 *kanji* that make up this group of *kanji*. Many of the *jinmeiyō kanji* are also included in the everyday *kanji*.

2.3.2   *Kana*

Kana (仮名) is the term used to collectively describe *hiragana* and *katakana*. *Kana* are derived from *kanji*. *Hiragana* is derived from the whole *kanji* character, whereas *katakana* is derived from a part of the *kanji* character (Gottlieb, 2005, p. 79). They are phonemic scripts with both *hiragana* and *katakana* being syllabaries (Kess, 1999). In most cases, *kana* are easily remembered. Japanese can be written entirely in *hiragana* or *katakana*, although not all Japanese can be written in *kanji* alone (Unger, 2006, p. 95). It is worth noting that although Japanese can actually be written without using *kanji*, and in spite of the difficulty of *kanji*, Japanese is actually easier to read when it incorporates *kanji*. This is due to the fact that *kanji* produces suitable breaks in the language to help distinguish words and homonyms, thereby assisting the reader.

2.3.2.1 *Katakana*

With the *manyōgana* (see Section 2.2.2) in use, the Chinese characters started to be used for their phonetic qualities and not just to represent meaning. The problem with this was that it was difficult to know the phonetic for each of the characters. Historically, *katakana* was adapted from *kanji* specifically to serve as *furigana*—syllabic characters printed above *kanji* to indicate the correct pronunciation of the *kanji* (Unger, 2006, p. 97). This allowed for more people to be able to read.

In total, there are 48 *katakana* characters. The Japanese word "*kata*" which also is a part of the word "*katakana*" means "one side" which seems to further suggest that *katakana* were derived from one side or part of *kanji*. *Katakana* characters are quite angular and they are readily recognised as distinct from the other scripts.

Table 2.5: Development of *katakana* from *kanji*

Kanji	*Katakana*
外 (*soto/gai*)	ト (*to*)

Katakana is generally used for writing foreign loan words—onomatopoeia—and for emphasising particular words (Pye, 1984, p. 1).

2.3.2.2 *Hiragana*

Hiragana were developed in the 9th century and as noted earlier, just as with *katakana*, *hiragana* also evolved from *kanji* but evolved from the whole character. Table 2.6 illustrates the *hiragana* character for "*fu*" and the *kanji* from which it evolved. The resemblance is clear.

Table 2.6: Development of *hiragana* from *kanji*

Kanji	Hiragana
不 (*fu*)	ふ (*fu*)

Hiragana have a cursive, soft feminine like appearance. Originally they were used by women and referred to as *onnamoji* (女文字), literally meaning women's characters, or *onnade* (女手), literally meaning "woman's hand" (Seeley, 1991). Eventually, the use of *hiragana* became more widespread and they were incorporated into the written language alongside *kanji*.

Hiragana is used for writing verb inflections, particles and Japanese words when a suitable *kanji* is not available.

Hiragana is typically the first script taught to primary school students in Japan and JFL students abroad after they have grasped *rōmaji* (see Section 2.3.6). They are relatively

easy to learn and present little difficulty for both native and non-native Japanese alike.

2.3.2.3 *Furigana*

Furigana (振り仮名), also sometimes referred to as *rubi* (ルビ), are smaller scale *hiragana* and *katakana* written above *kanji* to indicate the pronunciation of the *kanji*. They are used when the *kanji* may be difficult and or the target audience may not have sufficient knowledge of *kanji* to be able to read them. *Furigana* is frequently found in comics, children's books and in language textbooks for JFL learners.

2.3.3 *Rōmaji*

Rōmaji（ローマ字）is the use of the Latin alphabet to write Japanese words, and it is used to write Japanese when the reader cannot read Japanese written in the other scripts. The term *rōmaji*, literally translates to "Roman letters," "*rōma*" meaning "Rome" or "Roman" and "*ji*" meaning "letters." According to Shibatani (1990, p. 128), the first transcription of Japanese into the Roman alphabet was in the late sixteenth to early seventeenth centuries by Portuguese and Spanish missionaries. A widely accepted system of *rōmaji* did not come into fruition until the American missionary James Curtis Hepburn (1815-1911), the founder of *Meiji Gakuin University*, devised a system of *rōmaji* for his Japanese-English Glossary, published in 1867 (Shibatani, 1990, p. 128). Hepburn's system or *rōmaji* became known as *hebon-shiki* (ヘボン式). In addition to Hepburn's system, the Japanese government attempted to unify all systems and devised a system of *rōmaji* known as *kunreishiki* (訓令式). There are a number of different systems of *rōmaji* in use. The table below illustrates the three main systems of *rōmaji* in use today.

Table 2.7: Characteristics of *rōmaji* systems

Rōmaji system	Characteristics of the system
Hepburn (ヘボン式)	Uses English spelling pronunciation and is therefore easier to understand for English speakers. A "revised Hepburn" system of *rōmaji* also exists. In this system, a macron is used to indicate long vowel sounds.
Kunrei-shiki (訓令式)	Developed by the Japanese government, this system is phonemic and based on the *hiragana* chart. A circumflex is used to indicate long vowel sounds in this system.
Nihon-shiki （日本式）	This system of *rōmaji* was originally developed as a system to replace the other Japanese scripts. In this system, there is a different Romanisation for every *kana* symbol. For example, where both "じ" and "ぢ" are treated as "ji" in Hepburn's system, in this system they are treated as "ji" and "di" respectively.

In a JFL context, *rōmaji* will be the first script learned as it uses the alphabet and does not rely on the ability to learn a different script. *Rōmaji* is easily attainable by most students and allows the student to read Japanese from the beginning of their studies.

2.4 The difficulty of learning *kanji*

The Japanese language has long been regarded as one of the most difficult languages in the world (Miller, 1991). It is perhaps not surprising, therefore, that sixteenth century Portuguese missionaries regarded Japanese as a language invented by the devil (Seeley, 1991, p. ix). On average, the Japanese language takes three times longer to learn than a European language, and even native Japanese speakers argue that their language is

difficult— not only for foreigners but for Japanese native speakers as well (Kindaichi, 1978, p. 23). Japanese is included in the "category four" languages (Chinese, Japanese, Korean and Arabic—all non-western orthographic languages). "Category four" is a term used by the Foreign Service Institute and the Defense Language Institute to classify languages according to the time taken to attain varying levels of proficiency (Grainger, 2005, p. 328).

The difficulty of learning Japanese is believed to be largely due to the complexity of its written language, especially the *kanji* (Bourke, 1996; Gamage, 2003). The consequence of this being that it contributes to high rates of attrition amongst students from non-*kanji* backgrounds (Grainger, 2005, p. 329). So, why are *kanji* so difficult for learners of Japanese, particularly for those students whose first languages are alphabet-based? The answer to this question lies in the complex nature of *kanji* and, according to Tollini (1992), the differences between the alphabet and *kanji*. Douglas (1999) divides the problems of learning *kanji* into two groups: (1) Affective factors—that is, problems caused by learners' misunderstanding of *kanji*, and (2) problems which result from *kanji* itself. Some of these complexities and differences will be examined.

2.4.1   The number of *kanji*

There are 26 letters in the English alphabet but several thousand *kanji*. Most Japanese newspapers and magazines use approximately 3000-3500 *kanji* (Seeley, 1991, p. 2). The sheer number of *kanji* can be overwhelming for the JFL learner whose initial excitement for learning *kanji* may soon dwindle when they realize the number of *kanji* required for fluent reading and writing.

2.4.2   Multiple readings for each *kanji*

Many words in Japanese are polysemous and their meaning is determined by context. Unger (2006, p. 97) suggests that though the large number and complex shapes of the *kanji* used in Japanese are often remarked upon, the principal difficulty of the writing system is that the typical *kanji* can take multiple 'readings'. Most *kanji* have an *on* (Chinese reading) and a *kun* (Japanese reading) as well as several possible variations on reading depending on the particular compound or context. Prior to the most recent amendment to the *jōyō kanji,* there were 4087 *on/kun* readings (Kess, 1999). The most recent amendment to the *jōyō kanji* saw an increase in the number of *kanji*, so the current number of *on/kun* readings would have also increased.

Kanji compounds, words comprised of two or more *kanji*, can also be read in more than one way. For example, "生物" can be read as *seibutsu* (organism) or *namamono* (raw) (Richmond, 2005).

2.4.3   Large number of homonyms

The large number of homonyms in the Japanese language means that it can be difficult to know the correct *kanji* to use, consequently making them troublesome for native and non-native Japanese alike.

For example, the morpheme *sei* has no less than 47 *kanji* which can be assigned to it (Richmond, 2005). Therefore, faced with the prospect of writing a word in which the morpheme "*sei*" is present, one must know which *kanji* from the 47 *kanji* available is the correct one. Furthermore, faced with the task of writing the word "*seikatsu*" or "lifestyle," the student must know which is the correct *kanji* for "*sei*" in this particular word. This is in some cases much easier than others. In this case "*seikatsu*" is used as

an example but in reality, as it is a high frequency word, it is a relatively easy task to know which is the correct *kanji*. The task becomes somewhat more troublesome when faced with less frequently used words.

The number of homophones in Japanese highlights the importance of context in interpreting the correct *kanji*. Despite the difficulty that homonyms present, the large number of homonyms in the language is also a frequently used argument for preserving *kanji* as a part of the written language as they help to decipher the meaning (See section 2.5).

2.4.4   *Kanji* typology

The typological differences between *kanji* and alphabets are another aspect that makes *kanji* difficult for learners from alphabet-based L1s (Sato, 1992; Tollini, 1994; Gamage, 2003; Iwashita, 2009). The alphabet is one-dimensional and linear, whereas *kanji* are two-dimensional and spatial. For example, the words "dog" and "god" rely on a linear arrangement of letters in English (Douglas, 1992); *kanji* has two dimensions: horizontal and vertical (Tollini, 1992). That is, many *kanji* are comprised of separate *kanji* or *kanji* components and these characters are combined vertically with one on top of the other, or horizontally with one beside the other.   Whereas a word written with the alphabet may comprise one or more letters, a word in Japanese may comprise one or more *kanji*.

For many beginners in Japanese, *kanji* appear alike and can be difficult to distinguish from one another. Takebe (1989) suggests that it is this ability to distinguish between different *kanji* that is needed for effective learning and that this is something that Japanese children acquire by being raised in an environment involving frequent exposure to *kanji*. Thus, when Japanese children commence their study of *kanji* in

schools, they already have a degree of familiarity with *kanji* and, as a result, a greater ability to recognise and distinguish one *kanji* from another. The JFL student does not have the benefit of such exposure and is usually only exposed to *kanji* through classroom materials.

2.4.5   Challenges for JFL learners

In addition to the inherent complexities of *kanji* that make them difficult to learn, JFL learners are faced with a number of other challenges. Bourke (1996, pp. 21-24) identifies four such challenges: 1. a lack of "*kanji* readiness;" 2. limited vocabulary; 3. exposure to *kanji*; and, 4. limited time. Each of these will be considered in turn as well as consideration to one more factor, motivation.

1. Unlike Japanese primary school children who have grown up in an environment in which *kanji* are used all around them, JFL learners are less familiar with *kanji* and therefore lack "reading readiness" (Clay as cited in Bourke, 1996, p. 21).

2. Bourke identifies limited vocabulary as another obstacle. That is, Japanese primary school children commencing their study of *kanji* already have a grasp of the spoken language, whereas JFL learners are often faced with learning the spoken and written languages simultaneously.

3. Bourke also acknowledges limited exposure to *kanji* as another challenge for JFL learners. While limited exposure to *kanji* in daily life may be a factor, JFL learners have a lot more access to Japanese related materials via online sources. Obviously, this cannot replace the experience of living and studying in Japan where students can immerse themselves in the Japanese language every day,

nevertheless, limited exposure is perhaps not as big a factor as it once was.

4. Limited time to spend on *kanji* is also a factor that can prevent JFL learners from making steady progress in learning *kanji*. As JFL learners are faced with learning all aspects of the Japanese language, only a portion of their time can be spent on *kanji*, unlike Japanese primary school children who spend several years working on *kanji*.

5. Student motivation is also a factor that may affect JFL learners in the *kanji* learning process. Bourke acknowledges that for Japanese children, comic books and story books can be a source of motivation for Japanese children to learn *kanji*. Clearly, a certain degree of motivation is needed to learn *kanji* and there may be less motivation for JFL learners to learn *kanji* when the ability to read *kanji* is not a factor that affects the JFL learner's everyday life. However, there has been considerable growth in popularity of *anime*, *manga*, and Japanese computer games in Australia, which is no doubt for some a motivating factor to learn *kanji*.

2.5   The importance of learning *kanji*

As all Japanese can be written in *hiragana*, one might be inclined to think that *kanji* are not necessary and therefore Japanese would be much simpler if it did away with *kanji* altogether. The emergence of script reform movements, including those that advocate abolishing *kanji*, illustrates that these sentiments are also shared by some Japanese, although motives for abolishing *kanji* go beyond just simplifying the written language. There is no doubt that abolishing *kanji* would reduce the burden of learning *kanji* for both native Japanese and JFL learners alike. Nevertheless, *kanji* still remain an integral part of the Japanese writing system and will likely continue to do so. There

are two issues here; one is to the role of *kanji* in the Japanese writing system and debate as to whether they are an indispensable part of the writing system; and the other, is to the importance of learning them for JFL students. In this section, we will consider these two issues in turn.

Firstly, we will consider the debate over the indispensable nature of *kanji*. Perhaps one of the most persuasive arguments for preserving *kanji* is the fact that *kanji* indicate meaning, making Japanese easier to read. Although one may think reading Japanese written in *hiragana* script without *kanji* would be easier to read than one that includes *kanji*, this is in many cases not the case. For example, if we consider the sentence below, we see that if it was not for the *kanji*, we would not be able to decipher the meaning.

くるまでまっててください。(*Hiragana* Only)

Kuruma de mattete kudasai/Kuru made mattete kudasai

In spoken Japanese, the above sentence would be easily understood, as meaning could be deciphered from the context in which it is used and vocal inflection. In written Japanese, however, the absence of vocal inflection means that deciphering the meaning could make this sentence problematic. The Japanese sentence above could have two possible interpretations:

① 来るまで待っててください。(*hiragana* and *kanji*)

Please wait till I get there.

② 車で待っててください。(*hiragana* and *kanji*)

Please wait at the car.

If the sentence is written with *kanji*, as above, the meaning of the sentence becomes instantly clear to the reader and no confusion arises. The absence of *kanji* in the above example means that the reader does not know whether the intended meaning is, "*kuru made*" literally meaning "till I come," or "*kuruma de*" literally meaning "at the car." Therefore, confusion arises as it isn't clear whether the syllable "*ma*" is part of the noun "*kuruma*" meaning "car," or whether it is intended to accompany "*de*" to form the conjunction "*made*" meaning "till."

Ironically, the large number of homonyms in Japanese, which we see in Section 2.4.3, is a contributing factor as to why *kanji* are difficult, and is also an equally valid reason for why *kanji* are important to learn (Suzuki, as cited in Ezaki, 2010, p. 179). For example, if we consider a compound word in Japanese such as こうしょう/*kōshō*, we can see that there are several possible meanings and consequently several ways to write this *kanji*. *Kōshō* could be written as 交渉、高尚、公証、考証、口承、鉱床、厚相、哄笑, as well as several other possibilities, and absent any contextual clues as to the meaning, the meaning would be dependent on the particular *kanji* used. Consequently, the absence of *kanji* can make deciphering the meaning of Japanese script difficult.

Initially, it would seem that there is a strong argument for regarding *kanji* as an "indispensable" part of the Japanese writing system, but there are equally convincing arguments to both sides of this argument. If we consider the above example in which Japanese is written in *hiragana* absent of *kanji*, it is easy to see how it could be argued that *kanji* may facilitate the process of reading Japanese rather than hindering it. In reality, however, this issue could easily be resolved by effective use of spaces when writing in *hiragana*.

For those scholars who dismiss the notion that *kanji* are indispensable, there is the view that the semantic function of *kanji* is overemphasised and that *kanji* users also rely heavily on sound in reading and writing *kanji* (Ezaki, 2010, p. 180). Ezaki also suggests that *kanji* can create language related barriers for foreigners living in Japan, and if Japan is to maintain relations and accept foreign workers then there is "little room for insistence upon the indispensability of *kanji*" (Ezaki, 2010, p. 183). Ezaki's point is a valid one and raises issues of equality for foreign workers and foreigners in the Japanese education system. If *kanji* are to be treated as an "indispensable" part of the language, then clearly foreign residents who otherwise have fluency in spoken Japanese may be disadvantaged if they are unable to read *kanji*.

Despite Ezaki's position against the indispensability of *kanji*, Ezaki does acknowledge two important factors which support continued *kanji* usage, albeit to a modified degree. Firstly, the aesthetic nature of Japanese writing and how *kanji* "may be strategically applied to express a certain level of creativity" (2010, p. 200). Secondly, *kanji* play a "critical role in enabling us to read the extensive corpus of archives accumulated throughout history in various fields" (2010, p. 200). Ezaki does proffer a solution in relation to *kanji* usage in the form of a two-tiered approach in which *kanji* usage is different for literary and non-literary works. Ezaki suggests that for non-literary works such as newspapers and other mediums for practical communication, that *kanji* be reduced or subject to compulsory application of *furigana.*

Evidently, treatment of *kanji* in the Japanese language is not without its difficulties; however, it is unlikely that *kanji* will fall out of use in the foreseeable future. From the perspective of Japanese language teachers and JFL learners, issues regarding the indispensable nature of *kanji* do not override the fact that they still comprise a major part of the writing system, and for a JFL learner to achieve a high level of fluency in

Japanese and have access to authentic Japanese texts, they are an essential element of any Japanese curriculum at the university level. For those learners whose purpose of learning Japanese is to merely travel to Japan and not undertake any serious study of the language and culture, the stamina required to learn *kanji* may not make their study a worthwhile endeavour. So, whether studying *kanji* is essential is an entirely different matter and will depend largely on the learners' goals. Goals are, however, a personal endeavour and therefore are not a practical consideration for Japanese language instructors at the tertiary level.

2.6   Teaching and learning *kanji*

With *kanji* established as an integral part of the Japanese writing system, they have also established firm footing as an area in the education system in Japan. Likewise, they are considered an important part of learning Japanese for JFL learners and will be a part of the curriculum for learning Japanese. Treatment of *kanji* education in Japan and abroad share both similarities and dissimilarities, the most obvious of which is the fact that *kanji* education in Japan commences in primary school through to the end of high school whereas in the Japanese curriculum abroad some JFL learners may commence their studies as adult learners with no previous knowledge of *kanji* and will study *kanji* for three or four years at the university level. In this section, we will look at both *kanji* education in Japan and abroad and consider both approaches.

2.6.1   *Kanji e*ducation in Japan

Despite the difficulty attributed to learning *kanji* for native and non-native Japanese alike, Japan boasts one of the world's highest literacy rates and dyslexics are virtually unheard of. One theory for this is that it is due to the "perceptual process involved in learning to read in Japanese" (Makita, as cited in Sheridan, 1982, p. 326). Parental

influence and the availability of suitable reading materials have also been cited as possible reasons for the high rate of literacy (Sakamoto, as cited in Sheridan, 1982, p. 326). The seemingly paradoxical situation of a difficult writing system with high literacy rates piques interest in *kanji* education in Japan. In any case, a look at *kanji* education in Japan provides a useful context from which we can examine *kanji* education in a JFL setting.

At school in Japan, students start studying *kanji* from grade one. The Japanese Ministry of Education (*monbukagakusho*) has arranged the *Jōyō kanji* or everyday *kanji* into a specific order for which they are to be taught in the Japanese educational system. By the end of their sixth year of primary school, students have learned the 1006 *kyōiku kanji* recognized as the most commonly used of all 2136 *kanji* in use. It is estimated that these 1006 *kanji* alone make up 95% of actual *kanji* usage in print (Kess, 1999). Table 2.8 below outlines the number of *kanji* learned in elementary school by year in Japan.

Table 2.8: Number of *kanji* learned per grade in the Japanese educational system (*kyōiku kanji*)

Grade	Number of *kanji*
1	80
2	160
3	200
4	200
5	185
6	181
Total	**1006**

(Source: http://www.mext.go.jp/a_menu/shotou/new-cs/youryou/syo/koku/001.htm)

Table 2.9 below outlines the number of *kanji* in each of the six categories listed above studied each year at elementary school in Japan.

Table 2.9: Types of *kanji* per year group

	Pictographs	Ideographs	Semantic	Semantic-Phonetic	Loan	Derivative
Grade 1	39	14	11	16	0	0
Grade 2	48	4	37	70	0	1
Grade 3	25	3	50	122	0	0
Grade 4	26	8	51	114	0	1
Grade 5	12	0	28	145	0	0
Grade 6	15	3	36	127	0	0
Total	165	32	213	594	0	2

(Source: http://www.cc.mie-u.ac.jp/~la20100/kanziriku.html)

Despite Japan having one of the highest literacy rates in the world, Japanese native speakers spend twelve years of their education studying the *jōyō kanji*, and even Japanese people sometimes struggle to remember the correct *kanji*. According to *Mainichi Shinbun newspaper*, (March, 2008), of the third year high school students taking level 2 of the Japanese *Kanji* Aptitude Test—the high school graduate level which includes the reading and writing of the *jōyō kanji*—there has been a pass rate of below twenty percent for ten consecutive years. Considering that the sheer number of *kanji* presents difficulties for native Japanese speakers, it is no surprise that mastering *kanji* is a complex and daunting task for learners from alphabet-based languages.

2.6.2 *Kanji* education abroad

The length of time taken for native Japanese speakers to learn *kanji* raises questions as to how *kanji* should best be taught to JFL learners. Learning *kanji* the Japanese way takes a long time and requires considerable motivation on the part of JFL learners who

are limited in their exposure to *kanji* in everyday life. Moreover, the order in which the *kanji* are taught to native Japanese seems to have no logical progression other than the fact that the more frequently used *kanji* are taught first. For JFL learners who have limited exposure to real Japanese, frequency is perhaps not the best criteria for ordering *kanji*. Ordering strategies for *kanji* will be considered in more depth in Section 2.7.

In Stage 2 of this study, a survey of *kanji* teaching and learning beliefs was administered. This stage of the study serves to provide some useful background information regarding the state of *kanji* education abroad, and the information collected from that stage of the study will be discussed in Chapter 5. With respect to *kanji* education at the university level in Australia and other non-*kanji* background countries, there are no clear guidelines in terms of how much university graduates are expected to know by the time they graduate. There are no national or international standards for teaching *kanji* and therefore the *kanji* selected for instruction, the number of *kanji* taught and teaching methods will vary depending on the curriculum implemented by the university. Should students be expected to graduate with mastery of the everyday *kanji*? Or, should they just be expected to be proficient in reading the *kyōiku kanji*? How many *kanji* should students be expected to know by the time they graduate? When should *kanji* be introduced? There is no uniformity with regards to answers to these questions.

Some universities may choose to teach *kanji* from a textbook while others may choose to design their own *kanji* lists and teaching materials. The overall emphasis on *kanji* in the curriculum will vary to a certain degree according to the beliefs of the teachers in charge of curriculum design.

In light of the many difficulties that *kanji* pose, as covered in Section 2.4, clearly the teacher is also in a difficult position when trying to decide on which *kanji* to teach and how to best teach them. All textbooks will vary in their selection and ordering of *kanji* and devising a specific, logically-derived order for teaching *kanji* is no easy task. Many of the textbooks available on the market for *kanji* study are often more suited to self-study as they will have little relation to the other teaching materials used in the course. Therefore, evidently, there is a lack of suitable teaching materials and teaching strategies available to Japanese teachers.

Allen (1997) succinctly sums up the dilemma faced by Japanese teachers when she says:

> Which of us teachers of Japanese – especially the old-timers who rarely had a textbook and perhaps only a list of 80, or 100, or 150, or whatever of the wretched things to teach by the end of Year 12 – hasn't agonized over which *kanji* to teach, when to teach them, and how to do it in a meaningful way that enabled our students to acquire them relatively easily? (p. 32)

2.6.3 *Kanji* and Japanese language tests

Although testing at university level Japanese language courses will vary based on the particular curriculum and teacher's approach, there also exist a number of *kanji* and Japanese language tests that can be taken by Japanese language students to test their proficiency. The *Kanji Kentei* (漢字検定) is the only test that focusses solely on testing *kanji*, however, *kanji* is incorporated into the other tests in some capacity thereby allowing JFL learners to test their *kanji* ability as well as their overall proficiency in the Japanese language. In many cases, universities may encourage their students to participate in such tests and in some cases these language tests may also have an impact on the content Japanese language courses cover. For example, *kanji*

examined in these tests may be used as a guide for selecting *kanji* to incorporate into the syllabus. The influence of these tests on course curriculum is, however, more apparent in privately run Japanese language schools within Japan where some students may need to attain a certain level of proficiency for entry into university in Japan. In this section, a number of the major *kanji* and Japanese language tests are considered and compared with attention to how *kanji* are incorporated into these tests.

2.6.3.1   *Japanese Language Proficiency Test*

(http://www.jlpt.jp/e/index.html)

Probably the most commonly recognised test of Japanese language proficiency for JFL learners is the Japanese Language Proficiency Test (JLPT). The JLPT commenced in 1984 and is organised jointly by the Japan Foundation and the Japan Educational Exchanges and Services. The JLPT is offered twice annually in Japan and either once or twice annually in other cities throughout the world depending on the host city.

The JLPT was revised in 2010 from a test with four levels to one with five levels. This revision added an additional level between the former levels two and three. The other levels are approximately of the same level as those previously in place with level N1 regarded as slightly more difficult than the previous level one. According to the official JLPT website, the JLPT "measures communicative competence required to perform tasks" (http://www.jlpt.jp/e/about/points.html). The current JLPT consists of five different levels: N1, N2, N3, N4, N5 with N1 being the most difficult level. Tests are scored out of 180 and the areas tested include language knowledge (vocabulary/grammar), reading and listening. The number of points and time allocated for each of these sections varies slightly depending on the level. The JLPT does not test writing or speaking. The JLPT consists of multiple choice questions and is

machine tested.

Due to the fact that writing is not tested and questions are in the form of multiple-choice questions, it is unnecessary for the examinee to write any *kanji* whatsoever to pass this test. Therefore, passing the JLPT does not provide an accurate representation of the successful examinee's *kanji* writing ability, and only indicates a degree of competency in *kanji* reading. Furthermore, prior to the revision of the JLPT, *kanji* lists were published which presented the *kanji* which was subject for examination in each level. These lists are no longer provided making it more difficult to use this test as a means for selecting *kanji* to incorporate into a teaching syllabus. Although *kanji* writing is not tested in the JLPT, *kanji* understanding is important for sections on vocabulary and reading comprehension and therefore students intending to take this test will typically also spend considerable time studying *kanji*. Even with the absence of *kanji* lists, a number of JLPT specific texbooks exist which provide *kanji* instruction based on *kanji* which have appeared in past tests.

2.6.3.2   *Business Japanese Proficiency Test*

(http://www.kanken.or.jp/bjt/english/)

The Business Japanese Proficiency Test (BJT) is organized by The Japan *Kanji* Aptitude Testing Foundation and is available twice annually in Japan and some parts of Asia. BJT was first offered by the Japan External Trade Organization (JETRO) in 1996 and transferred to The Japan *Kanji* Aptitude Testing Foundation in 2009. The BJT is, according to their official website, a test to measure proficiency in communicating in the Japanese language required in business settings.

(See: http://www.kanken.or.jp/bjt/english/about/).

The BJT consists of one hundred questions examined over 120 minutes and comprises

three parts: listening comprehension; listening and reading comprehension; and reading comprehension. Questions are multiple-choice. The BJT is measured on a scale of six levels J5 to J1+ based on a score achieved out of 800. Examinees who receive a mark of 600 and over will fall within the highest level, J1+.

The BJT website provides no specific information regarding the *kanji* which is incorporated into this test. A look at the sample questions however does reveal that the questions are consistent with the business focus of the test and many of the *kanji* incorporated are those *kanji* that will frequently arise in business settings. As with the JLPT, this test does not require examinees to write *kanji*.

2.6.3.3   *J.Test*

(実用日本語検定) (http://j-test.jp/)

The J.Test is promoted by the *nihongo kentei kyokai* (日本語検定協会) and was first offered in 1991. J.Test is a test designed to test practical use of the Japanese language.

The test is offered six times a year. The test is available in Japan and in some parts of Asia. There is an intermediate-advanced level test (levels A-D), a beginner level test (levels E-F), an introductory level test (G level), and a business Japanese test available. The J.Test (A-D level) and business Japanese test are estimated to be more difficult than the N1 level of the JLPT. An examinee's level (A-D) is determined based on the score achieved out of 1000. The J.Test is divided into two separate but consecutive tests. The first test is eighty minutes and consists of grammar, vocabulary, reading, *kanji*, and writing. The second test is forty-five minutes and consists of listening based tests. Each test is worth 500 marks each.

Unlike the JLPT and BJT, which is comprised solely of multiple choice questions, the J.Test requires participants to write *kanji* as well. Therefore, it could be argued that the

J.Test is a more thorough examination of an examinee's *kanji* ability.

2.6.3.4 Kanji Kentei

(漢字検定) (http://www.kanken.or.jp/)

The *kanji* kentei, "*kanken*" for short, is organised by the same organisation that offers the BJT, The Japan *Kanji* Aptitude Testing Foundation (established 1992). *Kanken* tests *kanji* proficiency, and is therefore a test developed for native Japanese, but is also available to non-native Japanese to test their *kanji* proficiency. *Kanken* is offered three times a year within Japan. *Kanken* is also offered in some parts of Australia, Asia, Europe and the United States although the number of available locations in each area is quite limited.

Kanken consists of twelve levels, levels ten through three and then pre-level two, level two, pre-level one, and the highest level, level one. Levels eight through ten are marked out of a score of 150 and require 80% correct answers to pass. Levels pre-level two through to level seven are marked out of 200 and require 70% correct answers to pass. Levels one and two are marked out of 200 and require 80% correct answers to pass.

Table 2.10 provides a comparison of the various tests available for Japanese language learners. Upon examination it is clear that some of these tests have limited availability outside of Japan. The JLPT is the most easily accessible with tests being conducted abroad whereas J.Test and BJT are limited to Japan and some parts of Asia. *Kanken* on the other hand is available in some overseas locations however, is limited to fewer locations than the JLPT and it is most likely the case that *Kanken* is offered outside of Japan mainly to cater to the needs of Japanese natives living abroad and less so as a tool for JFL learners to test their *kanji* proficiency.

Table 2.10: Comparison of Japanese Language Tests

TEST	Organizing Body	Frequency	Availability	Content	Format	Score/Levels
JLPT	Japan Foundation and the Japan Educational Exchanges and Services	Twice a year in Japan and once or twice in other cities worldwide	In Japan and abroad	• Language knowledge (vocabulary/grammar) • Reading • Listening	Multiple Choice	5 Levels scored out of 0-180
J.TEST	Association for Testing Japanese Proficiency/J.TEST Office	Six times a year	Japan and some parts of Asia	• Grammar • Vocabulary • Reading • *Kanji* • Writing • Listening	Various	Measured on a scale of 0-1000. Levels A-D determined based on score.
BJT	The Japan *Kanji* Aptitude Testing Foundation	Twice a year	Japan and some parts of Asia	• Listening comprehension • Listening and reading comprehension • Reading comprehension	Multiple Choice	Measured on a scale of 0-800
Kanken	The Japan *Kanji* Aptitude Testing Foundation	Three times a year	Japan and some overseas locations	• *Kanji*	Various	12 levels with level one the highest

2.7 *Kanji* ordering strategies

In this section, we will briefly consider some other specific examples of possible *kanji* orders, looking at groups of *kanji* based on different criteria. It is at the core of this thesis to examine whether presenting *kanji* in a particular order offers any advantages for learning *kanji*.

For the purpose of this thesis, a *kanji* ordering strategy will be any order of *kanji* that is introduced as a learning strategy in and of itself and or in conjunction with other learning strategies. Ordering strategies for *kanji* provide a means by which *kanji* can be given more meaning and therefore serve as a useful *kanji* learning strategy. Visual, phonological, contextual, stroke number and frequency are all criteria by which *kanji* can be ordered. Therefore, the purpose of this chapter is to examine possible criteria by which *kanji* can be ordered or grouped and consider the pros and cons of these orders.

Five criteria based ordering strategies will be considered: pictographs/etymological-based criteria, component-based criteria, frequency-based criteria, form-based criteria, and other *kanji* orders. A sample group of *kanji* based on each of these orders will be provided alongside a discussion of each of these criteria based orders. Finally, the major points will be summarised and the potential pedagogical implications of implementing ordering strategies in *kanji* education will be discussed.

2.7.1 Pictographs/etymological-based instruction

In many Japanese courses, the most common approach for teaching *kanji* is to begin by teaching the etymology of the *kanji*. However, the etymology of the *kanji* is only practical for *kanji* which come under the category of pictographs（象形文字

/*shōkeimoji*). For some *kanji*, it is very easy to see the visual formation of the *kanji* from its intended form and this is both interesting for students and a useful memory aid. Hatasa (1989) found that the meanings of pictographs were easier to remember than non-pictographic characters. In ease-of-learning ratings from a questionnaire conducted by Yamashita and Maru (2000, p. 166), pictographs were rated higher than all other types. The findings of Yamashita and Maru support previous proposals that pictographs should be taught at the earlier stages of *kanji* learning (Takebe, 1989; Hatasa, 1989).

Etymology is a useful teaching tool for those *kanji* that still closely resemble their original form, such as the *kanji* "日" (*hi*/day) and "目" (*me*/eye). However, despite being useful in the early stages of learning, there are difficulties associated with etymology-based instruction that make etymology, as a criterion for ordering *kanji* and as a teaching methodology, very limited. Firstly, pictographs only make up a small percentage of *kanji* and therefore its application is limited to a small percentage of characters. Secondly, many *kanji* have undergone changes over time and frequently, therefore, bear little resemblance to their original form and intended meaning. For example, the *kanji* "業" (*gyō*, *waza*/profession, deed) was originally written in a manner unlike its modern form and depicted a base and notched board of a musical instrument (Henshall, 1998, p. 75). Thus, the original meanings of this *kanji* and its form have both changed over time, making its etymology of little use in the task of memorizing *kanji* for the JFL learner. As explained above, the number of pictographs is limited and therefore etymology-based instruction would only be applicable for those *kanji*. Etymology, therefore, does not offer a method for ordering all of the *jōyō kanji*. Nevertheless, learning the pictographs first and together before any other *kanji* may be a useful approach. The *kanji* below provide an example of *kanji* based on etymology.

Etymology-based order (All pictographs taken from grade 5 syllabus)

益	久	再	支	示	舌	率
Eki/yaku/ masu Profit	*Kyū/**hisa** shii* Long time	*Sai/sa/**futa tabi*** Again	*Shi/**sasa** eru* Branch, Support	*Ji/shi/**shi mesu*** Show	*Zetsu/s hita* Tongue	*Ritsu/sotsu/ **hiki**iru* Rate, Command

All the above *kanji* share the characteristic of being pictographs. Pictographs are generally thought to be the best characters to introduce students to first. Nevertheless, from the random group chosen above, many of the *kanji* do not resemble their original form and therefore may not necessarily offer any advantages to the JFL learner. The average stroke number for each character in this group is six strokes. Readings and meanings are provided for this group to illustrate the lack of visual representation of meaning.

2.7.2 Component-based criteria

Many of the pictographs and visually less complex *kanji* are made up of one component; however, *kanji* are often comprised of two or more separate components. Components are frequently radicals or independent standalone *kanji*. For example, the *kanji* "続"（*tsuzu**ku**,zoku*/continue）is a *kanji* that could be said to be comprised of two components: (1) "糸" the radical 糸偏（*itohen*）also a standalone *kanji* "糸" (*ito*/string) (2) "売" the independent *kanji* for 売る (*uru*, *bai*/sell).

Many approaches have been taken to learn *kanji* by analyzing the components of *kanji* as opposed to trying to learn the whole *kanji* as a single entity. Most notably, Kaiho

(1990), Takebe (1991), De Roo (1986), Heisig (1986) and Takagi (1993) have all challenged traditional approaches to *kanji* learning for learners from non-*kanji* backgrounds and have encouraged component based approaches (Noguchi, 1995). As the more complex *kanji* are made up of less complex forms, introducing *kanji* that can build upon each other creates a system in which there is a logical progression for the learner as opposed to the frequency-based order which may seem somewhat random.

Evidence demonstrates that learners retain new *kanji* characters better using componential analysis (Kubota & Toyoda, as cited in Toyoda, 2011). The order in which *kanji* are introduced to second language learners is, as discussed earlier, most often based on either their frequency of use or the order which they appear in the course rather than on any structural features of the characters (Taft & Chung, 1999, p. 244). Inevitably, some simple characters that act as radicals for more complex characters are introduced first, but as we saw with the case of the character "占", that is not always the case. Taft & Chung (1999, p. 244), citing evidence that radicals do play a significant role in recognition of Chinese characters by adult native readers, note that if expert Chinese readers make use of radical structure when reading, it seems sensible to suggest that learning would be facilitated if this structure were explicitly highlighted when teaching characters to novices.

An experiment by Taft & Chung (1999) found that awareness of radicals facilitates the learning of Chinese characters even after only a brief exposure to radical structure. Taft and Chung (1999) further conclude that getting students to learn complex characters as whole entities, without a systematic emphasis on their radical structure, is not the most effective method of teaching characters.

One advantage of knowing the *kanji* components is that more complex *kanji* can be

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broken down into more easily remembered components. Traditionally, *kanji* for Japanese *kanji* dictionaries are located by the 214 部首(*bushu)* or "radicals." This method of locating *kanji*, although practical for native Japanese speakers or foreign students with a high degree of familiarity with *kanji*, is of little use to beginner Japanese students as it requires the student to be able to correctly determine the radical of a *kanji*. One possible approach is for students of Japanese to learn the radicals prior to learning any other *kanji*. In addition to serving as *kanji* components, some radicals (approximately 98 of the 214), are also independent general-use *jōyō kanji*. This would mean that by learning the radicals first, students would have mastered a number of independent *kanji* and radicals that are components of more complex *kanji*.

Yamashita and Maru (2000, p. 160) postulate that incorporating compositional features in the Japanese language curriculum may be part of an effective approach to *kanji* instruction. Teaching *kanji* by giving attention to appropriate compositional features of *kanji* ensures each character becomes a meaningful unit as opposed to an arbitrary combination of lines (Yamashita & Maru, 2000, p. 162). Yamashita and Maru (2000, p. 162) conducted a survey to determine whether beginner JFL students regarded certain groups of *kanji* with compositional features as easy to learn or not. The groups of *kanji* tested were grouped according to four compositional features: 1. pictograph, 2. *katakana* composites (*kanji* comprised of two *katakana* characters, eg. "加"), 3. semantic-phonetics (*kanji* in which one part indicates meaning and the other part represents the reading), and, 4. semantic composites (*kanji* that represent the integrated meaning of its components, eg. "好"). Yamashita and Maru's test found that students regarded pictographs as the easiest to learn followed by *katakana* and semantic composites. Semantic-phonetics were rated the lowest. Yamashita and Maru also found that there was a correlation between the number of strokes and the rating, with those

kanji with more strokes as rated more difficult.

The significance of Yamashita and Maru's study is that it provides evidence that compositional features of *kanji* affect students' perceptions of characters (2000, p. 169). Furthermore, Yamashita and Maru (2000, pp. 169-170) identify two pertinent points from their study. Firstly, beginner students perceive as easy to learn those compositional features that they can identify with already existing concepts, and, secondly, information that makes learning meaningful appeals to learners.

Element/Component -based order （mutual components）

王	玉	宝	珠	現	狂	皇

The above *kanji* were taken from Heisig (2001, pp. 107-110). The *kanji* above all share the common character "王" and therefore after learning the first character it would seem likely that the other *kanji* are easier to remember. The average stroke number for each *kanji* in this group is eight strokes.

Radical-based order （mutual radical）

針	釣	鈍	鉛	鉱	鉄	鉢

This group is similar to the above group in that each character shares a common component, in this case, 金. In this group, however, the common character is the radical and is in the same position for each character, unlike the component-based order in which the component changes position. The average stroke number for characters in this group is twelve. Bear in mind that, in this group, the radical consists

of eight strokes in and of itself.

2.7.3   Frequency-based order

The National Language Research Institute conducted research in Tokyo from which the most frequently occurring words formed from the most frequently used *kanji* could be identified. Crowley (1972, p. xiv) introduces *kanji* based on their frequency. The rationale for this ordering is that by knowing the most frequently used *kanji*, you can read a lot more. For example, Crowley (1972) states that:

> …one-fourth of all the characters used in modern Japanese occur in three-fourths of all the most frequently occurring words. This means that by concentrating on learning approximately 500 select characters, the student is assured of being able to read 75 percent of all the high-frequency words he will encounter in modern literature. (p. xv)

The order of the everyday *kanji* as set out by the Japanese Ministry of Education is one based on frequency of usage and consequently may aid students in reading comprehension by familiarising them with the most frequently used *kanji* first. Pye, (1971) regarded this approach as a much more sensible criterion on which to base one's study. However, it has little application to the writing process of *kanji* and is of little use to the foreign learner whose exposure to Japanese written script is mostly restricted to their textbook. Indeed, it is the foreign learners' lack of exposure to *kanji* in everyday life away from the Japanese class that is partly responsible for impeding faster progress in *kanji* acquisition.

Teaching *kanji* in an order based on their frequency of use means that at some stages students will learn more visually complex *kanji* before visually less complex *kanji*. This is despite the fact that less complex *kanji* will often be a component of the more complex yet albeit more frequently used *kanji*. For example, in the order outlined by

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the Japanese Ministry of Education, the *kanji* 店 (*mise*/shop) and 点(*ten*/point)are taught before 占(***uranau***/fortune-telling). Clearly, 占 is the least visually complex *kanji* of the three and a component of the other two. If we learn by comparing new knowledge to the knowledge we already have, then teaching the less complex *kanji* first would be the better option. Yet, teaching *kanji* on the frequency-based order remains one of the most common methods in *kanji* textbooks.

The assumption that the frequency-based order of teaching *kanji* is the best for foreign learners of Japanese because it is the one used by native Japanese is flawed because as Hatasa (1989) notes, in the case of non-native learners of Japanese, the study of both verbal language and written language takes place almost simultaneously. Frequency of *kanji* has limited applicability as well because, unlike Japanese children, non-native learners of Japanese only see *kanji* in their Japanese textbooks, not in textbooks for other subject matters or generally in their everyday environment.

As noted earlier, one of the principal difficulties of the Japanese writing system lies in the fact that typical *kanji* can have multiple readings. Unger (2006, p. 97) notes that the higher a *kanji's* frequency of occurrence, the more readings a *kanji* is likely to take. He gives the *kanji*, 日, as an example of a *kanji* frequently used that has multiple readings. Perhaps an even better example is the *kanji* "生" (*sei/*live) and the *kanji* "下" (*shita*/under) which both have over ten different readings per *kanji*. If Unger is correct in his assessment, then teaching the more frequently used *kanji* that have multiple readings may be another reason why teaching *kanji* in a frequency-based order is troublesome and perhaps not the best criteria for ordering *kanji* for JFL students. In saying this, it is not necessary for beginner students to learn all of the readings for the one *kanji* when initially learning it, as some of the readings are not commonly used and it is therefore feasible to return to that *kanji* at a later date to learn the less commonly

used readings. This is often the case in the Japanese education system, in which students learn the readings for a *kanji* in junior high school and learn more complex usage and readings of the same *kanji* at high school. For example, students learn the *kanji* "鑑" as "*kan*" in junior high school and learn the more advanced reading for the same *kanji* – 鑑みる (*kangamiru*/in view of) in high school.

Alprin (2002) in "Teaching *Kanji* Components: Using An Element-Based Approach in Class", has the following to say in regards to the "frequency-based approach":

> It is my opinion that textbooks generally follow the Monbusho example, and do not usually dare to teach a *kanji* that is not considered "important" in beginning levels. It is my contention that this makes sense for Japanese children, but not necessarily for Western teenage and college students. It seems unfortunate to me that the "frequency-based approach" is so mainstream that very simple *kanji* that could act as building blocks for "important" *kanji* are virtually ignored under the "frequency-based approach". ("Frequency-Based Approach" Defined section, para. 3)

Although not without merit, there seems to be sufficient support to suggest that a frequency-based order for teaching *kanji* is perhaps not always the most appropriate criterion for ordering *kanji* for students from non-*kanji* backgrounds.

Ministry of Education prescribed order (Frequency based, Grade 5 primary school kanji）

圧	移	因	永	営	衛	易

The *kanji* in the list above are taken from the *kanji* for grade five elementary school children. There appears to be little in common amongst these *kanji* and it is hard to see how studying *kanji* in this order offers any advantages to students by making them easy to remember. Nevertheless, this is a segment of *kanji* taken from the order used by

native Japanese speakers.

2.7.4   Form-based order

The visual aspects of *kanji* are often overlooked as criteria for the order in which *kanji* are introduced. More often than not, the visual element of *kanji* is considered to be one that assumes a *kanji* with fewer strokes is easier to remember than one with many.

Obviously, the number of strokes in a *kanji* can play a part in determining its level of difficulty. Such is the case if we were to compare two *kanji* such as the *kanji*"一" (*ichi*/one) with the *kanji*"鬱" (*utsu*/depression). Clearly, the first *kanji* is much easier than the second. Yamashita and Maru (2000) also found as a result of their own study that *kanji* with more strokes were regarded as harder to learn in their study. However, it is not always the case that *kanji* with more strokes are harder to remember. Tollini (1994, p. 113) cites the following *kanji* as an example:

1. 扼、処、矛、炒
2. 高、員、益、容

The *kanji* in the second list have a greater number of strokes but are more easily recognizable than the *kanji* in the first list. According to Tollini (1994), the form (字形) of a *kanji* is an important element that requires consideration when selecting *kanji* to be introduced. Tollini (1994, p. 107) asserts that, "Western students who have no familiarity with *kanji* can recognize and memorize better those *kanji* whose form is easily distinguishable and is in accordance with the visual recognition laws of western people." According to Tollini (1994, p. 108), one of the problems for students of Japanese from alphabet-based languages is they try to approach *kanji* according to the decoding rules for the alphabet and can therefore not treat *kanji* adequately. Tollini

(1994, p. 108) notes that western students can better recognise certain forms due to their "visual habits". Tollini (1994, p. 108) goes on to say that if we can better understand how Westerners see *kanji* then we can identify *kanji* that are more easily recognisable to Westerners and introduce those *kanji* in the initial stages.

What forms, then, are important considerations? According to the results of an experiment by Tollini, Westerners employ relatively simple visual criteria: horizontal, vertical, and homogeneous forms (Tollini, 1994, p. 119). One might think that Tollini's emphasis on the form of *kanji* suggests that he is advocating the components/element-based approach to studying *kanji*. However, on the contrary, Tollini asserts that "the division of *kanji* according to component parts is irrelevant, because it does not fit into the universal laws of recognition" (Tollini, 1994, p. 112) Nevertheless, Tollini does advocate teaching component parts as they enhance the learning process (1994, p. 114).

Form-based order

果	界	花	辛	赤	当	異

The *kanji* in this group were taken from an experiment by Tollini (1994, p. 112) in which participants who were completely unfamiliar with *kanji* were asked to draw a single pencil line through each *kanji* to divide it in a place they felt appropriate. The *kanji* above received a high score for both horizontal and vertical division. Furthermore, as Tollini notes, all of these *kanji* have a high degree of vertical symmetry but also have a clear horizontal divisibility (1994, p. 112). The typology of *kanji* is something that is often neglected when considering which *kanji* to introduce to

students; however, consideration of symmetry and the form of the *kanji* may present some advantages to students. However, to this author's knowledge no studies have been conducted to confirm this. The average stroke number for characters in this group is eight.

2.7.5 Context-based order

Context-based order (All *kanji* represent parts of the body)

手	足	首	頭	耳	鼻	口
Hand	Foot	Neck	Head	Ear	Nose	Mouth

In this group, all *kanji* represent parts of the body: hand, leg, head, face, etc. This may offer students the advantage of being able to store information in an organised fashion. Beyond this, it does not seem to offer any obvious advantages. The average stroke number for characters in this group is eight strokes.

2.7.6 Overview of *kanji* orders

Foreign learners of *kanji* are at a vast disadvantage in the *kanji* learning process as their exposure to *kanji* is very limited to their Japanese textbook and classroom and whatever time they can find for individual study. It is therefore important that we seek out more efficient methods of *kanji* instruction and helpful learning strategies. Yamashita and Maru (2000, p. 171) note that what is necessary is careful, systematic investigation of correlations between the manner in which *kanji* are introduced and how well they are acquired. Yamashita and Maru (2000, p. 170), in discussing the implications of their own study, suggest that one possible way to apply the findings to teaching would be to use them in selecting characters and deciding the order in which to teach them. This indeed is the motivation for this research, and it is hoped that this

research will improve our understanding of how to best select and order *kanji* for JFL students. The examination of various orders possible with *kanji* highlights some of the advantages and disadvantages associated with each. In proceeding chapters, these orders will be used to determine if in fact different methods of ordering *kanji* are useful for students in the *kanji* acquisition task.

How can ordering strategies be implemented in *kanji* teaching? An awareness of these ordering strategies may be of assistance when teachers are faced with designing a curriculum. For example, if the goal is to introduce a certain number of *kanji*, then one may consider commencing with simple pictographs, followed by simple *kanji* that have a symmetrical form, and from there introducing some *kanji* that combine different components. It may be difficult and unrealistic to try and apply one criterion-based order to all *kanji*.

2.8   Summary

This chapter examined the origins and history of the Japanese writing system and looked at unique aspects of the individual writing scripts from which it is comprised. Characteristics of these scripts were considered with special attention to the complex nature of *kanji* and the difficulty they pose for non-*kanji* background learners of Japanese. The debate as to the indispensable nature of *kanji* was also considered, as well as the importance of learning *kanji* for both native Japanese and JFL learners. Next, we considered the learning and teaching of *kanji* in Japan and abroad. Finally, several *kanji* orders were considered. This chapter established *kanji* as a unique and complex part of the Japanese writing system from which we can better understand the problems they pose to non-*kanji* background JFL learners. With that in mind, the focus now turns to consider what research has been done on learning and teaching *kanji* for

non-*kanji* background students. The following chapter examines the relevant literature.

CHAPTER 3: LITERATURE REVIEW

3.1   Introduction

The previous chapter examined the complex nature of the Japanese writing system and considered why *kanji* are difficult for non-*kanji* background JFL learners but yet also essential to learn. As evident in the previous chapter, the complex nature of *kanji* has given rise to controversy regarding their usage and they have been the subject of several reforms, much of which has related to the restriction of the number of *kanji* prescribed as the "everyday *kanji*." *Kanji* have also been the subject of scholarly work as efforts are made to find effective methods to teach *kanji* to non-*kanji* background JFL learners. In this chapter, the relevant literature will be examined.

In the field of Japanese language teaching, the teaching of *kanji* was a long neglected area (Noguchi, 1995). However, there is growing interest in *kanji* education, and advances in cognitive psychology and second language research present opportunities for advancement in *kanji* teaching methods. The research questions posed for this study touch upon three primary areas of scholarship: (1) second language acquisition, (2) cognitive theory, and (3) literature on learning strategies. The purpose of this chapter is to examine the literature in these areas as it relates to *kanji* learning and teaching.

Structurally, this chapter examines the literature relating to the following areas as a context for the study. First, the literature related to second language acquisition will be examined in relation to *kanji* acquisition for non-*kanji* background JFL learners. Next, the literature relating to cognitive theory will be considered as it provides insights into how humans process information and therefore is relevant to the task of remembering *kanji*. Next, *kanji* learning strategies have been the source of much work related to

kanji and they will be covered here. Next, a number of self-study *kanji* textbooks are examined to determine the approach the approach they have taken to ordering and teaching *kanji*. Finally, the methodological framework of this study will be discussed and the major points of this chapter will be summarised.

3.2   Second language acquisition

In the field of second language acquisition, studies that examine the role of one's first language (L1) on second language (L2) acquisition have dominated the field. This literature is pertinent to this study because the focus group for this study is JFL students from non-*kanji* backgrounds. Therefore, the field of second language acquisition can offer insights into how one's L1 could affect *kanji* acquisition. Moreover, the major differences in the Japanese writing system in comparison with alphabet-based writing systems has been the source of much debate, in particular this debate has centred around how *kanji* are processed and its impact on learning *kanji*. In this section, we will consider both areas; non-*kanji* background learners and processing *kanji*.

3.2.1   Non-*kanji* background learners

Much has been written about how the learner's existing linguistic knowledge influences the course of second language development. The linguist Lado (1957) is credited with first introducing the notion of L1 transfer in which students apparently transfer their habits from their first language to the target language (L2). In the case of non-*kanji* background learners of Japanese from alphabet-based languages, one would assume that they are at a distinct disadvantage to those students whose L1 incorporates *kanji*. Overall, the literature seems to support this argument.

Although the *hanzi* as used in the Chinese language are different from *kanji* in Japanese, some studies have been done on non-*hanzi* background learners of Chinese. Ke (1998, p. 95), in tests done to find the effect of language background on learning Chinese characters *hanzi*, found that there are no statistically significant differences between means of character recognition and production for heritage and non-heritage learners. In other words, the result suggests that for the analysed sample, language background – in this case, being a heritage learner or non-heritage one, is not a variable influencing students' performance on Chinese character recognition and production. Ke (1998, p. 97) admits, however, that the results of his tests could have been a result of "uneven work habits" between the two subgroups. That is, it is quite possible that the non-heritage group had more adequate study habits. Other factors such as motivation could well have influenced this outcome as well.

In studies on non-*kanji* background learners of Japanese, Iwashita (2009, p. 3.15) found that L1 and study background may influence the development of writing skills in Japanese as a second language. Iwashita found that character-based background language learners performed better on various aspects of *kanji* use due to the L1 influence. Similarly, Machida (2013), in conducting *kanji* tests in which results of character and non-character based language backgrounds were compared, found that the findings supported the argument that a character-based background was beneficial in learning *kanji*.

3.2.2   *Kanji* processing

Much of the debate surrounding *kanji* learning for non-*kanji* background students hinges on two factors; the first being the debate over whether *kanji* are symbols that predominantly represent meaning, and secondly, differences in cognitive processes

when processing information written in an alphabet-based script as opposed to one that incorporates *kanji*. Each of these factors will be examined in turn.

3.2.2.1   *The linguistic nature of kanji: Meaning versus sound*

A common perception of *kanji* is that they are symbols that communicate meaning and not sound, and hence they are commonly referred to in terms that imply their semantic quality over any phonetic quality whatsoever. Hence, it is not uncommon to hear *kanji* referred to as "pictographs," "ideographs," or "logographs". Historically speaking, *kanji* did first develop as pictographs and therefore this tendency to label *kanji* with terms that imply their semantic function is understandable and not entirely without merit. Some scholars have, however, questioned this line of thinking, and there is convincing evidence that suggests that *kanji* do not represent meaning independent of sound and are in fact more phonetic than semantic. If we consider this in terms of *kanji* recognition, clearly there are pedagogical implications that stem from these assertions as to the linguistic nature of *kanji*.

Contrary to the popular perception of both *hanzi* in Chinese and *kanji* in Japanese as ideographs, Horodeck (1987) argues convincingly that *kanji* were developed as a phonetic writing system and that the graphic shapes of *kanji* are more reliable clues to sound than meaning. Horodeck conducted two independent studies in Japan, one on writing and the other on reading. Firstly, to test the hypothesis that meanings trigger *kanji* when Japanese write spontaneously, Horodeck implemented a study that examined *kanji* errors in 2410 manuscripts collected from final examination answers to courses provided by Nihon University. They were examined for errors by a native proofreader from which 495 errors were discovered. These errors were categorised based on the type of error and *on* compound errors were chosen as the best type of error for analysis. Errors were analysed to determine whether the writer was working

from sound or meaning and to test the hypothesis that meanings trigger *kanji* when Japanese speakers write. Errors in which the sound and graphic elements of the *kanji* were incorrect but the meaning was correct were determined to be errors that supported the hypothesis that meanings triggered *kanji*. Errors in which the sound was correct but the graphic and semantic elements of the *kanji* were incorrect were said to refute the hypothesis. Results from this study found that errors that refute the hypothesis that *kanji* triggers meaning outnumbered those errors that support it. Following this, Horodeck used the errors in the previous writing test to implement a reading test to test the hypothesis that *kanji* trigger meanings when Japanese read. In this test, native Japanese speakers were asked to read and respond to several newspaper headlines containing meaningless *kanji*. Results from this test revealed that when the sound of the meaningless *kanji* matched that of the correct *kanji*, the error would frequently go undetected and therefore the hypothesis was also refuted. Horodeck concluded that *kanji* users rely heavily on sound when they both read and write.

Following on from Horodeck, Matsunaga (1994) argues that *kanji* also signify sounds and that psycholinguistically sound is relied on when native Chinese and Japanese read for comprehension. Matsunaga systematically rebuts the popular terminology used to describe *kanji* and suggests that the sound component of *kanji* is significant, and they would therefore be better described as "morphophonic" or "morphonic" (p.39). Matsunaga conducted a study on *kanji* reading using eye-tracking methodology and results confirmed Horodeck's findings with clear evidence of phonological coding when Japanese native speakers read for comprehension.

Sayeg (1996) seems to agree with Horodeck and Matsunaga and argues that, although the traditional view has been that phonological processes play little part in *kanji* recognition, recognition on the basis of sound is more prevalent than previously

thought. Sayeg, as a non-native speaker of Japanese but with advanced knowledge of *kanji*, in relaying her own experience when reading *kanji*, states that she thinks of the reading of the *kanji* first followed by the meaning (p. 142).

A strong argument can therefore be made that *kanji* are not ideographs and despite their historical beginnings as pictographs, the phonetic role of *kanji* is significant. Evidently, the perception of *kanji* as ideographs and the emphasis on the semantic function of *kanji* has led to a trend in which *kanji* are taught with greater emphasis on their semantic function. When the beginner first comes into contact with *kanji*, they are inevitably first introduced to pictographs which further entrenches this belief in *kanji*'s role as symbols with a mostly semantic function. These lines of argument have significant implications in relation to the debate over the "indispensability of *kanji*" and to Japanese language pedagogy.

What, therefore, are the implications for treating *kanji* as more phonetic in relation to the debate over the indispensability of *kanji*? Those that support the notion that *kanji* are indispensable emphasise the semantic function of *kanji,* and therefore greater emphasis on the phonetic function of *kanji* suggests that *kanji* could be replaced by a simpler, much more easily acquired phonetic script such as *kana* or *rōmaji*. The emphasis on the phonetic role of *kanji* arguably refutes the argument that *kanji* are indispensable because they express meaning. In any case, the linguistic nature of *kanji* does not seem to be sufficient grounds to justify any notion of indispensability nor does it provide sufficient grounds to relinquish their usage. In reality, Japanese cultural ties to *kanji* are probably the greatest platform for arguing that *kanji* are indispensable. Okutsu and Tanaka (1989) note that:

> The mixed *kanji-kana* writing system used today is, among other things,
> intricately interwoven with the long history of Japan and Japanese culture, and it

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is not easy to extricate its writing system from the rich and complex heritage in which it has been nurtured. A great deal would be lost in simplifying the writing system, even in exchange for greater convenience. (p. 18)

What, therefore, are the pedagogical implications for treating *kanji* as more phonetic? The emphasis on the semantic function of *kanji* has no doubt influenced how *kanji* are taught to JFL learners, and in some cases the phonetic role of *kanji* is undermined by greater emphasis on *kanji* as symbols that represent meaning. Horodeck (1987) recognises that the role of sound in *kanji* and its importance in facilitating the *kanji* learning process when he states:

Stressing the relationship between *kanji*, sounds and spoken forms in teaching second language learners *kanji*, then, may be the most efficient way to move students along the path to native-like literacy (p. 7).

Sayeg (1996) expresses a similar sentiment when she notes:

Although fluent readers may not need a phonological code for lexical access, more use could be made of sound in learning *kanji*, and more importantly, developing reading proficiency (p. 150).

Sayeg does not go on to provide specific ways in which sound could be used other than to suggest that greater emphasis on phonetic recognition of *kanji* may facilitate faster recognition of *kanji*.

These arguments are persuasive and do suggest that a greater emphasis on the phonetic role of *kanji* might be useful for the JFL learner. In any case, this area needs further exploration in order to determine how the phonetic role of *kanji* can be relayed to JFL learners in a manner that facilitates their learning.

3.2.2.2 The psycholinguistic nature of kanji

In the preceding section, the literature relating to non-*kanji* background learners of *kanji* and the linguistic nature of *kanji*, that is, whether *kanji* are ideographs or not was considered. In this section, the psycholinguistic aspects of *kanji* will be considered. With multiple scripts used in the Japanese writing system, Japanese has been the subject of several studies related to *kanji* processing. Many of these studies have been conducted with native Japanese, both adults and children, as well as with foreigners. Many studies have been conducted on *kanji* processing to determine whether meaning is accessed directly from *kanji* without phonological processing. The literature suggests that phonological processes play a more significant role than once thought; however, visual, semantic and phonological processes are all activated to some degree in *kanji* recognition. At any rate, understanding how *kanji* are processed by both native Japanese and non-*kanji* background learners of *kanji* may provide some clues as to how they can be most efficiently learned and taught.

A number of studies have been conducted on the Chinese characters *hanzi*, and many of these studies reflect the significance of phonology in processing these characters. Perfetti and Zhang (1991) conducted a study on the phonological processes in reading Chinese characters and found that character identification is not mediated by phonemic processes but phonological representations are immediately aroused as a part of word identification.

Several studies have also been conducted with native Japanese as subjects to explore *kanji* processing. Flores d'Arcais, Saito and Kawakami (1995) tested the effect on *kanji* naming produced by pre-exposure to a semantic or phonetic radical. They found that prior presentation of the radical that carries phonological information affects speed of naming the whole character whereas pre-exposure of the semantic radical does so to

a lesser extent or, in some cases may even slow the process down. Similarly, Wydell, Patterson and Humphreys (1993) used homophones to conduct a semantic categorization task with *kanji*. If meaning is accessed prior to phonological information then homophony should not affect semantic judgement. However, they found that homophony increased reaction times and the number of errors and therefore concluded that both visual and phonological information was accessed in *kanji* recognition.

According to Fukuda, Hirataka and Fukuda (as cited in Usuki, 2000, p. 4), learners from non-*kanji* areas see *kanji* from a bottom-up perspective, which moves from feeling – perception – recognition – association of the meanings. Toyoda (as cited in Usuki, 2000, p. 5) reported from her survey results that learners from non-*kanji* areas tended to have difficulties in retaining what they have memorised rather than in memorising the *kanji* itself. One might surmise from this that students could retain information in their short term memory (STM) but have difficulty encoding information to their long term memory (LTM) or to a sufficient depth of processing (see Section 3.2.2). This is a very common scenario, one all too familiar to the author of this thesis, in which students use rote learning to memorize *kanji* and can often produce good results in tests but fail to retain the information after testing.

According to Nesbitt (2009, p. 61), the English letters a-z trigger a sound association. When combined with other letters to make a word, a semantic value is activated; therefore, a degree of separation can be maintained between the simple phonetic-based alphabet and its lexical content. This is very different from *kanji* and perhaps another reason why *kanji* may pose difficulties for non-*kanji* background JFL learners, especially those from alphabet-based L1s. According to Shimizu and Green (2002, p. 228), the use of morphemes rather than phonemes represents a significant departure from the language decoding experience of most Westerners. *Hiragana* and *katakana*

are usually easily remembered by JFL students from alphabet based L1s probably because they are phonemic in nature, less visually complex, and the number of characters is much more manageable. As the literature suggests, however, the phonetic role of *kanji* is more significant than once thought and if that is the case, Shimizu and Green's assertion may be a less plausible explanation for why Westerners encounter difficulties in learning *kanji*.

According to psycholinguistics, there are three aspects of informational processes involved in processing *kanji*: orthography (grapheme), phonology, and semantics (Shimizu, 2002, p. 229). However, *kanji* are complex for recognition due to a lack of transparent semantic, phonological and grapheme-based information, and even when present this is frequently unreliable (Toyoda, 2011, p. 384). As those non-*kanji* background learners of JFL who are from alphabet based L1s have acquired skills in phonological information when reading in their L1s, there is evidence to suggest that they will similarly rely on phonological information when dealing with a new script (Koda, 1995, Chikamatsu, 1996 in Toyoda, 2013:240).

In addition to separate studies conducted with Japanese and non-Japanese subjects, a number of comparative studies have been conducted. Biederman and Tsao (1979) conducted a stroop test on Chinese and Americans and concluded that different processes were present when processing the alphabet and Chinese characters. Flaherty (1991) found that Japanese children access the phonetic code prior to the semantic code while the non-Japanese subjects accessed both codes at "comparable rates" (p. 191).

There are several other factors that may contribute to *kanji* recognition: the simplicity/complexity of the *kanji*, the reader's familiarity with the *kanji*, and the

concreteness and abstractness of the *kanji*. Kess (1999, p. 42) notes that high frequency *kanji* are easier due to familiarity and that orthographic complexity does not necessarily result in processing difficulty. Kess compares stroke numbers in *kanji* with long English words that contain a large number of letters and notes that their complexity actually makes them unique and therefore easier to recognise.

The literature seems to suggest that phonology is accessed in *kanji* recognition and although the literature has not provided any definitive answers regarding *kanji* processing, the role of phonology in *kanji* recognition suggests that a greater emphasis on sound when teaching and learning *kanji* may be useful.

3.3   Cognitive theory

Cognitive psychology attempts to understand the nature of human intelligence and how people think (Anderson, 1980, p. 1). Cognitive theories provide insight into how we process, store, and retrieve information. As learning a second language involves storage and retrieval of information, cognitive theories provide a relevant theoretical framework for understanding *kanji* acquisition. We will therefore examine some relevant areas of cognitive theory and their relevance to *kanji* acquisition.

3.3.1   Short and long term memory – the dual storage approach

The dual storage model for memory (Atkinson and Shiffrin, 1968) characterised memory in terms of dual storage: short term memory (STM) and long term memory (LTM). STM is also sometimes referred to as *primary* memory, *immediate* memory, and *working* memory (Klatzky 1980, p. 11). In contrast to STM, Klatzky (1980, p. 13) states that information in LTM seems to be arranged in a way that retrieval is accomplished with relative ease. In the case of *kanji* acquisition then, and if we are to

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accept the dual storage model of memory, the goal of *kanji* learning is to retain *kanji* in our LTM so that *kanji* can be easily retrieved.

Kanji learning strategies and teaching methodology must then be considered in relation to the task of storing *kanji* in the LTM. Unfortunately, there seems to be little agreement on how something initially stored in STM can subsequently become stored in LTM. Rote learning has been considered as one such method for retaining information in the LTM; however, some theorists argue that rehearsal only serves to maintain items in the STM and more active processing such as elaboration (see Section 3.2.6) is required for that information to be represented in the LTM (Klatzky, 1980, p. 12).

3.3.2   Level of processing

Craik and Lockhart (1972) postulated the depth of processing theory which, in contrast to the dual storage theory, suggests that there are not two separate memory storages but rather different levels of processing in which deeper processing results in more elaborate, longer lasting and stronger memory traces. When learners analyse for meaning, they may think of other, related associations, images and past experiences related to the stimulus. Factors that influence the depth of perceptual processing include the amount of attention devoted to the stimulus, its compatibility with existing memory structures in the learner's brain, and the amount of processing time available. In addition, the "Self-Reference Effect," (Rogers, Kuiper and Kirker, 1977) in which new information is related to learners themselves, takes learning to deeper levels and therefore promotes long-term memory.

3.3.3   Meaningfulness

One important aspect of the depth of processing theory is that 'meaningfulness' is said to be a significant contributor to deepening the level of processing. This has a direct impact on second language acquisition and *kanji* acquisition. According to Steinberg and Yamada (1978, p. 88), meaningfulness is interpreted as being much more important in learning writing symbols than is perceptual complexity. Fukuzawa (as cited in Steinberg & Yamada, 1978, p. 97) found that meaning and not perceptual complexity mainly determined the acquisition rate of *kanji* for elementary and middle school children. In order to help learners gain a sense of control over a complex and enormous task, Findley and Cooper (as cited in Yamashita & Maru, p. 160) conclude that the teacher must break the task into meaningful and tangible subsets. Applying this principle to teaching *kanji* translates into two strategies. One is that teachers must select characters that are meaningful and introduce them in an effective order, while providing students helpful information for learning each character (Hammerly, 1985). The other is to train students to acquire strategies for learning new *kanji* so they can be active and independent learners.

3.3.4   Component analysis

In the area of memorization techniques, one common approach is to break items down into smaller components that are easier to remember. For example, if you are required to learn a long list of numbers such as: 567833442729, then the task would be for most people quite challenging. The task becomes much easier if the number is broken down into three sets of four numbers, for example, 5678, 3344, and 2729. This approach relates to *kanji* acquisition because *kanji* can be broken down into separate components or what are sometime referred to as "graphemes." In doing so, seemingly very complex

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kanji can be more easily learned. For example, if we were to take the *kanji* "想" (*sou*), at first sight it may seem like a complex *kanji* to the beginner; however, if we break it down into its separate components – "木"(*ki*), "目" (*me*), and "心" (*kokoro*), it becomes much less daunting to the student of *kanji*. This is particularly so if the student is already familiar with the separate components. In the case of the *kanji* "想" the three separate components are also independent *kanji* that are generally taught to beginner to lower intermediate students. In this way, by chunking *kanji* down into simpler components, students improve their awareness of the structure of the *kanji*. This approach can be taken with many *kanji* and is the approach often adopted when implementing mnemonics (see Section 3.4.2) as a learning strategy.

3.3.5   Encoding

Moving things from STM to LTM is called encoding (Baddeley, 1999), or if we adopt the level of processing theory, encoding is achieving sufficient depth of processing. What methods help in the process of encoding? As stated earlier, repetition is not regarded as an effective method of encoding information but rather more of a means of retaining information in the STM. Organisation, meaningfulness and imagery all contribute to the encoding process and therefore are of particular interest when considering learning strategies for *kanji* acquisition as we want to implement learning strategies that will assist in the encoding process of *kanji*.

3.3.6   Organisation and recall

Psycholinguistic studies have demonstrated that learning unorganised random entities is difficult (Yamashita & Maru, 2000, p. 160). In the case of *kanji*, without any systematic order, they can appear to be a random array of lines and curves. The role of organisation and its effect on memory is pertinent as we consider how different

sequences of *kanji* affect *kanji* retention. Chase and Simon (as cited in Yamashita &Maru, 2000, p. 160), did a study on chess players and found that experienced chess players could not remember randomly placed chess pieces whereas they could remember pieces arranged in legal positions, suggesting that random information affects visual information processing and memory. Yamashita and Maru (2000, p. 160) claim that learning hundreds of *kanji* by rote makes them seem like an endless stream of such entities, because without proper guidance the characters are nothing but complex, seemingly arbitrary combinations of bars and boxes, and their correspondences with meanings and readings are random.

Numerous manipulations have been shown to improve subjects' memory in recalling a long list of items. Many such devices involve organising the material in such a way that subjects can systematically search their memories for the items (Anderson, 1985, p. 183). If such is the case, organising *kanji* in a systematic order should also produce greater rates of retention.

3.3.7   Elaboration/Association

Elaboration/Association is the process of relating new language information to concepts already in memory, or relating one piece of information to another, to create associations in memory (Oxford, p. 41). Elaboration is the process, therefore, of adding more extensive information into the memory system. This serves to make existing information and incoming information more distinctive and unique. Yamashita and Maru (2000, p. 159) found that results of a questionnaire-style experiment indicate that students find it easy to learn those *kanji* that they can relate to their previous knowledge and those that are particularly memorable. If we apply this concept of elaboration to English spelling, most would acknowledge that it would be better to first

learn how to spell a simpler word such as "cat" before one attempted to learn a more complex word such as "**cat**astrophe." Regardless of the fact that there is no relation in meaning between these two words, learning the shorter, less complex word first becomes a building block from which the student can go on to learn more complex words.

In *kanji* learning, however, it is frequently the case that a more visually complex *kanji* is learned prior to a less visually complex character. The example discussed in 2.7.3 where 店 (*mise*/shop) is most often learned before the *kanji* 占 (*uranau*/fortune-telling) is once again pertinent. Despite the fact that the second *kanji* is both visually less complex and is a component of the first *kanji*, it is still in most cases learned after the first. The basis for learning these particular *kanji* in this order is that the *kanji* for shop is a more frequently used *kanji* and is therefore more useful. However, if we consider elaboration as a useful technique for retaining information, it may be more systematic and efficient for JFL learners to learn the visually simpler *kanji* first regardless of the functional qualities of the *kanji*. This is especially so if at some stage the student will be required to learn the *kanji* for fortune-telling anyway.

Elaboration, therefore, is a pertinent concept to consider when deciding which order to introduce *kanji* to the JFL student. Of course, student objectives will also play a role in determining which approach is appropriate. An emphasis on more functional vocabulary may be a better approach for those JFL learners who only wish to acquire a conversational level of proficiency. Nevertheless, the concept of elaboration and its role in memory retention suggests that consideration of this concept will assist in retention and a *kanji* order that gives consideration to this concept may be more efficient than a random organisation of *kanji*, regardless of the functional qualities of those *kanji*.

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3.4   *Kanji* learning strategies

A language learning strategy is a conscious technique used by a learner to purposely assist the language learning process (Grainger, 2005). The Strategy Inventory for Language Learning (SILL) (Oxford, 1990) is a guide to different strategies for language learning; however, Grainger (2005) identifies a number of problems with applying the SILL to learners of Japanese due to special characteristics of the Japanese language and concludes that SILL is not in fact appropriate for use with orthographic languages like Japanese. A significant improvement was made on SILL for learners of *kanji* by Bourke (1997) with her establishment of the Strategy Inventory for Learning *Kanji* (SILK). SILK provides a list of 56 possible ways of processing *kanji* and managing *kanji* learning (Anderson & Bourke, 2007).

Bourke (1996) found that the most successful students in *kanji* recall tasks were the ones who used the highest number and widest variety of strategies. It is beyond the scope of this paper to consider all 56 different strategies outlined in SILK; however, as noted by Shimizu and Green (2002), conventional strategies for learning *kanji* often include rote learning, mnemonic, and contextual. We will therefore look at each of these in turn.

3.4.1   Rote learning

Gamage (2003) found that JFL learners from alphabetic backgrounds used repeated writing strategies to memorize *kanji* words more than learners from Chinese character backgrounds (See also Mori, 2003, p. 452). The main method encouraged for learning *kanji* for native Japanese in Japanese schools seems to be rote learning. Considering that even after twelve years of studying *kanji* Japanese native speakers have difficulty with the *jōyō kanji*, you would think it would be difficult to convince many foreign

learners of Japanese to study *kanji* in the same way as Japanese native speakers do. Yet, rote learning seems to be the principal method used by foreign learners to remember the writing of the *kanji*. A study by Shimizu and Green (2002) found that the rote learning strategy was the most commonly used by students of Japanese for *kanji* study. Shimizu points out that part of the reason for the popularity of rote learning as a learning strategy might be due to the fact that many native Japanese teachers draw on their own experiences when teaching *kanji* and most of them learned by using rote methods. Furthermore, rote learning is not an uncommon method used by native English speakers to remember the spelling of English words; therefore, this may also be a factor in why so many students choose to use this learning strategy to remember *kanji*.

Rote learning, however, can be a useful method in helping to remember the *kanji* as it not only helps students to remember the *kanji* but can help students in developing their ability to write *kanji* with the correct proportions. Nesbitt (2009) suggests that rote learning be used in the first year of *kanji* learning as a specific, structured learning-tool to develop strong neural pathways for automaticity. Clearly, rote learning will continue to have its place as a *kanji* learning strategy; however, studies seem to suggest that it is not particularly effective in improving retention.

3.4.2   Mnemonics

The use of mnemonics in *kanji* learning involves the use of keywords to represent individual components of a *kanji*. By combining these keywords into a sentence, students have a useful tool to help remember the *kanji*.

James Heisig's *Remembering the Kanji* is probably the most well-known book on *kanji* to have taken the approach of using mnemonics to remember the *kanji*. The use of

mnemonics as a *kanji* learning strategy seems to be gaining in popularity. Despite this, there seems to be little evidence to suggest that mnemonics aid in long-term memory retention. Wang and Thomas (1992) found that there was no greater advantage in memory recall with mnemonics over rote learning, and in fact in their study, there was greater forgetting among the learners who used mnemonics. Wang does, however, recognise the advantages of mnemonics in learning and immediate recall but found no evidence to suggest that keyword mnemonics confer any long-term advantages. Grunberg (1998) disputed this, arguing that if students are tested immediately after learning of the vocabulary, keyword mnemonics are useful for short and long term retention.

Manalo, Mizutani, and Trafford (as cited in Mori & Mori, 2011, p. 450) found that mnemonic strategy introduction has a positive impact on learner perceptions, rather than on test performance as such. Although mnemonics may assist readers in remembering the structure of individual *kanji*, it cannot give the readers semantic and phonological information across *kanji* (Toyoda, 2011). This is one of the major criticisms of mnemonics as a learning strategy, although it may be useful in helping students remember the structure of the *kanji*, it does not aid students in remembering the reading of the *kanji*. Indeed, Heisig's book does not teach the readings of the *kanji*.

There still seems to be a lack of evidence to support the advantages of mnemonics as a learning strategy. Nevertheless, the growing popularity of this method should be sufficient evidence to suggest that for some people it is indeed an effective learning strategy. Shimizu and Green (2002) maintain that the important underlying concept of mnemonics as a learning strategy is the possibility of making the learning of new *kanji* more meaningful if they are presented within the context of a student's previous knowledge. This is consistent with the theory of elaboration and suggests further

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evidence to support the effectiveness of mnemonics as a learning strategy.

3.4.3 Contextual

Studying *kanji* in context is a popular learning strategy for *kanji* study and evidence of this can be seen in the number popular *kanji* textbooks on the market that adopt this approach; in particular, the following titles, *Basic Kanji Book*, *Intermediate Kanji Book*, and *Kanji in Context.*

The basis for this approach is that *kanji* should be treated as "vocabulary" rather than an "alphabet" and therefore *kanji* are better learnt in context rather than in isolation. This is frequently the approach taken for *kanji* education at intermediate levels. Kano (1995) asserts that the goal of *kanji* education at the intermediate level should be efficient vocabulary building with *kanji* use words rather than the teaching of *kanji* as characters. According to Shimizu and Green (2002), contextual strategies have been emphasised because the reading and meaning of *kanji* compounds are often highly context dependent. With the large number of homonyms in the Japanese language, studying *kanji* in context as opposed to just studying individual *kanji* isolated from any context whatsoever is a useful strategy for the student of *kanji*.

3.5 Self-study *kanji* textbooks

As Japanese language teachers frequently introduce *kanji* in the order they appear in textbooks, in stage 1 of the study, a textbook analysis was conducted on textbooks frequently used in Japanese language courses at the undergraduate level. The textbooks used in this stage of the study were textbooks that teach *kanji* alongside the spoken language and are therefore not textbooks that solely deal with the teaching of *kanji*. Most Japanese language courses will teach *kanji* in relation to the other material which

is being taught in the course. There are, however, several books on the market that are dedicated to teaching *kanji* exclusively, and they are therefore popular as self-study texts. This is not to say that they are not or could not be used as textbooks in Japanese courses at university, though the tendency is for these textbooks to be used as self-study texts. With such texts, authors have approached the teaching of *kanji* in varying ways. In this section, several self-study *kanji* textbooks were examined to determine the ordering strategy and the instructional approach taken.

Firstly, an overview of instructional *kanji* books published between 1945 and 2014 is provided in the Table 3.1. The table illustrates the ordering strategy used in the textbook as either one that follows the Ministry for Education's order, which will be referred to as "MOE", or whether the order is unique, that is an order unique to that book. Following that, some individual textbooks that have implemented a unique ordering strategy are discussed in more detail. This analysis is restricted to those books that include the "everyday *kanji*" as there are a number of other textbooks that have been published that only deal with a small number of *kanji*. The "everyday *kanji*" will, however, be different depending on the year the book was published because, as noted in Chapter 2, the number of *kanji* included in the everyday *kanji* has undergone changes. Therefore, the most recently published book included in this list contains 2300 *kanji*, the 2136 everyday *kanji*, currently the number of *kanji* included in the everyday *kanji*, plus an additional 164 *kanji*, whereas, the oldest book included in this list only includes 1850, which was the designated number of *kanji* at that time.

Table 3.1: Self-study *Kanji* textbooks

Title and Author	Year First Published	Number of *Kanji* in current edn.	Ordering Strategy
Standard kanji by Oreste Vaccari and Enko Elisa Vaccari	1949	1850	MOE
A Guide to Reading and Writing Japanese by Florence Sakade	1959	2136	MOE and Stroke Number
The Study of Kanji by Pye, M.	1971	1945	MOE and Unique
Remembering the Kanji Vol. 1: A Complete Course on How Not to Forget the Meaning and Writing of Japanese Characters by James W. Heisig	1977	2042	Unique
2001 Kanji by Joseph R. De Roo	1980	2001	Unique
Essential Kanji: 2,000 Basic Japanese Characters Systematically Arranged For Learning And Reference by P. G. O'Neill	1987	2000	Unique
A Guide to Remembering Japanese Characters by Kenneth G. Henshall	1988	1945	MOE
Guide to Writing Kanji & Kana (Books 1 and 2) by Wolfgang Hadamitzky and Mark Spahn	1991	1945	Unique
The Complete Guide to Everyday Kanji by Yaeko S. Habein, Gerald B. Mathias	1991	1945	Unique

Table 3.1: Self-study *Kanji* textbooks (contd.)

Title and Author	Year First Published	Number of *Kanji* in current edn.	Ordering Strategy
Kanji ABC: A Systematic Approach To Japanese Characters by Andreas Foerster & Naoko Tamura	1994	1945	Unique
The Kanji Handbook by Vee David	2006	1945	Unique
The Kodansha Kanji Learner's Course by Scott Conning	2013	2300	Unique

The above table illustrates which textbooks have adopted an order consistent with the order prescribed by the Ministry of Education and which have not. It is evident the majority of these textbooks have opted to arrange the *kanji* into a unique order. This suggests that these authors have considered the order in which the *kanji* are introduced to be an important factor. Following is a more in-depth look at the instructional approach and ordering strategies implemented by some of those authors who have adopted a unique ordering strategy.

***Remembering the Kanji Vol. 1: A Complete Course on How Not to Forget the Meaning and Writing of Japanese Characters* by James W. Heisig**

James Heisig's *Remembering the Kanji*, first published in 1977, takes an innovative approach to *kanji* learning and has attracted much attention from Japanese language learners seeking out new methods for remembering *kanji*. Heisig's book represents a departure in method from previous books by teaching the writing and meaning of the *kanji* without teaching the pronunciation of the *kanji*. Heisig asserts that remembering the writing and meaning is the "single most difficult barrier to learning Japanese" (p. 1) and it can be "greatly simplified when the two are isolated and studied apart from

everything else." (p. 1 also). Heisig even goes so far as to say that, "it is hard to imagine a less efficient way of learning the reading and writing of the *kanji* than to study them simultaneously" (p. 10).

Heisig takes a component-based approach and creates a sort of alphabet of imaginative symbols, which he calls "primitives", from which to draw. It is from these primitives that all characters in the book are comprised. Heisig asserts that "what makes forgetting the *kanji* so natural is their lack of connection with normal patterns of visual memory (Heisig, 2008, p. 1). Heisig's approach therefore uses imaginative memory as opposed to visual memory to remember the *kanji*.

Significant for the purpose of this study is that Heisig's method is dependent on "order" as a critical factor to his method. Heisig (2008) notes, "it will soon become apparent that the most critical factor is the order of learning the *kanji*. The actual method is simplicity itself" (p. 5). Heisig further notes that, "if one's goal is to learn to write the entire list of general-use characters, then it seems best to learn them in the order best suited to memory, not in order of frequency or according to the order in which they are taught to Japanese children" (p. 6).

As Heisig's book is designed for self-study, one may wonder if it could also serve as a supplemental tool for those also enrolled in a formal Japanese language course. In response to this common query, Heisig (2008) states:

> The reader will not have to finish more than a few lessons to realize that this book was designed for self-learning. What may not be so apparent is that using it to supplement the study of *kanji* in the classroom or to review for examinations has an adverse influence on the learning process. The more you try to combine the study of the written *kanji* through the method outlined in these pages with traditional study of the *kanji*, the less good this book will do you. I know of no

exceptions (p. 8).

An online search of Heisig's book will soon reveal many glowing reviews and it is apparent that it has achieved a high degree of popularity amongst students wanting to learn *kanji* from this self-learning tool. Nevertheless, the fact that this book is a self-learning tool, and as Heisig himself notes is not good as a supplemental tool, provides very little assistance to the Japanese language teacher in search of an efficient method and order in which to teach *kanji*. Heisig regards traditional methods of rote learning as inefficient and espouses relating the characters to images over sounds. However, as we have seen, there is increasing evidence to suggest that *kanji* are more phonetic in nature than once thought and that sound may play a more significant role in reading *kanji* than initially thought. Heisig's approach of learning the *kanji* meanings first with no regards to their sound is an innovative approach but one must wonder if the exclusion of sound is to the detriment of the learner.

2001 Kanji (1980) by Joseph R. De Roo

In this book, De Roo takes a component-based approach, listing 230 graphemes from which the *kanji* are formed and combining this with a mnemonic system for memorising. De Roo's book is actually more of an index of *kanji* that enables learners to look up unknown *kanji* by associating numbers with the component in the top or left top of the character and a number for the component in the bottom or right bottom of the character.

Guide to Writing Kanji & Kana (Books 1 and 2) by Wolfgang Hadamitzky and Mark Spahn

This book covers the everyday *kanji* and introduces the *kanji* in a unique order. The

authors do not provide specific details as to how the *kanji* are ordered other than to say that they start with the simplest and most common through to the more complex and less common *kanji*. Seemingly then, the authors have opted for a frequency-based approach. Hadamitzky and Spahn do not, however, seem to consider learning the *kanji* in the order presented in their book as an important factor. In fact, the authors say that "you can choose any order you like" (p. 5). *Kanji* compounds are taught alongside the *kanji* and the compound *kanji* is comprised from *kanji* previously taught; therefore, the authors recommend learning the *kanji* in the order which they are presented in the book so as to avoid having to look up unknown *kanji*. The authors provide several tips on learning *kanji*.

The Complete Guide to Everyday Kanji (1991) by Yaeko S. Habein and Gerald B. Mathias

This book takes a systematic and unique approach to introducing *kanji*. The book aims to clarify the form-meaning relationship of a *kanji* and the form-*on-yomi* relationship of *kanji*. The *kanji* are grouped accordingly into three categories:

6. Basic-form *kanji* – 152 independent *kanji*

7. Semantic compound *kanji* – 483 *kanji*

8. Phonetic compound *kanji* – 1310 *kanji*

Due to this grouping strategy, the *kanji* have not been ordered on a frequency-based criterion. Habein et al. note that not all *kanji* developed as pictographs and that they do not look like pictures today. They emphasise that special attention has been paid to the order of presentation. *Kanji* are introduced in an order that builds upon previously introduced *kanji*.

Kanji ABC: A Systematic Approach to Japanese Characters (1994) by Andreas Foerster & Naoko Tamura

This book takes a component-based approach to _kanji_ and asserts that the key to success in learning _kanji_ is based on breaking _kanji_ down into familiar components and pictures. In order to achieve this, _kanji_ graphemes are divided into groups and taught first. Subsequent _kanji_ introduced are all made up of the graphemes taught at the beginning. This book stresses that the sequence in which _kanji_ are learnt is paramount and that the "importance" of the _kanji_ is not a good criterion for ordering _kanji_.

The Kanji Handbook (2006) by Vee David

This book relies on a unique system in which _kanji_ characters appear as "_Kanji_Hybrids," a combination of _kanji_ and English words in which the first letter of the English word is replaced with a _kanji_, e.g., "火 ire." In this example, the first letter of the English word, "fire" is replaced with the _kanji_ for fire 火. These _kanji_ hybrids are then used in a sentence alongside other similar looking _kanji_ to create a mnemonic system the author calls "Veemuenics." This approach has been taken to help learners distinguish between similar-looking _kanji_ by comparing them in the context of the author's Veemuenic stories. For example, "拾 ick-up a pen & paper, let's write a 合 ombined 答 nswer…" (p. 231). In this example, three similar-looking _kanji_ have been used to form a Veemuenic story.

Obviously, the order _kanji_ are presented in this book is closely related to the author's mnemonic method, and _kanji_ contained in the Veemuenic stories are grouped together. Therefore, the author has chosen to order _kanji_ with respect to their similarity of appearance and argues that this will enable learners to discern the differences between the _kanji_.

***The Kodansha Kanji Learner's Course* (2013) By Scott Conning**

One of the most recent editions to this genre of *kanji* instructional books is Scott Conning's *The Kodansha Kanji Learner's Course*. This new addition to the genre of *kanji* instructional books takes an eclectic approach to teaching *kanji* and is of particular interest to this study due to its *kanji* order. Conning recognises the importance of order in learning *kanji* and suggests that "the order in which you learn the *kanji* is perhaps as important as the method by which you learn them" (Conning, 2013, p. 17). Essentially, the order which Conning introduces *kanji* uses a component-based approach in which simple graphemes that are components of more complex *kanji* are introduced first. Conning also notes that most *kanji* learner's texts do make the "unfortunate compromise" of introducing *kanji* in an order based on frequency rankings, proficiency test requirements, or the Ministry of Education's stipulated order for Japanese school children (p. 17). Nevertheless, Conning acknowledges that he has also given regard to frequency as an ordering criterion but stresses that the frequency factor carries much less weight (p. 18). In relation to the order of *kanji*, Conning has the following to say:

> The character sequence for this course achieves what perhaps no other sequence
> has done: it follows a rational pedagogy by introducing character components step
> by step and related *kanji* together, yet also introduces the most important
> characters early on and maintains a general correlation with frequency throughout
> (p. 18).

Many previous works are characterised by a more methodical approach of applying one approach to all *kanji*. Conning, on the other hand, openly acknowledges that his system is not a "systematic" approach but one that is flexible and pragmatic. Conning states that, "Each *kanji* presents a unique challenge; for this reason, the study of *kanji* is ill served by the rigid application of one theory of learning or another" (p. 15).

The varying approaches taken towards ordering *kanji* was a strong indication that most authors considered the order in which *kanji* are introduced to be an important factor in learning *kanji*. Moreover, analysis of the self-study *kanji* textbooks revealed that the component-based approach to ordering *kanji* was the most prevalent. Mnemonics also featured quite frequently amongst these self-study *kanji* textbooks indicating that for many authors, it was a regarded as an effective learning strategy, especially in conjunction with a component-based approach to ordering *kanji*.

3.6 Methodological framework of the study

Previously in this chapter, an overview of the literature revealed that much of the research on *kanji* had focused on learning strategies but very little attention had been given to the order *kanji* are introduced. In this research, the order *kanji* are taught was examined from three different perspectives: textbooks, teachers, and learners. Three stages of research were designed to collect and analyse data from those three sources. The three stages of research were connected as each stage focussed on *kanji* order and its role in facilitating the kanji learning process. The following three chapters will present a description of my research procedures, the results and a discussion of the findings for the three studies conducted to address the research questions.

3.6.1 Research questions

The central focus and purpose of this study is to determine whether the order in which *kanji* are introduced facilitates learning of *kanji* among non-*kanji* background learners of Japanese. This question evolved from a much broader more general interest in how we can enhance *kanji* teaching and learning methods. The following research questions were formulated:

1. How are textbooks different from each other from the perspective of *kanji* selection and ordering?

2. What beliefs are held by Japanese teachers at universities in Australia, New Zealand, Canada, the UK and the US, in regard to teaching *kanji* to non-*kanji* background learners of Japanese?

3. Which *kanji* clusters do non-*kanji* background learners perceive as easy or difficult to learn?

3.6.2 Overview of research procedures

This study followed the process of triangulation as a model of research, implementing a multi-perspective approach in which data from three separate sources was collected and analysed. Cohen and Manion (1986) defined triangulation as an "attempt to map out, or explain more fully, the richness and complexity of human behaviour by studying it from more than one standpoint" (p. 254). Triangulation, according to Altrichter (1996), "gives a more detailed and balanced picture of the situation" (p. 117). This was consistent with the aims of this research and therefore determined to be an appropriate approach. In this study, triangulation was employed so that *kanji* order could be analysed from multiple data sources: Japanese language textbooks, Japanese language teachers and JFL learners. This multi-perspective approach was adopted in order to maximise the validity of the results.

Three stages of research were determined to be the best approach to answer my research questions. The first stage, a textbook analysis, was conducted to determine the number and order of *kanji* introduced in four Japanese textbooks used at beginner level courses in universities. In stage two, the *kanji* teaching and learning beliefs of Japanese

teachers at universities in Australia, New Zealand, Canada, the UK, and the US were investigated. The third stage investigated the ease of learnability of several *kanji* clusters in a survey of students' perceptions of *kanji* clusters. Studies in Stage 1 of the research employed quantitative methods of data collection and analysis and studies in Stage 2 and 3 of the research employed a mixed methods approach.

In Stage 1 of the research, a textbook analysis was conducted to determine which *kanji* are frequently selected for inclusion in Japanese language textbooks and to what extent ordering strategies are present. This stage of the research employed quantitative methods and was conducted in two parts. Part one was an analysis of Japanese language textbooks, including analysis of *kanji* selected for inclusion and the characteristics of those *kanji*. Part two was an analysis of ordering patterns. A unique method of analysis was employed.

The *kanji* teaching and learning beliefs survey was conducted as Stage 2 of the research in order to establish the beliefs of teachers of Japanese in relation to teaching *kanji* to non-*kanji* background learners and to determine whether teachers believed that the order in which *kanji* are taught is a factor that is both important and one that can facilitate learning. This stage of the research employed a questionnaire as the method of research and employed a mixed methods approach.

Finally, in Stage 3 of the research, students were asked to rate the ease of learnability of several *kanji* clusters. The *kanji* clusters chosen for inclusion in this stage of the research were based in part on findings from the textbook analysis in Stage 1 of the research. Student surveys were conducted in Stage 3 of the research in order to determine whether student responses were consistent with findings from the perspective of teachers in Stage 2 of the research and textbooks in Stage 1 of the

research. The research was designed to answer my research questions and to determine whether teachers' beliefs and teaching materials are consistent with student perspectives on *kanji* and whether the order of *kanji* can therefore be manipulated to facilitate the *kanji* learning process.

3.6.3   Ethical considerations

There are a number of ethical issues that require consideration when dealing with humans as participants. This study was guided by Macquarie University human research guidelines which require researchers to conform with National Health and Medical Research Council's Australian Code for the Responsible Conduct of Research (2007) (the Code), the National Statement on Ethical Conduct in Human Research (2007) (National Statement) and to other relevant legislation and guidelines (see http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human _research_ethics).

Research conducted for this thesis adopted a number of measures to address ethical concerns. Stages 2 and 3 of the research collected data with humans as participants and therefore a number of ethical issues required consideration. Stages 2 and 3 of the research both underwent a formal process of review with an application requesting ethics approval through Macquarie University. Ethics approval was granted by Macquarie University Ethics Review Committee and data collection commenced upon ethics approval being granted.

For Stages 2 and 3 of the research, the opening statement of the surveys (See Appendix) provided potential participants with information regarding the confidential and voluntary nature of the survey as well as information concerning the content and purpose of the survey. For Stage 3 of the research, the *kanji* cluster survey, students

were made aware that their participation in the survey was completely voluntary and would not affect their grades in any way. Participants did not need to identify themselves in the survey and therefore participation in the survey was anonymous. Furthermore, survey answers were not accessed until students had completed the unit in which they had been enrolled and grades had been distributed.

3.7   Summary

In this chapter, we examined some of the literature on second language acquisition and cognitive theories and their relevance to *kanji* learning. We also examined some of the literature on the most common learning strategies for *kanji* as well as the approaches taken by several self-study *kanji* textbooks. This chapter also reiterated the research questions and presented an overview of the research and ethical considerations for the three stages of research.

The following three chapters will present the research procedures, results and a discussion of findings for the three stages of research.

CHAPTER 4: TEXTBOOK ANALYSIS

This chapter will present the research procedures, results of the textbook analysis and a discussion of findings. Finally, conclusions will be drawn in relation to the first research question.

In Stage 1 of the research, a textbook analysis was conducted in which four Japanese language textbooks often used in beginner courses at the university level were examined and compared.

The purpose of this study was to ascertain which *kanji* were frequently selected for inclusion in beginner level textbooks and the frequency with which *kanji* ordering patterns were present. To that end, this stage of the research sought to answer my first research question: How are Japanese language textbooks different from each other from the perspective of *kanji* selection and ordering?

4.1 Introduction to Stage 1 of the research

Teaching materials such as textbooks and in-house teaching materials play an important role in language education. There are both advantages and disadvantages to relying heavily on textbooks in language courses. One advantage of using textbooks is that in the absence of a well-developed curriculum that has a clearly defined set of objectives, the textbook itself can function as a ready-made syllabus on which the curriculum can be based. Alternatively, in the case where a curriculum with objectives is present, a disadvantage of using a textbook is that it may be incompatible with the curriculum and in-house materials or supplementary material may be required to complement this curriculum.

In the field of JFL, there is no standardised approach to teaching *kanji* and as such the

choice of teaching materials will determine the order in which students learn *kanji*. Educators are therefore faced with the difficult task of choosing a suitable textbook or taking on the arduous task of designing in-house materials. Another option is to combine the use of readily available materials such as textbooks with supplementary material, and indeed this is one approach that is frequently found at the university level. Faced with the task of selecting and designing suitable material to use in Japanese language courses, it is not surprising that some universities will adopt textbooks as their core materials. Textbooks will often come packaged with speaking, listening, reading and writing tasks and therefore once a decision has been made to use a textbook, the teacher is left with little choice but to teach *kanji* in the order prescribed in the textbook. Textbooks provide an efficient method of teaching that allows teachers to spend more time on teaching and less time on designing their own in-house materials. In light of the efficiency of using textbooks and the propensity for Japanese language teachers at university to adopt their usage, textbooks provide a useful source to investigate which *kanji* are frequently taught at university and in which order they are taught.

As convenient as it may be to use textbooks in Japanese language courses, one must consider how effective textbooks are as course materials. Textbooks may well be efficient in the sense that they provide a ready-made syllabus, but are they effective in yielding sufficient student progress? There is a paucity of research on Japanese language textbooks and very few studies have examined *kanji* as it is presented in textbooks. A previous study was conducted by Kawamura (1999) in which a *kanji* checker was used to determine the difficulty of *kanji* in a text analysis. Kawamura's study determined the difficulty of *kanji* introduced in several textbooks by analysing the number of *kanji* in the textbooks and the percentage which fall into the respective

levels of the Japanese Language Proficiency Test (JLPT). However, Kawamura's study is based on the assumption that the respective levels of the JLPT are an accurate gauge of the difficulty of the *kanji*. This stage of the research also analyses the respective JLPT levels of *kanji* selected for inclusion in the textbooks but goes beyond that to analyse the equivalent elementary grade and classification of the *kanji*.

The results of this study provide a resource for JFL teachers in selecting textbooks for classroom use and as a guide from which teachers can design their own *kanji* teaching materials. Furthermore, awareness of *kanji* orders in textbooks used in class presents an opportunity for teachers to take advantage of those orders by bringing it to the attention of their students and facilitating students learning of *kanji*. That is, if two or more *kanji* introduced together share a common property or have some connection, teachers may be able to facilitate student learning by acknowledging this property and sharing it with students.

4.2 Analysis of Japanese Language textbooks

In this section, the procedures, results and a discussion of results for the analysis of Japanese language textbooks are presented.

4.2.1 Materials

Four beginner level Japanese language textbooks were chosen for this study. These particular textbooks were chosen because they all include sections that teach *kanji* and are textbooks used in Japanese language courses at university. Beginner level textbooks were chosen for this stage of the research so that a comparison could be made of the approaches to ordering *kanji* in textbooks targeting JFL learners who had no previous *kanji* knowledge. As "intermediate" level can often encompass a broad

range of skill levels from lower-intermediate to high-intermediate, it was thought that it would be difficult to select intermediate level textbooks that were equivalent in their difficulty level for this study. Beginner level textbooks, on the other hand, target learners of the same skill level making a more accurate comparison possible. Following the analysis of the Japanese language textbooks, several self-study *kanji* textbooks were also analysed.

Table 4.1 outlines the details of the Japanese language textbooks selected for analysis.

Table 4.1: Textbook analysis materials

	Title	Author	Publisher	Year
1.	*GENKI* 1 (Second Edition): An Integrated Course in Elementary Japanese	Banno, E. et al.	The Japan Times	2011
2.	*YOOKOSO*! An Invitation to Contemporary Japanese 3rd ed.	Tohsaku, Y.	McGraw-Hill	2006
3.	*Nakama* 1a and 1b	Hatasa, Y.A. et al.	Houghton Mifflin Harcourt	2009
4.	*Minna no Nihongo*: *Kanji* I	Nishiguchi, K. et al.	3A Corporation	2000

GENKI 1 (Second Edition): An Integrated Course in Elementary Japanese

Genki consists of a textbook and a workbook. Both are divided into a conversation and grammar section and a reading and writing section. For the purpose of this study, the focus was on the reading and writing section as that section introduces *kanji*.

In the introduction of the textbook, a brief background of *kanji* is included. The background provides a brief history of *kanji* and explains about the *kun* and *on* readings of *kanji* as well as the *jōyō kanji* and *kanji* education in schools in Japan. A very brief overview of the types of *kanji* such as "pictograms" is also included. In the reading and writing section of the textbook, *hiragana* and *katakana* are taught in the first two lessons respectively and 145 *kanji* are taught from lesson three through lesson twelve. No explanation is given for why *kanji* are presented in the order they are introduced. The table below sets out the 145 *kanji* introduced in the order that they appear.

Table 4.2: *Kanji* in *Genki 1*

Lesson 3	一、二、三、四、五、六、七、八、九、十、百、千、万、円、時
Lesson 4	日、本、人、月、火、水、木、金、土、曜、上、下、中、半
Lesson 5	山、川、元、気、天、私、今、田、女、男、見、行、食、飲
Lesson 6	東、西、南、北、口、出、右、左、分、先、生、大、学、外、国
Lesson 7	京、子、小、会、社、父、母、高、校、毎、語、文、帰、入
Lesson 8	員、新、聞、作、仕、事、電、車、休、言、読、思、次、何
Lesson 9	午、後、前、名、白、雨、書、友、間、家、話、少、古、知、来
Lesson 10	住、正、年、売、買、町、長、道、雪、立、自、夜、朝、持
Lesson 11	手、紙、好、近、明、病、院、映、画、歌、市、所、勉、強、有、旅
Lesson 12	昔、々、神、早、起、牛、使、働、連、別、度、赤、青、色

Nakama 1a and 1b

Nakama 1a consists of six chapters, chapters one to six and *Nakama* 1b consists of a further six chapters, chapters seven to twelve. *Hiragana* and *katakana* are taught in chapters one and two respectively. Chapters four through twelve teach 127 *kanji*. In this study, *Nakama* 1a and 1b were analysed and therefore the focus was on *kanji* taught in chapters four through twelve. The *kanji* taught in these chapters can be seen in Table 4.3 below.

Table 4.3: *Kanji* in *Nakama* 1a and 1b

Chapter Four	大、学、校、先、生
Chapter Five	山、川、田、人、上、中、下、小、日、本
Chapter Six	今、私、月、火、水、木、金、土、曜、何、週、末、休
Chapter Seven	時、間、分、半、毎、年、好、語、高、番、方、新、古、安、友
Chapter Eight	一、二、三、四、五、六、七、八、九、十、百、千、万、円、店
Chapter Nine	行、来、帰、食、飲、見、聞、読、書、話、出、会、買、起、寝、作、入
Chapter Ten	男、女、目、口、耳、足、手、父、母、姉、兄、妹、弟、家、族、両、親、子
Chapter Eleven	天、気、雨、雪、風、晴、温、度、東、西、南、北、寒、暑、多、少、冷
Chapter Twelve	春、夏、秋、冬、朝、昼、晩、午、前、後、去、昨、供、元、思、明、回

Yookoso!: an invitation to contemporary Japanese

Yookoso comprises one textbook and an accompanying workbook/laboratory manual. The textbook consists of seven chapters and introduces 170 *kanji*. *Kanji* are introduced in the form of a *kanji* list at the end of each chapter in the textbook. The accompanying workbook/laboratory manual consists of three sections for each of the seven chapters

in the textbook. The second section for each chapter in the workbook/laboratory manual contains a section titled, "*Kanji* Practice and Exercises." In this section, the meanings, readings, examples of use and stroke order for the *kanji* introduced in the *kanji* lists in the textbook are provided. The workbook/laboratory manual also includes information about the Japanese writing system and *kanji* such as information on radicals and principles of stroke order.

Table 4.4: *Kanji* in *Yookoso*

Chapter 1	日、本、学、生、名、年、何、月、人、一、二、三、四、五、六、七、八、九、十、百、先、話、語、大
Chapter 2	間、半、上、下、分、小、好、町、左、右、中、外、前、後、時、山、口、千、万、方、近、遠、有
Chapter 3	朝、明、午、昼、来、行、聞、食、出、飲、入、休、夕、今、週、曜、毎、回、見、起、読、火、水、木、金、土、会
Chapter 4	天、気、雨、雪、度、風、台、番、春、夏、秋、冬、東、西、南、北、高、多、少、強、弱、昨、暑、寒、空
Chapter 5	手、家、男、女、子、母、父、兄、弟、姉、妹、作、族、勉、道、使、国、音、楽、全、部、運、動
Chapter 6	思、終、始、物、肉、事、茶、酒、牛、鳥、湯、野、魚、味、悪、料、理、米、品、和、洋、夜、言、貝
Chapter 7	同、長、場、市、主、電、売、切、店、引、白、屋、黒、色、買、青、赤、服、返、花、黄、員、暗、円

Minna no Nihongo: Kanji I

This is the *kanji* textbook that accompanies the *Minna no Nihongo* course book. However, this *kanji* textbook can be used independent of the general course. According to the introduction in this textbook, "in the process of selecting the target *kanji* and *kanji* words, the contents of the course book and the lists of *kanji* and vocabulary prepared for the Japanese Language Proficiency Test were taken into consideration. Therefore, this book can be used as a general beginning *kanji* text, as well as a *kanji*

book accompanying みんなの日本語初級Ⅰ" (p.v). It is worth noting that as this textbook was published in the year 2000 and since then the Japanese Language Proficiency Test has undergone changes, so the original correlation between *kanji* in this textbook and the *kanji* in the Japanese Language Proficiency Test may be different.

Two hundred and twenty *kanji* and three hundred and fifty *kanji* words have been selected as targets in this book. Clearly, in this textbook, thought has gone into the selection and order of *kanji*. The author writes: "To be able to write *kanji* in an orderly and efficient way you have to acquire *kanji*-specific psychomotor skills." And, in regards to the *kanji* taught in Part II of the textbook, the author states that, "thirty-five *kanji* are selected and ordered in a way that you will acquire the necessary psychomotor skills as you work through the material." (p.vi)

This textbook consists of four parts:

Part I: Introduction to *kanji*

Part II: Introductory Lessons

Part III: Main Lessons

Kanji Reference Booklet

Table 4.5: Kanji in Minna no Nihongo

Unit 1	日、月、火、水、木、金、土、山、川、田
Unit 2	一、二、三、四、五、六、七、八、九、十、百、千、万、円
Unit 3	学、生、先、会、社、員、医、者、本、中、国、人
Unit 4	今、朝、昼、晩、時、分、半、午、前、後、休、毎、何
Unit 5	行、来、校、週、去、年、駅、電、車、自、転、動
Unit 6	高、安、大、小、新、古、青、白、赤、黒
Unit 7	上、下、父、母、子、手、好、主、肉、魚、食、飲、物
Unit 8	近、間、右、左、外、男、女、犬
Unit 9	書、聞、読、見、話、買、起、帰、友、達
Unit 10	茶、酒、写、真、紙、映、画、店、英、語
Unit 11	送、切、貸、借、旅、教、習、勉、強、花
Unit 12	歩、待、立、止、雨、入、出、売、使、作
Unit 13	明、暗、広、多、少、長、短、悪、重、軽、早
Unit 14	便、利、元、気、親、有、名、地、鉄、仕、事
Unit 15	東、西、南、北、京、夜、料、理、口、目、足、曜
Unit 16	降、思、寝、終、言、知、同、漢、字、方
Unit 17	図、館、銀、町、住、度、服、着、音、楽、持
Unit 18	春、夏、秋、冬、道、堂、建、病、院、体、運、乗
Unit 19	家、内、族、兄、弟、奥、姉、妹、海、計
Unit 20	部、屋、室、窓、開、閉、歌、意、味、天、考

4.2.2   Procedures

Two main research methods were used in this textbook analysis. First, the *kanji* used in each of the textbooks was compiled into tables so the number and order of the *kanji* could be compared. Secondly, *kanji* were checked against the *kanji* analysis criteria codified to check the frequency of different *kanji* ordering patterns. Similarities and differences between the textbooks were then assessed. A unique set of criteria based on various *kanji* properties was developed to determine the presence of *kanji* ordering strategies. *Kanji* were assessed on a chapter by chapter basis and a *kanji* ordering strategy was determined to be present when at least two consecutive *kanji* fulfilled the

kanji ordering strategy criteria as outlined in Table 4.6.

4.2.3   Analysis

The analysis consisted of two parts: Part 1 analysed *kanji* characteristics and examined the types of *kanji* selected for inclusion in the textbooks. Part 2 examined the presence of *kanji* ordering patterns in the textbooks.

4.2.3.1   Part 1 – Kanji characteristics

In Part 1 of the analyses, the emphasis was on the selection of the *kanji* in each textbook and the similarities and differences of the *kanji* chosen for each textbook. In this stage of the analysis, the following steps were implemented:

1. *Kanji* included in the textbooks were compared to see which *kanji* were introduced in which textbooks. For example, the *kanji* 「先」 was found to be present in all four textbooks while the *kanji* 「文」 was present in only one textbook.

2. *Kanji* were analysed using Tamaoka, K., Makioka, S., Sanders, S., & Verdonschot, R. G. (2013). http://www.*kanji*database.com/ The new 2136 Japanese *jōyō kanji* web-accessible database and the respective grade that the *kanji* is taught in Japanese schools, JLPT level and *kanji* classification for each *kanji* were analysed and compared.

4.2.3.2   Part 2 – Kanji ordering patterns

For my analysis of the order of *kanji* in the textbooks, no pre-existing method of analysis was available and therefore an approach was formulated to identify the presence of relationships between consecutively introduced *kanji*, referred to here as "*kanji* orders." A particular order was deemed to be present when it met one of the

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following criteria outlined in the table below.

Table 4.6: *Kanji* ordering patterns

Criterion	Description
Pictographs	When two or more *kanji* which can be classified as pictographs are introduced consecutively, an etymological order was determined to be present.
Opposite Meanings	Eg. *Kanji* of opposite meanings 上、下 (up/down)
Mutual Components	This order will be deemed to be present when two or more *kanji* are introduced consecutively with a shared component. Eg. 王、玉、宝、珠、現、狂、皇 Note that the position of the mutual component can move in its relative position to the rest of the character and this component may or may not function as the *kanji* radical.
Contextual Meaning	A context based order will be determined to be present when two or more *kanji* with a shared contextual meaning are introduced consecutively. Eg. 手、足、首、頭、耳、鼻、口、(hand, foot, neck, head, ear, nose, mouth)
Compound *Kanji*	When two consecutive *kanji* introduced can form a *kanji* compound, this order will be determined to be present. Eg. 先、生　（先生/teacher）
Combined Components	*Kanji* in which two separate *kanji* are then combined to make a new *kanji*. Eg. （田、力、男）、(女、子、好)
Other Orders	When two or more *kanji* introduced consecutively have some relationship not covered in the above categories, they will fall within this category.

Rules of *Kanji* Order Analysis

In order to ensure that the analysis of orders was consistent throughout, the following rules of *kanji* order analysis were formulated.

1. When two consecutive *kanji* appeared that represented some form of counting,

they would not be recognised as a *kanji* order. Eg. 「三年」 "three years".

This rule was formulated to keep the analysis consistent and avoid a disproportionate number of orders being recognised due to the abundant possibilities of combining numbers with other *kanji*.

2. People and place names would not be recognised as orders. Eg. 「山口」 "Yamaguchi".

4.2.4 Results

This section is divided into two parts: Part 1 describes the results from the analysis of *kanji* selection and *kanji* characteristics, and Part 2 describes the results from the analysis of *kanji* orders in the Japanese language textbooks.

4.2.4.1 Part 1: Kanji selection and characteristics

A comparison of the *kanji* included in each textbook was undertaken (See Appendix). From this comparison, the number of *kanji* present in all four, three, two or unique to just one textbook could be determined. In total there were 662 *kanji* contained within the four textbooks. The results from this comparison are illustrated in the table below.

Table 4.7: Shared *kanji* across textbooks

Number of Textbooks	Number of Shared *Kanji*
One Textbook Only	83
Two Textbooks	57
Three Textbooks	47
All Four Textbooks	81

Overall, 83 *kanji* were unique to one textbook, 57 *kanji* were included in two textbooks, 47 *kanji* were included in three textbooks and 81 *kanji* were included in all four textbooks.

An analysis of the *kanji* included in the four textbooks was conducted using http://www.*kanji*database.com/. This analysis revealed the elementary grade in which the *kanji* are taught in Japan, the classification of the *kanji* as either simple ideograph, loan, pictograph, semantic-composite or semantic-phonetic composite, as well as the JLPT level of that *kanji* for each of the textbooks.

Table 4.8: *Genki Kanji*

Grade	1	2	3	4	5	6
	59	61	18	4	0	2
Classification	Simple Ideograph	Loan	Pictographs	Semantic Composite	Semantic-phonetic Composite	
	10	8	49	47	30	
JLPT	Level 4	Level 3	Level 2			
	80	55	9			

Table 4.9: Minna no Nihongo Kanji

Grade	1	2	3	4	5	6	Other
	63	91	49	9	1	5	2
Classification	Simple Ideograph	Phonetic loans	Pictographs	Semantic Composite	Semantic-phonetic Composite		
	10	7	57	77	69		
JLPT	Level4	Level 3	Level 2				
	80	122	18				

Table 4.10: *Yookoso Kanji*

Grade	1	2	3	4	5	6
	56	81	30	3	0	0
Classification	Simple Ideograph	Phonetic loans	Pictographs	Semantic Composite	Semantic-phonetic Composite	
	10	6	57	50	47	
JLPT	Level 4	Level 3	Level 2			
	75	74	21			

Table 4.11: *Nakama Kanji*

Grade	1	2	3	4	5	6	Other
	50	59	10	4	0	3	1
Class	Simple Ideograph	Phonetic Loans	Pictographs	Semantic Composite	Semantic-phonetic Composite		
	11	6	48	35	27		
JLPT	Level 4	Level 3	Level 2				
	71	40	16				

Grade

The following pie charts illustrate percentage breakups of the *kanji* in the four textbooks for the respective elementary grade level in which the *kanji* are taught in Japan.
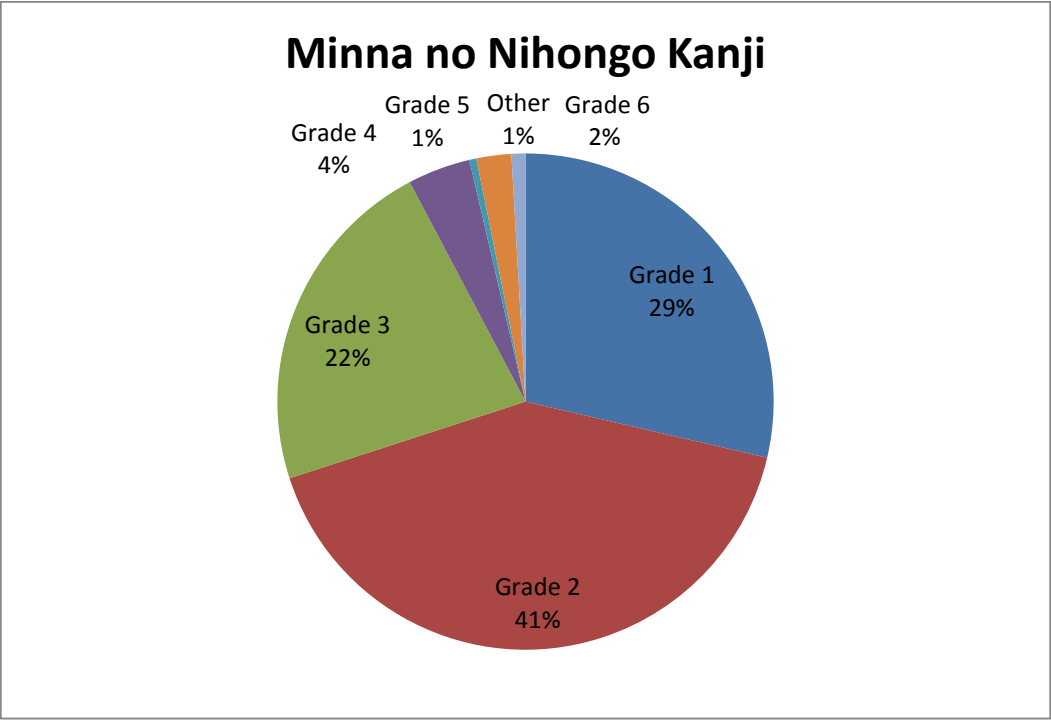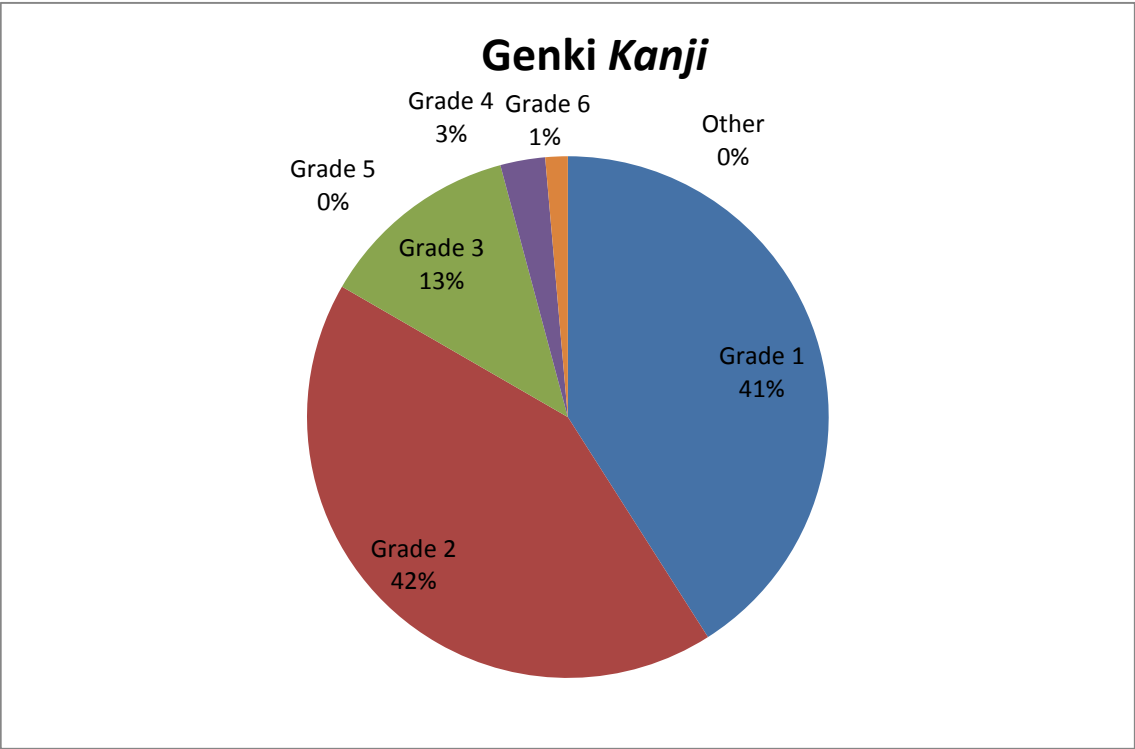
Minna no Nihongo Kanji

Grade 4
4%

Grade 5
1%

Other
1%

Grade 6
2%

Grade 1
29%

Grade 3
22%

Grade 2
41%

Figure 4.1: Minna no Nihongo: Grade

Genki *Kanji*

Grade 4
3%

Grade 6
1%

Other
0%

Grade 5
0%

Grade 3
13%

Grade 1
41%

Grade 2
42%

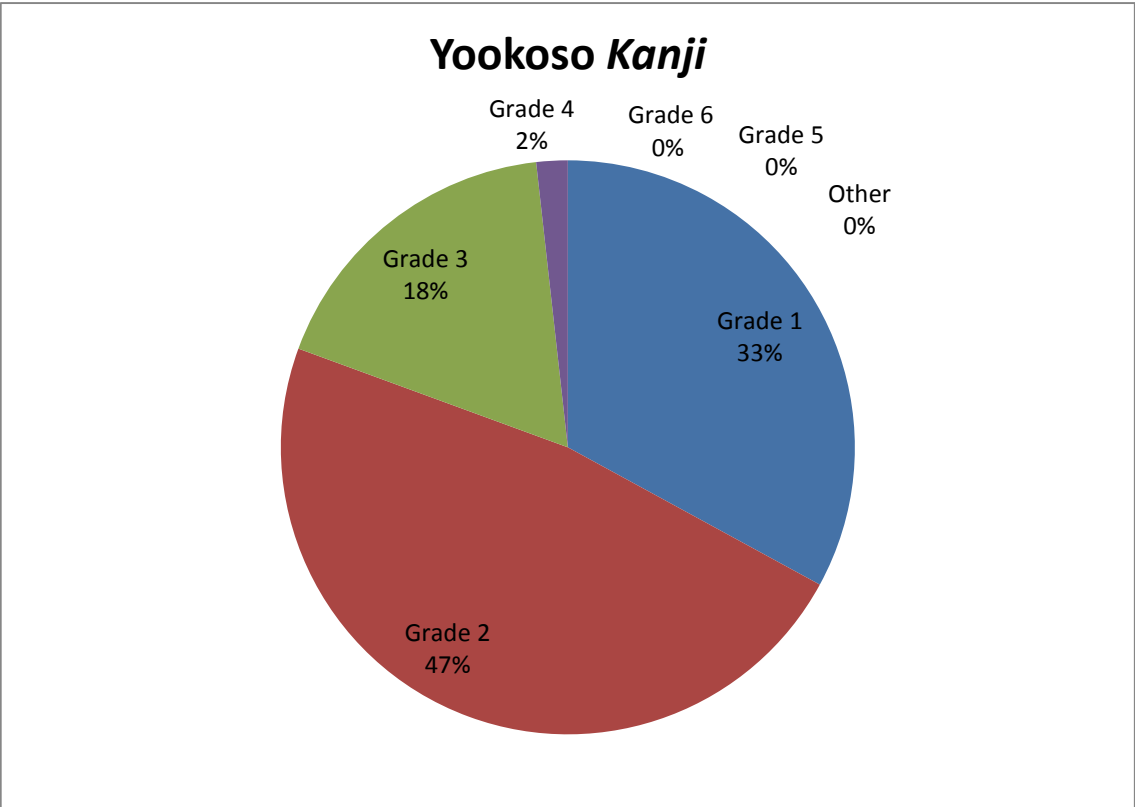**Figure 4.2: *Genki*: Grade**

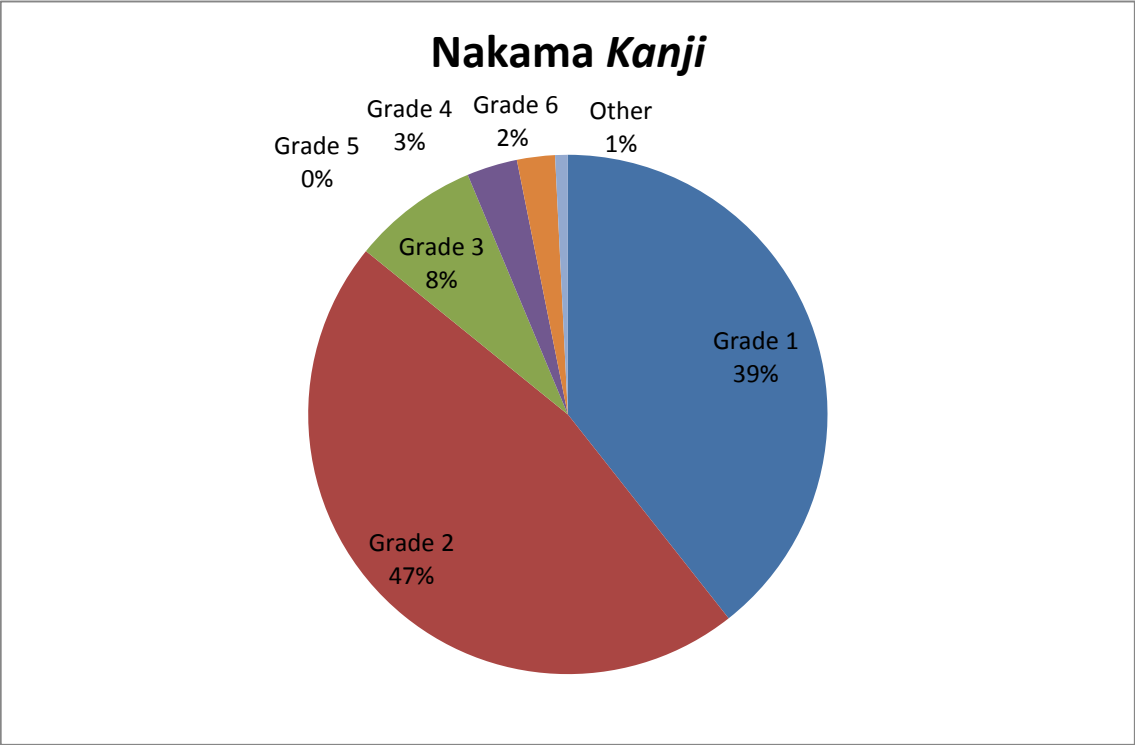**Figure 4.3:** *Yookoso*: **Grade**

Figure 4.4: *Nakama*: **Grade**

Results for analysis of grade indicated that all textbooks selected the majority of *kanji* from grades one and two with all textbooks having a higher percentage of *kanji* from grade two. Grade three level *kanji* were also included with *Minna no Nihongo* having 22% of *kanji* from grade three, the highest percentage of kanji from that grade.

Classification

The following pie charts illustrate percentage breakups for the classifications of the *kanji* included in the four textbooks.

Genki *Kanji*

Simple Ideograph 7%

Phonetic Loans 5%

Semantic-phonetic Composite 21%

Semantic Composite 33%

Pictographs 34%

Figure 4.5: *Genki***: Class**

Yookoso *Kanji*

Simple Ideograph 6%

Phonetic Loans 3%

Semantic-phonetic Composite 28%

Semantic Composite 29%

Pictographs 34%
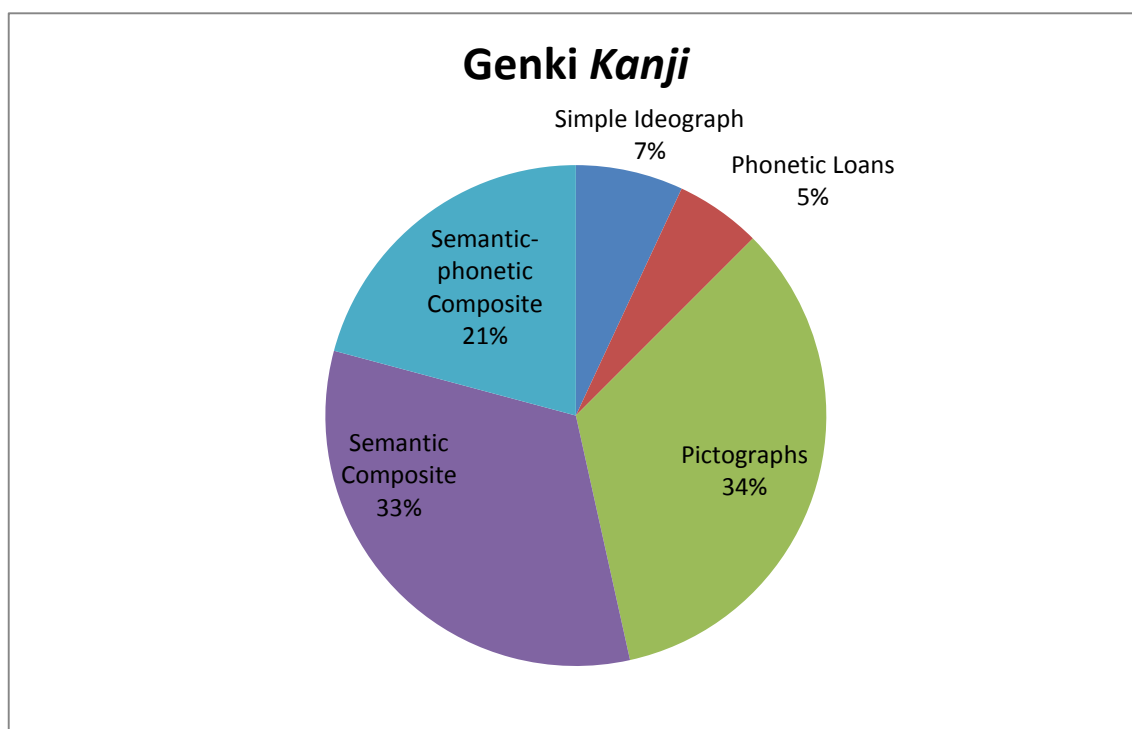
Figure 4.6: *Yookoso***: Class**

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Figure 4.7: *Nakama*: **Class**

Figure 4.8: *Minna no Nihongo*: **Class**

Results for analysis of classification of *kanji* included in the Japanese language textbooks indicated that the majority of *kanji* included were pictographs (*kanji* which have developed from pictures), semantic-composites (combination of two or more existing *kanji*), and semantic-phonetic composites (the most common type of *kanji* comprised of one element that represents meaning and one part that represents sound). See Table 2.4 for a detailed account of the different types of *kanji*.

Japanese Language Proficiency Test (JLPT)

The online program used to analyse the *kanji* characteristics provides data based on the old JLPT levels, with level four being the most basic through to level one being the most advanced. The JLPT was revised in 2010 and the current JLPT has five levels: N1, N2, N3, N4 and N5. Nevertheless, the *kanji* based on the old JLPT still provide a good indication of how the *kanji* are divided amongst the different levels and are relevant because other than *GENKI* all the textbooks were published prior to the revision of the JLPT. Moreover, since 2010 the JLPT has not published an official *kanji* list for the respective levels, making the current analysis impossible using the current JLPT.

The following pie charts illustrate percentage breakups for the JLPT level of the *kanji* included in the four textbooks.
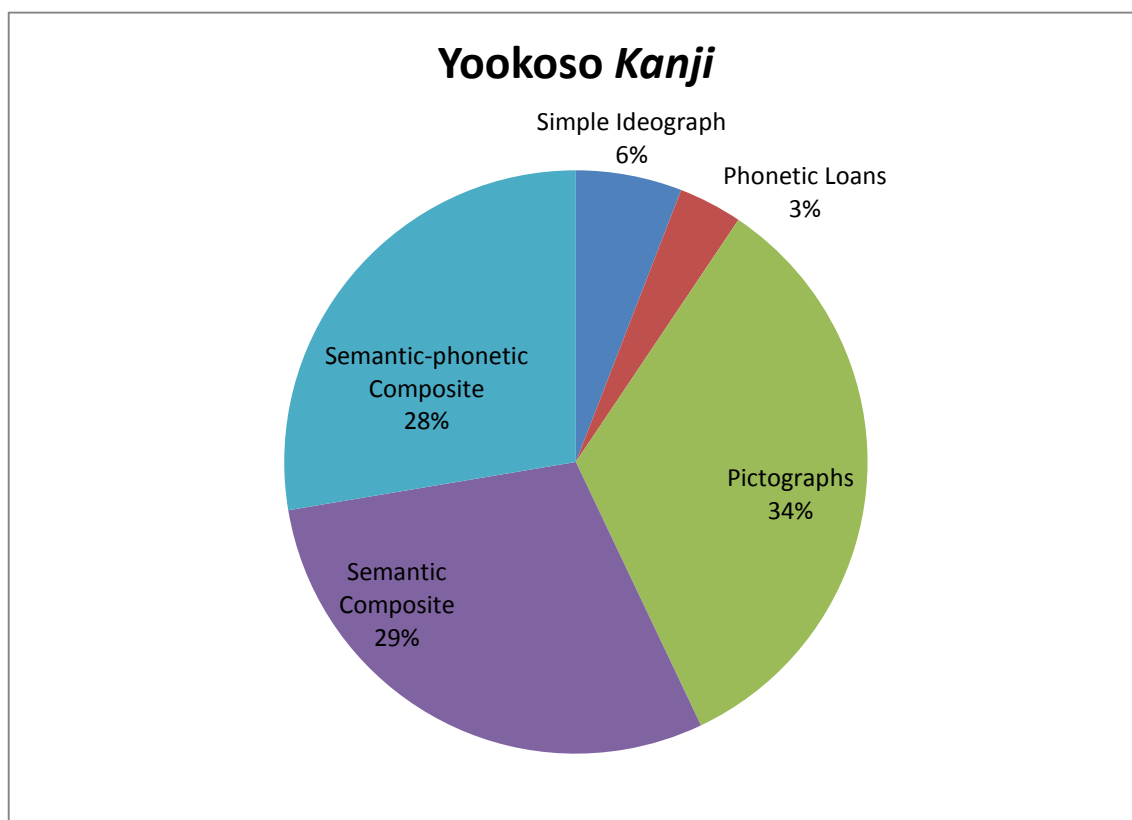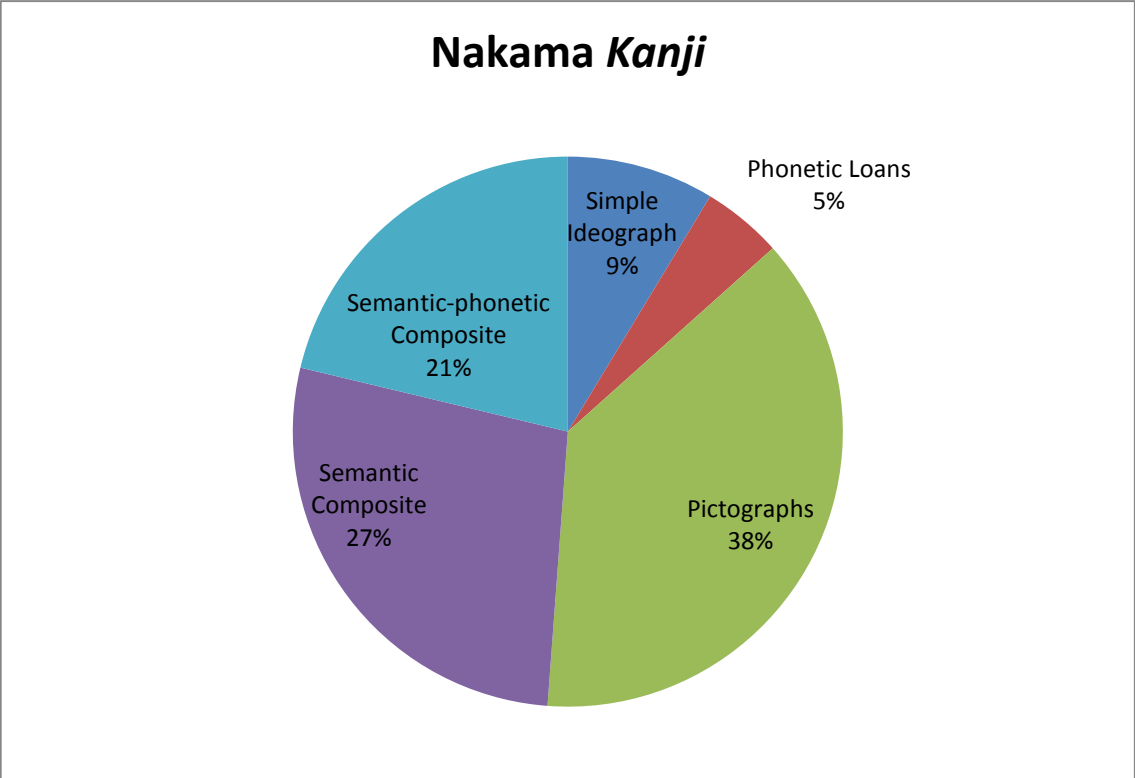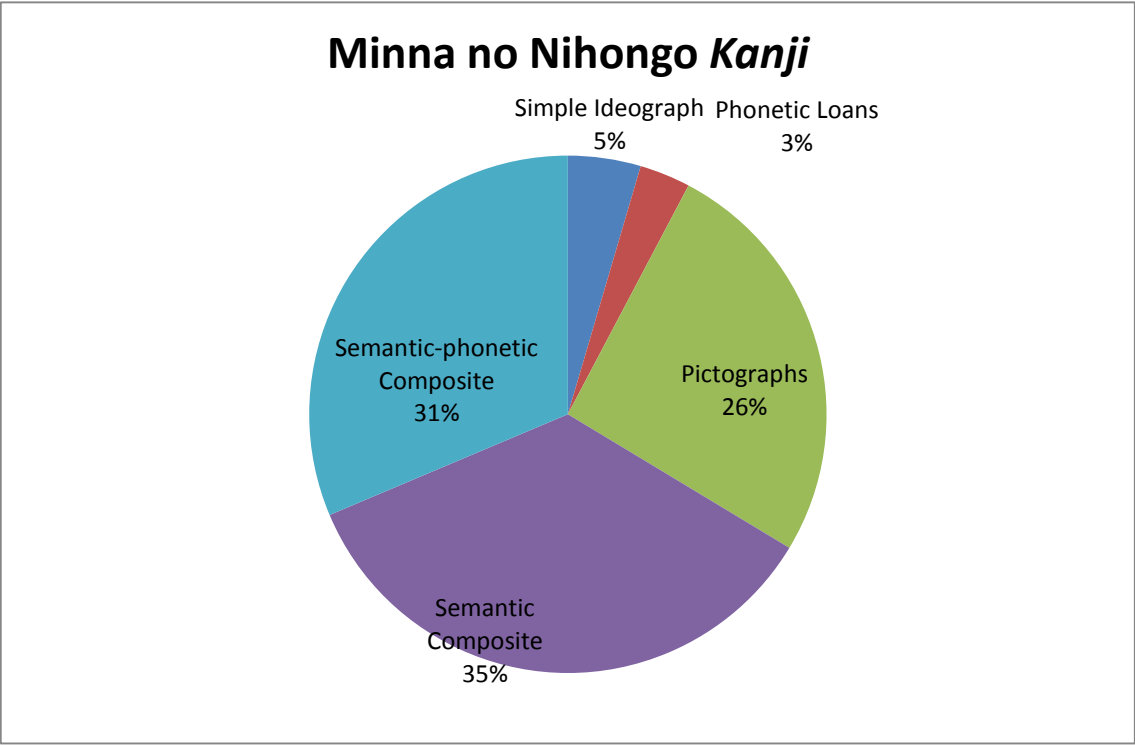
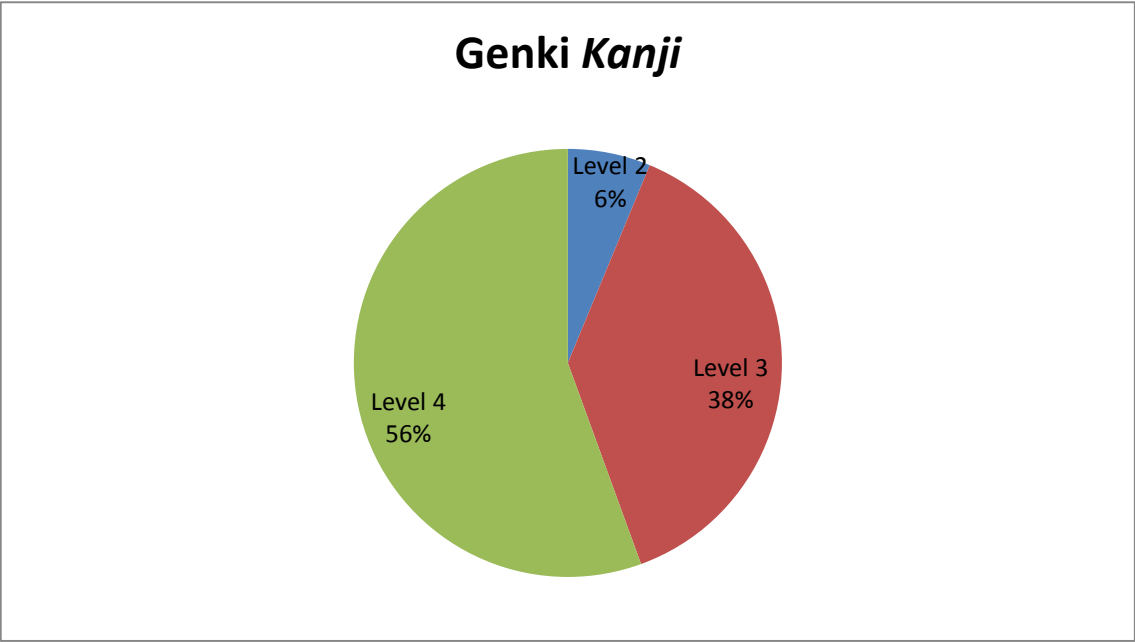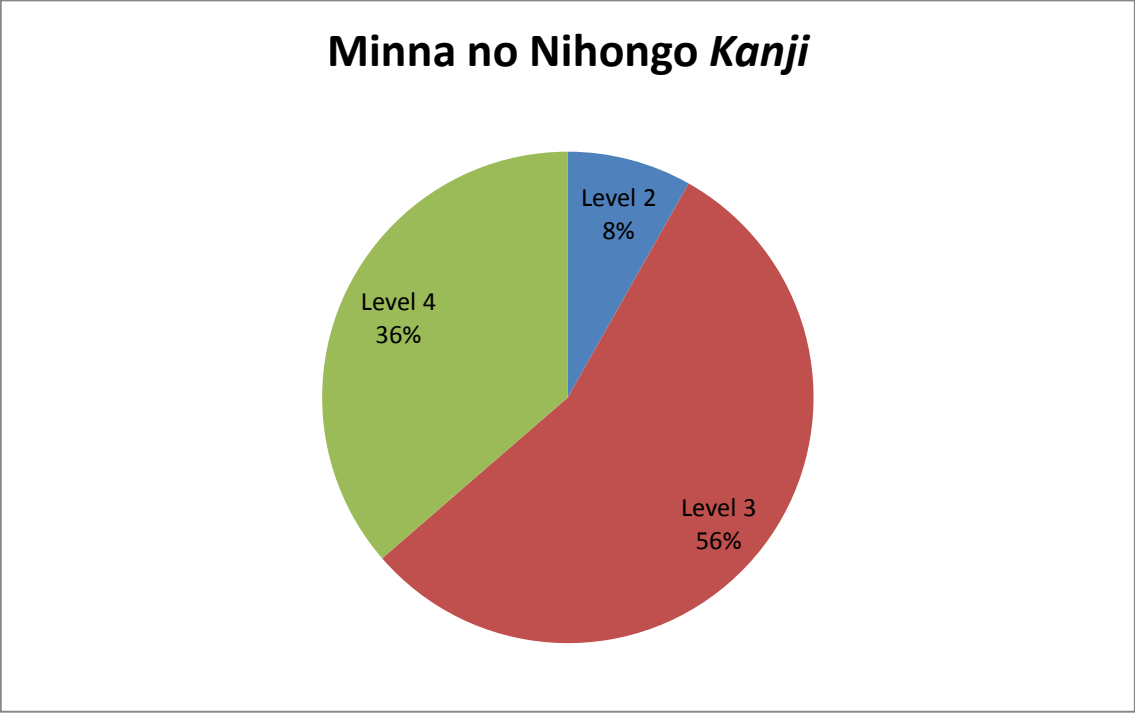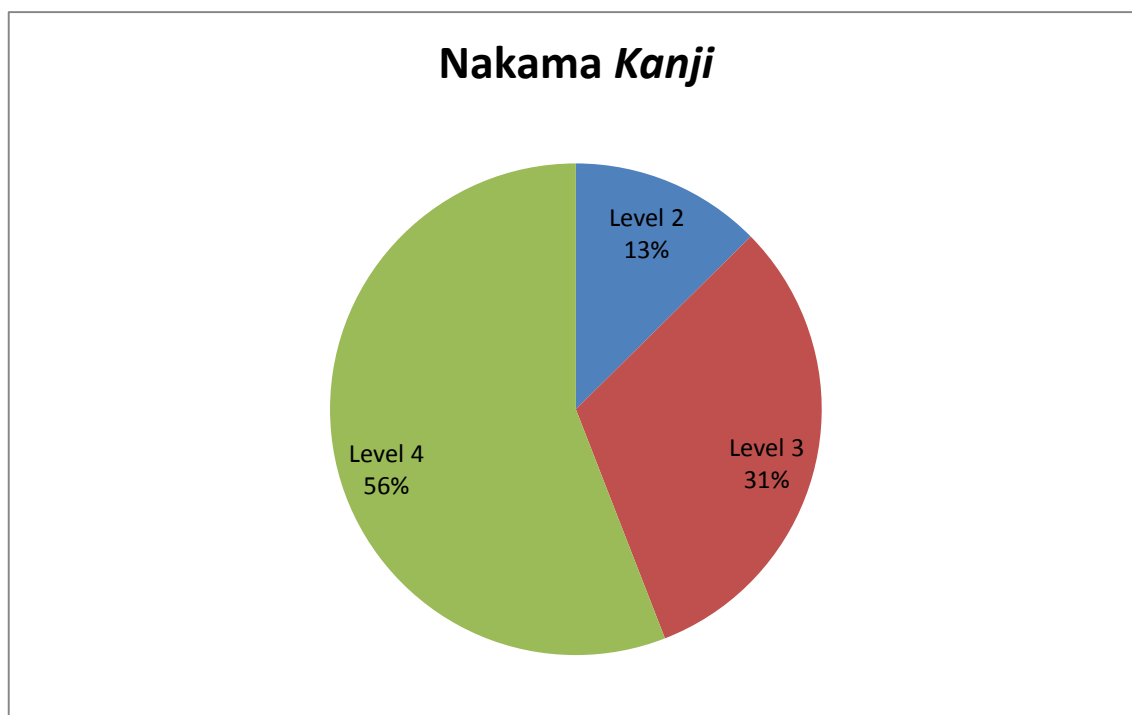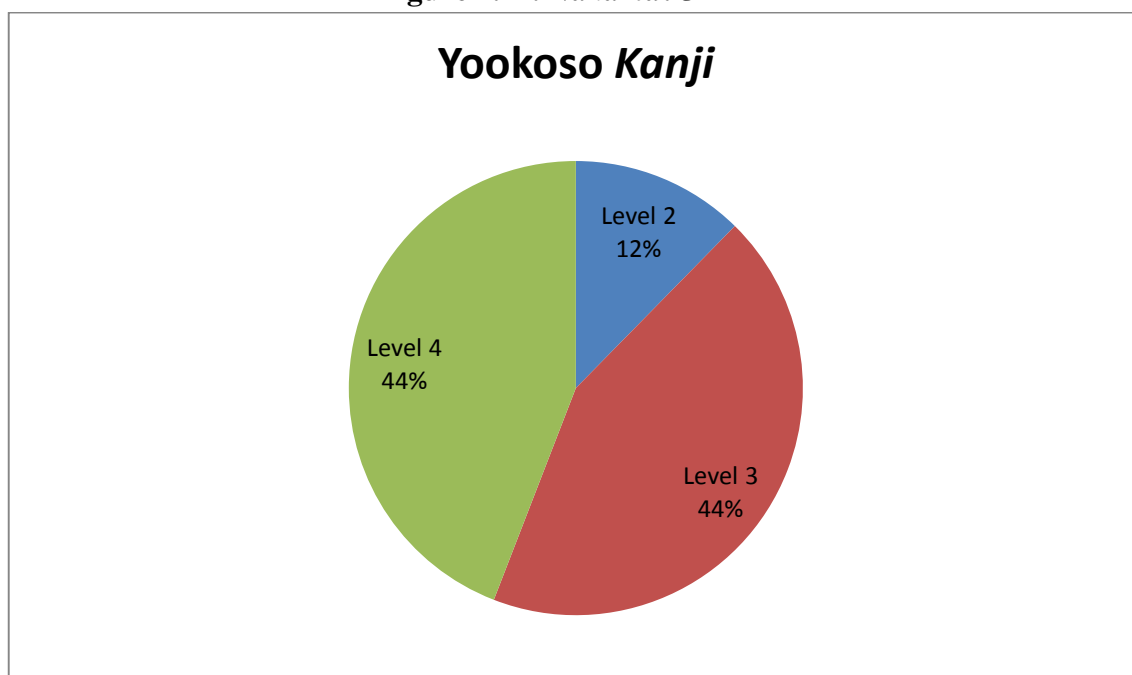**Figure 4.9:** *Genki*: JLPT

Figure 4.10: *Minna no Nihongo*: JLPT

Figure 4.11: *Nakama*: JLPT

Figure 4.12: *Yookoso*: JLPT

Results from the analysis of JLPT level indicated that the majority of *kanji* included in the four Japanese language textbooks were from levels 3 and 4 of the JLPT. *Minna no Nihongo* was the only textbook that had more *kanji* from level 3 than 4, possibly due to

the larger number of *kanji* included in this textbook. Some *kanji* from level 2 of the JLPT were included with *Yookoso* having the highest number of *kanji* from level 2 with 21 *kanji* from that level. No *kanji* from level 1 were included in any of the textbooks.

4.2.4.2 Part 2: Kanji orders

In this section we will examine the results of the *kanji* orders analysis. Firstly, the table below outlines the percentage of the *kanji* that fall within one or more categories from the *kanji* included in each textbook.

Table 4.12: *Kanji* orders

Textbook	Percentage of *Kanji* that fall within an Order Category	Percentage of *Kanji* that don't fall within an Order Category
Genki	74%	26%
Nakama	82%	18%
Yookoso	64%	36%
Minna	74%	26%

Nakama had the highest percentage of *kanji* fall within an order category. This is not surprising due to the low number of *kanji* contained in the textbook. *Yookoso* had the lowest percentage of *kanji* orders while *Genki* and *Minna no Nihongo* were equal at 74%.

The following table examines the breakup of the *kanji* that fell within ordering categories and outlines which categories they fell under.

Table 4.13: Ordering categories

	Etymology	Component Based	Mutual Components	Context based order	*Kanji* Compounds	Opposites	Other Orders
Genki	17%	0%	5%	25.8%	39.6%	11.3%	1.26%
Nakama	14.2%	0%	2.2%	35.5%	30.6%	14.2%	3.3%
Yookoso	13.5%	0%	5.2%	25.4%	35.8%	17.6%	2.6%
Minna	13.8%	0%	3.1%	27.3%	38.5%	15.4%	1.9%

For the percentage of *kanji* falling under the ordering categories, results revealed similar results for each textbook. *Kanji* falling under the etymology ordering category was relatively similar for all textbooks with *Genki* having slightly more *kanji* fall under this category. No *kanji* fell under the component based ordering category. *Kanji* falling under the mutual component ordering category was relatively low for all textbooks and context based *kanji* was similar for most textbooks with *Nakama* having approximately ten percent more *kanji* fall under this category than the other textbooks. *Kanji* compounds also revealed relatively similar results but with *Nakama* having the least number of *kanji* fall under this category, approximately ten percent less than *Genki*. Similarly, results for *kanji* falling under the opposites ordering category were similar but *Yookoso* had the highest number of *kanji* fall under this category, six percent more than *Genki*.

4.2.5   Discussion of findings

From this comparison of the *kanji* included in each of the textbooks, a number of general observations can be made. The fact that there were only 81 *kanji* that appeared in all four textbooks, and only 47 that appeared in three, indicates that *kanji* selection for each textbook is unique and therefore there is quite a significant difference in the

selection of *kanji* for each textbook. One can imagine, then, that students of equal level of Japanese ability studying *kanji* at the same level in university may be exposed to very different experiences in *kanji* instruction if the teachers were to choose two different textbooks from those analysed in this study.

Based on the analysis, a number of observations can be made in relation to the *kanji* selected for inclusion in these textbooks. Firstly, if we consider the equivalent elementary school grade of the *kanji* selected for inclusion in these textbooks, clearly the *kanji* introduced are not limited to those *kanji* from grade one but rather are from varying grade levels. Therefore, it seems that the *kanji* selected for inclusion in these textbooks are somewhat different from the order and type of *kanji* that are taught in Japan. For three of the four textbooks, more *kanji* featured from grade two than grade one. Moreover, three of the textbooks included *kanji*, albeit small in number, from grade six. Even *Nakama,* which had a smaller number of *kanji,* introduced the *kanji*「私」 *watashi* "I" which is a *kanji* introduced at grade six in Japan. *Minna no Nihongo* introduced「奥」and「寝」which are not even taught in elementary school. *Kanji* selection, therefore, is unique and no attempt has been made to introduce *kanji* in the same order in which they are taught in Japan. From this, we can assume that the authors of these textbooks perceive that *kanji* and the order they are introduced in Japan may not be the best order to use to introduce them to JFL learners. It is difficult to say what the reasoning is behind the *kanji* selected for inclusion in these textbooks, other than that it is most likely based on subjective opinion as to the importance of the *kanji* and how it relates to the other parts of the textbook.

Secondly, classifications of the *kanji* will be considered. For all textbooks other than *Minna no Nihongo*, pictographs were the most commonly introduced *kanji*. The fact that *Minna no Nihongo* had a greater number of semantic composites and

semantic-phonetic composites over pictographs may be a result of the fact that it introduced a larger number of *kanji*. Furthermore, *Minna no Nihongo* still introduced the largest number of pictographs, equalled only by *Yookoso*.

Thirdly, if we consider the results in relation to JLPT level, it is clear that other than *Minna no Nihongo*, the majority of *kanji* introduced in all textbooks are from JLPT level 4. As we can only surmise as to the intention of the authors, it is hard to say whether this was an intentional action. It is feasible to assume that it probably was not, and when we examine the results it is clear that a large proportion of the *kanji* were also taken from JLPT level three. This, however, is not surprising as level four of the JLPT consisted of about 100 characters and level three consisted of approximately 300 characters. All textbooks included *kanji* from level two of the JLPT, which is an interesting result considering that these textbooks are aimed at the beginner and level two was regarded as a quite advanced level of the JLPT. As with the case of the relationship between *kanji* selected for inclusion and the equivalent elementary school grade level of those *kanji*, there seems to be little relationship between JLPT levels and *kanji* included in these textbooks.

In addition to the above observations, a number of other general observations relating to *kanji* selection can be made. The *kanji* for the days of the week and numbers were included in all four textbooks. The *kanji* for high/expensive「高」appeared in all four textbooks but the *kanji* for cheap「安」only appeared in two. Thirdly, the *kanji*「休」(rest) was present in all four textbooks but the *kanji*「体」(body) only appeared in one. Due to the close resemblance of these *kanji* and the fact that only one stroke differentiates them, it was surprising that the *kanji* for "body" did not appear as frequently as the *kanji* for rest. Finally, the *kanji*「目」(eye), a relatively simple pictograph that is taught in grade one at elementary school in Japan, was only present

in two textbooks. Due to the relatively simple nature of this *kanji*, it is surprising that it did not appear in all four textbooks.

Part 2 of this stage of the research considered the presence of *kanji* ordering patterns. The results indicated that *Nakama* had the highest percentage of *kanji* falling within an order category and *Yookoso* had the lowest. *Genki* and *Minna no Nihongo* were the same with 74% of *kanji* falling within an ordering category.

Clearly, context-based and *kanji* compound orders dominated the results. Component-based orders were not present in any of the textbooks. *Kanji* of opposite meanings appearing consecutively in the textbooks were quite frequent, and in some cases (*Yookoso* and *Minna no Nihongo*), the opposite category garnered a higher number of entries than did the etymological-based orders. Mutual components were quite scarce, further suggesting that a component-based approach still has not achieved much support in Japanese language textbooks. The results from this part of Stage 1 suggest that to some extent the authors have made a conscious attempt to introduce consecutive *kanji* with consideration to the relationship between these *kanji*. Furthermore, the results suggest that etymology, context, *kanji* compounds and opposites were the most popular considerations of the authors. One of the most significant findings from part two of the analysis was that the results relating to ordering strategies were remarkably similar for each textbook.

In Chapter 3 a number of self-study *kanji* textbooks were examined and it was found that in the self-study *kanji* textbooks, the component-based approach to ordering kanji was the most prevalent. It is therefore a significant finding that the component-based approach did not appear in any of the Japanese textbooks analysed in this stage of the research. Considering the popularity of the component-based approach in the

self-study *kanji* textbooks, why then has this approach not been adopted with equal enthusiasm in Japanese language textbooks? The most likely explanation is that, unlike the self-study *kanji* textbooks, Japanese textbooks are designed to teach all aspects of the language and therefore a component-based approach to ordering *kanji* is more difficult to implement in a manner that complements other areas of the textbook. For example, one popular approach adopted in Japanese textbooks is to introduce *kanji* based on the vocabulary introduced in a reading passage. If this reading passage happens to be on a topic such as "family", then the logical progression is to adopt a context based approach and introduce *kanji* which represent members of the family. This would be much harder to accomplish using a component-based approach to ordering *kanji*.

One further observation can be made when we compare the results from the textbooks analysed in this study and the self-study *kanji* textbooks. That is, almost all authors of the self-study *kanji* textbooks are non-native speakers of Japanese whereas the authors of the textbooks analysed in this study are all native Japanese speakers. The difference in approach between these two sets of textbooks may therefore indicate that there is a difference in mindset and pedagogical approach towards *kanji* instruction for native and non-native speakers of Japanese. This gap in mindset and pedagogical approach needs careful consideration as the teacher's belief as to the best approach to *kanji* instruction may be the result of their own *kanji* learning experience and therefore may not reflect the JFL student's learning experience. This is not to say that because the non-native author's experience of learning *kanji* may more closely reflect the JFL learner's experience that their approach is superior. It may suggest that pedagogical approaches to *kanji* instruction should consider the perspectives of both native and non-native Japanese speakers more carefully.

Results from this stage of the research may offer teachers a resource from which they can generate their own in-house *kanji* lists and instructional materials. Teachers can observe the types of *kanji* and ordering strategies that typically appear within textbooks and can utilise similar patterns where they think it might facilitate the *kanji* learning process in students. Alternatively, the selection and order of *kanji* may be manipulated to adopt other *kanji* orders or to include other *kanji* that may be more appropriate for beginner JFL students. In Stage 3 of the research, a survey on *kanji* was conducted that analysed how learners perceive different *kanji* clusters. Data from that stage of the research combined with the results in this stage of the research serves to present an even bigger picture from which teachers may construct their own teaching materials.

4.3 Research question 1:

How are Japanese language textbooks different from each other from the perspective of kanji selection and ordering?

This stage of the research revealed that each textbook's selection of *kanji* was unique. However, *kanji* orders in all four textbooks closely resembled each other with a similar ratio of *kanji* falling under the same ordering categories. In particular, all four textbooks had a tendency to adopt context and *kanji* compounds as their ordering strategies. This result was in stark contrast to the approaches taken in the self-study kanji textbooks as was seen in Chapter 3. Whereas the self-study *kanji* textbooks favoured a component-based approach to ordering *kanji*, the component-based approach was completely absent in the Japanese language textbooks analysed in this stage of the research.

4.4   Limitations of Stage 1 of the research – Textbook analysis

There are some limitations to this study. First, only four textbooks were used as materials for this analysis, and although this study carefully selected textbooks widely used for non-*kanji* background JFL learners, the results from this study may not be indicative of other textbooks, and further analysis and comparison of textbooks may provide more insight into the type of *kanji* selected for inclusion in such textbooks and the presence of any ordering strategies.

The second limitation of this study was that the analysis of ordering strategies was limited to *kanji* that were presented consecutively in the textbook. That is, it is possible that *kanji* that appear later in the textbook have some form of connection with previously introduced *kanji,* and there is no reason that that connection could not be used by the teacher to highlight the relationship between those *kanji*. In saying that, in the case of orders such as opposites and mutual components, it is generally easier to establish a connection between such *kanji* when they are introduced consecutively.

The third limitation to this stage of the research was that it was unclear as to the authors' reasoning and intentions in selecting *kanji* for inclusion in their respective textbooks and their manner of ordering their *kanji*. Many valuable insights can be gained from analysing the selection and order of *kanji* in these textbooks, but this could be further expounded upon if the authors' intentions were known. Unfortunately, the authors provide very little insight into this matter in their respective textbooks.

4.5   Conclusion

In this chapter, four Japanese language textbooks were analysed with regard to the *kanji* they selected for inclusion and the order in which they presented them. The

results revealed that each textbook had a unique selection of *kanji,* but their ordering patterns were quite similar, with context and *kanji* compounds being the most frequently appearing *kanji* orders. Very little information was provided by the authors as to why they selected the *kanji* included in their textbook and why they ordered them in the manner they did. Based on the frequent presence of context and *kanji* compounds, it seems reasonable to assume that these ordering patterns were deliberate acts on the part of the authors and may be adopted as they are easier to implement in a manner which complements other areas of the textbook.

The second research question, relating to teachers' beliefs in relation to *kanji* learning and teaching, will be addressed in the following chapter.

CHAPTER 5: SURVEY OF *KANJI* TEACHING AND LEARNING BELIEFS

The previous chapter presented the research procedures, results and a discussion of the results from the textbook analysis. Pursuant to the approach of examining *kanji* order from multiple perspectives, *kanji* order is now examined from the perspective of Japanese language teachers. This chapter will present the research procedures, results of the survey of *kanji* teaching and learning beliefs and a discussion of findings. Finally, conclusions will be drawn in relation to the second research question.

In Stage 2 of the research, an online survey of *kanji* teaching and learning beliefs was administered in which Japanese language teachers employed at universities in Australia, New Zealand, Canada, the UK and the US were asked about their beliefs in relation to *kanji* teaching and learning.

The purpose of this stage of the research was to answer the second research question: What beliefs are held by Japanese teachers at universities in Australia, New Zealand, Canada, the UK and the US, in regard to teaching *kanji* to non-*kanji* background students of Japanese?

5.1   Introduction to Stage 2 of the research

Considering the close relationship between teachers' beliefs and practices, a survey of beliefs was determined to be a useful step in answering my second research question and for providing an insight into the *kanji* teaching process as a whole. According to Brown (2002, p. 120) there is considerable evidence to suggest that teachers teach more effectively when their classroom methodology matches their belief system. It was for this reason that it was determined that this study was a useful step in answering my

second research question and for providing an insight into teachers' attitudes to *kanji* overall. The survey examines teachers' beliefs in regard to current teaching methods; learning strategies; the order in which *kanji* are taught; the role of technology; the importance of *kanji*; and non-*kanji* background learners. The purpose of conducting this survey was to investigate teachers' beliefs with respect to *kanji* education and determine problems and solutions from the perspective of Japanese language teachers. As Japanese language teachers are in a position to both design curriculum and assess student progress, it was determined that the second stage of my research would examine *kanji* from the perspective of teachers. From this perspective, the results would reveal to what degree teachers believe that there is a problem in relation to *kanji* education for non-*kanji* background JFL learners and whether there was a need for improved teaching methods.

Many attempts have been made to define "beliefs". This is, however, no easy task. Pajare (1992, p. 309) points out that much of the confusion centres on the distinction between beliefs and knowledge. Pajare asserts that, "the chosen and perhaps artificial distinction between belief and knowledge is common to most definitions: Belief is based on evaluation and judgment; knowledge is based on objective fact" (1992, p. 313). It is beyond the scope of this study to debate the various merits of different definitions. Nevertheless, for the purpose of this study, I will adopt Rokeach's definition (as cited in Pajares, 1992, p. 314), "any simple proposition, conscious or unconscious, inferred from what a person says or does, capable of being preceded by the phrase, 'I believe that…'".

Learners' beliefs in relation to language learning have attracted substantial attention in the literature. Horowitz (1988) developed the Beliefs About Language Learning Inventory (BALLI), an inventory developed to test students' opinions in relation to

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language learning, and administered it to students of German, French, and Spanish. Horowitz's inventory was not an all-encompassing inventory of beliefs; however, it is a useful tool for eliciting students' beliefs about language learning and its development was a catalyst in further work in the field on student beliefs, particularly in the field of English language teaching.

Kanji has also been the subject of learner belief studies. Okita (1995) utilised a survey that dealt with students' beliefs and found that students felt that *kanji* should be introduced at the very beginning of their Japanese language studies simultaneously with learning speaking and listening, and not delayed, which is a common approach. Mori (1999) conducted surveys on the beliefs about language learning and their relationship to the ability to integrate information from word parts and context. Mori's study focused on advanced Japanese learners and found that there was a statistically significant correlation between learner beliefs and the ability to integrate information from word parts and context. In Mori & Shimizu's (2007) work on Japanese language students' attitudes to *kanji*, they found that students felt rote memorisation to be the most effective learning strategy. Moreover, they established a connection between appreciation of the cultural value of *kanji* and positive emotions towards *kanji* with a belief in varied learning strategies.

Teachers' beliefs have also been a widely covered topic in the literature (Calderhead, 1996; Pajares, 1992). Pajares (1992, p. 307) notes that, "Few would argue that the beliefs teachers hold influence their perceptions and judgments, which, in turn affect their behavior in the classroom (…)." The relationship between teachers' beliefs and practices is a complex one but one which warrants careful consideration. Calderhead (1996) examined five main areas in teachers' beliefs: beliefs about learners and learning; about teaching; about subject; about learning to teach; about self and about

teaching role, in which teachers have been found to hold significant beliefs. In this study, the survey's main focus is on teachers' beliefs in relation to learners and learning; teaching; and subject.

In the fields of teaching English as a Second Language (ESL) and teaching English as a Foreign Language (EFL), a substantial body of research exists on teachers' beliefs. This same methodology has been used in the field of JFL, but to a much lesser extent. Evidently, the majority of literature in the field of JFL has concentrated on learners' beliefs and very few studies have been conducted on teachers' beliefs in relation to *kanji*. Shimizu and Green (2002) conducted a survey of Japanese language educators' strategies for and attitudes toward teaching *kanji*. They implemented a new instrument designed to measure attitudes to teaching *kanji* and identified six dimensions which they used as a subscale to assess educators' attitudes to *kanji*: 1) cultural tradition, 2) the difficulty of *kanji*, 3) affective orientation, 4) aptitude, 5) future of *kanji*, 6) and usefulness. Shimizu and Green found that attitudes to teaching *kanji* and teaching strategies were multidimensional and complex.

For this study, Shimizu and Green's six dimensional subscales were inadequate for answering my research questions and therefore questions based on alternative criteria were designed. Shimizu and Green identify attitudes towards technology as an important dimension which they did not include in their own survey (2002, p. 239). Moreover, Shimizu and Green's suggestion for future research was to explore further dimensions and items for investigating attitudes. This study attempts to do just that by incorporating teachers' beliefs towards technology as well as other dimensions unexplored in Shimizu and Green's study but relevant to this study.

A survey on *kanji* was also conducted by Hatasa (1989) with regard to *kanji* instruction

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at the undergraduate level. However, there are significant differences between Hatasa's survey and the survey conducted in this study. Hatasa's survey was titled, "Survey of the Teaching of Characters for Beginning Level" and as such was not concerned with teachers' "beliefs" but was more a survey on the actual teaching process. Hatasa's survey is interesting but Hatasa acknowledges that it was not without its shortcomings due to unclear wording of questions and lack of control over responses (1989, p. 44).

There are several reasons for inquiring into teachers' beliefs in relation to *kanji* teaching and learning; however, the purpose of this stage of the research was to advance understanding of those factors that could be regarded as important in advancing *kanji* pedagogy. There is a relationship between teachers' beliefs and teaching practices; therefore, determining what beliefs teachers hold is useful for understanding *kanji* education and revealing problems and possible solutions. Teachers' beliefs may or may not reflect the teaching methods being used at certain institutions. For the purposes of this study, what is important is that we understand that teachers' beliefs can affect and influence a variety of factors. For example, teachers' beliefs can influence students' beliefs and also how and what teachers' choose to teach. The survey conducted in this stage of the research represents a significant departure from previous studies in that it explores areas such as teachers' beliefs in relation to the order in which *kanji* are taught, a topic not yet explored from the perspective of teachers. This stage of the research therefore presents an opportunity to peek into the beliefs of Japanese language teachers and see how teachers perceive the current situation of *kanji* education. As it is Japanese language teachers who are in the trenches, so to speak, in a position to observe the struggles and progress that JFL learners confront, their beliefs are founded on experience and therefore are a valuable source of data.

Prior to conducting this survey, several predictions in relation to survey responses were

made. As the central focus of this thesis is on *kanji* order, it was predicted that Japanese language teachers would agree that *kanji* order is an important factor in facilitating the *kanji* learning process. Furthermore, another expected outcome was that teachers would express some form of dissatisfaction in relation to currently available *kanji* teaching methods, textbooks, and levels of *kanji* proficiency in undergraduate students.

5.2   Research Procedures

5.2.1   Participants

The participants in this study were Japanese language teachers employed at universities in Australia, New Zealand, Canada, the UK and the US. Teachers at several universities were contacted and asked to participate in the study. Where possible, teachers with research interests in *kanji*, second language acquisition, and Japanese language pedagogy were chosen from the relevant department at the university. This was done in an attempt to ensure a higher response rate by contacting teachers whose research interests were related to the topic of the survey. Furthermore, it was hoped that teachers who responded to the survey were currently engaged in teaching *kanji* or at some stage in their career had engaged in teaching *kanji*.

Although it was hoped that universities in other regions such as Europe and other parts of Asia in which the majority of students would be from non-*kanji* backgrounds could be included in the study, due to difficulty in acquiring information from university websites not in English, they were excluded from the study. The majority of universities in the other regions were contacted and requested to participate in the study.

5.2.2 Materials

Questionnaires are a popular method for data collection in studies on beliefs (Horwitz, 1985; Peacock, 2001). Furthermore, questionnaires are frequently used to collect data about behavioural questions (Dörnyei, 2003). In this study, a questionnaire in the form of an online survey, "Survey of *Kanji* Teaching and Learning Beliefs" incorporating a Likert scale was the instrument for data collection (See Appendix). The survey was administered by using the online survey provider, Survey Monkey (http://www.surveymonkey.com/). The decision to conduct this survey online was made in order to ensure the highest possible response rate by making the survey easily accessible for possible participants. The survey comprised thirty questions of which twenty eight questions were multiple-choice. Question three required the participant to input the number of years of teaching experience and question thirty asked for comments.

Survey design

The purpose of this study was to research the beliefs held by teachers of Japanese at the university level and answer my second research question: What beliefs are held by Japanese teachers at university level in regard to teaching *kanji* to non-*kanji* background learners of Japanese? The survey was kept short to ensure that a majority of respondents would complete the survey without being encumbered by a time consuming project that may see some teachers commence the survey but fail to complete it. The items included in the survey were designed to determine whether current teachers' beliefs were consistent with many popular beliefs and assumptions regarding *kanji*. The following is an overview of the content of the questions and the specific data sought from those questions.

Question 1-3: Demography

Questions one through three dealt with the demography of participants. Questions related to 1) Gender 2) Native Language 3) Teaching Experience.

Questions 4-6: Satisfaction with *kanji* teaching methods and resources

Questions four through six dealt with the teachers' level of satisfaction with current *kanji* teaching methods implemented at their university and available resources. In effect, the purpose of these questions was to determine if, from the perspective of teachers of Japanese, there was a problem with *kanji* education and to what extent this problem is recognised.

Questions 7-8: *Kanji* and technology

Questions seven through eight dealt with technology and its role in teaching and learning *kanji*. These questions sought to determine whether teachers believe that technology has an important role to play in *kanji* education and whether they feel that it is being utilised sufficiently.

Questions 9-11: The importance of *kanji*

Questions nine through eleven dealt with teachers' beliefs regarding the importance of *kanji* skills. These questions sought to determine whether teachers believed that, 1) listening and speaking skills in Japanese are more important than reading and writing skills, 2) the ability to read *kanji* is a more important skill than the ability to write *kanji*, and 3) increased use of computerised technology has minimised the need for students to learn how to write *kanji*.

Questions 12-15: Non-*kanji* background JFL learners

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Questions twelve through fifteen dealt with non-*kanji* background students and sought to determine teachers' beliefs regarding. 1) Difficulty of *kanji* for non-*kanji* background students, and, 2) teaching methods for non-*kanji* background students.

Questions 16–22: Learning Strategies

Questions sixteen through twenty-two dealt with teachers' beliefs in relation to learning strategies.

Questions 23-29: *Kanji* order

Questions twenty-three through twenty-nine dealt with teachers' beliefs in regards to the order in which *kanji* are taught.

Question 30: Comments

Question thirty asked for comments from participants in the survey. It was hoped that the survey questions would prompt participants to comment on issues about which they had strong beliefs.

5.2.3   Procedures

All survey data were collected between February 2013 and March 2013. In order to ensure sufficient participants took part in the survey, a number of approaches were taken to reach potential participants. Firstly, a list of people to contact was compiled by visiting the relevant department's page on university websites, and a member of faculty was selected to be contacted. Where possible, and when faculty members' research interests were listed, faculty whose research interest was related to *kanji*, second language acquisition, or Japanese language pedagogy were selected. A recruitment email (See Appendix) was sent to the faculty member with a request for their

participation in the survey. The recruitment email contained a unique link to the survey. In some cases I received a reply email in which the participant suggested other faculty members whose research interest was related to the survey, and they were subsequently contacted. Secondly, I contacted associations related to Japanese language teaching for their assistance in recruiting participants.

5.2.4 Analyses

Analysis of data collected from this survey was by means of descriptive statistics and data was compiled into graphs and percentages. Results were recorded with a 4–point Likert scale which consisted of the four following possible responses: strongly agree, agree, disagree, and strongly disagree. Data was analysed using a t-test and analysis of variance (ANOVA) in order to determine if there was any statistically significant differences in responses based on native language and teaching experience. Statements made in question thirty, the open-ended question, were summarised and tabulated so they could be analysed from a qualitative perspective. Responses were coded and then a frequency distribution table was formulated.

5.3   Results and a discussion of findings

This section presents the findings of the survey of *kanji* teaching and learning beliefs and a discussion of those findings. The first section looks at the descriptive statistics results of the closed-end questions. The second section presents the inferential statistics. The third section compiles the comments received in the call for comments in question thirty. The results from this study will be discussed by addressing the results from each of the different areas focused on in the survey. Finally, the second research question will be addressed in light of these results and discussion.

5.3.1   Section 1 – Descriptive statistics results

In total, the survey achieved a total of 54 teacher respondents. This response rate was reasonable, and the number of participants was determined to be an adequate sample size.

Demography

In the first section of the survey, demographic information on participants was collected.

Table 5.1: Gender distribution of survey participants

Male	Female
20.75%	79.25%

Table 5.2: Native language of survey participants

Japanese	English	Other
64.15%	28.30%	7.55%

Table 5.3: Teaching experience of survey participants

1-12 years	13-22 years	23 or more years
37%	31.48%	29.62%

Results indicated that there was an even spread of teaching experience among participants. Regarding gender, the majority of participants were female, and regarding native language, the majority of participants were native Japanese speakers.
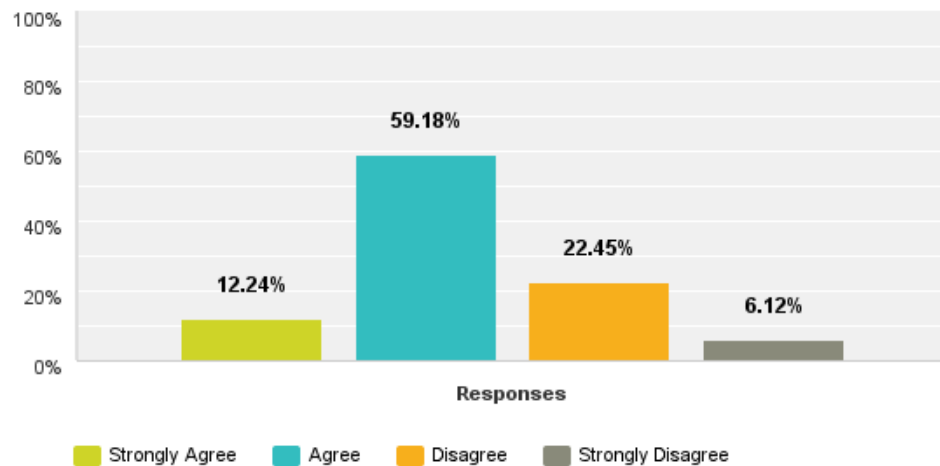
Satisfaction with *kanji* teaching methods and resources

The following graphs illustrate the degree to which teachers agreed with the statements presented in the survey in relation to satisfaction with *kanji* teaching methods and resources.

Figure 5.1: Q4 Responses

Figure 5.2: Q5 Responses

Figure 5.3: Q6 Responses

Results from the first part of the survey (questions 4-6) indicate that there is a relatively high degree of satisfaction among Japanese language teachers with the proficiency in *kanji* achieved by undergraduate students upon graduation. However, approximately 45% of teachers believe that insufficient class time is allocated to teaching *kanji* and over 50% of teachers did not believe that currently available textbooks are adequate for teaching *kanji*. These results suggest that a substantial number of teachers feel the need to spend more time on *kanji* instruction and require better resources to teach *kanji*. This may indicate that many teachers do not agree with the approaches taken to *kanji* instruction in Japanese language textbooks, or that they do not produce sufficient results in student progress. It is possible that many teachers may prefer to use in-house teaching materials that are designed specifically for their courses. In any case, these figures are significant and suggest that a substantial

number of Japanese language teachers are dissatisfied with available time and resources for JFL *kanji* education. The results in this part of the survey concur with results from the Japan Foundation survey report on Japanese language education abroad (2012) in which the most cited problem by Japanese language institutes was "inadequate teaching materials" (p. 5 of excerpt). Whereas the Japan Foundation report does not provide specific details in regards to what facets of Japanese language teaching materials teachers found to be inadequate, results from this study clearly illustrate that *kanji* education is one area in which a substantial number of teachers believe resources to be inadequate.

Kanji and Technology

The following graphs illustrate the degree to which teachers agreed with the statements presented in the survey in relation to technology and *kanji*.
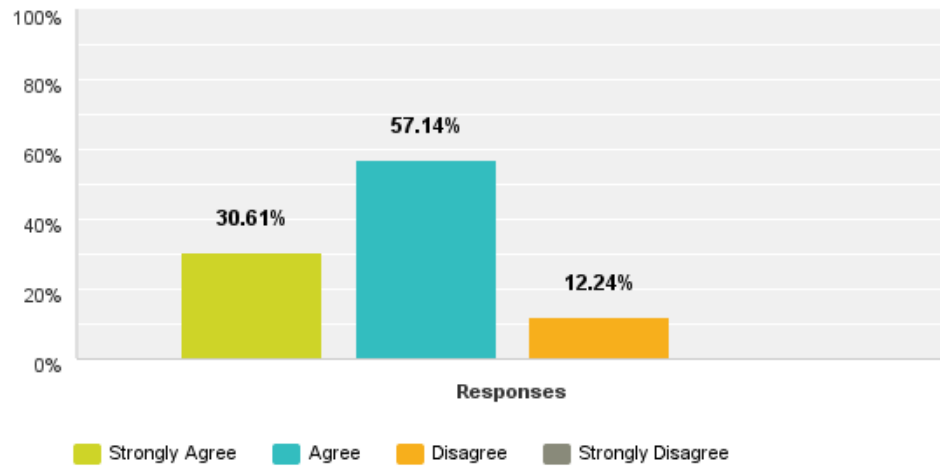
Figure 5.4:Q7 Responses

Figure 5.5: Q8 Responses

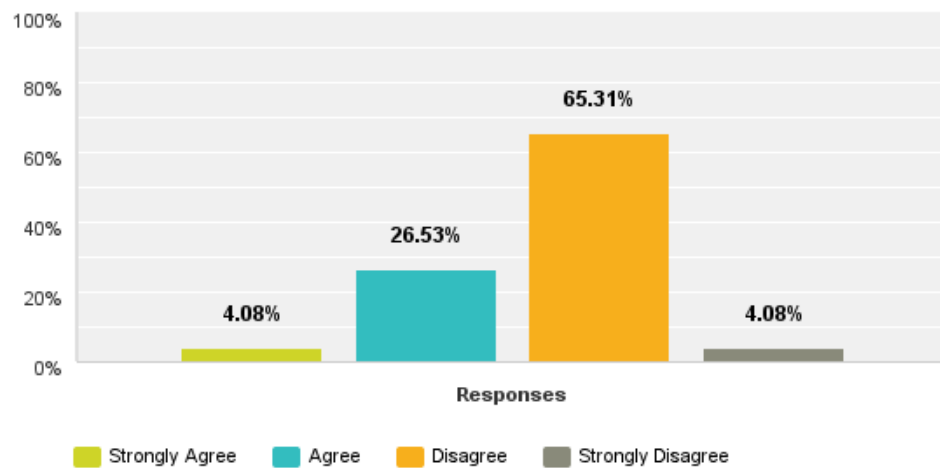Not surprisingly, a significant number of teachers were in agreement that technology offers possibilities with regard to teaching and learning *kanji*, but an overwhelming majority disagreed (4.08% strongly disagree, 65.31% disagree) that it was sufficiently utilised in the *kanji* teaching process at their university. With the development of technological devices that can be used for *kanji* related teaching and learning, it seems that in the future, technology will play a greater role in *kanji* education. At this stage, however, the results suggest that technology is perhaps not being utilised to its full extent and teachers' responses seem to reflect this while at the same time acknowledging its potential.

The importance of *kanji*

The following graphs illustrate the degree to which teachers agreed with the statements presented in the survey in relation to the importance of *kanji*.

Q9 Listening and speaking skills in Japanese are more important than reading and writing skills.

Answered: 49   Skipped: 5
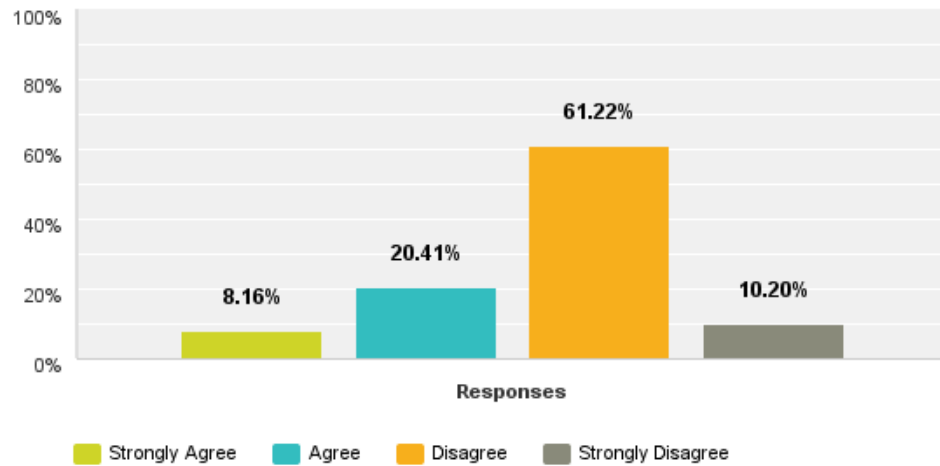
Figure 5.6: Q9 Responses

Q10 The ability to read kanji is a more important skill than the ability to write kanji.

Answered: 49   Skipped: 5

Figure 5.7: Q10 Responses

Figure 5.8: Q11 Responses

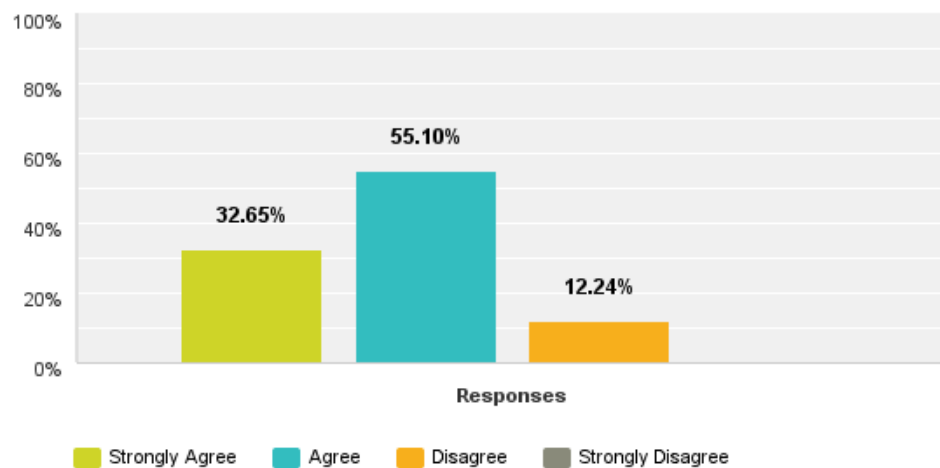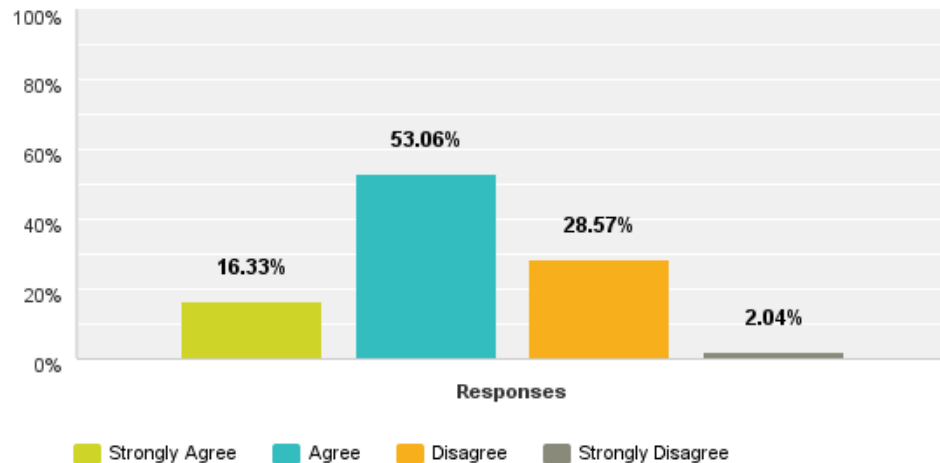Responses to questions related to the importance of *kanji* (questions 9-11) indicate that a majority of teachers in the sample surveyed do not believe that listening and speaking skills are more important than reading and writing skills. However, an overwhelming majority (32.65% strongly agree, 55.10% agree) of the teachers surveyed do believe that the ability to read *kanji* is a more important skill than the ability to write *kanji*. Similarly, a majority of teachers agree that technology has minimised the need for students to learn how to write *kanji*.

In a utopian world of SLA, second language learners would be able to acquire equal proficiency in the four language skills: reading, writing, speaking and listening. As such, JFL students would graduate from university with equal mastery of all of these skills. In reality, however, this is unlikely to be the case. Regardless of the obvious benefits of being able to write *kanji*, it is highly improbable for a JFL student to

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acquire equal proficiency in all areas of the Japanese language. This is especially true for JFL students from non-*kanji* backgrounds as their writing skills will inevitably be their weakest language skill. This is quite simply because of the complex nature of the Japanese writing system and the reality is that production skills are much harder to acquire than recognition skills. Even within Japanese society, Gottlieb (2005) notes that there is sufficient evidence to suggest that technology, such as the use of word processors, has affected people's ability to write *kanji* by hand. As most correspondence these days is by technological means, there is very little opportunity or need to write *kanji* in everyday life. Ruxton (1994) goes as far as to say that the ability to write *kanji* is virtually a "redundant skill" (p. 7). Even within Japanese society, some, noting the effects and widespread use of technology, have advocated for reform in character education that emphasises recognition over reproduction (Gottlieb, 2005). The results from this study in relation to the importance and *kanji* are therefore consistent with much of the existing literature and may suggest that with increasing reliance on technology, a future direction of JFL *kanji* education may be to place more emphasis on *kanji* recognition skills over production skills.

Non-*kanji* background JFL learners

The following graphs illustrate the degree to which teachers agreed with the statements presented in the survey in relation to non-*kanji* background JFL learners.

Q12 Kanji are the most difficult part of the Japanese language for students whose native language does not incorporate their usage.

Answered: 48   Skipped: 6
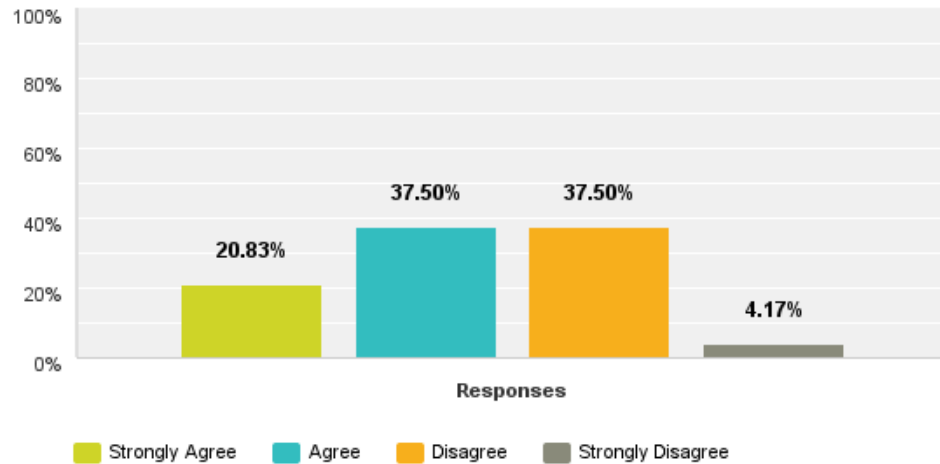
Figure 5.9: Q12 Responses

Q13 Non-kanji background students are at a disadvantage to learning Japanese compared to those students whose native language incorporates kanji usage.

Answered: 48   Skipped: 6
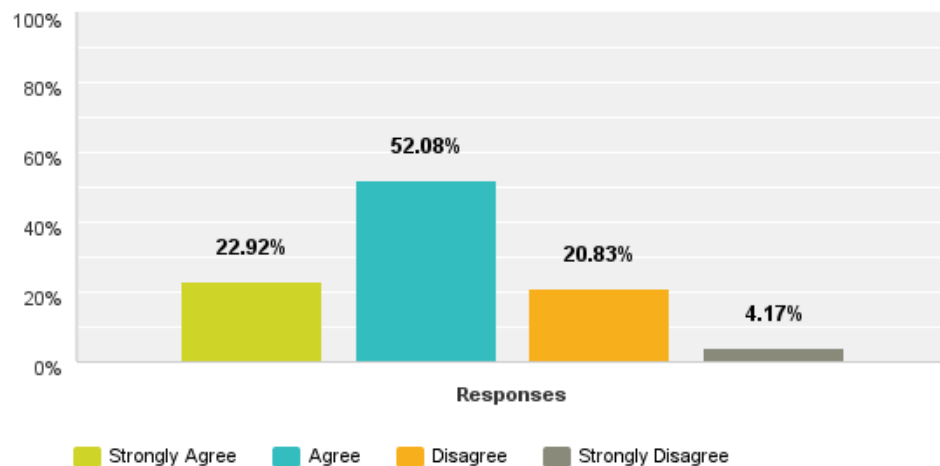
Figure 5.10: Q13 Responses

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Q14 Non-kanji background students of Japanese require instruction in kanji different from instruction given to Japanese language students whose native language incorporates kanji.

Answered: 48   Skipped: 6

Figure 5.11: Q14 Responses

Q15 Improved methods of teaching kanji to students from non-kanji backgrounds are needed.

Answered: 48   Skipped: 6
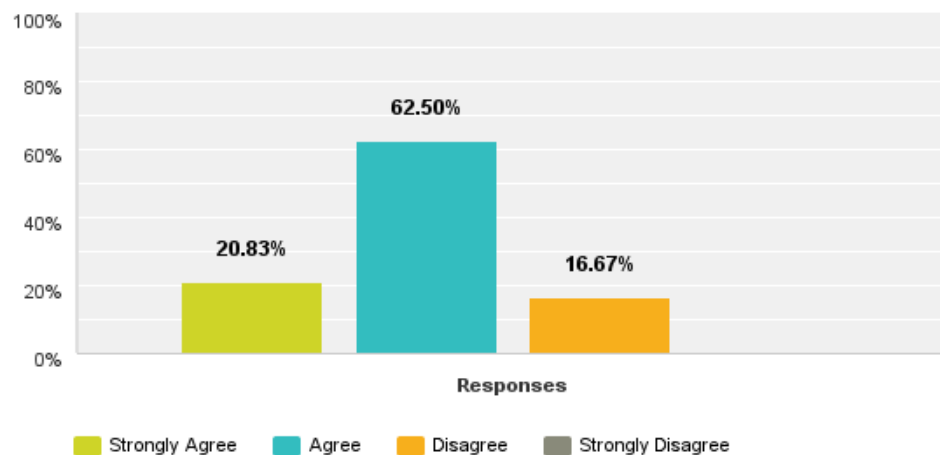
Figure 5.12: Q15 Responses

Responses to questions 12-15 indicate that the majority of teachers surveyed agree with the following statements: (1) *Kanji* are the most difficult part of the Japanese language for students whose native language does not incorporate their usage (20.83% strongly agree, 37.50% agree), (2) Non-*kanji* background students are at a disadvantage to learning Japanese compared to those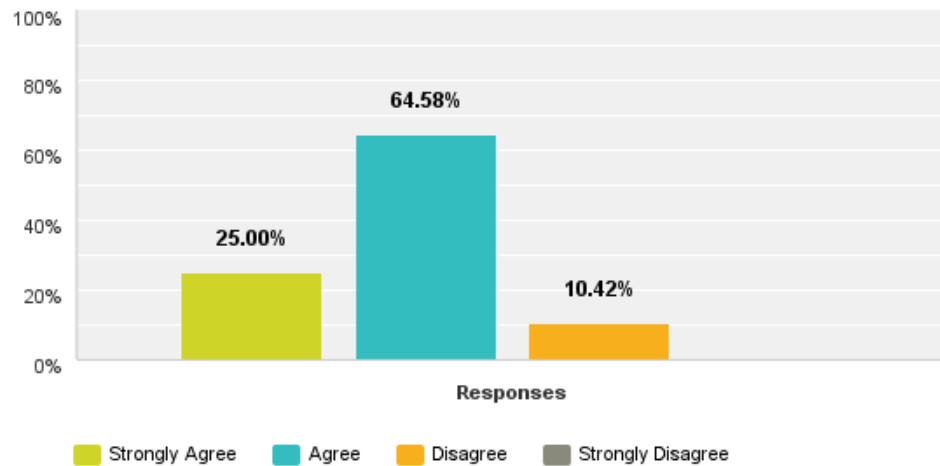 students whose native language incorporates *kanji* usage (22.92% strongly agree, 52.08% agree), and (3) Non-*kanji* background students of Japanese require instruction in *kanji* different from instruction given to Japanese language stu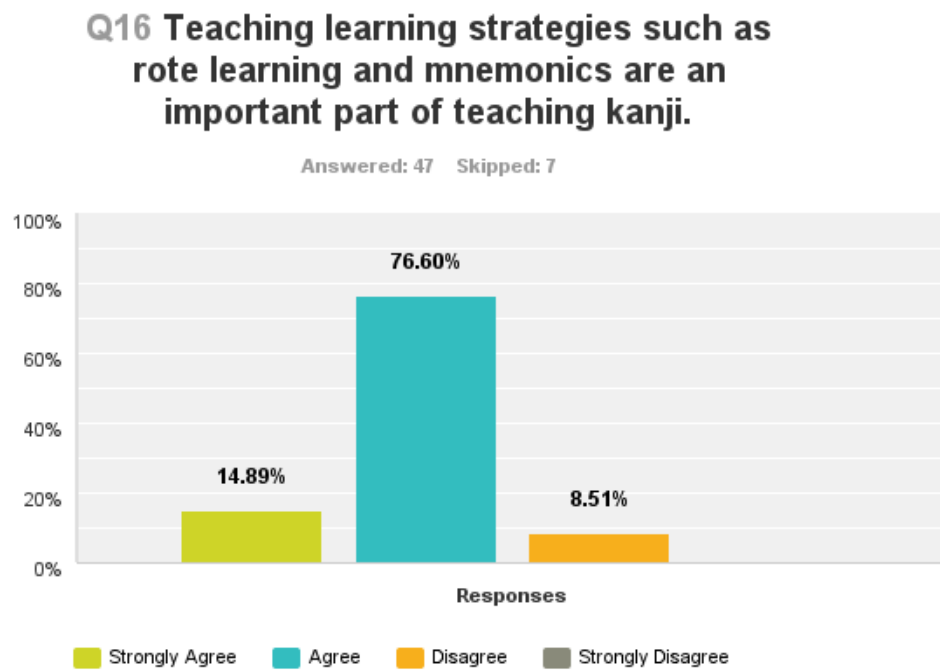dents whose native language incorporates *kanji* (25% strongly agree, 64.58% agree). Of these statements, statement three (question 14 in the survey) received the highest degree of agreement, with close to 90% of participants either agreeing or strongly agreeing to this statement.

The results from this section of the survey concur with the literature and provide further support to the notion that Japanese is a difficult language for non-*kanji* background JFL learners. Furthermore, this result affirms that for non-*kanji* background learners there is indeed a hurdle to learning *kanji* and that, from the perspective of a substantial number of Japanese language teachers, a different approach to *kanji* education is required for non-*kanji* background learners to tackle that hurdle. Moreover, the high degree of agreement with the idea that non-*kanji* background JFL learners require different instruction could have implications for Japanese language courses in which students enrolled may come from vastly different backgrounds, including students from both *kanji* backgrounds and non-*kanji* backgrounds. This would be particularly the case in highly multicultural environments and is indeed the case in Australia.

Learning strategies

The following graphs illustrate the degree to which teachers agreed with the statements

presented in the survey in relation to learning strategies for *kanji*.
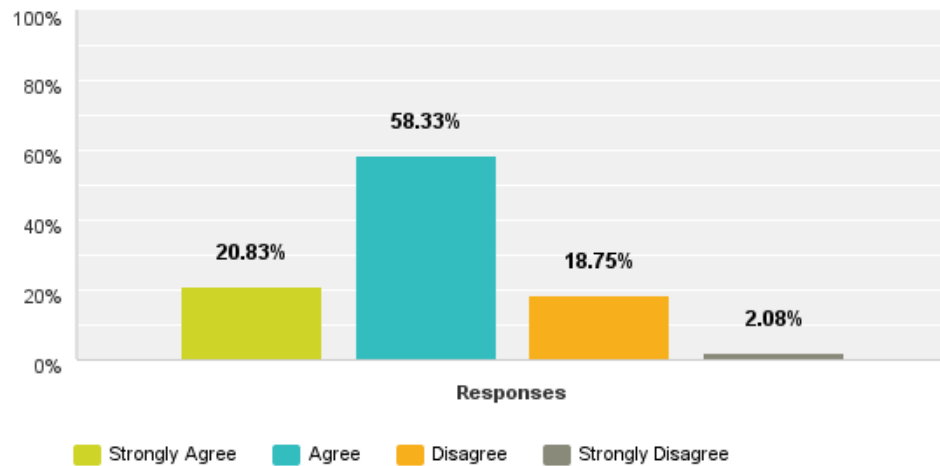

Figure 5.13: Q16 Responses

Figure 5.14: Q17 Responses

Figure 5.15: Q18 Responses
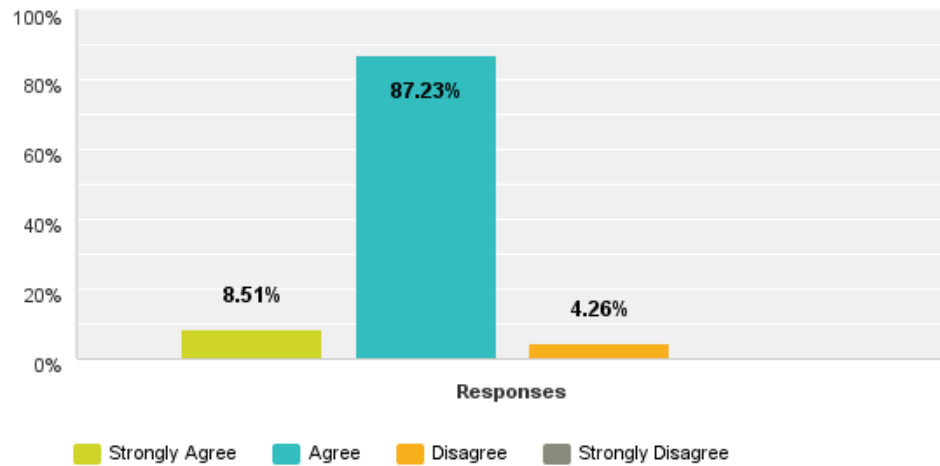
Figure 5.16: Q19 Responses

Figure 5.17: Q20 Responses

Figure 5.18: Q21 Responses

Figure 5.19: Q22 Responses

Responses to questions 16-22 indicated that a majority of the teachers surveyed believe that teaching learning strategies is an important part of teaching *kanji* and that rote learning, mnemonics, component-based instruction, etymology and teaching *kanji* in context are all effective learning strategies. All of these learning strategies were regarded as effective by the majority of respondents with component-based instruction garnering the highest degree of support with all respondents choosing one of either "agree" or "strongly agree" as their response. Mnemonics garnered the greatest number of respondents choosing "agree" as their response, with 87.23% of respondents selecting this. Furthermore, in response to the statement, "*Kanji* are best taught in context," 39.58% of respondents selected "strongly agree" as their response, the highest response rate in this section for "strongly agree".

Respondent's support for mnemonics as a learning strategy and the component-based approach to *kanji* education suggest that teachers' beliefs in relation to learning strategies are closely aligned with approaches popular in self-study *kanji* textbooks, as seen in stage 1 of the research. However, teachers also indicated a high degree of support for learning *kanji* in context, which is mostly absent from the self-study *kanji* textbooks.

Kanji order

The following graphs illustrate the degree to which teachers agreed with the statements presented in the survey in relation to *kanji* order.

Q23 The order in which kanji are taught is an important factor in facilitating memory recall of the kanji.

Answered: 48   Skipped: 6

8.33%   58.33%   33.33%

Strongly Agree   Agree   Disagree   Strongly Disagree
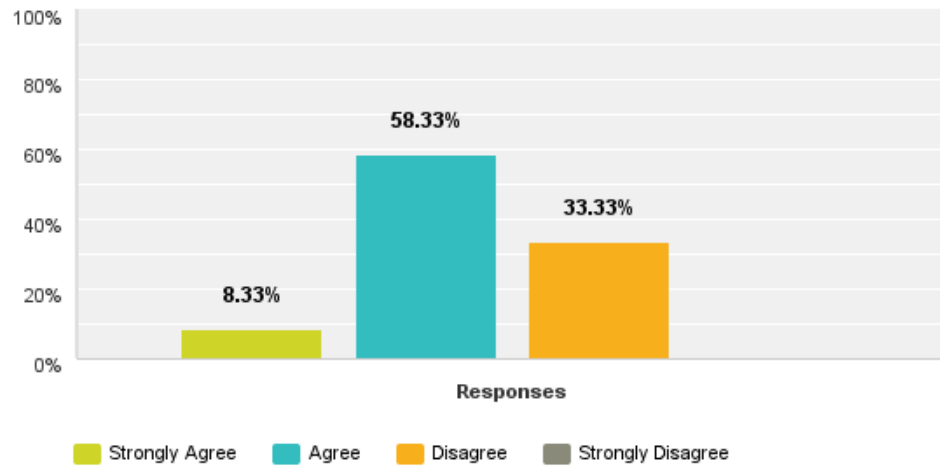
Figure 5.20: Q23 Responses

Q24 Kanji are best taught in the order they appear in the textbook.

Answered: 47   Skipped: 7

36.17%   57.45%   6.38%

Strongly Agree   Agree   Disagree   Strongly Disagree
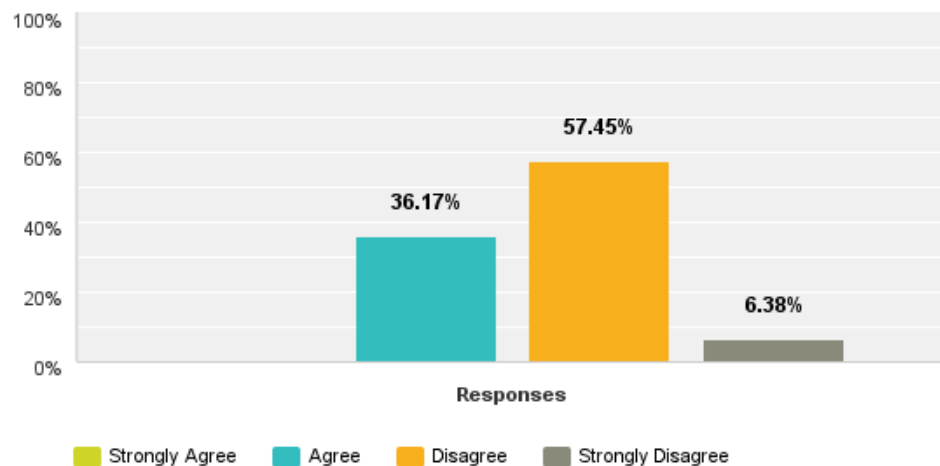
Figure 5.21: Q24 Responses

Q25 Kanji are best introduced in an order that introduces the most frequently used kanji in Japanese first.

Answered: 46   Skipped: 8
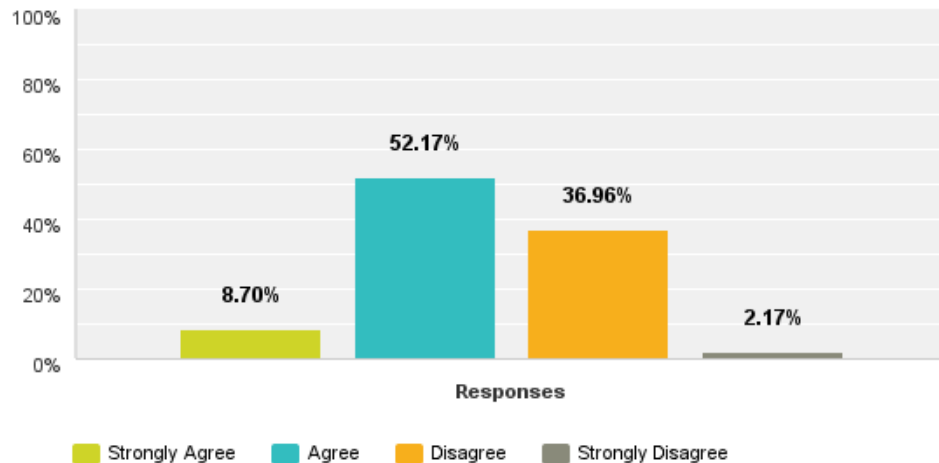
Figure 5.22: Q25 Responses

Q26 Kanji are best taught to non-kanji background students in the same order that they are taught to native Japanese students.

Answered: 45   Skipped: 9
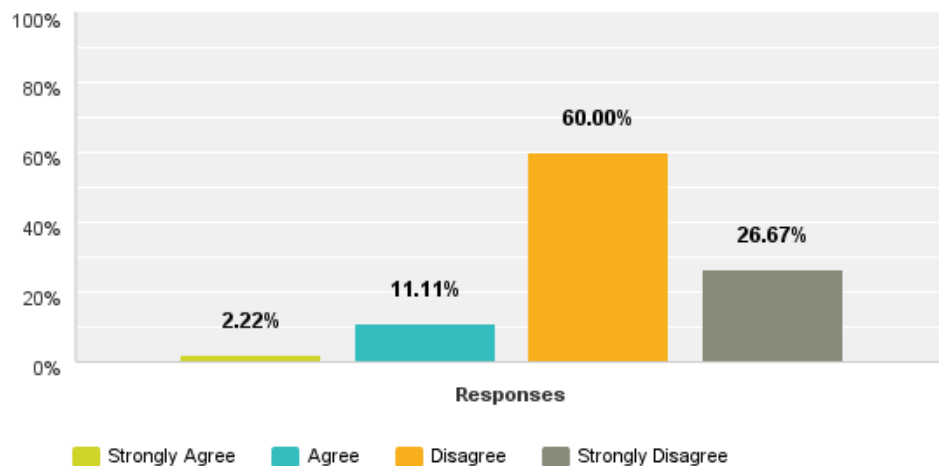
Figure 5.23: Q26 Responses

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Q27 The typology of kanji (i.e. its form, shape, and symmetry) is an important consideration in deciding on the order kanji are introduced.

Answered: 46   Skipped: 8
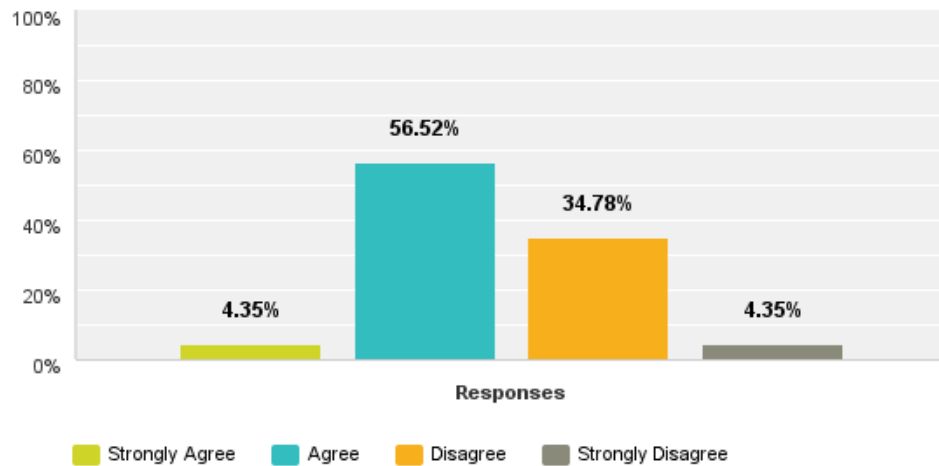
Figure 5.24: Q27 Responses

Q28 Introducing kanji in the order currently used at your university is an effective way of teaching kanji to non-kanji background students.

Answered: 46   Skipped: 8
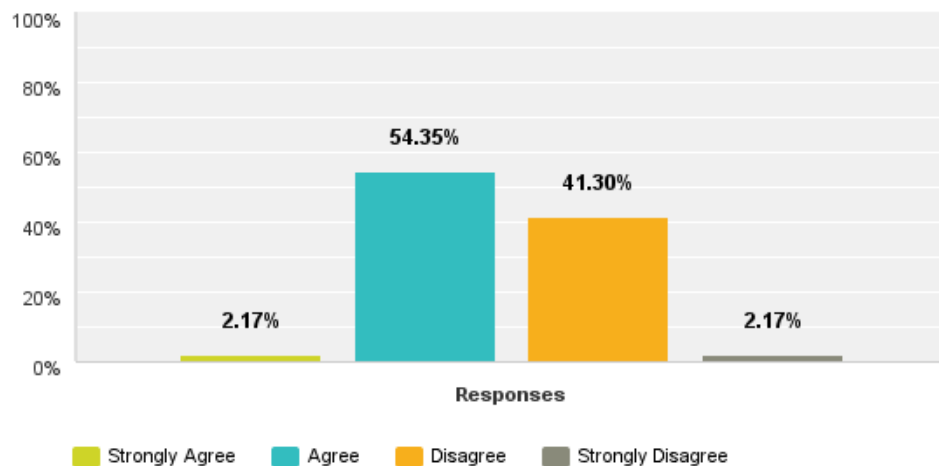
Figure 5.25: Q28 Responses

169
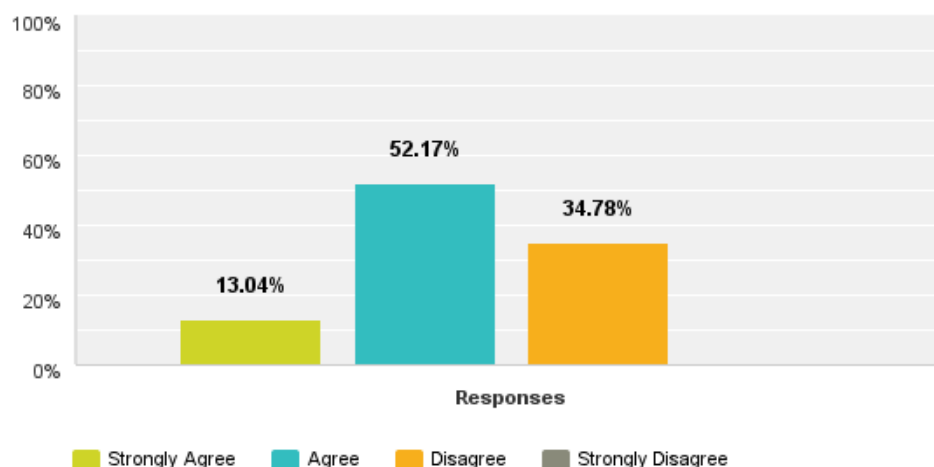
Figure 5.26: Q29 Responses

A number of interesting results were collected in response to statements related to *kanji* order. Two-thirds of respondents either agreed or strongly agreed that the order in which *kanji* are taught is an important factor in facilitating memory recall of *kanji*. This is a significant result as it affirms the notion that *kanji* order is an important factor in facilitating the *kanji* learning process. This result is consistent with predictions made prior to administering the survey.

The majority of respondents did not believe that *kanji* are best taught in the order they appear in the textbook or in the same order that they are taught to native Japanese students. The majority of respondents did either agree or strongly agree that *kanji* are best introduced in an order that introduces the most frequently used *kanji* in Japanese first. Typology was also regarded as an important factor, with 56.24% of respondents agreeing and 4.35% of respondents strongly agreeing that typology is an important consideration in deciding on the order *kanji* are introduced. This result indicated that

frequency and typology as criteria for ordering *kanji,* are considered as important by many teachers.

The majority of teachers surveyed did believe that the order in which *kanji* are taught at the respondent's university was an effective way of teaching *kanji* to non-*kanji* background students. However, 41.30% of respondents did not agree with that statement and a further 2.17% strongly disagreed. Although not a majority, this result is still significant as it indicates that close to half of teachers do not believe that the order in which they are teaching *kanji* is an effective approach for teaching *kanji* to non-*kanji* background students. Moreover, probably the most interesting result from this section of the survey was that over 65% of respondents either agreed or strongly agreed that a new order for introducing *kanji* to non-*kanji* background students is needed. Results in this section provide strong evidence that further research and improved methods for teaching *kanji* to non-*kanji* background learners are needed, particularly in relation to the order in which *kanji* are taught.

5.3.2 Section 2 – Inferential Statistics

A t-test was conducted in order to determine whether native language had any bearing on teacher's reponses. In relation to teacher's satisfaction with current *kanji* teaching methods, a significant difference was found between native Japanese speakers and non-Japanese speakers. Native Japanese speakers were less satisfied with current *kanji* teaching methods than other language speakers.

For the purpose of data analysis, the variable "teaching experience" was divided into three groups: 1-12 years, 13-22 years, and over 23 years. A one way ANOVA to examine the differences in the teachers responses was conducted. A significant difference was found between those three groups in relation to the need for different

teaching methods for non-kanji background students. It showed that there are significant differences only between the 1-12 years teacher group and the over 23 years teacher group. The teachers with 1-12 year's experience support the idea of using different methods for non-*kanji* background students more than the teachers with over 23 year's experience.

5.3.3 Section 3 – Comments

In this section, the open-ended responses in which twenty nine teachers offered comments (see Appendix) were subjected to qualitative analysis. The data was analysed and coded, and the following major categories were identified.

Table 5.4: Coded comments

Category	Code
"I want students to develop their own study habit for *kanji* learning," "*kanji* is something that students learn, not something we instructors teach."	**Learner Autonomy**
"The most effective method of *kanji* learning combines rote, mnemonics, etymology, understanding and knowledge of radicals, as well as stroke order." "combining several existing methods," "combine various methods"	**Combined Methods**
"It depends on learner's preference," "there is no one particular method that suits them all," "what is effective varies from learner to learner."	**Learner Differences**
"We recommend technology-based learning aids." "Recognition and knowing how to best use technology to write and look up words are more important skills in the real world."	**Technology**
"*Kanji* should be introduced in a more logical order," "The order of introducing *kanji* is very important for teaching *kanji* to non-Japanese."	***Kanji* Order**
"Examination can affect how they are taught and learned."	**Assessment**
"I think one of the biggest problems for students to master *kanji* is that *kanji* are not used in daily life at all in Australia."	**Usage**
"We don't spend very much class time on *kanji*," "I know that we can/should do more but we don't because of the time limitations."	**Time Limitations**

From the themes identified in the comments section, a frequency distribution table was created to identify the frequency with which the themes arose. The table below illustrates the frequency distribution of coded comments.

Table 5.5: Frequency distribution of coded comments

Code	Frequency
Learner Autonomy	1
Combined Methods	5
Learner Differences	7
Technology	2
Kanji Order	4
Assessment	1
Usage	1
Time Limitations	2

From the frequency distribution table, the results illustrate that "learner differences," "combined methods," and "*kanji* order" were the most frequent themes to arise from teachers' comments. These areas will be considered in more depth in the following section.

5.3.4   Discussion of teachers' comments

Responses to the open-ended comments section of the survey provided various insights into teachers' beliefs in relation to teaching and learning *kanji*. The frequency distribution table of the coded comments indicated that learner differences, combined methods, and *kanji* order were of significant interest to many teachers. These three areas will be considered in turn.

5.3.4.1 *Learner differences*

One area that featured frequently in the comments section of the survey was that of "learner differences", the idea that there are differences in learners' personalities and

learning preferences. Examples of comments made in relation to learner differences are provided below:

"Individual learning styles must be taken into account."

"I think it depends on learners' preference, so it is difficult to generalise what the most efficient way to teach kanji is. Maybe, the most important thing would be to show them several strategies regarding how to study kanji and let students choose when studying by themselves. In the end, they never learn kanji unless they keep practising on a daily basis, no matter what strategy they adopt."

These results are consistent with Bourke's (1996) view on learning strategies when she states:

> However, it important to remember that strategy choice varies with personality type and learning style. It is the role of the teacher to raise students' consciousness of strategy use and make them aware of what strategies are available but students need to choose for themselves which strategies suit them best (p. 133).

5.3.4.2 Combined methods

Comments in relation to combining different learner strategies also featured frequently. These results suggest that the predominant pedagogical approach to teaching *kanji* is to combine different learning and teaching strategies in order to cater for a variety of different leaners with different learning preferences. Examples of such comments are provided below:

"The most effective method of kanji learning combines rote, mnemonics, etymology, understanding and knowledge of radicals, as well as stroke order (in terms of using the same stroke order each time to train one's muscle memory)."

"There are a variety of types of "students from non-kanji backgrounds", and therefore there is no one particular method that suits them all. It would seem best to try understanding the needs of individual students and choose a practical and effective learning method (by combining several existing methods, if necessary) that facilitates learning in each individual case."

5.3.4.3 *Kanji order*

Interestingly, *kanji* order was also commented on by respondents indicating that, for some teachers, they considered it to be an important consideration. This, therefore, provides further evidence from the perspective of Japanese language teachers that *kanji* order plays a role in facilitating *kanji* learning.

"Kanji should be introduced in more logical order (ex. teach Tera first, then teach Toki), but we are just following the textbook for now."

"The order of introducing kanji is very important for teaching kanji to non-Japanese, and I have made a few materials for teaching kanji."

"Yes, I would like to see more research done on which kanji to introduce first as 'high use in Japan' is not necessarily a good indicator of usefulness in New Zealand and the text books are written in Japan. I have experimented with introducing various kanji and the students don't seem to voice any preference for certain kanji over other kanji probably because they are just too busy getting on with the task."

5.4 Research question 2:

What beliefs are held by Japanese teachers at universities in Australia, New Zealand, Canada, the UK and the US, in regard to teaching kanji to non-kanji background students of Japanese?

This study achieved its aim in identifying beliefs held by Japanese language teachers in relation to *kanji* learning and teaching. The research question for this stage of the research was deliberately designed so that it would be broad and enable teachers' beliefs to be explored in relation to several aspects of *kanji* learning and teaching. To that end, this study has highlighted a number of interesting insights into various areas of *kanji* education. Many of the results from this survey were consistent with existing literature, but this survey broke new ground by delving into areas such as *kanji* order and non-*kanji* background learners which have not been previously researched from the perspective of teachers' beliefs.

The responses to this survey bring to light several problems and obstacles related to advancing *kanji* education. Firstly, the survey indicated that many teachers believed that insufficient time was allocated to *kanji*. Secondly, many teachers believe that available textbooks are inadequate for *kanji* education. And, thirdly, many teachers believe that *kanji* order is an important consideration in facilitating *kanji* learning. Furthermore, from these problems arise the issue of compatibility between a new *kanji* order and adequate textbooks which are compatible with the curriculum. These problems are encapsulated in one teacher's comments:

"I know that we can/should do more but we don't because of the time limitations. If a kanji book that introduces kanji in a more coherent manner which is also compatible with the textbook (we use Genki), I would adopt the book!"

Results in this stage of the research did coincide with predictions formulated at the beginning of the research to some degree. Results in relation to *kanji* order were consistent with predictions; however, the responses in relation to *kanji* order were higher than expected and the belief that a new *kanji* order is needed and that order is a factor that can facilitate learning were surprisingly high. Although dissatisfaction was expressed in relation to available textbooks, it was expected that a greater sense of dissatisfaction would have been expressed in relation to the level of *kanji* proficiency achieved by students at the time of graduation and teaching approaches currently implemented at the respondent's university.

5.5 Limitations of Stage 2 of the research – Survey of teachers' beliefs

In Stage 2 of the research, fifty-four Japanese teachers responded to the survey. The data collected in this survey revealed many interesting insights into teachers' beliefs in relation to teaching *kanji* to non-*kanji* background learners and *kanji* education as a whole. Many teachers proffered useful insights in the comments section of the survey which could have been furthered by conducting follow-up interviews with some of the participants. A greater in-depth understanding of *kanji* education from the teachers' perspective as well as *kanji* education strategies utilised at individual institutions could have been made by doing follow-up interviews as a part of this stage of the research.

Inevitably, in studies such as this, bias may come into play when participants in the survey have been the teachers who have designed the curriculum and approach to *kanji* that they are being asked to comment upon. From this perspective, then, results of the survey may be very subjective and some participants may have expressed a more optimistic view on *kanji* teaching methods employed at their own university.

Furthermore, without having access to in-house teaching materials used at different universities it is difficult to objectively examine different approaches employed at different universities. The purpose of this stage of the research was, however, aimed at examining teachers' beliefs and therefore from that perspective, results from this stage of the research have provided an overview of beliefs held by teachers of Japanese in relation to teaching and learning *kanji*.

5.6   Conclusion

In conclusion, this study provided a look into teachers' beliefs in relation to *kanji* learning and teaching, which until now had been a largely underexplored area. The study highlighted a number of interesting findings. In relation to learning strategies, the results from this study concurred closely with previous literature and studies. This study also clearly identified teachers beliefs in relation to *kanji* order, which until now has been an area not explored in the literature. Furthermore, teachers' beliefs in relation to non-*kanji* background learners built upon existing literature by exploring this subject from the perspective of teachers. Finally, results from this study confirmed the need for further research and ongoing improvement in the area of JFL *kanji* education.

In the next chapter, we will continue on the path of exploring *kanji* order but will shift to examine it from the perspective of Japanese language learners and address the third research question in relation to students' perceptions of *kanji* clusters.

CHAPTER 6: SURVEY OF JFL LEARNERS' PERCEPTIONS OF *KANJI* CLUSTERS

The previous chapter presented the research procedures, results and a discussion of findings from the survey of *kanji* teaching and learning beliefs. This chapter will present the research procedures, results and a discussion of findings from the survey of JFL learners' perceptions of *kanji* clusters. Finally, conclusions will be drawn in light of the third research question.

An online survey was conducted in which university students enrolled in Japanese language courses were asked to rate the ease of learnability of several *kanji* clusters. The purpose of this stage of the research was to answer my third research question: Which *kanji* clusters do non-*kanji* background learners perceive as easy or difficult to learn?

6.1   Introduction to Stage 3 of the research

When the student of Japanese is faced with the challenge of learning *kanji*, it is not uncommon for them to go from feeling excited and interested in *kanji* to feeling overwhelmed. In the initial stages of learning *kanji*, when relatively simple pictographs are introduced, the student may even begin to think that *kanji* are quite logical and easier than they had initially expected. Pictographs seem easy because you can see the origins of the *kanji* and the development of these *kanji* seem to be logical. The origin of the *kanji* may act as a memory anchor from which those *kanji* could be easily remembered. Furthermore, pictographs introduced in the initial stages of learning *kanji* are visually simplistic in that they are comprised of only a few strokes and they closely resemble the object which they represent. However, when the *kanji* learner goes

beyond these characters and discovers that there are many more *kanji* that do not neatly fit within this category, then the learner will in many cases start to feel overwhelmed and possibly lose motivation, and in many cases eventually quit studying Japanese altogether.

In Stage 1 of the research, the presence of *kanji* orders in textbooks was assessed to determine the type of *kanji* orders present and the degree to which they are incorporated. In stage 2 of the research, a survey of *kanji* teaching and learning beliefs was conducted to investigate Japanese language teachers' beliefs in relation to teaching and learning *kanji*. Investigating *kanji* order from the perspective of textbooks and teachers provided many insights but would not be complete without further investigation from the perspective of the JFL learner. In Stage 3 of the research, therefore, an online survey was administered in which Japanese language students were asked to rate the ease of learnability of several *kanji* clusters. Groups of *kanji* which share a common property will be referred to as ***kanji* clusters.** A survey in which students were the participants was determined to be a useful step in answering my third research question: Do learners perceive different *kanji* clusters as easier to learn than others? The purpose of this stage of the research was to ascertain whether students perceive certain groups of *kanji* as easier or more difficult than others, and if so, which *kanji* do they perceive as easy and difficult. Furthermore, this stage of the research sought to determine whether there was any correlation between the *kanji* clusters that students perceive as easy or difficult and the student's native language, level of *kanji* understanding and Japanese course level enrolled in. This stage of the research was an attempt to broaden our knowledge of *kanji* acquisition by investigating the student perceptions of *kanji* clusters.

In the field of SLA, similar tests have been conducted using ESL vocabulary. Tinkham

(1997), for example, found that semantically unrelated vocabulary were more easily learned than semantically related vocabulary and that thematically related vocabulary were remembered more easily than semantically related vocabulary. Tinkham found that due to interference theory, semantically related vocabulary actually hindered rather than facilitated learning. For the ESL teacher, findings such as these are of great interest and have pedagogical implications that contribute greatly to curriculum design.

Despite this, very few studies have been conducted using *kanji*. Yamashita and Maru (2000) conducted a study in which they introduced compositional features of *kanji* to students and tested whether those features were perceived as helpful among learners. Yamashita and Maru used the term "compositional features" to refer to "those features that characterize the makeup of each *kanji*" (p. 161).

Some *kanji* can be decomposed into compositional features such as *katakana* for *katakana* composites. For example, the *katakana* composite *kanji* "加" is made up of two *katakana* characters – カ and ロ. A semantic composite *kanji* can have its meaning interpreted by considering the combination of the meaning of its components. Yamashita and Maru give the example of the *kanji* "好" (*su**ki***/to like) which combines the character "女" (*onnna*/woman) and "子" (*ko*/child). "Woman *likes* child" could therefore be one way to interpret the meaning of this *kanji*. Yamashita and Maru's study was similar to this one in that it asked students to rate the ease of learnability of these *kanji,* but it was limited to four compositional features: pictographs, *katakana* composites, semantic-phonetics, and semantic composites. In Yamashita and Maru's study, pictographs were rated as the easiest to learn and they found that *kanji* that could be related to previous knowledge and *kanji* that were particularly memorable were easy for students to learn (p. 159).

This study sought to move beyond the general compositional features of *kanji* as used in Yamashita and Maru's study to incorporate other features to determine whether a group of *kanji* taught together based on a common property is perceived as easier or more difficult than others. Results from this study may have pedagogical implications that can assist teachers in compiling *kanji* in an order that may facilitate students in learning *kanji* and in the creation of textbooks and *kanji* instructional materials.

It was expected that students in this study would gravitate towards pictographs as the easiest *kanji* cluster; however, as this area is still a largely unexplored area, there was no certainty as to how students will respond to the other *kanji* clusters. What was expected was that students would perceive some *kanji* clusters as easier or more difficult than others and that would provide evidence to suggest that the way *kanji* are ordered is an important consideration that may facilitate the *kanji* learning process and therefore one that requires careful consideration. In other words, results from this stage of the research were expected to provide insight into how varying criteria based *kanji* clusters are perceived by learners of Japanese and how *kanji* may therefore be ordered so as to facilitate the learning process.

6.2   Research Procedures

6.2.1   Participants

For this stage of the research, participants were forty-seven Japanese language students enrolled in one hundred level (introductory), two hundred level (intermediate) and three hundred level (advanced) Japanese language courses at Macquarie University in 2014. The survey was open to all level of Japanese students in order to generate the largest number of participants possible. Also, the results from the survey could then compare results to determine if there were any significant differences in responses

from students from different levels of *kanji* ability. Japanese language students at Macquarie University were notified of the survey and asked to participate in the study, but participation in this study was strictly voluntary.

6.2.2   Materials

A questionnaire was determined to be an appropriate instrument for data collection for this study. A questionnaire developed by the author in the form of an online survey, "Survey of *Kanji* Clusters", incorporating a Likert scale, was the instrument for data collection (See Appendix). The questionnaire was administered using the online survey provider, Survey Monkey (http://www.surveymonkey.com/). The decision to conduct this questionnaire online was made in order to ensure the highest possible response rate by making the questionnaire easily accessible for possible participants.

The survey comprised thirteen questions, of which questions one to nine related to rating the difficulty level of *kanji* clusters. Questions one to seven asked students to rate *kanji* clusters as either very difficult, difficult, moderately difficult, moderately easy, easy, or very easy. Questions eight and nine asked students which cluster they thought was the easiest and most difficult. Questions one to seven were accompanied by a brief video explanation of the *kanji* cluster so as to clearly identify the common property in each cluster. In order to not demonstrate any bias towards one *kanji* cluster over another, each video explanation was less than one minute in length and the explanation was limited to explaining the common characteristic of the *kanji* cluster. Questions ten through twelve asked about the participant's native language, level of *kanji* understanding and which level Japanese class they were enrolled. Question thirteen asked whether respondents would be willing to participate in follow-up interviews.

6.2.3 *Kanji* clusters

The table below (Table 6.1) outlines the *kanji* clusters used in the survey as well as the common property for each of these clusters. The idea of "*kanji* clusters" or groups of *kanji* with a common property is very rarely seen in *kanji* education. As seen in the textbook analysis in Stage 1, in most textbooks there will be some instances where consecutively introduced *kanji* share a common property and this may or may not be a conscious act on the part of the author.

The clusters as seen here do not exist independently but were identified to help determine whether certain characteristics of *kanji* affect the perceived difficulty level of *kanji* in the minds of students. The purpose being that introducing *kanji* with common characteristics may facilitate the *kanji* learning process. The *kanji* clusters identified for this study were formulated based on two factors: 1. The *rikusho* (Table 2.7) or the six categories of *kanji*, and 2. The results from the textbook analysis in stage 1 of the research. In order to ensure that all *kanji* used in the study were of an equivalent level of difficulty, the stroke number of each *kanji* was kept between five and seven strokes to avoid any *kanji* being visually more complex than others. Moreover, each *kanji* cluster was comprised of approximately seven *kanji* to stay consistent with Miller's observation that human beings can only retain seven plus or minus two objects in working memory (Miller, 1956). Therefore, it was determined that any *kanji* in excess of nine *kanji* may overload the students and adversely affect the results of this survey.

Multiple readings and meanings of the *kanji* were not explained and each *kanji* was given one reading (*on* Reading) and one English word to represent its meaning. This was done in order to avoid any confusion that may arise from different meanings and

multiple possible readings.

Kanji were introduced in a way that highlighted the particular characteristic that was unique to that cluster; for example, in the pictograph group the development of that *kanji* from its original form was explained to students.

Table 6.1: *Kanji* Clusters

Kanji Cluster	*Kanji*	**Shared Property**
Cluster One	山 ("yama"/mountain) 川 ("kawa"/river) 田 ("ta"/rice field) 人 ("hito"/person) 女 ("onna"/woman) 子 ("ko"/child)	Pictographs
Cluster Two	高、安（expensive/cheap） 大、小（big/small） 多、少 （many/few） 新、古（new/old）	Opposite Meanings
Cluster Three	姉 ("ane"/older sister)、妹 ("imōto"/younger sister) ― mutual component = 女（"onna"/woman）話 ("hanasu"/speak), 語(suffix "go" meaning language) ― mutual component = 言 ("iu"/say) 雨 ("ame"/rain) 雪 ("yuki"/snow) ― mutual component = 雨 ("ame"/rain)	Mutual Component
Cluster Four	父 （father）, 母 (mother)、兄 (older brother), 弟 (younger brother), 妹 (younger sister), 姉 (older sister)	Contextual Meaning
Cluster Five	日 + 本 = 日本 ("nihon"/Japan）学 + 生 = 学生 ("gakusei"/student） 天 + 気 = 天気 ("tenki"/weather）	Compound *Kanji*

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Table 6.1: *Kanji* Clusters (contd.)

Kanji Cluster	*Kanji*	Shared Property
Cluster Six	田(rice field)、力 (strength)、男 (man) - 田＋力 ＝ 男 女 (woman), 子(child)、好(like) - 女＋子 ＝ 好 言(say)、寺 (temple)、詩(poem) - 言 ＋ 寺 ＝ 詩	Combined Components
Cluster Seven	年 (year)、 白 (white)、 八 (eight)、 百 (one hundred)、 文 (sentence)、 木 (tree)	Grade One *Kanji* at elementary school in Japan

6.2.4 Procedures

Macquarie University Ethics Review Committee granted ethics approval for this study and a recruitment flyer (see Appendix) was distributed throughout the Japanese department at Macquarie University. The flyer was designed to appeal to those students with an interest in *kanji* and a desire to improve their *kanji* ability.

The flyer directed people to the website, www.*kanji*ninja.com, which included a welcome video that briefly outlined what students were required to do in the survey and the purpose of my research. Students were then asked to click on the link at the top of the page to be taken to the survey.

6.2.5 Analyses

Data collected from the online survey was downloaded into an Excel database file and responses were recoded into numerical form before being subjected to statistical analysis (SPSS). Survey responses were compiled into descriptive statistics, and Chi-square tests were conducted to determine if there was any correlation between responses and native language, course level and level of *kanji* understanding. A

Chi-square test tests the probability of independence of a distribution of data and is used to discover if there is a relationship between two categorical variables. It was therefore determined to be an appropriate means of analysis.

The open ended responses to why participants chose certain *kanji* clusters as the easiest and most difficult were subjected to qualitative analysis. Open-ended responses were coded into various categories and the frequency of appearance of these categories were recorded in table form.

6.3   Results

This section presents the findings of the survey of JFL learners' perceptions of *kanji* clusters. The first section looks at the descriptive statistics results of the closed-end questions. The second section presents the results from the open-ended responses where students gave reasons for choosing the easiest and most difficult *kanji* clusters. Section three presents the results from statistical analysis conducted using a chi-square.

6.3.1   Section 1 – Descriptive statistics results

In total, the survey received forty-seven responses. This response rate was reasonable and the number of participants was determined to be an adequate sample size. Not all participants answered every question and therefore total responses for each question are sometimes much less than forty-seven. The majority of participants were native English speakers and there were varying levels of *kanji* ability. Some students listed two languages as their native language. The following tables provide the respondents' native language, level of *kanji* ability, and the level of course enrolled.

1) Native language of participants

Table 6.2: Native language

Native Language	Number of Students
Telugu	1 (3.03%)
Hebrew	1 (3.03%)
German	1 (3.03%)
Chinese (Mandarin and Cantonese)	3 (9.09%)
English	27 (81.81%)

2) Level of *kanji* understanding (self-rated)

Table 6.3: Level of *kanji* understanding (self-rated)

Level of *Kanji* Understanding	Number of Students (%)
Never Studied *Kanji* Before	2 (6.67%)
Beginner	8 (26.67%)
Intermediate	17 (56.67%)
Advanced	3 (10%)

3) Course level enrolled in by participants

Table 6.4: Number of students per course level

Course Level	Number of Students
Level One (Beginner)	9 (31.03%)
Level Two (Intermediate)	11(37.93%)
Level Three (Advanced)	9 (31.03%)

In response to the course level enrolled in, students answered with the course code. Level one courses are beginner level, level two are intermediate and level three advanced. There was a good spread of different levels of students with varying levels of *kanji* understanding. The survey was open to all levels to encourage more people to participate and so that results from students of different levels of knowledge could be compared to see if there were any significant differences.

The following figures represent the difficulty rating results for the seven clusters.

Following that, results for the easiest and most difficult *kanji* clusters as well as the statistical analysis will be presented.

Q1 **The kanji in this cluster are pictographs. How would you rate their level of difficulty?**
Cluster 1: 山 ("yama"/mountain)、川 ("kawa"/river)、田 ("ta"/rice field)、人 ("hito"/person)、女 ("onna"/woman)、子 ("ko"/child)

Answered: 47   Skipped: 0

Ease of Learnability Rating

Very Difficult   Difficult   Moderately Difficult   Moderately Easy   Easy
Very Easy
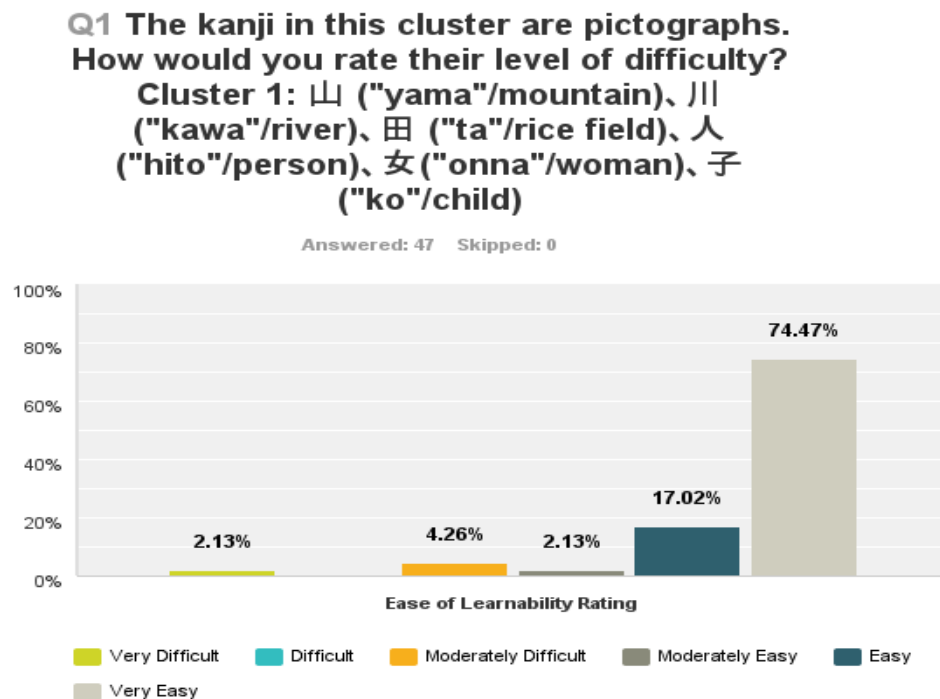
Figure 6.1: Level of difficulty for cluster one (pictographs)

Results for this *kanji* cluster indicated that 74.47% of respondents regarded pictographs as "very easy" and a further 17.02% regarded this cluster as "easy".

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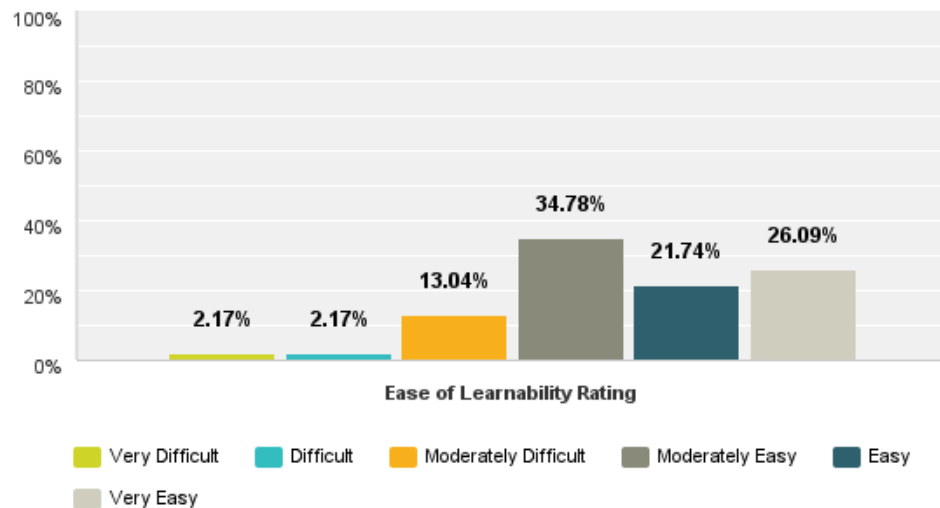
Figure 6.2: Level of difficulty for cluster two (opposites)

Over 80% of participants rated cluster two (opposites) as one of easy, moderately easy,

or very easy indicating that a large majority perceived this cluster as one that would not

present them with a great difficulty to learn.

Q3 Cluster three has pairs of kanji with a mutual component. That is, one part of the kanji is the same in both characters. How would you rate their level of difficulty?
Cluster 3: 姉("ane"/older sister)、妹 ("imouto"/younger sister) —　mutual component = 女（"onna"/woman）話 ("hanasu"/speak), 語(suffix "go" meaning language) —　mutual component = 言 ("iu"/say)雨 ("ame"/rain) 雪 ("yuki"/snow) — mutual component =　雨 ("ame"/rain)

Answered: 29　Skipped: 18
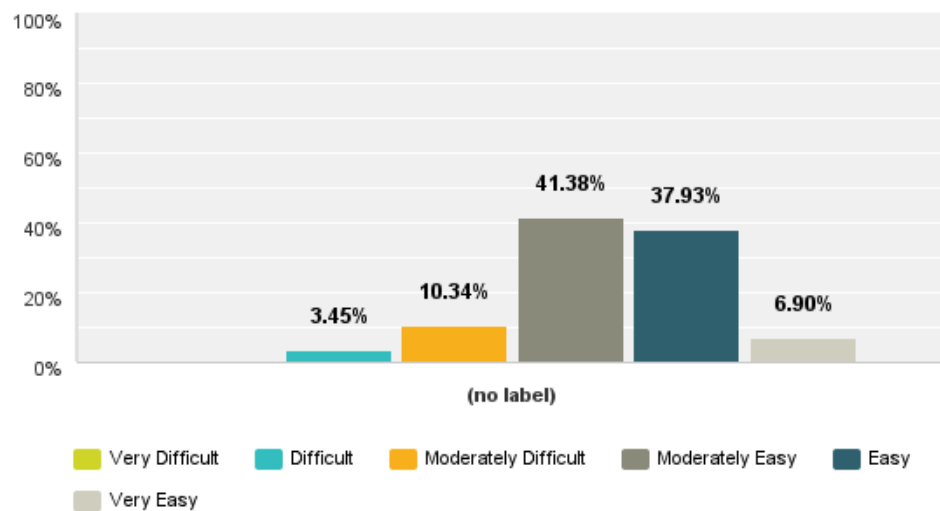
Figure 6.3: Level of difficulty for cluster three (mutual components)

Cluster three (mutual components) was rated by a large number of participants as moderately easy (41.38%) and easy (37.93%).

Q4 In cluster four, all kanji represent members of the family. The common element being therefore that each kanji share a similar meaning, in this case, family members. How would you rate their level of difficulty? Cluster 4 : 父（father）, 母 (mother)、兄 (older brother), 弟 (younger brother), 妹 (younger sister), 姉 (older sister)

Answered: 30   Skipped: 17
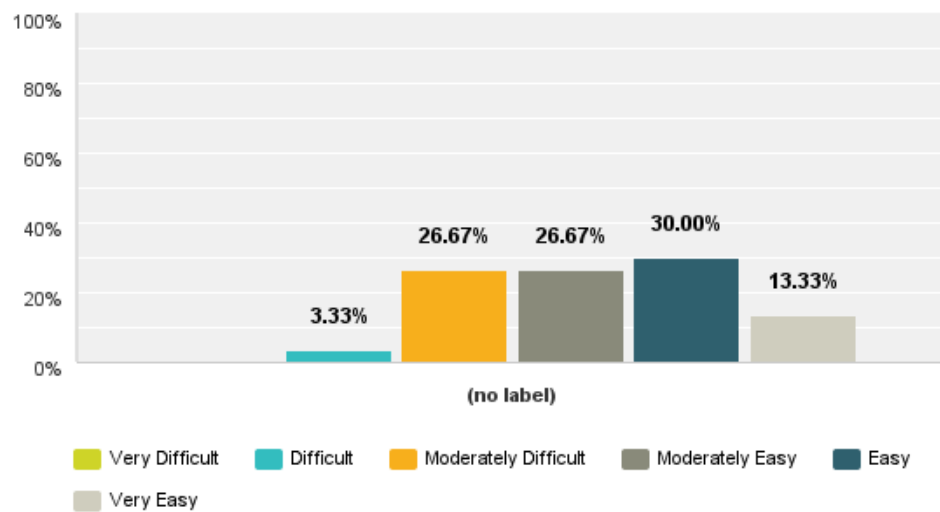
Figure 6.4: Level of difficulty for cluster four (context)

Participants gave cluster four (context) equal ratings for moderately difficult and moderately easy, at 26.67% for each. However, 30% of participants did rate this cluster as easy.
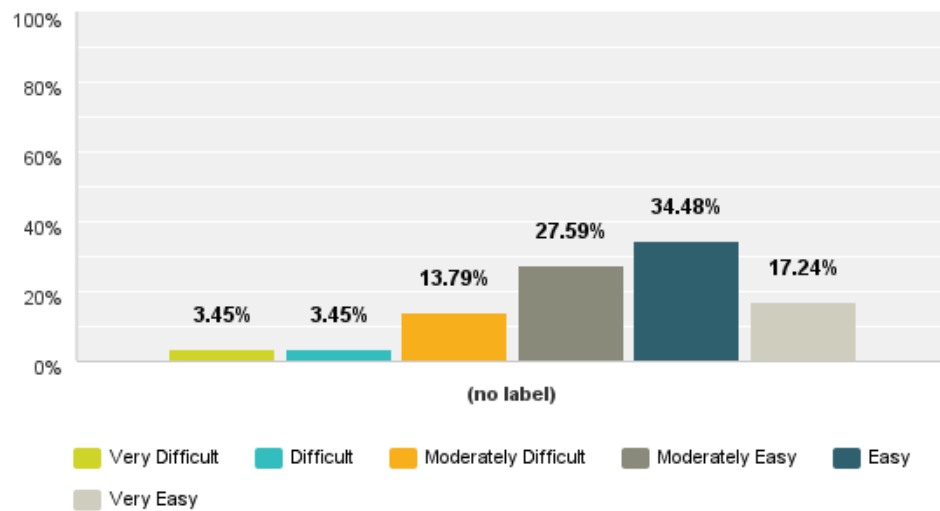
Figure 6.5: Level of difficulty for cluster five (compound *kanji*)

Cluster five (compound kanji) had 34.48% of participants rate it as easy. However, 13.79% also rated it as moderately difficult with some respondents, albeit small in number, also rating this cluster as difficult or very difficult. .

199
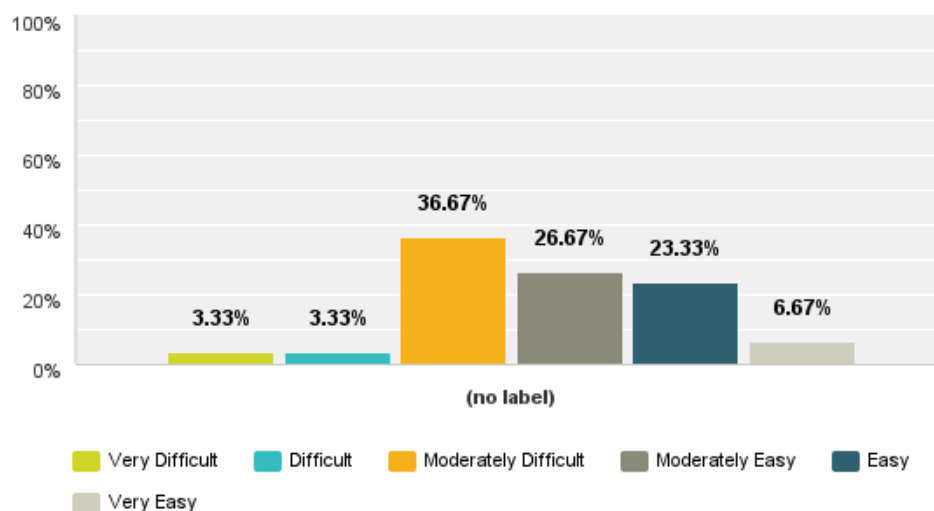
Figure 6.6: Level of difficulty for cluster six (components)

This cluster was rated as moderately difficult by 36.67% of participants but received ratings in all categories including very difficult and very easy.

Q7 In cluster seven, kanji are taken from the 80 kanji that are taught in grade one at elementary school in Japan. How would you rate their level of difficulty?Cluster 7: 年 (year), 白(white), 八 (eight), 百 (one hundred), 文 (sentence), 木 (tree)

Answered: 30   Skipped: 17
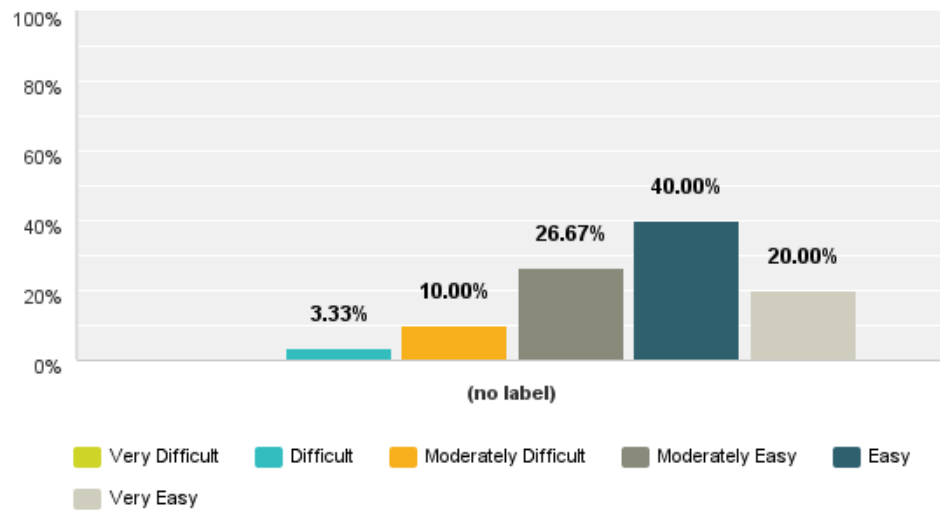
Figure 6.7: Level of difficulty for cluster seven (Japanese elementary school)

Forty per cent of participants rated this cluster as easy and 20% rated it as very easy. This cluster received no responses for, "very difficult" and only a 3.33% response for "difficult."
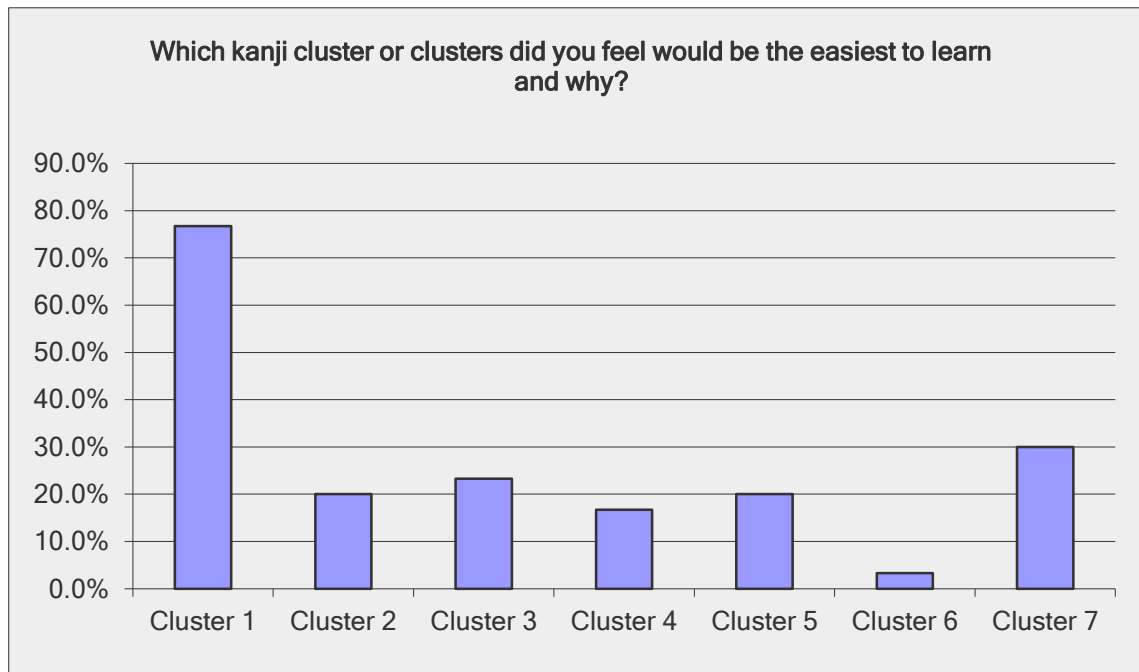
Figure 6.8: Easiest *kanji* cluster

Figure 6.8 above indicates that cluster one (pictographs) was rated as the easiest, and cluster seven (Japanese elementary school) was rated the second easiest.

Most difficult kanji cluster
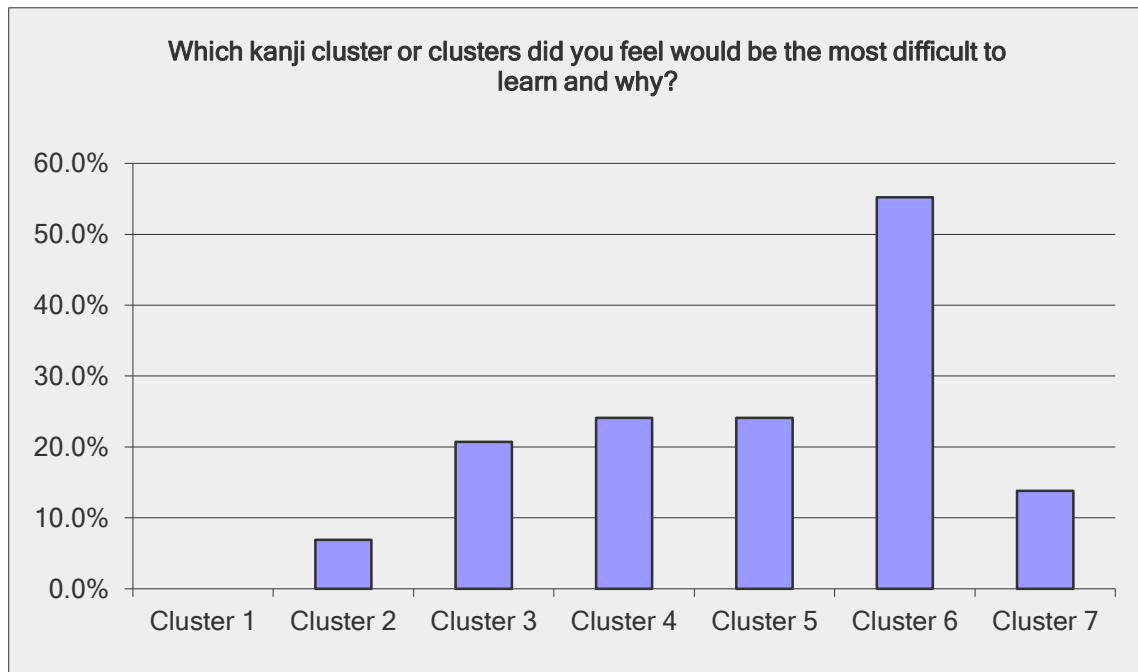
Figure 6.9: Most difficult *kanji* cluster

Figure 6.9 above indicates that cluster six (combined components) was rated as the most difficult with clusters four (context) and cluster five (compound *kanji*) as the second most difficult.

6.3.2   Section 2 – Open-ended responses

1. Easiest cluster

The open-ended responses in which students gave reasons for selecting clusters as the easiest were subjected to qualitative analysis. The data was analysed and coded and the following categories were identified.

Table 6.5: Code list for easiest *kanji* cluster

Category	Code
High level of Association/relation between *kanji* and its meaning, "representative," "direct link" between *kanji* and meaning, "shows you what it means" resemble	**Associative (A)**
Easy to learn multiple *kanji* together	**Multiplicity (M)**
Less strokes	**Stroke Number (SN)**
The *Kanji* provides clues to their meaning, you can guess the meaning	**Meaning (Mg)**
Interesting to learn	**Interest (I)**
Groups that are similar in meaning easier to remember/common theme/	**Thematic (T)**
Makes sense/logical/reasoning	**Logical (L)**
The shape is simple	**Shape (S)**
Useful, high frequency	**Usefulness (U)**
Other – No specific reason	**Other (O)**

The responses for each cluster were analysed using the above coding to determine the frequency of justifications featured for each cluster. The results are displayed in Table 6.6 below.

The results from the open-ended responses indicate that for cluster one (pictographs), the link between the actual character and its meaning as well as having fewer strokes was a frequently cited justification for choosing this cluster as the easiest. Usefulness was cited as a factor for a number of clusters but most notably for cluster seven (Japanese elementary school), indicating that students perceived the *kanji* in this cluster to be of *kanji* that they would use frequently. Justifications related to the meaning of the *kanji* were cited three times for cluster three (mutual components) indicating that for some students, the meaning of a radical or component may contribute to the ease of learnability of *kanji*. Thematic justifications were cited three

times for cluster four (context) indicating that for some students a common theme may facilitate learning of a group of *kanji*. Cluster four, however, did not rate very highly compared to the other clusters.

Table 6.6: Frequency of justifications for easiest cluster

	A Associative	M Multiplicity	SN Stroke Number	Mg Meaning	I Interest	T Thematic	L Logical	S Shape	U Usefulness	O Other
Cluster 1	13		5	1				1	1	3
Cluster 2		1	1				1			2
Cluster 3	1			3	1				1	1
Cluster 4						3			1	1
Cluster 5				1			2			2
Cluster 6									1	
Cluster 7			1	1				2	3	3

2. Most difficult cluster

The open-ended responses in which students gave reasons for selecting clusters as the most difficult were subjected to qualitative analysis. The data was analysed and coded and the following categories were identified.

Table 6.7: Code list for most difficult *kanji* cluster

Category	Code
Not Related – No common element between the *kanji* characters, difficult to find connections, etc	**Not Related (NR)**
Similarity – Similar *kanji* are confusing, etc.	**Similarity (S)**
Combined Characters – Combining two or more *kanji* characters to form a new *kanji* is difficult	**Combined Characters (CCH)**
Combined Components – Combining two components to form a *kanji* is confusing/ not logical	**Combined Components (CCO)**
Stroke number – *kanji* comprised of many strokes are difficult.	**Stroke Number (SN)**
Other – No specific reason	**Other (O)**

The responses for each cluster were analysed using the above coding to determine the frequency of justifications featured for each cluster. The results are displayed in Table 6.8 below.

Table 6.8: Frequency of justifications for most difficult cluster

	NR (Not Related)	S (Similarity)	CCH (Combined Characters)	CCO (Combined Components)	SN (Stroke Number)	O (Other)
Cluster 1 Pictographs						
Cluster 2 Opposite Meanings						2
Cluster 3 Mutual Components		3			1	1
Cluster 4 Contextual Meaning	2					4
Cluster 5 Compound *Kanji*			5		2	1
Cluster 6 Combined Components	2			9	2	3
Cluster 7 Grade one *kanji* at elementary school in Japan	3					1

The results from the open-ended responses indicate that for clusters five (compound *kanji*) and six (components), the combination of *kanji* characters and the combination of components that were the common property were identified as the reason for being regarded as difficult. Clearly, *kanji* that comprise of multiple parts were perceived by many students in the sample group as difficult. For cluster three (mutual components), the use of mutual components meant that for some students this cluster would be

difficult due to similarity of characters. Stroke number was also identified as a reason for difficulty for clusters three (mutual components), five (compound *kanji*) and six (components), which are all clusters that contained multiple characters or components. The lack of a connection between the *kanji* was cited as a reason for difficulty for clusters four (context), six (components) and seven (Japanese elementary school). "Not Related" was cited twice as a justification for cluster four (context) being difficult; however, this lack of connection was between the actual *kanji* and its meaning and not amongst the *kanji,* as obviously the *kanji* in this group shared a common theme. For cluster seven (Japanese elementary school), although this cluster rated as one of the easiest clusters to learn, students did note that there was a lack of connection between the *kanji* themselves and therefore this was cited as a reason for it being difficult.

6.3.3 Section 3 – Statistical analysis

A Chi-square test was performed to determine probability of independence of native language, *kanji* understanding and course level with individual *kanji* clusters and their difficulty rating as well as *kanji* clusters chosen as the easiest and the most difficult.

The null hypothesis, therefore, for *kanji* clusters selected as the easiest/most difficult is: the *kanji* cluster chosen as the easiest/most difficult is not different for students with different native language/*kanji* understanding/course level. For the ratings of individual *kanji* clusters, the null hypothesis is: the *kanji* cluster difficulty rating is not different for students with different native language/*kanji* understanding/course level. The null hypothesis is rejected when results for p-value (probability) is less than 0.05.

Results for *kanji* clusters chosen as the easiest and most difficult will be presented first followed by results for individual clusters.

6.3.3.1 *The most difficult kanji cluster*

The most difficult *kanji* cluster was not statistically significant for any of native language, *kanji* understanding or course level for any cluster.

6.3.3.2 *Kanji cluster difficulty ratings*

A Chi-square test on this data revealed that *kanji* difficulty ratings were statistically significant for native language for cluster one (pictographs), two (opposites) and four (context).

The difficulty ratings for *kanji* cluster one (pictographs) differed by native language category in a statistically significant manner, $x2(10, N = 30)$; Pearson Chi-square = 34.783, p = .000.

a.   English = Very Easy

b.   Chinese = Very Easy

c.   Telugu = Moderately Easy

d.   English + 2nd Language = Very Easy

e.   Cantonese = Very Easy

f.   Australian Born Thai = Easy

The difficulty ratings *kanji* cluster two (opposites) differed by native language category in a statistically significant manner, $x2(16, N = 29)$; Pearson Chi-square = 33.869, p = .006

a.   English = Moderately Easy

b.   Chinese = No responses for Cluster two (opposites)

c.   Telugu = Difficult

d.	English + 2nd Language = Moderately Easy

e.	Cantonese = Moderately Easy

f.	Australian Born Thai = Moderately Easy

The difficulty ratings for *kanji* cluster four (context) differed by native language category in a statistically significant manner, $x2(20, N = 30)$; Pearson Chi-square = 42.886, $p = .002$.

a.	English = Easy

b.	Chinese = Very Easy

c.	Telugu = Difficult

d.	English + 2nd Language = Equal responses for Moderately Easy, Easy, and Moderately Difficult

e.	Cantonese = Moderately Easy

f.	Australian Born Thai = Moderately Easy

Kanji difficult ratings were statistically significant for *kanji* understanding for cluster one (pictographs), three (mutual components) and seven (Japanese elementary school).

The difficulty ratings for *kanji* cluster one (pictographs) differed by *kanji* understanding category in a statistically significant manner, $x2(6, N = 30)$; Pearson Chi-square = 20.824, $p = .002$.

a.	Never Studied = Equal responses for Moderately Easy and Easy

b.	Beginner = Very Easy

c.	Intermediate = Very Easy

d.	Advanced = Easy

The difficulty ratings for *kanji* cluster three (mutual components) differed by *kanji* understanding category in a statistically significant manner, x2(12,N = 29); Pearson Chi-square = 22.093, p = .036.

a.   Never Studied = Equal responses for Moderately Easy and Difficult

b.   Beginner = Moderately Easy

c.   Intermediate = Moderately Easy

d.   Advanced = Easy

The difficulty ratings for *kanji* cluster seven (Japanese elementary school) differed by *kanji* understanding category in a statistically significant manner, x2(12,N = 30); Pearson Chi-square = 23.520, p = .024.

a.   Never Studied = Equal responses for Difficult and Moderately Difficult

b.   Beginner = Easy

c.   Intermediate = Easy

d.   Advanced = Equal responses for Very Easy, Moderately Easy, and Easy

Kanji difficult ratings were not statistically significant for course level for any cluster.

6.4   Discussion of findings

The present study attempted to answer the question: do learners of Japanese perceive some *kanji* clusters as easier than others and which *kanji* clusters do learners perceive as the easiest and the most difficult. The findings of this study will be discussed in relation to the individual *kanji* clusters and finally research question 3 will be addressed.

6.4.1   Cluster One – Pictographs

Results indicated that learners perceive cluster one (pictographs) as the easiest to learn with cluster one being voted as the easiest *kanji* cluster by close to 80% of participants. Figure 6.8 illustrates ratings for each of the seven clusters, in which clearly cluster one is rated significantly higher than all other clusters. This finding supported results found in the study conducted by Yamashita and Maru (2000) in which pictographs were rated the highest in ease of learning ratings.

Analysis of the open-ended responses revealed that it was the close association between the *kanji* character and its meaning that prompted students to choose pictographs as the easiest *kanji* to learn. For students, this close association was a cogent reason for rating this *kanji* as the easiest. The overwhelming support for pictographs suggests that in the initial stages of *kanji* study, pictographs that closely resemble the objects they represent are still a good choice as the first *kanji* to introduce to students as they are interesting to students, provide insight into the origins of *kanji* and, as determined in this stage of the research, perceived as easier than other *kanji* clusters.

6.4.2   Cluster Two – Opposite Meanings

Statistical analysis revealed that native language was a factor in the difficulty rating assigned by students to this cluster with native English speakers inclined to rate this cluster as "moderately easy." The degree of support for studying *kanji* as opposites suggests that when introducing *kanji* that represent adjectives, learners will see the logic behind introducing the *kanji* that represents the opposite meaning and therefore are inclined to respond well to *kanji* introduced in this manner.

6.4.3 Cluster Three – Mutual Components

Cluster three was rated the third easiest *kanji* cluster to learn by participants. Justifications for choosing this *kanji* as the easiest indicated that participants felt that the *kanji* gave clues to its meaning. However, in justifications for the most difficult *kanji* cluster, participants indicated that the similarity between *kanji* with a mutual component may make it difficult. Interestingly, cluster three was statistically significant for native language with English native speakers more inclined to rate it as not easiest but Chinese native speakers inclined to rate it as the easiest. The easiest *kanji* cluster was also statistically significant for course level for cluster three. Whether *kanji* cluster three was determined to be the easiest of the clusters differed by Japanese course level, with students enrolled in level 100 courses more inclined to rate it as the easiest.

This result suggests that *kanji* learners acknowledge that components and radicals might be helpful in the *kanji* learning process. The open-ended responses in relation to cluster three provided further insight as to why students rated clusters as the easiest. The majority of these responses focused on how components that make up these *kanji* provide clues to the meaning of the *kanji*. This seems to suggest that learners may respond to learning *kanji* with multiple components if the separate components combined convey the meaning of the *kanji*. The fact that students responded in relation to meaning is a useful insight that may assist teachers when they teach *kanji* with multiple components, as well as suggesting that teaching components and radicals may be an important stage in *kanji* development beyond those initial stages of learning basic pictographs and basic single-unit *kanji*. Cluster three was also recognised as difficult due to the fact that *kanji* with the same radical or component may appear quite similar and therefore make them difficult to recognise.

6.4.4 Cluster Four – Contextual Meaning

In ratings for most difficult *kanji* cluster, cluster four (context) was rated the second most difficult along with cluster five (compound *kanji*). Reasons for cluster four being rated as difficult included the lack of a connection between the *kanji*. Students did acknowledge the common theme for this cluster as a reason for it being chosen as the easiest *kanji* cluster, but it was not rated very highly as the easiest *kanji* cluster. The *kanji* difficulty ratings were statistically significant for native language for cluster four with English native speakers inclined to rate it as easy and Chinese native speakers as very easy.

Findings for cluster four are interesting in light of the fact that context is frequently an approach taken to teaching *kanji*. Findings in this study seem to indicate that the presence of a common theme is not sufficient to make students perceive the *kanji* as easy to learn and the lack of any connection amongst the *kanji* beyond a common theme is reason for them to perceive it as difficult. Therefore, grouping *kanji* together based on a common theme may not be as effective as once thought.

6.4.5 Cluster Five – Compound *Kanji*

Cluster five was rated as equal second for the most difficult cluster to learn. Many students said their reason for rating this *kanji* as difficult was that combining two or more *kanji* characters to form a new *kanji* word was difficult.

This result was quite surprising as some of the combinations of characters can be logical and it was predicted that participants would rate this cluster as easy to learn. For example, the combination of 学 (***mana***bu/learn) and 生 (*sei*/various possible meanings but also used as the first character in the word 生徒 (*seito*/student)).

Findings for this cluster suggest that as *kanji* build in complexity and are combined to make compound *kanji* words, some students may perceive them as difficult.

6.4.6   Cluster Six – Combined Components

Cluster six was rated as the most difficult *kanji* cluster, far outranking the other clusters in this category. What is of particular interest about this result is that it is cluster six that would most resemble the building block ordering strategy approach adopted in many of the *kanji* self-study books analysed in Chapter 3. Results therefore seem to contradict the approach taken in many self-study *kanji* textbooks.

This result was unexpected as it was thought that students would perceive the combination of components as logical and therefore easy to learn. Why was this not the case? One possible explanation may relate to how beginner's view *kanji*. Whereas an intermediate or advanced JFL learner who has a solid foundation in *kanji*, is able to see how *kanji* characters can be broken down into their separate components, the beginner JFL learner may find this more difficult and have a tendency to look at kanji as if they are one picture. As many of the participants in this stage of the research were beginner JFL learners, this may provide one possible reason as to why combined components were rated as the most difficult *kanji* cluster in this study.

As with some of the other *kanji* clusters, the results do not seem to suggest that the other clusters are not suitable for *kanji* education as indeed some students chose *kanji* clusters three (mutual components), four (context), five (compound *kanji*) and six (components) as the easiest. However, the results do suggest that these clusters may be better suited to intermediate to advanced level students.

6.4.7   Cluster Seven – Grade One Japanese Elementary School *kanji*

Cluster seven was rated the second easiest cluster. Interestingly, the difficulty ratings for *kanji* cluster seven differed by *kanji* understanding in a statistically significant manner, with those participants who had never studied *kanji* more inclined to rate this cluster as difficult or moderately difficult. For those students who perceived this cluster as difficult, the lack of any relationship between the *kanji* was the most common justification.

As this cluster did not have any particular common property other than that they were taken from year one *kanji* taught at elementary school in Japan, the rating of this *kanji* cluster as the second easiest was unexpected. Open-ended responses to the most difficult *kanji* cluster to learn revealed that, for some students, the lack of any connection or common property with *kanji* in this cluster meant that they rated it as one of the more difficult *kanji* clusters to learn. Nevertheless, the simple nature of these *kanji* as well as their perceived usefulness, was for many sufficient reason to rate this *kanji* cluster as one of the easiest to learn. The *kanji* introduced in cluster seven, although devoid of any common property that connects them, are all basic single-unit *kanji* that do not have multiple components.

Therefore, based on these results, single-unit *kanji* may well be suited for introduction in the early stages of *kanji* education even in the absence of any interrelatedness with other *kanji*. Although impossible to determine, it is possible that because students knew this cluster was of elementary grade level *kanji*, that this may have affected their judgement. That is, some students may have been inclined to perceive this cluster as easy based on the fact that they are *kanji* which are normally taught to Japanese children. Furthermore, some participants may have known the *kanji* in this cluster and

this could have affected the outcome.

6.5   Research question 3:

Which kanji clusters do non-kanji background learners perceive as easy or difficult to learn?

The results of this stage of the research provide a wide range of information in relation to learners' perceptions of *kanji* clusters. Participants demonstrated a high degree of preference for some *kanji* clusters over others, indicating that learners do perceive some *kanji* clusters to be easier or more difficult than others.

In many cases, findings were consistent with expected outcomes. Most notably, the preference shown towards pictographs concurred with existing literature and was consistent with expected outcomes. On the other hand, some results were surprising and provided useful insights into how JFL learners may perceive *kanji* clusters. Most notable was the rating for cluster six (combined components) and cluster seven (Japanese elementary school). As for combined components, it was expected that JFL learners would perceive this cluster to be more logical and therefore easier to learn than many other clusters. As for Japanese grade one *kanji*, due to the lack of a common characteristic amongst the *kanji* in this cluster, it was expected that this cluster would be rated as one of the more difficult. In both cases, the opposite was the case.

The insights collected from this stage of the research provide a possible basis for deciding which *kanji* to introduce to students and which order to introduce them in. A proposed *kanji* order will be presented based on results from this stage of the research in the following chapter.

6.6   Limitations of Stage 3 of the research – Survey of JFL learners' perceptions of *kanji* clusters

There are some limitations in the present study. Firstly, the sample size was relatively small and therefore responses from this survey revealed information about that particular sample group, but a greater number of participants may provide greater insights into JFL learner perceptions of *kanji* clusters.

Secondly, as some participants had knowledge of *kanji* already, they may have been inclined to rate those *kanji* clusters containing *kanji* they knew as easier than those that perhaps that they had not yet encountered, regardless of how the *kanji* were organised into clusters. In other words, knowledge of the *kanji* introduced in the clusters may have affected participants' perception of that cluster and its level of difficulty.

Finally, the scope of the current study is limited to examining students' perceptions of *kanji* clusters. It is reasonable to assume that there would be some degree of consistency between students' perceptions of difficulty and the difficulty they would experience in the actual practice of learning these *kanji* clusters. However, this survey is only an indication of perception; therefore, further research is needed to ascertain the reliability of student responses in order to determine whether students' responses are indicative of students' ability to remember one *kanji* cluster more easily than others, or whether the findings from this study are only perceived levels of difficulty and not truly representative of actual difficulty.

6.7 Conclusion

This study demonstrated that certain *kanji* clusters one (pictographs) and seven (grade one Japanese elementary school) are perceived by students of Japanese as easier to learn than others. Participants clearly demonstrated which *kanji* clusters they perceived as both easy and difficult and gave reasons for their answers. Results such as the high degree of responses for pictographs as the easiest *kanji* cluster concur with existing literature and were consistent with predictions. On the other hand, results such as the combined components *kanji* cluster being selected by many students as the most difficult were unexpected due to the popularity of this approach in many of the self-study *kanji* textbooks, as was found in stage 1 of the research. Results from this study provide a useful insight into how JFL learners perceive *kanji* clusters and therefore may be helpful for teachers when designing a curriculum and selecting and ordering *kanji* to introduce.

In the final chapter, limitations of the three studies, recommendations for future research and conclusions will be presented.

CHAPTER 7: CONCLUSIONS

The preceding three chapters presented the research procedures, results and a discussion of those results from the three stages of research. In this final chapter, the research questions and conclusions are presented, the significant outcomes from the three stages of research are synthesised and the limitations of the study are considered. The implications of this study for *kanji* learning and teaching as well as recommendations on how this study can be applied to improve the efficiency of teaching and learning *kanji* are also presented. Finally, recommendations for future research and final conclusions are made.

7.1   Research questions and conclusions

The aim of this study was to investigate *kanji* order as a factor that facilitates the *kanji* learning process. *Kanji* order was investigated from three different perspectives: textbooks; Japanese language teachers; and JFL learners. Three research questions were formulated and investigated over three stages. This following section presents the conclusions reached based on the findings.

7.1.1   Research Question 1: How are Japanese language textbooks different from each other from the perspective of *kanji* selection and ordering?

To answer the first research question, a textbook analysis was conducted in which four Japanese language textbooks that incorporated *kanji* were analysed to determine the *kanji* selected for inclusion in the textbook and the presence of *kanji* orders. A *kanji* order was determined to be present when two consecutively introduced *kanji* had some common property.

Results from this stage of the research indicated that there are significant differences in

the *kanji* selected for inclusion in Japanese language textbooks. However, the overall presence of ordering strategies was similar across all four textbooks. Moreover, none of the Japanese language textbooks selected for inclusion in this stage of the research incorporated a component-based order. On the other hand, analysis of self-study *kanji* textbooks in Chapter 3 revealed that a component-based ordering strategy was adopted in many self-study *kanji* textbooks.

7.1.2 Research Question 2: What beliefs are held by Japanese teachers at universities in Australia, New Zealand, Canada, the UK and the US, in regard to teaching *kanji* to non-*kanji* background learners of Japanese?

To answer the second research question, a survey of teaching and learning beliefs was conducted in which Japanese language teachers employed at universities in Australia, New Zealand, Canada, the UK and the US were asked about their beliefs in relation to *kanji* teaching and learning. Survey responses to the closed questions were subjected to quantitative analysis and the comments section was subjected to qualitative analysis.

Quantitative analysis of the data revealed several major findings. Firstly, teachers agreed with the need for different teaching methods of *kanji* for non-*kanji* background learners. This finding confirmed basic assumptions made prior to conducting this survey and highlighted the need for advances in teaching methodology for teaching *kanji* to non-*kanji* background learners. Secondly, results from this stage of the research indicated that many Japanese language teachers believe that the order in which *kanji* are taught plays an important role in facilitating the *kanji* learning process, and a new order is needed to introduce *kanji*. Thirdly, qualitative analysis of the comments section of the survey revealed that the prevalent pedagogical approach to *kanji* instruction is to incorporate varied teaching and learning strategies to cater for

individual needs among learners. Finally, the survey revealed that many teachers believe that *kanji* are a troublesome area for non-*kanji* background learners and new teaching methods are needed. Some teachers also believed that limited time to teach *kanji*, amongst other reasons, meant that autonomous learning of *kanji* was also an important factor.

Based on the findings from this stage of the research, it can be concluded that there is room for the development of alternative approaches to JFL *kanji* education and a large majority of teachers would welcome a new order to introduce *kanji* if it is complementary to their syllabus.

7.1.3   Research Question 3: Which *kanji* clusters do non-*kanji* background learners perceive as easy or difficult to learn?

To answer the third research question, a student survey of *kanji* clusters was conducted in order to determine whether JFL learners perceive different criteria-based *kanji* clusters as easier as or more difficult than others, and if so, which *kanji* clusters do they express preference for and why. Survey responses to the closed questions were subjected to quantitative analysis and the comments section was subjected to qualitative analysis.

Analysis of the data collected in this survey revealed that JFL learners do perceive some *kanji* clusters as easier than others, and a 'hierarchy of difficulty' (see Section 7.5.3) of *kanji* was discovered. Findings in this stage of the research revealed that pictographs are overwhelmingly perceived as easier than other *kanji* clusters. This result concurred with existing literature. Single-component *kanji* such as those introduced in grade one at elementary school in Japan were rated as the second easiest *kanji* to learn. This finding was surprising as the *kanji* within this *kanji* cluster had no

common property beyond the fact that they were taken from grade one elementary school *kanji* taught in Japan. The mutual components cluster received some positive ratings but results indicated that some learners may find these *kanji* difficult to distinguish from one another due to similarity in appearance of *kanji* sharing the same component. Cluster 6 (combined components) was rated as the most difficult and many students indicated that these *kanji* can be confusing and said the fact that the combination of characters frequently lacked any logical connection to meaning or pronunciation increased the difficulty of remembering such *kanji*. This result was surprising as the analysis of self-study *kanji* textbooks in the literature review revealed that the component-based approach was the approach most frequently adopted. Student's perceptions therefore seemed to contradict the approach taken in self-study *kanji* textbooks.

Results from this stage of the research illustrated that for the sample group, JFL learners clearly identified preferences for *kanji* clusters in relation to how they perceived them as easy or difficult. Insights from this stage of the research provide useful information that can be used to create a structured syllabus that promotes incremental *kanji* development.

7.2   Significant outcomes

The research in this study had a number of significant outcomes with implications for JFL *kanji* education. The significant outcomes of this study are:

7.2.1   *Kanji* selection and ordering in Japanese language textbooks

Firstly, a comparison of *kanji* included in Japanese language textbooks revealed the absence of a standard approach to introducing *kanji* and very little justification on the

part of the authors as to why *kanji* were ordered the way they were. Secondly, the first stage of the research applied a new method of analysis developed specifically to analyse the sequence of *kanji* for the presence of *kanji* orders. Thirdly, a divergence in approaches to ordering *kanji* between Japanese language textbooks and self-study *kanji* textbooks was revealed. Whereas Japanese language textbooks relied heavily on contextual and compound *kanji* ordering patterns, self-study *kanji* textbooks relied heavily on a component-based approach. Neither approach seemed to implement an incremental approach to *kanji* learning that reflects JFL learners' perceptions of *kanji* as revealed in Stage 3 of the research.

7.2.2   Teachers beliefs in relation to *kanji* learning and teaching

Results indicated that many Japanese language teachers consider *kanji* to be difficult for non-*kanji* background learners and that the order *kanji* are taught can facilitate the *kanji* learning process. This is significant because it illustrates the need for improved *kanji* teaching methods for non-*kanji* background JFL learners. The degree of satisfaction teachers held in relation to current *kanji* teaching methodologies as well as their beliefs regarding technology in *kanji* education also reveal important areas that need improvement in JFL education.

7.2.3   JFL learners' perceptions on the difficulty of different types of *kanji* clusters

JFL learners clearly identified some *kanji* clusters as easier than others and some as more difficult than others and provided specific reasons for their choices. Based on these results, the concept of a 'hierarchy of difficulty' (see Section 7.5.3) was applied to *kanji* to create a unique approach to looking at *kanji* from the perspective of JFL learners. The basic premise for the hierarchy of difficulty of *kanji* is that some types of

kanji may be better introduced at different stages in the *kanji* learning process. The hierarchy of difficulty for *kanji* is a unique and alternative approach that provides teachers with a tool to predict learner difficulties by ranking certain types of *kanji* based on their perceived level of difficulty. The hierarchy of difficulty allows teachers to introduce *kanji* in a manner in which the perceived difficulty level of the *kanji* is incremental; that is, *kanji* are introduced in an order that gradually increases in difficulty. This is significant because it offers an alternative approach to selecting and ordering *kanji* that is fluid and can be complementary to an existing syllabus.

7.2.4   *Kanji* order

This is the first major study to investigate the order *kanji* are taught as a means to facilitating the *kanji* learning process and as such has contributed to the existing body of literature on JFL *kanji* education and has brought to light several issues that may inform future studies.

7.2.5   Practical application of findings in the research

Findings in this research in relation to *kanji* orders in textbooks and JFL learner's perceptions of *kanji* clusters can be applied to curriculum design and *kanji* teaching; therefore, the greatest contribution of this research is in the form of its potential for practical application.

7.3   Strengths and impact of the study

This study contributes to the field of JFL *kanji* education by recognising various *kanji* ordering strategies as well as broadening knowledge on three major areas:

1. Approaches to ordering *kanji* in Japanese language textbooks and self-study *kanji* textbooks; 2. Teachers' beliefs in relation to *kanji* learning and teaching; 3. JFL

learners' perceptions of different *kanji* clusters. Research into these three areas offers a unique contribution to the field of JFL *kanji* education by going beyond the limits of previous studies.

With knowledge of "ordering strategies" as an extra tool in the arsenal of Japanese language education, teachers can take advantage of opportunities to introduce more *kanji* by noting important connections between different *kanji,* and by providing a learning environment that supports incremental learning, as opposed to introducing *kanji* in an arbitrary manner or designing a *kanji* list based on the teacher's view as to which *kanji* are important. In the end, it is not about learning *kanji* that are the most frequently used or *kanji* that are deemed the most "important" but about helping learners achieve the highest level of proficiency. Therefore, the emphasis should be on efficient *kanji* learning and supporting learners to learn *kanji*. Although proficiency in a large number of *kanji* may not equate to overall Japanese proficiency, it is certainly a factor that can help learners engage in wider reading and promote overall proficiency. Moreover, *kanji* are an area that will present the greatest difficulty for non-*kanji* background JFL learners and therefore advancements in JFL *kanji* education are needed.

As seen from the existing literature, the emphasis in the majority of *kanji* related studies has been on learning strategies, and therefore this study represents a significant departure from previous approaches. The approach in this study emphasises efficiency by capitalising on the matrix of connections between *kanji*. This approach therefore represents a synergistic approach to learning *kanji* that emphasises careful consideration to the order in which *kanji* are introduced and not just learning strategies for remembering them.

7.4   Limitations of the study

Limitations for the three separate stages of research were addressed in their respective chapters. Limitations of the study as a whole will be considered here.

It was not the purpose of this research to prescribe any particular order in which *kanji* should be learned, as it is unlikely that one perfect order exists. Overall, this study has highlighted how the order in which *kanji* are learned can be manipulated to facilitate the learning process. This study did not incorporate any longitudinal studies by which different *kanji* orders could be tested, and further research is needed to test different *kanji* orders and how they can maximise efficiency in *kanji* learning.

One limitation to this study is that, although different approaches to ordering *kanji* were considered, greater attention was needed to address the multidimensional nature of *kanji*. One approach to *kanji* order cannot sufficiently cater to all dimensions of *kanji* and therefore learning objectives become a crucial consideration. For example, a context based approach to learning *kanji* may be an effective approach to learning *kanji* if the learning objective is to study the semantic connections between *kanji*. This approach would be ineffective, however, if the learner's objective was to study the *On*-readings of *kanji*.

When learning any foreign languages it is natural to ask which method is the "best", but as is usually the case with questions of this nature, the correct response is that there is no universal "best", but there can be new and alternate methods that may be better for some people. It is unlikely that any method exists by which JFL learners can tackle *kanji* with ease. Nevertheless, results from this study have highlighted the interrelated nature of *kanji* and how *kanji* order can be manipulated to facilitate the learning process and help JFL learners to grow and gain greater competence. In that sense, the

words of Johnson (1992) seem to encapsulate how this study, despite its limitations, has successfully contributed to the field of Japanese language education.

> The importance of research is not so much that it supplies definitive answers to questions such as "What is the best way to learn a language?" or "Which is the most effective method of L2 teaching?" It does not. Rather, research can help us gain a richer understanding of the many interrelated factors involved in learning. It can help us see how the ways we organize learning environments can promote or inhibit growth (p. 5).

7.5   Implications and recommendations

The study contributes to the field of JFL *kanji* education by recognising various *kanji* ordering strategies as well as broadening knowledge on how JFL learners perceive *kanji*. The findings of this study have implications for JFL *kanji* education in relation to *kanji* teaching and curriculum design. Based on the findings in this study, recommendations are made in which a hierarchy of difficulty for *kanji* has been formulated and recommendations for *kanji* order are presented.

7.5.1   Implications for JFL teaching

The findings in this research relate to the field of Japanese language teaching in three primary ways, 1. Student perceptions; 2. Teaching approach, and 3. Curriculum design.

These three areas will be considered in turn.

Findings from this research identified *kanji* clusters that JFL students perceive as both easy and difficult. Therefore, teachers who are aware of these student perceptions can better cater to students' needs by anticipating possible problems that students may encounter and adapting their teaching appropriately. For example, if a teacher is teaching *kanji* in the order that they are presented in a textbook, the teacher may spend

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more time explaining *kanji* that are introduced in an order that may present difficulties for students. Teachers should have a better understanding of how non-*kanji* background JFL learners will respond to certain types of *kanji* and why some *kanji* may pose difficulties for learners.

Moreover, teachers can apply *kanji* clustering strategies to teaching *kanji* by teaching learners about the interrelated nature of *kanji* and common properties shared by many *kanji*. The interrelated nature of *kanji* and *kanji* characteristics create connections between *kanji* that can help in memory retention. By implementing *kanji* ordering strategies, Japanese language teachers can help students to learn *kanji* more efficiently by ordering *kanji* in a way that will help them develop a strong foundation from which they will be able to tackle more advanced level *kanji*.

As for curriculum design, the research in this study has presented several *kanji* ordering strategies or *kanji* clustering strategies that can be considered when selecting *kanji* and deciding the order in which to teach them. When formulating lists of *kanji* for students, consideration of different ordering strategies and an understanding of how students perceive groups of *kanji* can function as a guide for teaching more logically and efficiently. Rather than introducing a list of *kanji* arranged simply because they either relate to the other parts of the course, or are a pre-existing list taken from a textbook, or simply because the teacher decides that they are "important", a greater level of thought can be applied to designing the curriculum and introducing *kanji* with greater consideration to their interrelatedness and with greater understanding of how learners may struggle with certain *kanji* orders but be more open to others.

7.5.2   Implications for JFL learners

It is important that JFL learners become aware of the characteristics of *kanji* and the

interrelated nature of the *kanji* so that they are equipped with a broader knowledge of *kanji* that will facilitate ongoing study of Japanese beyond completion of the course they are studying at university. Findings in this study revealed that some teachers thought it important that students become autonomous learners of *kanji*. *Kanji* can be ordered based on a number of criteria and it is through these criteria that we see the interrelated nature of *kanji*. The order in which *kanji* are taught is particularly important for beginner to intermediate level learners, as the *kanji* they learn in the early stages of the *kanji* learning process will become their foundation in *kanji* from which they can continue on to become more autonomous learners. A greater awareness of similar characteristics of *kanji* can be achieved by learning them in an order that allows this to be demonstrated. In turn, this will lead to a better understanding of *kanji* overall.

7.5.3   Recommendations: Hierarchy of difficulty for k*anji*

In the field of Second Language Acquisition (SLA), it is recognised that due to language differences in one's L1 and the target language, different aspects of the target language will present varying degrees of difficulty to the learner. Stockwell and Bowen (1965) devised a 'hierarchy of difficulty' through contrastive analysis of English and Spanish languages from which certain predictions could be made about learner difficulties.

In a similar approach, a hierarchy of difficulty for *kanji* has been formulated based on findings in this study. This hierarchy functions as a means of being able to predict learners' perceptions of difficulties with *kanji* and forms the basis for recommendations relating to *kanji* order proposed in the following section. This hierarchy of difficulty for *kanji* is formulated based on the findings in Stage 3 of the research and is meant to function as a guide by which teachers can adapt their teaching to introduce *kanji* in a

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way that will facilitate *kanji* learning. That is, it can form the basis for selecting *kanji* to introduce and can inform the teacher as to how students may respond to certain types of *kanji*. Not all learners will respond equally to all groups of *kanji* and this hierarchy is based on research done for the sample group in this study. Nevertheless, it does provide the JFL teacher with one more tool with which to approach *kanji* teaching. The validity of this model requires further testing and analysis based on more studies including JFL learners from different native languages.

Stage 3 of the research revealed that there was substantial agreement as to which *kanji* clusters are the easiest and most difficult. It was the inherent characteristics of *kanji* as well as the manner in which *kanji* are ordered that accounted for the difference in perceived difficulty.

Table 7.1: Hierarchy of difficulty for *kanji*

Difficulty Ranking	*Kanji*
1	**Pictographs**
2	**Single-unit *Kanji* (*kanji* comprising one component only)**
3	**Combined components(components from 1 & 2)**
4	**Mutual Component *Kanji***
5	**Compound *Kanji***
6	**Multiple Component *Kanji***

Pictographs were overwhelmingly regarded as the easiest *kanji* cluster in Stage 3 of the research, and those *kanji* that still closely represent their intended meaning are therefore rated as the easiest. Single-unit *kanji* are rated second in the hierarchy of

difficulty because they are visually simple and have a large number of single-unit characters with a high frequency of usage. In Stage 3 of the research, students clearly identified *kanji* that were combined components as difficult; however, some students indicated that that was due to the lack of any logical connection. *Kanji* that are comprised of different components make up the majority of *kanji,* and therefore a student of Japanese cannot avoid learning them. However, in the hierarchy of difficulty for *kanji*, combined components that combine components from levels one and two precede more difficult combinations. Recommendations for the order in which *kanji* are introduced will now be presented.

7.5.4   Recommendations: *Kanji* order

Based on the research conducted in this study, specific recommendations for teaching *kanji* have been formulated in the form of *kanji* learning stages. Each stage consists of types of *kanji* to be introduced as well as recommended learning strategies and *kanji* clustering strategies. These recommendations are meant to function as a flexible guide from which teachers can create their own *kanji* lists to introduce to learners. The recommendations provided herein are designed to achieve long term outcomes and are therefore suited for teaching Japanese at the undergraduate level where learners will typically study Japanese for three years at Australian universities.

JFL learners' preferences for certain *kanji* clusters in Stage 3 of the research revealed elements of *kanji* that affected the sample groups' perception of how easy or difficult the *kanji* cluster would be to learn. Although *kanji* difficulty ratings may not be the only factor to consider when designing an order in which to present *kanji*, it does provide us with a framework from which *kanji* can be introduced progressively without overwhelming the learner. With respect to *kanji* order, learners' perceptions of *kanji*

orders as well as a schematic approach to ordering *kanji* from which learners build upon their knowledge as they go creates a logical approach to structuring *kanji* order.

As sorting and grouping are ways of categorising data to provide memory traces to aid in recall, *kanji* clustering could be utilised as a teaching methodology in and of itself, and *kanji* orders may be broken down into smaller clusters so that each week learners are presented with a new *kanji* cluster. *Kanji* clustering highlights relationships among major groups and among the items in each subgroup, and therefore connections between *kanji* can be established to assist in making the *kanji* memorable. These recommendations are designed to be consistent with cognitive psychology and to assist learners in processing *kanji* and encoding them into their LTM. Therefore, in these recommendations, *kanji* are learned by associating new knowledge with the knowledge the learner has already acquired. In some respects, this resembles the component-based approach taken in many self-study *kanji* textbooks but differs on one important point. Information is acquired and allowed to become a part of the learner's knowledge base before new information that can be associated with that knowledge is introduced. In most self-learning texts, the tendency is to order *kanji* so that one *kanji* builds upon the next, but the new *kanji* that builds upon the one just taught is taught directly after it. In the recommendations provided here, learners focus on one type of *kanji* at each stage of their development and once learners have proceeded to a different level of development they will see how the *kanji* they have learnt previously are building blocks for the next level of learning development. This is a unique approach to *kanji* teaching that is designed to achieve best results over the long term as opposed to short-term.

There are several problems with the component-based approach so often found in *kanji* self-study textbooks. One such problem is that it is not user friendly for classroom use,

as the approach may be difficult for some learners, particularly beginner learners who may become overwhelmed. Furthermore, if as is the case in Heisig's book, the component-based approach is combined with mnemonics as a learning strategy, then this will be problematic for those learners who struggle with mnemonics. Moreover, as found in the survey of students on *kanji* clusters, learners rated the combined components as the most difficult *kanji* cluster to learn.

Recommendations for structuring *kanji* have been approached from the perspective of learners' *kanji* ability. *Kanji* recommendations are provided from the perspective that at certain stages of ability, learners will be able to better deal with certain types of *kanji*, yet each stage builds a foundation from which the learner can progress to the next stage in learning. For example, in order not to overwhelm learners and to introduce *kanji* that learners will be able to learn without too much difficulty, results from this study and others provide sufficient evidence to support introducing simple pictographs in the early stages of learning. Pictographs that still closely resemble their intended meaning are an appropriate means to first introduce *kanji*. Many *kanji* that may be classified as pictographs but no longer closely represent their intended meaning are better left to latter stages of learning. That pictographs are generally the best *kanji* to introduce first has been widely accepted, the challenge has always been what *kanji* to introduce once these simple pictographs have been introduced. Therefore, frequency of usage has generally taken over beyond this point as the most important criterion for selecting *kanji* to be taught. Although learners identified *kanji* usefulness as an important factor, and introducing frequently used *kanji* may aid in student motivation to some degree, priority should be given to incremental learning that produces long term student outcomes. Table 7.2 below outlines *kanji* ordering recommendations through learning stages. The time allocated to each stage of *kanji* learning will depend

on two factors: 1. The amount of time that the learner will undertake *kanji* study, and, 2. The number of *kanji* that fall within the category of *kanji* in each learning stage. For example, stage one may only require two or three weeks of study while stage six may take one year or longer.

Table 7.2: *Kanji* ordering recommendations

STAGE ONE: Pictographs that closely resemble their intended meaning	Results in this study and others clearly indicate that students find pictographs to be the easiest type of *kanji* to learn. As many pictographs no longer closely resemble the object they were first intended to resemble, this stage should introduce those pictographs that still closely resemble their intended meaning. For example, 山 (*yama*/mountain)
STAGE TWO: Single Component Characters	Results indicated that learners perceived simple single component *kanji* as easier and that there was a tendency to consider high frequency *kanji* as useful. Although these characters may lack the high degree of relationship between *kanji* and meaning as pictographs, their visual simplicity and usefulness make them suitable *kanji* to teach after pictographs. For example, 古い(***furu****i*/old). These *kanji* provide learners with a good foundation in *kanji* so that they may better deal with more complex *kanji* in later stages. Context-based approaches and *kanji* of opposite meanings may be introduced here to facilitate the learning process.
STAGE THREE: Repeating Components	As the first step in introducing multiple component *kanji*, *kanji* comprised of two or three of the same *kanji* are in many cases logical in their relation to meaning and enable learners to see how *kanji* that they have already learnt can be combined with other *kanji* components to create a different meaning. This serves as a good introductory step to introducing multiple component *kanji*. For example, as learners will have already learnt the *kanji* 木 （*ki*/tree） as a pictograph in stage one, it is a logical progression for learners to relate the meaning of the *kanji* which incorporates two or three trees. Eg. 林 (*hayashi*/grove) and 森 (*mori*/forest)

**Table 7.2: *Kanji* ordering recommendations (contd.)**

STAGE FOUR: Multiple known components with a logical connection	*Kanji* comprised of two components but two components of which the learner is familiar with from stage one and two in the *kanji* learning process. In this stage of the *kanji* learning process, multiple components that go together and make a logical connection to their intended meaning are recommended. For example, 好 (*suki*/like). By this stage learners would have learnt both individual components for this *kanji* (女 and 子) and introduction of learning strategies such as mnemonics can assist learners to cope with multiple component *kanji*. *Kanji* with mutual components can also be discussed at this stage as well as discussing radicals and their functions.
STAGE FIVE: Multiple component *kanji* (One known combined with unknown non-standalone *kanji*).	After learners are familiar with multiple component *kanji* which combine two or more independent *kanji* in stage four, learners can now advance to tackle *kanji* which combine independent *kanji* with components that are not in and of themselves standalone *kanji*. For example, 活 (*katsu*) – learners would have learned the *kanji* 舌 (*shita*/tongue) in stage two and although they would also have learnt the *kanji* 水 (*mizu*/water), until now however learners would not have been aware of the radical for water.

Table 7.2: *Kanji* Ordering Recommendations (contd.)

STAGE SIX: **Multiple non-independent *kanji* combinations**	By this stage in the *kanji* learning process, learners will have a strong foundation in *kanji* and will be able to handle more complex combinations of *kanji*. In this stage of the learning process, it is important to ensure that learners are familiar with structural elements of *kanji* and how components function as semantic and phonetic elements of *kanji*. This stage of development coupled with extensive reading on the part of the learner will bring the learner much closer to reading fluency. In this stage, learners will learn *kanji* that combine elements which in and of themselves are not standalone *kanji*. For example, 寂しい(***sabi****shii*/lonely) which combines a radical and a phonetic which are both non-independent *kanji*.

Based on these recommendations, multiple examples of how learners would progress through these stages of *kanji* learning can be described. The process allows learners to develop their *kanji* ability without being overwhelmed and allows learners to build on knowledge they have and to associate each *kanji* with previous knowledge. These recommendations are designed to take advantage of learners' perceptions of *kanji* and to ease their development from basic *kanji* to more complex multiple component *kanji*. This approach to ordering *kanji* in combination with learning strategies will produce better *kanji* recall and a more logical and efficient progression through the different stages of learning.

Following is an example of how a learner may potentially learn *kanji* by tackling different types of *kanji* at different stages in their development.

Stage Two
舌
(*shita*/tongue)

↓

Stage Four
話す
(*hanasu*/speak)

↓

Stage five
生活
(*seikatsu*/lifestyle)
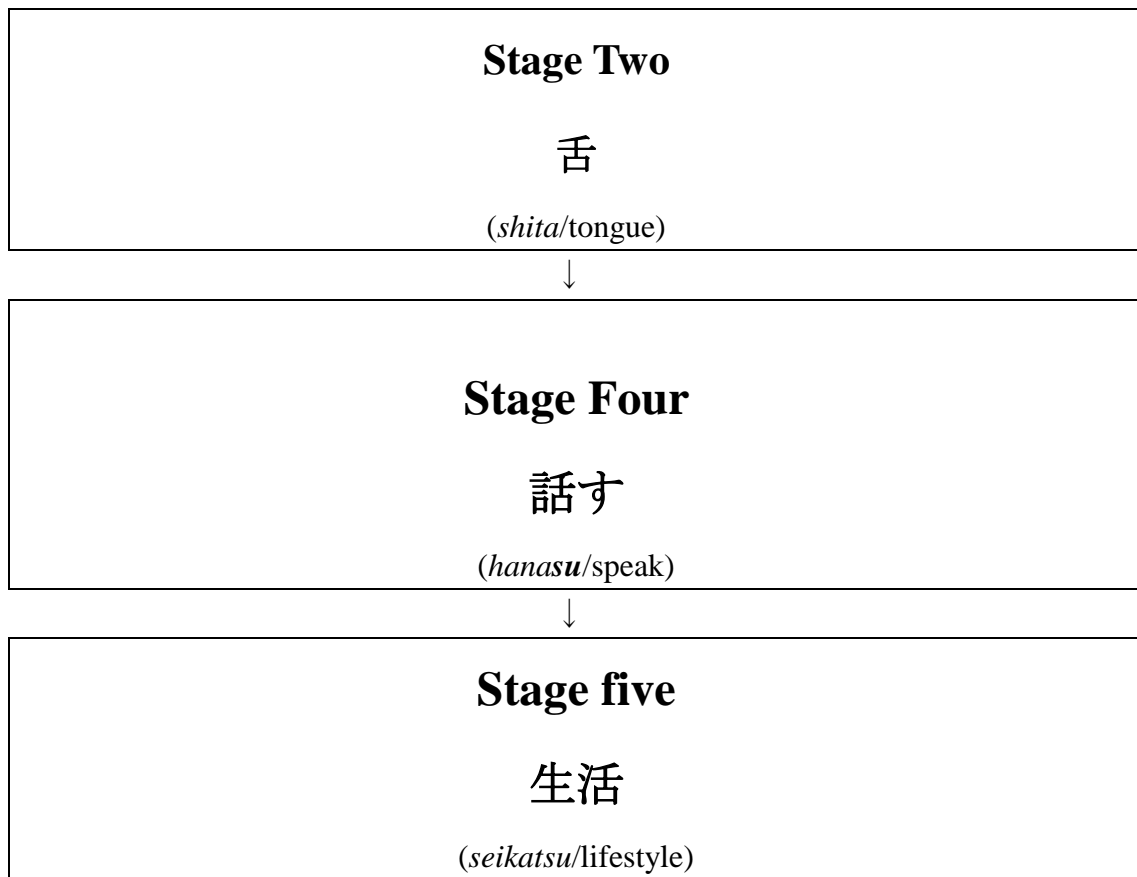
Figure 7.1: Example of *kanji* learning through stages

In practice, the above progression of *kanji* learning would begin with the learner learning the *kanji* for "tongue" in stage two as a single-unit *kanji*. The learner would then once again return to the *kanji* for "tongue" in stage four, where the *kanji* reappears as a multiple component *kanji* that logically combines with another known *kanji* (also learnt in stage two) to form the *kanji* for "speak". Then, the learner would once again return to the *kanji* for "tongue" in stage five where the learner now sees how the single-unit *kanji* for "tongue" can be combined with the water radical to make part of the word for "lifestyle".

At Japanese elementary school, the *kanji* for tongue is taught after both the *kanji* for speak and the second *kanji* for lifestyle, with both 話す（***hana*su**/speak）活 (*katsu*/lively) taught in grade 2 and 舌 (*shita*/tongue) taught in grade five. The

approach recommended here therefore will differ from the approach taken in teaching *kanji* to native Japanese. This approach does share some resemblance to the component-based approach often employed in self-learning texts, but differs in that the use of the component in multiple-component *kanji* is not immediately taught but delayed to allow learners to focus on one particular type of *kanji* at a time. For example, the *kanji* in the example above are taught consecutively in Conner's *The Kodansha Kanji Learner's Course* (2013) with the *kanji* 舌(*shita*/tongue) taught 52nd, the *kanji* 話す（***hana**su*/speak）taught 53rd and 活(*katsu*/lively) taught 54th. Results in Stage 3 of the research clearly showed that learners find multiple component *kanji* difficult and confusing; therefore, the approach recommended here allows learners to gradually tackle more difficult *kanji* combinations only after acquiring a solid foundation. Also, these *kanji* would only be taught after some time had lapsed. Therefore, the order in which these *kanji* are learnt would be the same as in Conner's course, but they would not be learnt consecutively.

This approach to learning *kanji* has the advantage that certain learning strategies will work well at certain stages in *kanji* learning development. For example, rote learning would be a suitable strategy to incorporate in stages one and two and mnemonics would be useful for helping learners cope with multiple component *kanji* in the later stages.

7.5.5   Recommendations for future research

This study was the first major study to investigate *kanji* order and its role in facilitating the *kanji* learning process. As such, this study has brought to light areas that could be addressed in future research. Three main areas are recommended for future research.

Firstly, further research into *kanji* order is needed. In this chapter, a number of

recommendations have been made in relation to *kanji* order. Further research that incorporates these suggestions to test their effectiveness would produce useful data to this end. In particular, a longitudinal study that incorporates the suggestions made in this chapter and examines the impact of *kanji* order on *kanji* acquisition would help advance our understanding of *kanji* order and its role in *kanji* education. Stimulated recall tasks using *kanji* clusters from this study may also provide further insights into the relationship between *kanji* clusters and *kanji* acquisition.

Secondly, this study implemented a new approach to analysing *kanji* in textbooks by examining the relationship between consecutively introduced *kanji*. This method provided insights into how *kanji* order was approached in Japanese language textbooks.

One suggestion for further research in this area would be to expand the study to analyse a broader range of textbooks, including textbooks designed for intermediate and advanced learners as well as in-house *kanji* teaching materials used at universities. Such research may offer further insight into the types of *kanji* that could be introduced and particular strategies for ordering those *kanji* for varying levels of JFL learners.

Finally, one further direction that future research could take would be to expand on the research conducted in this study in relation to teachers' beliefs. Qualitative studies that include semi-structured interviews and access to in-house *kanji* teaching materials may provide useful insights in to possible approaches to ordering *kanji*.

7.6   Conclusion

The process of learning any foreign language can be an arduous path, but for non-*kanji* background JFL learners faced with the challenge of learning *kanji*, this task can seem almost insurmountable. What approaches to learning and teaching *kanji* can facilitate the learning process and maximise efficiency in learning and teaching *kanji*? This line of thought was the seed from which this study into *kanji* order germinated. A review of the literature revealed that although a number of existing approaches to ordering *kanji* existed, this was still a largely underexplored area, and the majority of the literature on *kanji* education for JFL learners focused on learning strategies. This study therefore sought to investigate *kanji* order as a means for facilitating *kanji* learning and teaching by examining *kanji* order from the perspective of textbooks, teachers and students.

In conclusion, this study explored *kanji* order as a means to help students tackle the *kanji* hurdle. By better understanding the order in which *kanji* are introduced to JFL learners, as set out in this thesis, we can better see how *kanji* order can be manipulated to facilitate learning and how we can begin to better support JFL learners in learning *kanji*. This study has contributed to the field of Japanese language education by examining *kanji* order and presenting a means in which findings can be adapted and have pedagogical implications for the selection and ordering of *kanji*.

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APPENDICES

Appendix A: Textbook Analysis materials

Appendix B: Survey of Teacher Beliefs materials

Appendix C: *Kanji* Cluster Survey materials

Appendix D: Ethics approval letters

Appendix A1

Comparison of *kanji* included in four Japanese Language Textbooks

	Genki	Yokoso	*Nakama*	Minna	
日	1	1	1	1	4
本	1	1	1	1	4
人	1	1	1	1	4
月	1	1	1	1	4
火	1	1	1	1	4
水	1	1	1	1	4
木	1	1	1	1	4
金	1	1	1	1	4
土	1	1	1	1	4
曜	1	1	1	1	4
上	1	1	1	1	4
下	1	1	1	1	4
中	1	1	1	1	4
山	1	1	1	1	4
今	1	1	1	1	4
先	1	1	1	1	4
生	1	1	1	1	4
大	1	1	1	1	4
学	1	1	1	1	4
小	1	1	1	1	4
休	1	1	1	1	4
何	1	1	1	1	4
一	1	1	1	1	4
二	1	1	1	1	4
三	1	1	1	1	4
四	1	1	1	1	4
五	1	1	1	1	4
六	1	1	1	1	4
七	1	1	1	1	4
八	1	1	1	1	4
九	1	1	1	1	4
十	1	1	1	1	4
百	1	1	1	1	4
千	1	1	1	1	4

万	1	1	1	1	4
円	1	1	1	1	4
時	1	1	1	1	4
半	1	1	1	1	4
川	1		1	1	3
気	1	1	1	1	4
天	1	1	1	1	4
田	1		1	1	3
女	1	1	1	1	4
男	1	1	1	1	4
見	1	1	1	1	4
行	1	1	1	1	4
食	1	1	1	1	4
飲	1	1	1	1	4
東	1	1	1	1	4
西	1	1	1	1	4
南	1	1	1	1	4
北	1	1	1	1	4
口	1	1	1	1	4
出	1	1	1	1	4
右	1	1		1	3
左	1	1		1	3
分	1	1	1	1	4
外	1	1		1	3
国	1	1		1	3
子	1	1	1	1	4
会	1	1	1	1	4
父	1	1	1	1	4
母	1	1	1	1	4
高	1	1	1	1	4
校	1		1	1	3
毎	1	1	1	1	4
語	1	1	1	1	4
入	1	1	1	1	4
員	1	1		1	3
聞	1	1	1	1	4
作	1	1	1	1	4

事	1	1		1	3
電	1	1		1	3
言	1	1		1	3
読	1	1	1	1	4
午	1	1	1	1	4
後	1	1	1	1	4
前	1	1	1	1	4
名	1	1		1	3
白	1	1		1	3
雨	1	1	1	1	4
間	1	1	1	1	4
家	1	1	1	1	4
話	1	1	1	1	4
少	1	1	1	1	4
来	1	1	1	1	4
年	1	1	1	1	4
売	1	1		1	3
買	1	1	1	1	4
町	1	1		1	3
長	1	1		1	3
道	1	1		1	3
夜	1	1		1	3
朝	1	1	1	1	4
手	1	1	1	1	4
好	1	1	1	1	4
近	1	1		1	3
明	1	1	1	1	4
勉	1	1		1	3
強	1	1		1	3
有	1	1		1	3
起	1	1	1	1	4
使	1	1		1	3
度	1	1	1	1	4
赤	1	1		1	3
青	1	1		1	3
週		1	1	1	3
元	1		1	1	3

私	1		1		2
京	1			1	2
社	1			1	2
帰	1		1	1	3
新	1		1	1	3
仕	1			1	2
車	1			1	2
思	1		1	1	3
書	1		1	1	3
友	1		1	1	3
古	1		1	1	3
知	1			1	2
住	1			1	2
雪	1	1	1		3
立	1			1	2
自	1			1	2
持	1			1	2
紙	1			1	2
病	1			1	2
院	1			1	2
映	1			1	2
画	1			1	2
歌	1			1	2
市	1	1			2
旅	1			1	2
早	1			1	2
牛	1	1			2
色	1	1			2
昼		1	1	1	3
動		1		1	2
黒		1		1	2
主		1		1	2
肉		1		1	2
魚		1		1	2
物		1		1	2
茶		1		1	2
酒		1		1	2

店		1	1	1	3
切		1		1	2
花		1		1	2
暗		1		1	2
多		1	1	1	3
悪		1		1	2
料		1		1	2
理		1		1	2
終		1		1	2
同		1		1	2
方		1	1	1	3
服		1		1	2
音		1		1	2
楽		1		1	2
春		1	1	1	3
夏		1	1	1	3
秋		1	1	1	3
冬		1	1	1	3
運		1		1	2
族		1	1	1	3
兄		1	1	1	3
弟		1	1	1	3
姉		1	1	1	3
妹		1	1	1	3
部		1		1	2
屋		1		1	2
味		1		1	2
文	1				1
次	1				1
正	1				1
所	1				1
昔	1				1
々	1				1
神	1				1
働	1				1
連	1				1
別	1				1

末			1		1
医				1	1
者				1	1
晩			1	1	2
去			1	1	2
駅				1	1
転				1	1
安			1	1	2
犬				1	1
達				1	1
写				1	1
真				1	1
英				1	1
送				1	1
貸				1	1
借				1	1
教				1	1
習				1	1
歩				1	1
待				1	1
止				1	1
広				1	1
短				1	1
重				1	1
軽				1	1
便				1	1
利				1	1
親			1	1	2
地				1	1
鉄				1	1
目			1	1	2
足			1	1	2
降				1	1
寝			1	1	2
漢				1	1
字				1	1
図				1	1

265

館				1	1
銀				1	1
着				1	1
堂				1	1
建				1	1
体				1	1
乗				1	1
内				1	1
奥				1	1
海				1	1
計				1	1
室				1	1
窓				1	1
開				1	1
閉				1	1
意				1	1
考				1	1
遠		1			1
夕		1			1
回		1	1		2
風		1	1		2
台		1			1
番		1	1		2
弱		1			1
昨		1	1		2
暑		1	1		2
寒		1	1		2
空		1			1
全		1			1
思		1			1
始		1			1
鳥		1			1
湯		1			1
野		1			1
米		1			1
品		1			1
和		1			1

洋		1	267		1
貝		1			1
場		1			1
引		1			1
返		1			1
黄		1			1
耳			1		1
両			1		1
晴			1		1
温			1		1
冷			1		1
供			1		1
	145	170	127	220	662

Appendix A2 *Kanji* Orders

GENKI 1 (Second Edition): An Integrated Course in Elementary Japanese

Criterion	Applicable *kanji*
Etymological based order	（山、川、元）（人、月、火、水、木、金、土）（中、半）（田、女）（見、行、食）（口、出）（生、大）（京、子、小、会）（白、雨）
Component based order Eg. （田、力、男）、（女、子、好）	
Mutual Components Eg. 王、玉、宝、珠、現、狂、皇	（作、仕）、（言、読）（使、働）（食、飲）
Context based order Eg. 手、足、首、頭、耳、鼻、口、(hand, foot, neck, head, ear, nose, mouth)	(女、男)(月、火、水、木、金、土、曜) （一、二、三、四、五、六、七、八、九、十、百、千、万,円、時)（上、下、中、半）（山、川）（東、西、南、北）（父、母）（赤、青、色）（朝、夜）
Kanji Compounds Eg. 先、生　（先生/teacher）	（日、本、人),(元、気、天),(先、生) ,（大、学),(外、国)(会、社) (高、校)(父、母)(新、聞)(仕、事)(電、車)(午、後)(売、買)(手、紙)(病、院)(映、画)(勉、強)(昔、々)（上、下）（女、男）（北、口、出）（右、左）（後、前）（前、名）（町、長）（立、自）（青、色）（東、西、南、北）（道、雪）
Opposites	（右、左）（上、下）（女、男）（東、西）（南、北）（父、母）（後、前）（売、買）（夜、朝）
Other Orders	（早、起）

Nakama 1a and 1b

Criterion	Applicable *kanji*
Etymological based order	（山、川、田、人）（月、火、水、木、金、土）（半、毎）（番、方）（行、来）（出、会）（女、目、口、耳、足、手）（雨、雪）
Component based order Eg.（田、力、男）、（女、子、好）	
Mutual Components Eg. 王、玉、宝、珠、現、狂、皇	（食、飲）（雨、雪）
Context based order Eg. 手、足、首、頭、耳、鼻、口、(hand, foot, neck, head, ear, nose, mouth)	（月、火、水、木、金、土、曜）、（上、中、下）（山、川、）（時、間、分、半）（一、二、三、四、五、六、七、八、九、十、百、千、万、円）（男、女）（目、口、耳、足、手）（父、母、姉、兄、妹、弟、家、族、両、親、子）（天、気、雨、雪、風、晴）（東、西、南、北）（春、夏、秋、冬）（朝、昼、晩）
Kanji Compounds Eg. 先、生　（先生/teacher）	（大、学、校）（先、生）（日、本）（週、末）（上、中、下）(時、間)（毎、年）（行、来）（食、飲）（見、聞）（読、書）（男、女）（足、手)(父、母)（家、族）（両、親）（天、気、雨、雪、風）(温、度)（東、西、南、北）（寒、暑）（多、少）（春、夏、秋、冬）（午、前、後）
Opposites Eg. *Kanji* of opposite meanings 上、下（up/down）	(新、古)（行、来）（起、寝）（男、女）（父、母）（姉、兄）（妹、弟）（親、子）（東、西）（南、北）（寒、暑）（多、少）（前、後）
Other Orders	（何、週）（出、会）（起、寝）

※other order: a connection is possible but it doesn't fit within an existing category. Eg. 何週、何日、何曜, etc Includes words that would incorporate *okurigana* e*g.* 出会う, 寝起き, etc.

Yookoso!: an invitation to contemporary Japanese

Criterion	Applicable *kanji*
Etymological based order	（月、人）（山、口）（万、方）（来、行）（食、出）（毎、回、見）（火、水、木、金、土、会）（雨、雪）（女、子、母）（楽、全）
Component based order Eg. （田、力、男）、（女、子、好）	
Mutual Components Eg. 王、玉、宝、珠、現、狂、皇	（近、遠）（姉、妹）（話、語）（朝、明）（雨、雪）
Context based order Eg. 手、足、首、頭、耳、鼻、口、(hand, foot, neck, head, ear, nose, mouth)	（一、二、三、四、五、六、七、八、九、十、百） （左、右、中、外、前、後）、（千、万）（男、女、子、母、父、兄、弟、姉、妹）（春、夏、秋、冬、）（東、西、南、北） （火、水、木、金、土）（茶、酒）（牛、鳥）（黒、色）（赤、青）
Kanji Compounds Eg. 先、生　（先生/teacher）	（日、本、学、生）（天、気、雨、雪）（風、台、番）（音、楽）（全、部）（間、半）（上、下）（運、動）（料、理）（左、右）（前、後）（近、遠） （朝、明）（来、行）（今、週）（毎、回）（強、弱）（多、少）（暑、寒、空）（男、女、子、母、父、兄、弟、姉、妹）（終、始）（和、洋）（場、市）（黒、色）（春、夏、秋、冬）（東、西、南、北）
Opposites Eg. *Kanji* of opposite meanings 上、下 (up/down)	（多、少）（強、弱）（暑、寒）（上、下）（左、右）（前、後）（中、外）（近、遠）（来、行）（男、女）（母、父）（兄、弟）（姉、妹）（終、始）（和、洋）（東、西）（南、北）
Other Orders	(年、何、月）（売、切）

Criterion	Applicable *kanji*
Etymological based order	（日、月、火、水、木、金、土、山、川、田）（半、午）（行、来）（車、自）（大、小）（母、子、手）（主、肉、魚、食）（女、犬）（止、雨、入、出）（少、長）（口、目、足）
Component based order Eg. （田、力、男）、（女、子、好）	
Mutual Components Eg. 王、玉、宝、珠、現、狂、皇	（使、作）（明、暗）（室、窓）（開、閉）
Context based order Eg. 手、足、首、頭、耳、鼻、口、(hand, foot, neck, head, ear, nose, mouth)	（日、月、火、水、木、金、土）（山、川）（一、二、三、四、五、六、七、八、九、十、百、千、万、円)(朝、昼、晩)(青、白、赤、黒)（父、母、子）,(肉、魚)(茶、酒)（男、女）（教、習、勉、強）（東、西、南、北）（口、目、足、）（春、夏、秋、冬）、（家、内、族、兄、弟、奥、姉、妹、）（部、屋、室、窓）（駅、電、車、自、転）
Kanji Compounds Eg. 先、生　（先生/teacher）	(学、生、先)（会、社、員）（医、者）,（中、国、人）（今、朝）（午、前、後）（行、来、校）（去、年）（電、車、自、転、動）（大、小）（新、古）（上、下）（父、母、子）（肉、魚）（食、飲、物）（右、左）（男、女）（友、達)(写、真)(映、画)(英、語)（切、貸、借）（教、習）（勉、強）（出、入）（多、少）（長、短） （便、利）（元、気、）（有、名、地）（仕、事）（料、理）（漢、字）（東、西、南、北）（病、院）（家、内） 、（音、楽）、（部、屋）（意、味）（兄、弟）（姉、妹）（開、閉）（間、近）
Opposites meanings 上、下 (up/down)	（前、後)(行、来),(高、安)(大、小）（新、古),(上、下),（父、母）（男、女)(右、左)（貸、借）（入、出）（明、暗）（多、少）（長、短、）（重、軽）（東、西）（南、北）（開、閉、）（兄、弟）（姉、妹）
Other Orders	（時、分、半）（立、止）

Appendix B1

Recruitment email for survey of teachers' beliefs

Dear..

My name is Simon Paxton, I am a PhD candidate at Macquarie University in Australia. I am currently researching *kanji* teaching and learning beliefs and would like to request your participation in a survey.

The purpose of this survey is to determine the *kanji* teaching/learning beliefs of Japanese teachers at the undergraduate level. Results attained from this survey will make up part of my research for my PhD thesis and as such your contribution is both valuable and greatly appreciated.

This study is being conducted to meet the requirements of the Doctor of Philosophy in International Studies under the supervision of Dr. Chavalin Svetanant (email: chavalin.svetanant@mq.edu.au, Phone: 02 9850 7044) of the Department of International Studies at Macquarie University.

The survey should take no longer than fifteen to twenty minutes to complete. Any information or personal details gathered in the course of the study are confidential. No individual or institution will be identified in any publication of the results.

To take the survey, please go to:
https://www.surveymonkey.com/s/*kanji*survey
Thank you for your time.
Sincerely,
Simon Paxton

Appendix B2
Survey of teaching beliefs

1. Gender

○ Male

○ Female

2. Native language

○ Japanese

○ English

○ Other

3. Years of language teaching

[ ]

Directions: Please click on the response that corresponds to your degree of agreement with the statements below.

4. Kanji teaching methods employed at your university result in adequate proficiency in kanji among undergraduate students by the time students complete their degree.

Strongly Agree	Agree	Disagree	Strongly Disagree
○	○	○	○

5. Sufficient time is allocated to teaching kanji in class at the undergraduate level at your university.

Strongly Agree	Agree	Disagree	Strongly Disagree
○	○	○	○

6. Currently available Japanese textbooks are adequate for teaching kanji at the undergraduate level.

Strongly Agree	Agree	Disagree	Strongly Disagree
○	○	○	○

7. Technology offers many possibilities with regard to teaching and learning kanji.

Strongly Agree	Agree	Disagree	Strongly Disagree
○	○	○	○

8. Technology is sufficiently utilized in the kanji teaching process at your university.

Strongly Agree	Agree	Disagree	Strongly Disagree
○	○	○	○

9. Listening and speaking skills in Japanese are more important than reading and writing skills.

Strongly Agree	Agree	Disagree	Strongly Disagree
○	○	○	○

10. The ability to read kanji is a more important skill than the ability to write kanji.

Strongly Agree	Agree	Disagree	Strongly Disagree
○	○	○	○

11. Increased use of computerized technology has minimized the need for students to learn how to write kanji.

Strongly Agree	Agree	Disagree	Strongly Disagree
○	○	○	○

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12. Kanji are the most difficult part of the Japanese language for students whose native language does not incorporate their usage.

Strongly Agree	Agree	Disagree	Strongly Disagree
◯	◯	◯	◯

13. Non-kanji background students are at a disadvantage to learning Japanese compared to those students whose native language incorporates kanji usage.

Strongly Agree	Agree	Disagree	Strongly Disagree
◯	◯	◯	◯

14. Non-kanji background students of Japanese require instruction in kanji different from instruction given to Japanese language students whose native language incorporates kanji.

Strongly Agree	Agree	Disagree	Strongly Disagree
◯	◯	◯	◯

15. Improved methods of teaching kanji to students from non-kanji backgrounds are needed.

Strongly Agree	Agree	Disagree	Strongly Disagree
◯	◯	◯	◯

16. Teaching learning strategies such as rote learning and mnemonics are an important part of teaching kanji.

Strongly Agree	Agree	Disagree	Strongly Disagree
○	○	○	○

17. Rote learning is the most commonly used learning strategy employed by students of Japanese from non-kanji backgrounds.

Strongly Agree	Agree	Disagree	Strongly Disagree
○	○	○	○

18. Rote learning is an effective learning strategy.

Strongly Agree	Agree	Disagree	Strongly Disagree
○	○	○	○

19. Mnemonics are an effective learning strategy.

Strongly Agree	Agree	Disagree	Strongly Disagree
○	○	○	○

20. Component based instruction such as teaching radicals and breaking kanji down into separate components is an effective kanji teaching method.

Strongly Agree	Agree	Disagree	Strongly Disagree
○	○	○	○

21. Teaching the etymology of kanji is an effective teaching method

Strongly Agree	Agree	Disagree	Strongly Disagree
○	○	○	○

22. Kanji are best taught in context.

Strongly Agree	Agree	Disagree	Strongly Disagree
○	○	○	○

23. The order in which kanji are taught is an important factor in facilitating memory recall of the kanji.

Strongly Agree	Agree	Disagree	Strongly Disagree
◯	◯	◯	◯

24. Kanji are best taught in the order they appear in the textbook.

Strongly Agree	Agree	Disagree	Strongly Disagree
◯	◯	◯	◯

25. Kanji are best introduced in an order that introduces the most frequently used kanji in Japanese first.

Strongly Agree	Agree	Disagree	Strongly Disagree
◯	◯	◯	◯

26. Kanji are best taught to non-kanji background students in the same order that they are taught to native Japanese students.

Strongly Agree	Agree	Disagree	Strongly Disagree
◯	◯	◯	◯

27. The typology of kanji (i.e. its form, shape, and symmetry) is an important consideration in deciding on the order kanji are introduced.

Strongly Agree	Agree	Disagree	Strongly Disagree
◯	◯	◯	◯

28. Introducing kanji in the order currently used at your university is an effective way of teaching kanji to non-kanji background students.

Strongly Agree	Agree	Disagree	Strongly Disagree
◯	◯	◯	◯

29. A new order for introducing kanji to non-kanji background students is needed.

Strongly Agree	Agree	Disagree	Strongly Disagree
◯	◯	◯	◯

30. Do you have any comments or suggestions with regard to teaching kanji to students from non-kanji backgrounds?

KANJI KANJI KANJI

漢字がだいすき！

- **Are you a Japanese Language Student at Macquarie University?**
- **Do you find *kanji* difficult to remember?**
- **Would you like to learn more about *kanji*?**

Become a…

Kanji Ninja

Participate in a study about *kanji* TODAY!

Visit:

www.*kanji*ninja.com

Note: The black squares on the following pages indicate where a video was positioned.

You are invited to participate in a study of kanji clusters. The purpose of this survey is to determine the perceived ease and difficulty of kanji grouped together with a common property. Results attained from this survey will make up part of my research for my PhD thesis and as such your contribution is both valuable and greatly appreciated.

This study is being conducted by Simon Paxton to meet the requirements of the Doctor of Philosophy in International Studies under the supervision of Dr. Chavalin Svetanant (email: chavalin.svetanant@mq.edu.au, Phone: 02 9850 7044) of the Department of International Studies at Macquarie University.

If you decide to participate, you will be asked to complete a short one time survey on kanji clusters. The survey consists of rating kanji clusters according to how easy or difficult you feel they would be to learn followed by a comments section. The survey should take no longer than fifteen to twenty minutes to complete. Question 13 of this survey asks for students who are willing to participate in an interview to leave their email address so that they may be contacted. In the case of both the survey and interviews, any information or personal details gathered in the course of the study are confidential. No individual or institution will be identified in any publication of the results.

Results of this survey will comprise part of Simon Paxton's PhD thesis and a summary of the results of the data can be made available to you on request by contacting Simon Paxton at simon.paxton@students.mq.edu.au.

Participation in this study is entirely voluntary: you are not obliged to participate and if you decide to participate, you are free to withdraw at any time without having to give a reason and without consequence. Results from this survey will not be accessed by any person until the semester is finished and grading is completed.

If you have read and understand the information above and any questions you have asked have been answered to your satisfaction, please consent to your participation by clicking on the "next" button below.

Survey Explanation

Kanji have various properties and origins. For example, some kanji are derived from pictures, some kanji share the same component, some kanji are pronounced the same, etc.

Below are several kanji clusters (kanji groups) grouped together based on a common property. Each cluster includes an explanation which identifies the common property. Look at the kanji clusters and consider
which cluster you think would be easy or difficult to learn. Does the common property make those kanji easier to remember? Remember that if you were to learn each of the kanji in the cluster, you would have to learn the meaning, the reading (pronunciation), and how to write the kanji. Consider that when you rate each group.

Please rate each kanji cluster on the scale provided based on how difficult or easy you think it would be to learn that kanji cluster. Finally, in the comments section at the end, please identify the cluster or clusters which you felt would be the easiest to learn and the most difficult to learn. State your reasons. Please use the cluster numbers to identify the cluster. For example, "I thought cluster "2" would be easy to learn because..."

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1. The kanji in this cluster are pictographs. How would you rate their level of difficulty? Cluster 1: 山 ("yama"/mountain)、川 ("kawa"/river)、田 ("ta"/rice field)、人 ("hito"/person)、女("onna"/woman)、子 ("ko"/child)

Very Difficult	Difficult	Moderately Difficult	Moderately Easy	Easy	Very Easy
○	○	○	○	○	○
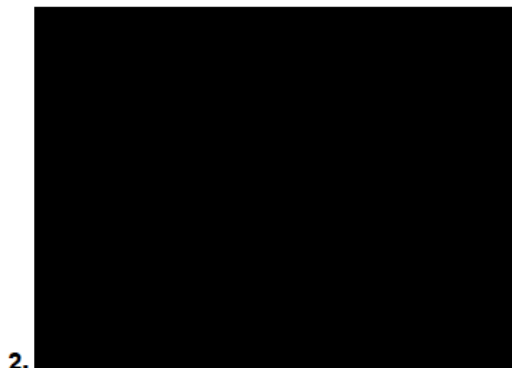
2. Cluster two introduces several pairs of kanji with opposite meanings. How would you rate their level of difficulty? Cluster 2: 高、安 （expensive/cheap）, 大、小 （big/small）, 多、少(many/few), 新、古（new/old）

Very Difficult	Difficult	Moderately Difficult	Moderately Easy	Easy	Very Easy
○	○	○	○	○	○

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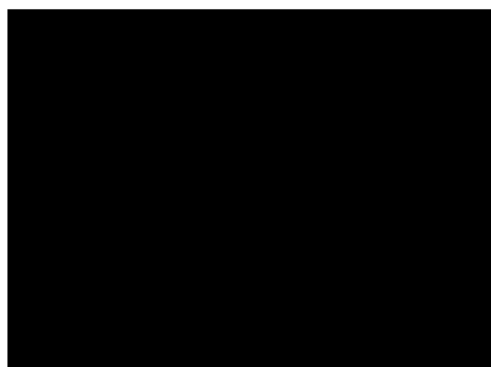
3. Cluster three has pairs of kanji with a mutual component. That is, one part of the kanji is the same in both characters. How would you rate their level of difficulty? Cluster 3: 姉("ane"/older sister)、妹 ("imouto"/younger sister) — mutual component = 女（"onna"/woman）話 ("hanasu"/speak), 語(suffix "go" meaning language) — mutual component = 言 ("iu"/say) 雨 ("ame"/rain) 雪 ("yuki"/snow) — mutual component = 雨 ("ame"/rain)
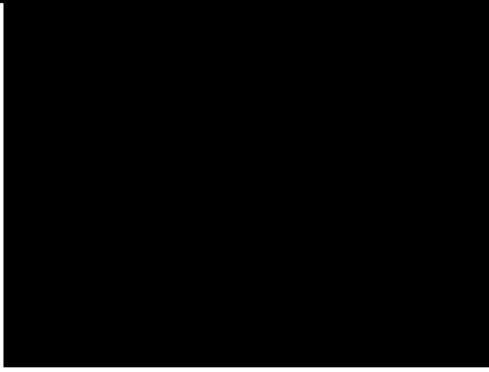
Very Difficult	Difficult	Moderately Difficult	Moderately Easy	Easy	Very Easy
◯	◯	◯	◯	◯	◯
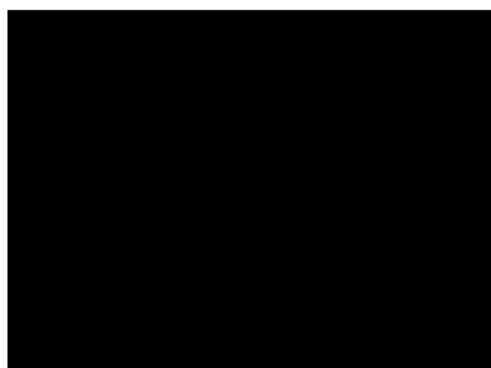
4. In cluster four, all kanji represent members of the family. The common element being therefore that each kanji share a similar meaning, in this case, family members. How would you rate their level of difficulty? Cluster 4：父 （father）, 母 (mother)、兄 (older brother), 弟 (younger brother), 妹 (younger sister), 姉 (older sister)

Very Difficult	Difficult	Moderately Difficult	Moderately Easy	Easy	Very Easy
◯	◯	◯	◯	◯	◯

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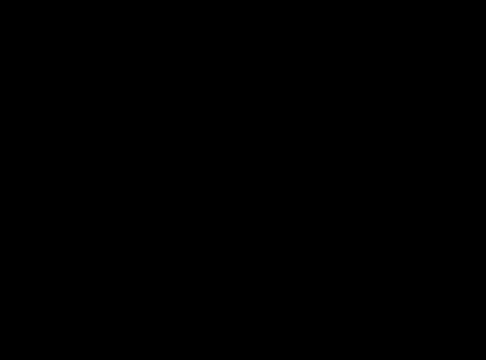
5. In cluster five, two kanji are combined to make a compound word. How would you rate their level of difficulty? Cluster 5: 日 ＋本 ＝日本（"nihon"/Japan）学 ＋生 ＝学生（"gakusei"/student）天 ＋気 ＝天気（"tenki"/weather）

Very Difficult	Difficult	Moderately Difficult	Moderately Easy	Easy	Very Easy
○	○	○	○	○	○

6. In cluster six, two separate kanji are combined to form another kanji. How would you rate their level of difficulty? Cluster 6: 田(rice field)、力 (strength)、男 (man) - 田+力 ＝ 男女(woman), 子(child)、好(like) - 女＋子 ＝ 好言(say)、寺(temple)、詩(poem) - 言 ＋ 寺 ＝ 詩

Very Difficult	Difficult	Moderately Difficult	Moderately Easy	Easy	Very Easy
○	○	○	○	○	○

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7. In cluster seven, kanji are taken from the 80 kanji that are taught in grade one at elementary school in Japan. How would you rate their level of difficulty? Cluster 7: 年 (year), 白(white), 八 (eight), 百 (one hundred), 文 (sentence), 木 (tree)

Very Difficult	Difficult	Moderately Difficult	Moderately Easy	Easy	Very Easy
○	○	○	○	○	○

8. Which kanji cluster or clusters did you feel would be the easiest to learn and why?

☐ Cluster 1
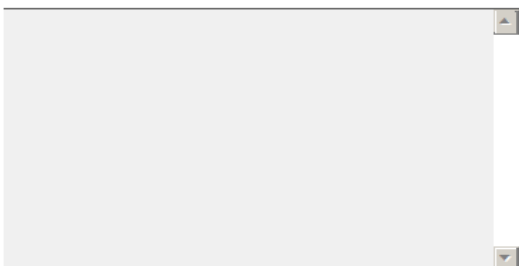
☐ Cluster 2

☐ Cluster 3

☐ Cluster 4

☐ Cluster 5

☐ Cluster 6

☐ Cluster 7

Please give your reasons:

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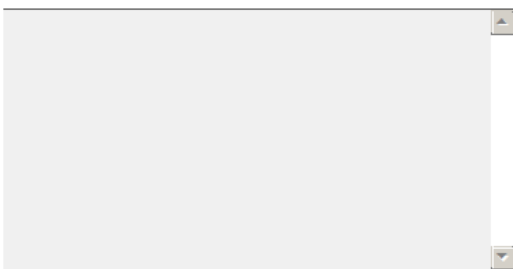
9. Which kanji cluster or clusters did you feel would be the most difficult to learn and why?

☐ Cluster 1

☐ Cluster 2

☐ Cluster 3

☐ Cluster 4

☐ Cluster 5

☐ Cluster 6

☐ Cluster 7

Please give your reasons:

10. What is your native language?

11. How would you rate your level of kanji understanding?

○ Never studied kanji before

○ Beginner

○ Intermediate

○ Advanced

12. What level Japanese unit are you currently enrolled in? Please provide the unit code.

13. Would you participate in a brief interview via skype regarding this survey? If so, please provide your email address so that you maybe contacted to setup a suitable time.

Participating in an interview will be helpful for those students interested in improving their kanji ability. At the conclusion of the interview, students are encouraged to ask questions and will be able to consult about any problems they may have with learning kanji.

Participation in this interview is entirely voluntary: you are not obliged to participate and if you do decide to participate, you are free to stop the interview at any time without having to give a reason and without any further consequence. The interview will involve questions about kanji and will be recorded so that they can be later transcribed.

By leaving your email here, you are consenting to participation in the interview.

Appendix C3

Survey of *Kanji* Clusters (Open ended responses):

Cluster One	- I think cluster one would be easy to learn as they're simple and can be associated with the thing they represent. - Less strokes than other clusters - Pictogram *kanji* are easiest to remember because they bring to mind the meaning quickly with the image they represent. - The easiest clusters to learn are the ones are the pictograms, because there is a direct link between the *kanji* meaning and the *kanji*. - Cluster 1 I think would be the easiest to learn because it kind of shows you what it means. - Cluster 1 would be very easy because they represent what they mean and pronunciation isn't difficult. - Pictographs make for simple mnemonics. - they seem to resemble pictures that go with the word. for example, the character for river sort of looks like a river. - For cluster 1, the resemblence of the shape of the *kanji* to the physical appearance of thing the *kanji* represents makes the *kanji* easy to recall. - Less strokes - they have very few strokes - Pictographs are easier to memorise.

	- Cluster 1 would be the easiest to learn I think, because there are not many strokes and their resemblance to what they represent makes it also easy to memorise. - For cluster 1, I'm a visual learner so seeing *kanji* take on a form similar to their real life image (hence they're pictographs), my brain retains them easily. - Pictograms are easier to remember as they look like what they represent - then you just have to match the correct word in Japanese with the meaning

Cluster Two	- I think cluster 2 would also be easy as you can remember the *kanji* in pairs, therefore making them easier to remember and also learning more *kanji*. - Less strokes than other clusters - For cluster 2, that is actually how I also learn *kanji* - by noting any opposites of whatever the *kanji* meaning and if I know one (and it has an opposite, eg. white/black, hot/cold), then I must know the other one too.

Cluster Three	- Gives clues to the words meaning - Cluster 3 is also fairly easy to learn, given that it's easier to derive the meaning if you know the meaning of the mutual *kanji*. - By recognising a component, you can kinda guess at the meaning (e.g. the *kanji* 'woman' in both imouto and

	ane - both are terms for women, 'rain' in ame and yuki denotes weather e.t.c.) This makes it easier to recognise.
	• For cluster 3, the mutual components for *kanji* that have similar meanings/concepts makes them seem less complicated and more interesting to learn.
	• Cluster 3 is easiest because the individual components of the clusters seem to relate more directly than the others such as in cluster 6. e.g. ame and yuki (rain and snow) Snow contains the rain radical. a connection is easily seem as compared to onnna and ko (women and child). to make up suki 'like' i don't see a distinct connection is between the two

Cluster Four	• Groups that are similar in meaning make memorisation simpler.
	• because they have a common theme under a smaller umbrella term and they are slightly more related rather than just sharing a radical
	• Cluster 4 is also easy because it is of the whole family, so when trying think what mother is, it is in the same group as father.

Cluster Five	• I guess by cluster 5 it is suggested that the meanings are relatively straight forward and you can kinda guess the meaning of the word based on those components.
	• I feel that *kanji* compounded into

	words makes remembering easier than remembering each *kanji* separately.
	● As long as you know the word, the *kanji* that go together naturally come to your head. For example 学生
	● I learn best in conext and you can see that it makes sense and there is logic

Cluster Six	● Depending on how it's taught, cluster 6 can also be easier to learn as it seems as the *kanji* meaning will be easier to remember if the reasoning behind the *kanji* creation is explained. For example, the *kanji* for poem, is easier to remember when you realise that when the *kanji* was created, poems were created by educated people, who were often priests.

Cluster Seven	● For cluster 7, the shapes of the *kanji* look relatively simple to remember.
	● They are relatively simple, and represent words that you would use often, so you would get plenty of opportunities to use them.

4) Justification for response to most difficult cluster

Cluster Three	- I think this cluster of *Kanji* seems to be a more difficult group to learn, due to the fact similar *Kanji* may confuse learners. The similar radicals mixed with other elements of *kanji* make it much more difficult to learn. The recognition and writing of the *kanji*, i believe, would be much slower when learning this cluster in comparison to pictograms in cluster one. - There is more strokes and radicals involved. - Cluster 3 would be hardest because they're so similar - For me Cluster 3 is the most difficult because although I might remember one part, I get confused about the 2nd part. Perhaps they are too similar.

Cluster Four	- Even though the meanings of the different *kanji* are related. The *kanji* themselves seem abstract and without relation. *Kanji* have basic versions that are used to make up the other characters. Rope memorisation based off similar themes is hard. *Kanji* learning is only hard because you are told to memorise stuff, when you should be taught to see how characters are made up, and able to guess their meanings from that. - With cluster 4, the size of a group of related words would always be a key to learning them. If a small group it is probably less difficult, especially if

	there was pictorial referencing. ● For cluster 4, despite all the *kanji* having similar meanings, some of the *kanji* in the cluster are very different from the others, so I believe it might be eaiser to learn them individually rather than as a common group.

Cluster Five	● There are many different readings of every *kanji*, and sometimes it's not apparent that two *kanji* together would have a certain meaning - like 近道 meaning 'shortcut' rather than 'a nearby road'. ● 5 & 6 rely on a knowledge of the simpler *kanji*/radicals to understand the contextual meaning. When those elements have been mastered, it is likely to be less difficult to learn in combination, but some don't necessarily appear to have a logical connection. ● putting two characters together seems complicated. ● For cluster 5, having to remember two different *kanji* and how they form a compound word together seems like it could be difficult, simply because its two *kanji* forming a different meaning. ● For cluster 5, there are so many *kanji* compound words, it's ridiculous. I find them the most hardest to remember (especially when both *kanji* have quite a few strokes each).

Cluster Six	● I think learning the pronunciation of cluster 6 would also be a bit difficult as just because they consist of one of the same *kanji* doesn't mean they are pronounced similarly.
	● There are more strokes and these *kanji* are composed of more than one *kanji* put together.
	● Cluster 6's components' meanings is understood but only after you know what they mean together to form the *kanji*, in this way it is harder to learn it as you need to work backwards.
	● they don't have much in common and it is more difficult to find connections
	● I often find combining two or more different *kanji* to create one character very difficult, as I would remember one part of the *kanji* and not the other.
	● I would find cluster 6 to be the most difficult due to the fact that combining two separate *kanji* to one, doesn't mean that the meaning is similar to it two components.
	● 5 & 6 rely on a knowledge of the simpler *kanji*/radicals to understand the contextual meaning. When those elements have been mastered, it is likely to be less difficult to learn in combination, but some don't necessarily appear to have a logical connection.
	● For cluster 6, similarly to cluster 5, I believe the fact that there are essentially two *kanji* present might make it difficult to remember, however, I also feel that if the two *kanji* used come together and form a

	kanji with a meaning that logically relates to the two *kanji* used, it may be easier to learn. ● The combinations of *kanji* are not necessarily related to the meaning of the final *kanji*

Cluster Seven	● Requires pure memorisation ● I think cluster 7 would be most difficult as the *kanji* aren't really related with one another ● The *kanji* in cluster seven are not related, so though they are simple, they are difficult to remember as a group. ● they don't have much in common and it is more difficult to find connections

Appendix D1

Ethics approval for Survey of *Kanji* Teaching and Learning Beliefs

From: Faculty of Arts Research Office <artsro@mq.edu.au>
Date: Tue, Dec 4, 2012 at 9:37 AM
Subject: Final Approval - Issues Addressed - Ref. no. 5201200847
To: Dr Chavalin Svetanant <chavalin.svetanant@mq.edu.au>
Cc: Faculty of Arts Research Office <artsro@mq.edu.au>, Mr Simon Regin Paxton
<simon.paxton@students.mq.edu.au>

Ethics Application Ref: (5201200847) - Final Approval

Dear Dr Svetanant,

Re: ('Survey of *Kanji* Teaching and Learning Beliefs')

Thank you for your recent correspondence. Your response has addressed the
issues raised by the Faculty of Arts Human Research Ethics Committee and
you may now commence your research.

This research meets the requirements of the National Statement on Ethical
Conduct in Human Research (2007). The National Statement is available at
the following web site:
  http://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/e72.pdf.

The following personnel are authorised to conduct this research:

Dr Chavalin Svetanant
Mr Simon Regin Paxton

NB.   STUDENTS: IT IS YOUR RESPONSIBILITY TO KEEP A COPY OF THIS
APPROVAL
EMAIL TO SUBMIT WITH YOUR THESIS.

Please note the following standard requirements of approval:

1.   The approval of this project is conditional upon your continuing

compliance with the National Statement on Ethical Conduct in Human Research (2007).

2.   Approval will be for a period of five (5) years subject to the provision of annual reports.

Progress Report 1 Due: 4/12/13
Progress Report 2 Due: 4/12/14
Progress Report 3 Due: 4/12/15
Progress Report 4 Due: 4/12/16
Final Report Due: 4/12/17

NB: If you complete the work earlier than you had planned you must submit a Final Report as soon as the work is completed. If the project has been discontinued or not commenced for any reason, you are also required to submit a Final Report for the project.

Progress reports and Final Reports are available at the following website: http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/ human_research_ethics/forms

3.   If the project has run for more than five (5) years you cannot renew approval for the project. You will need to complete and submit a Final Report and submit a new application for the project. (The five year limit on renewal of approvals allows the Committee to fully re-review research in an environment where legislation, guidelines and requirements are continually changing, for example, new child protection and privacy laws).

4.   All amendments to the project must be reviewed and approved by the Committee before implementation. Please complete and submit a Request for Amendment Form available at the following website:

http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/ human_research_ethics/forms

5.   Please notify the Committee immediately in the event of any adverse effects on participants or of any unforeseen events that affect the continued ethical acceptability of the project.

6.　　　At all times you are responsible for the ethical conduct of your research in accordance with the guidelines established by the University. This information is available at the following websites:

http://www.mq.edu.au/policy/

http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics/policy

If you will be applying for or have applied for internal or external funding for the above project it is your responsibility to provide the Macquarie University's Research Grants Management Assistant with a copy of this email as soon as possible. Internal and External funding agencies will not be informed that you have final approval for your project and funds will not be released until the Research Grants Management Assistant has received a copy of this email.

If you need to provide a hard copy letter of Final Approval to an external organisation as evidence that you have Final Approval, please do not hesitate to contact the Faculty of Arts Research Office at ArtsRO@mq.edu.au

Please retain a copy of this email as this is your official notification of final ethics approval.

Yours sincerely

Dr Mianna Lotz

Chair, Faculty of Arts Human Research Ethics Committee

Appendix D2

Ethics approval for Japanese Language Students' Perceptions on *Kanji* Learning - A Look at *Kanji* Clusters

Ethics Application Ref: (5201400387) - Final Approval

Dear Dr Svetanant,

Re: 'Japanese Language Students' Perceptions on *Kanji* Learning - A Look at *Kanji* Clusters'

Thank you for your recent correspondence. Your response has addressed the issues raised by the Faculty of Arts Human Research Ethics Committee. Approval of the above application has been granted, effective 19/05/2014. This email constitutes ethical approval only.

If you intend to conduct research out of Australia you may require extra insurance and/or local ethics approval. Please contact Maggie Feng, Tax and Insurance Officer from OFS Business Services, on x1683 to advise further.

This research meets the requirements of the National Statement on Ethical Conduct in Human Research (2007). The National Statement is available at the following web site:

  http://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/e72.pdf.

The following personnel are authorised to conduct this research:

Dr Chavalin Svetanant
Mr Simon Regin Paxton

NB. STUDENTS: IT IS YOUR RESPONSIBILITY TO KEEP A COPY OF THIS APPROVAL
EMAIL TO SUBMIT WITH YOUR THESIS.

Please note the following standard requirements of approval:

1.   The approval of this project is conditional upon your continuing compliance with the National Statement on Ethical Conduct in Human Research (2007).

2.   Approval will be for a period of five (5) years subject to the provision of annual reports.

Progress Report 1 Due: 19/05/15
Progress Report 2 Due: 19/05/16
Progress Report 3 Due: 19/05/17
Progress Report 4 Due: 19/05/18
Final Report Due: 19/05/19

NB: If you complete the work earlier than you had planned you must submit a Final Report as soon as the work is completed. If the project has been discontinued or not commenced for any reason, you are also required to submit a Final Report for the project.

Progress reports and Final Reports are available at the following website: http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics/forms

3.   If the project has run for more than five (5) years you cannot renew approval for the project. You will need to complete and submit a Final Report and submit a new application for the project. (The five year limit on renewal of approvals allows the Committee to fully re-review research in an environment where legislation, guidelines and requirements are continually changing, for example, new child protection and privacy laws).

4.   All amendments to the project must be reviewed and approved by the Committee before implementation. Please complete and submit a Request for Amendment Form available at the following website:

http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics/forms

5.   Please notify the Committee immediately in the event of any adverse

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effects on participants or of any unforeseen events that affect the continued ethical acceptability of the project.

6.   At all times you are responsible for the ethical conduct of your research in accordance with the guidelines established by the University. This information is available at the following websites:

http://www.mq.edu.au/policy/

http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics/policy

If you will be applying for or have applied for internal or external funding for the above project it is your responsibility to provide the Macquarie University's Research Grants Management Assistant with a copy of this email as soon as possible. Internal and External funding agencies will not be informed that you have approval for your project and funds will not be released until the Research Grants Management Assistant has received a copy of this email.

If you need to provide a hard copy letter of approval to an external organisation as evidence that you have approval, please do not hesitate to contact the Faculty of Arts Research Office at ArtsRO@mq.edu.au

Please retain a copy of this email as this is your official notification of ethics approval.

Yours sincerely

Dr Mianna Lotz
Chair, Faculty of Arts Human Research Ethics Committee
Level 7, W6A Building
Macquarie University
Balaclava Rd
NSW 2109 Australia
Mianna.Lotz@mq.edu.au