Improving the kanji proficiency of adolescent Japanese Heritage Learners

A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy

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December, 2018
Declaration

I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; any editorial work, paid or unpaid, carried out by a third party is acknowledged; and, ethics procedures and guidelines have been followed. I acknowledge the support I have received for my research through the provision of an Australian Government Research Training Program Scholarship.

Mizue Aiko
December 14th, 2018
Acknowledgements

The completion of this thesis would not have been possible without the contribution and support of a number of people. In particular, I would like to express my deepest gratitude to my supervisors, Adjunct Professor Berenice Nyland and Dr. Josephine Ng. They guided and supported me in numerous ways as I made my way through the research. Their encouraging advice and suggestions have assisted me greatly during the process of completing this study.

My deepest appreciation also extends to the principal of the hoshuu-koo where I conducted the research. She has kindly supported my research in negotiating with the school community to give me permission to conduct the research.

Further appreciation extends to the students and their parents who have participated in my research as informants. Without them, their work, and their ideas this thesis would not exist.

And finally, my heartfelt thanks and love extends towards my parents for their continuing support and patience during my studies in Australia.
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Abbreviations

ACARA: Australian Curriculum Assessment and Reporting Authority
AFESA: Australian Federation of Ethnic Schools Associations
CLA: Community Language Australia
CLS: Community Language Schools
JAPIASE: Japan Association for Promotion of Internet Application in School Education
JFL: Japanese as first language
JHL: Japanese heritage language
JIS: Japanese Industrial Standard
JSL: Japanese as a second language
LOTE: Languages other than English
MCEETYA: Ministerial Council on Education, Employment, Training and Youth Affairs
MEXT: The Ministry of Education, Culture, Sports, Science and Technology
OSJ: Oceania School of Japanese (pseudonym)
PICF: Participant Information and Consent Form
ABSTRACT

This thesis focuses on Japanese as a heritage language and the challenges that arise for children learning Japanese while living in a different language and cultural environment. This research concentrated on formulating kanji learning, one of the Japanese scripts, with an aim to improve kanji proficiency and attitudes toward kanji learning through devising appropriate kanji learning materials and learning methods for Japanese Heritage Language (JHL) learners, especially adolescents.

The context for the study was a hoshuu-koo, a Japanese language school, in Australia and participants were students in Year 7. Hoshuu-koo are supplementary Japanese schools for students who study Japanese on weekends outside of Japan. Despite the growth in the number of JHL learners, due to increasing global population movement, materials and teaching methods for JHL education have not kept up with changing needs. There is a diversity of outcomes for students learning Japanese as a heritage language as learning and teaching experiences mainly rely on the methods of the Japanese education system, in an assumption that students learning Japanese at a hoshuu-koo will return to the Japanese education system. Many JHL learners come from mixed language backgrounds and will not participate in the formal Japanese system. Reasons for learning Japanese varies and methods that apply to native speakers of Japanese will often leave heritage learners discouraged. To address this situation a new class was introduced for JHL and new methods introduced. Student outcomes, however, did not improve. The research conducted for this thesis took place in this new class. Identified in the research literature on Japanese heritage language education is the kanji script, which presents as a hurdle for many learners due to its complexity and number of characters. Hence the choice of kanji learning as a major focus in this research.
In order to promote learner motivation and confidence towards kanji learning, and to develop kanji proficiency and elicit positive attitudes to kanji, pedagogical changes to the teaching of kanji were introduced into the new class at the hoshuu-koo. The concept of cognitivism was the main theoretical frame for this study, cognitivism theory emphasises mental processes, like motivation and psychological structures, including attitudes and confidence. Derived from cognitive psychology, cognitivism incorporates student’s needs, personal interests and clear goals which are important for meaningful learning and the facilitation of long-term memory. Given this theoretical approach the research focused on learners’ levels of understanding. Data collection was concentrated on selected aspects of the students learning experiences and included testing for proficiency in certain tasks. Participants’ background contexts, that could influence heritage language learning, were also considered.

New kanji materials for adolescent JHL learners were designed by the researcher by adapting suggestions from prior research (e.g. Douglas, 2001). The revised teaching lessons and materials were conducted continuously throughout the year with an aim to improving the students’ kanji proficiency and attitudes to learning. Both quantitative and qualitative approaches were used to analyse and examine the data from surveys, tests and writing tasks so that the efficacy of the new materials and teaching methods for these learners could be explored.

It was found that a majority of the students had clear perceptions about their own abilities in learning Japanese and the difficulties they encountered with kanji. The results of surveys at the beginning and at the end of the research period indicated that the number of students who had gained confidence in learning kanji increased. In the kanji tests, little improvement was evident in kanji reading skills, but clear progress was identified in kanji writing. The improved use of kanji in writing tasks suggested an
increase in kanji knowledge. Other findings included a continuing issue related to motivation and patterns of typical mistakes made when using kanji in writing tasks were identified. The findings of this thesis have implications for future teaching and learning of JHL.
1 Chapter 1 Introduction

This chapter introduces the research, justifies the focus of the study by describing present problems, identifies the literature that was used, establishes the significance of the research. Important concepts that have been explored in the thesis are defined and the context introduced. The research questions derived from the research literature and personal experience are presented. The chapter concludes with an introduction to the research design, the theoretical approach as well as methodology and method.

1.1 Introduction

This thesis is about Japanese as a heritage language and the challenges that arise for children learning Japanese while living in a different language environment. The significance of heritage language has become increasingly important socially, culturally and economically as global population movement increases. This circumstance has meant that the diversity and importance of heritage language education has become a focus within language and linguistic research (e.g., Oguro & Moloney, 2012).

This research consisted of studying a group of students at a hoshuu-koo, a supplementary Japanese language school, in Australia. The research participants had been enrolled in a newly developed heritage language course that would run concurrently with an original course designed by the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT). The original course at the hoshuu-koo had the purpose of teaching formal Japanese language and literacy to children who would be returning to Japan (Ministry of Education Culture Sports Science and Technology (MEXT), 2017). However, the new course, which is the focus here, was designed for a different group of students. There is a growing body of evidence that many children in the Japanese diaspora in Australia do not have the Japanese native language skills to successfully study at the MEXT level and the expectation
that they can participate in formal classes, based on the Japanese curriculum, is setting them up to fail or withdraw (Oguro & Moloney, 2012). The newly designed heritage language course, investigated in this thesis, addresses this issue with an overall aim of encouraging heritage language learners to continue studying Japanese. There are a growing number of children who will learn their parents’ language, or the language of one of their parents, for social, cultural and heritage purposes (King & Lanza, 2017) but will not enter the Japanese education system. Given the importance of family language and culture for individual and community growth, the aim of this research was to make learning Japanese a more accessible and interesting task so that attrition rates at the hoshuu-koo would fall and proficiency in using Japanese would improve for this group of students.

The research was conducted throughout the school year and data from surveys, tests and writing tasks were collected and analysed in order to see how each student improved his/her kanji proficiency across one-year of kanji learning. Also explored was the question of whether there were any changes in the participants’ attitudes toward learning Japanese. This latter information was gathered through surveys that had both closed and open sections.

1.2 Background of the problem

Japanese Heritage Language (JHL) education is mainly conducted at hoshuu-koo outside of Japan. Hoshuu-koo were originally established by the MEXT for students who planned to go back into the Japanese education system. The number of students who attend hoshuu-koo has been increasing at the same time as issues regarding JHL education have been identified. The purpose of language learning in hoshuu-koo has shifted as circumstances of participants have changed. In this research, participants were Year 7 students (aged 11 - 13 years old) from a mixture of language backgrounds and would not enter the Japanese education system. In recent years, there have been a number of identified concerns
for such groups of students, including inappropriate curriculum and learning materials, insufficient professional teacher training, and difficulties in addressing diversity of proficiency and needs. The learning environment and learners’ attitudes toward heritage languages are influencing factors critical to student motivation to learn (Wang & Green, 2001). One significant issue that has been identified in the research literature is an aspect of the language itself: kanji. Kanji is one of the scripts of Japanese written language and is considered to be the most complex (Ootsuki, 2010). Learners’ attitudes towards kanji are considered a major hurdle for many students of Japanese. This issue was, therefore, the focus of this research.

A hoshuu-koo the setting where this research was conducted (see Chapter 3 for a description and more details), and a survey and initial assessments were conducted. According to the initial survey conducted with the students, prior to conducting the research, there was no indication that the students lacked confidence in their ability to learn Japanese, especially in the areas of listening and speaking. Initial assessments indicated that the proficiency of the students varied but there were few obvious differences found in listening and speaking proficiency. However, the initial assessment found big differences among the students in reading and writing proficiency and in the survey most of the students reported finding reading and writing were more difficult than listening and speaking. As in previous research findings (Kataoka, Koshiyama, & Shibata, 2008; Nakajima, 2003a), the majority of the students felt kanji learning was the hardest task they confronted. Kanji is necessary as nouns and the stems of verbs and adjectives are mostly written in these characters. The curriculum designed by MEXT specifies students are required to learn 1006 kanji characters by the end of Year 6. Students who live in Japan are exposed to kanji in their everyday lives, as well as books, textbooks, posters and a variety of media. However, the students living outside Japan who study Japanese as a heritage language often have limited access to relevant texts and their exposure to kanji is restricted. The lack
of exposure and resources create challenges in learning kanji as it becomes a task highly dependent on memorisation (Yamaguchi, 2013).

The number of kanji introduced in the first one or two years of schooling is restricted and the construction of the kanji is not very complicated, so that acquisition of kanji by JHL is not so different from students who live in Japan. However, researchers have found that age-appropriate kanji proficiency, is hard to maintain as students move to higher year level classes that come with higher expectations, therefore daily exposure to the language becomes an advantage (Kataoka & Shibata, 2011). Age-appropriate proficiency is regarded as knowledge which students learn at school based on the curriculum designed by MEXT. Not all students who live outside Japan use Japanese consistently at home and at their local Australian school the language of tuition will be English. This will impact on their ability to reach the same expected levels of proficiency as their peers who live in Japan. Therefore, extra effort is required for JHL learners to acquire the amount of kanji designed for native speakers of Japanese, especially at higher year levels. Despite the recognition of these problems, the MEXT designed curriculum and textbooks used in Japan are also adopted at most hoshuu-koo.

From previous research findings (Toyoda, 1995; Yanagida, 2011) and current practice, students may find challenges in the task of studying, reading and writing in Japanese due to the need to gain certain proficiency levels in kanji and this may impact their attitudes toward learning kanji. The gap in understanding between the content in the textbook designed by MEXT and actual proficiency levels of JHL learners widens as they get older and their motivation continues to wane. Thus, age-appropriate levels of kanji learning methods and materials for JHL learners are essential to address the language needs of this cohort of students. This research focused on adolescent JHL learners in Year 7 at a hoshuu-koo. The study sought to improve kanji proficiency through revised kanji learning methods.
and materials designed for these adolescents and to explore the relationship between changes in kanji proficiency and attitudes toward Japanese learning and kanji learning.

1.3 Summary of literature

1.3.1 Heritage language education

The term “heritage language” has a long history and various definitions. According to Kelleher, Haynes, and Moore (2010), “the term heritage language is used to identify languages other than the dominant language (or languages) in a given social context” (p.1). The view of heritage language adopted in this study indicates the languages that have shifted from a parent’s language into the local language; this means that a speaker acquires his/her parent’s language as the first language but as he/she gets older and starts to join the local community, he/she will be fluent in the local language and the parent’s language becomes a heritage language (Nakajima, 1998). This definition aligns with the characteristics of the selected participants of this study, who were mainly students in the Nihongo course. This course was the course that was provided with revised and modified teaching methods and materials (further discussion in Chapter 3). There is increasing evidence that Japanese language learners of mixed language background who will not return to Japan are the fastest growing group among JHL learners as a result of the rise in worldwide business and employment mobility and intercultural marriage (Yoshimitsu, 2013). Critical to the learning of heritage language is the need to be socially and culturally relevant. Being able to use heritage languages is highly valued both for the individual and for the society; for example, as a contribution to a multicultural society, for economic support on the international market, as a bridge to cultural inheritance, the transference of language to the next generation, advantages in academic and career qualification, awareness of self, sense of community belonging, identity and the development of self-esteem (S. M. Park & Sarkar, 2007; Wang & Green, 2001). Maintaining the heritage language is often difficult. Nakajima (2003a) reported that
30% of second-generation children do not understand their parent’s language and 70% of third generation children lose their heritage language. There are many possible reasons for the loss of heritage languages including the learner’s own emotional relationship to the language and difficulties within the learning environment where exposure to the language might be limited or non-existent. Some students lose confidence as language learning becomes more complex at higher levels and they recognise that their language skills might not be up to the task (Doerra & Leeb, 2009; Nakajima, 2001; Peyton, Ramard, & McGinnis, 2001). Adolescent learners may not recognise the value of learning their heritage language and feel uncomfortable learning a minority language in the society and, parents’ expectations can be a big burden. He (2006) suggests that adolescent students need to be culturally and positively involved in their language community to be motivated in heritage language learning; engage in social interaction and gain understanding of the value in learning the language. Physical elements, like travelling long distances for weekend classes, insufficient educational support, and the diversity of learners are also reported as challenges faced by JHL learners (Peyton et al., 2001; Schwartz, 2001; Takeguchi, 2007).

Organising formal learning environments that provide emotional support for learners in order to encourage the maintenance of the heritage language and maximise its benefits is essential. Understanding the differences among first, second and heritage language education is one of the important steps in the design of supportive environments. Moriyama (2007) and Nakajima (2001) state that first and heritage language learners acquire knowledge of the language in the early stages through natural interactions, usually with family. This gives these learners a different understanding of the language than second language learners. Children who are introduced to a second language after the age of two years, according to Haynes (2007), can still be considered bilingual but do not have the advantage of early acquisition. Children who learn another language when they are older are second language learners (Halliday, 1993). First language users usually achieve certain levels of language
proficiency through an acquisition process, but heritage learners will not always follow the same process as first language users as their exposure to another dominant language becomes a part of the language environment and the acquisition process is disrupted. As Nakajima (2001) stated, appropriate input at each acquisition stage is essential for language acquisition, but insufficient and inappropriate input, especially in later stages, may influence the acquisition of the first language for heritage language learners. In second language education, conscious learning, specific needs and effort are required as learners have not received natural input consistently at the early stage (Montrul, 2010). For heritage language learners, the lack of prior learning in accordance to age-appropriate cognitive levels can disturb acquiring and maintaining language; conscious learning and motivation are required as in second language learning. However, the legacy of having the rudiments of the language gained through infant and toddler interactions makes the task of moving from natural acquisition to formal learning a different cognitive task than that faced by second language learners (Ji-xian, 2001). Appropriate teaching and learning experiences, materials and stimulation for heritage language learners should be carefully explored in heritage language education, both at home and school. For the acquisition and development of children’s language, the role played by families is important. King, Fogle, and Logan-Terry (2008) emphasise the importance of family language policies in order to maintain the language. Family language policy often focuses on micro level issues, such as interaction patterns, frequency of language exposure and input at home, rather than on public usage, parents’ views and management, and the parents own perspective on cultural and social context will greatly influence children’s language acquisition (Curdt-Christiansen, 2013). Therefore, the relationships between home and children’s language acquisition and how school, home and community collaborate is significant in the development of heritage language education.
1.3.2 Japanese heritage language learning – *hoshuu-koo*

The number of children learning Japanese as a heritage language has increased with globalisation. Hoshuu-koo are usually organised by the MEXT or the local community to provide Japanese education for first grade to ninth grade students who attend local schools during the week. Originally designed for children who would eventually return to Japan these schools were expected to provide children overseas with access to part of the Japanese compulsory education curriculum. This would provide basic knowledge and skills of Japanese language and other core subjects so that these students would be able to enter, or re-enter, the Japanese schooling system (MEXT, 2017).

Despite this original purpose of hoshuu-koo, many Japanese students who were born overseas, or moved from Japan when they were very young will not go back to Japan for future study. For family and cultural reasons, many students attending a hoshuu-koo have different life circumstances and diverse access to the Japanese language, for example parents may have different language backgrounds. Such circumstances create issues for the use of the curriculum at the hoshuu-koo (Mulvey, 2009). The diversity of learners creates challenges due to differing needs in the learning of Japanese language. The relationship of each learner to Japan will influence learning needs, motivation and the language environment (Doerra & Leeb, 2009; Oguro & Moloney, 2012). The diversity of student’ background and circumstances impact upon language proficiency. These differences in language proficiency are expected to increase as students get older. The widening gap in language proficiency is considered a major factor impacting on attrition rates (Montrul, 2015) and consideration of teaching and learning methods for each year level is essential to help students remain engaged (Nakajima, 2001). There are many serious constraints that exist in the hoshuu-koo themselves, there may be a lack of learning materials, a limited number of institutions, infrequent learning sessions offered, insufficient teacher training opportunities and the lack of a network among JHL teachers (Douglas, 2008; Nakajima, 2001; Schwartz, 2001). Curriculum is one of most serious issues. A
mismatch of proficiency levels between curriculum and students makes learning difficult and may discourage students from continuing with their language learning. Douglas (2005a) pointed out that the MEXT curriculum is not suitable for many JHL learners.

Although learner proficiency varies, there are some common characteristics that have been identified. Overall, oral and aural skills are performed better than literacy skills, especially writing skills (Douglas, 2005a; Kataoka et al., 2008; Nishimura, 2012; Peyton et al., 2001). Direct translation from local language, inappropriate code-switching, lack of vocabulary, the wrong use of register, and knowledge of morphosyntax, such as word order and use of conjugation words, are reported as examples, and these issues become more problematic as learners become older and language use is expected to become more complex (Montrul, 2010; Nakajima, 2001; Nishimura, 2012; Wang & Green, 2001). Regarding reading comprehension, heritage language learners usually understand lengthy texts even if they lack knowledge of individual words as they can guess meanings from context (Gambhir, 2001). Also, heritage language learners’ reading comprehension is usually higher than second language learners. Differences between heritage and first language learners in reading comprehension can expand as they become older. Douglas’s (2005a) research found that Year 9 students’ reading skills are almost the same as that of elementary school students. It is also found that standard level of expression which native speakers use, are often hard to find among heritage language learners and informal expression and code-switching are often observed (Polinsky, 2014). These tendencies can be also observed in other heritage language learners; however, the difficulty of the Japanese written script is one of the unique characteristics of Japanese language learning which affects students’ proficiencies and attitudes toward learning JHL (see Chapter 2.4) (Paxton & Svetanant, 2014). Significant differences have been reported in kanji proficiency among individuals (Douglas, 2010; Salkind, 2010). Ootsuki (2010) commented that Japanese is not very different from other languages in terms of the
difficulty of acquiring the system, despite its unique grammar; however, the most difficult part of Japanese learning is the script system, specifically kanji.

1.3.3 Kanji learning

Japanese use three types of script: hiragana, katakana and kanji. Hiragana and katakana are phonetic symbols and have no meanings. Kanji originally came from China and has multiple readings and meanings; when two or more kanji characters are used in one-word, different readings and meanings are applied as opposed to when a single kanji is used. Okurigana, which are kana suffixes following kanji and show grammatical functions of the word, are required depending on words (see Chapter 2.4.1 for some examples). Moreover, many homonyms exist, and users are required to understand the meaning of each kanji in order to select the correct kanji. Construction of each kanji also has a degree of complexity. There are many kanji characters which have multiple strokes and almost 90% of kanji are combinations of simple kanji or radicals (Atsuji, 1985). A radical is an element of kanji that provides a clue to its origin, group or general meaning. When a different radical is used, it becomes another kanji and as a result of this complicated combination system, many similar shapes of kanji exist.

This kanji system is a hurdle to acquire and maintain for learners, especially for JHL learners. Nakajima’s (2003b) study found that kanji writing levels for students in Year 7 to Year 9 were almost the same as Year 2 levels although reading levels of kanji were slightly higher and had reached Year 4 levels. Douglas (2008) stated that students tended to write passages without kanji and use only hiragana, which is a phonetic symbol in Japanese. Prior research supported these findings and found that JHL learners often do not have age-appropriate kanji proficiency, which is regulated by MEXT, especially for the students in higher year levels (Kataoka & Shibata, 2011). Also, it was reported that
many students needed furigana (reading of kanji) to read written passages set by their schools, according to a worldwide school survey of teachers (Fujimori, Ito, Kashiwazaki, & Nakamura, 2006). Thus, there are many components to understand when learning kanji; such as reading, meaning, radicals, compound kanji words, and okurigana, but this does not mean that learners need to have all of this knowledge. Necessary information differs depending on the learners. Ariyama and Ochiai (2012) and Ishii (2013) insisted that what are important for learners are to understand what kanji indicates, to read and write kanji correctly, to select appropriate kanji in a dictionary, and to understand the meaning of kanji within words.

According to the mandated MEXT curriculum, students in Japan are expected to acquire 1006 kanji by the end of Year 6 and another 1129 in Year 7 and 9, which is the end of compulsory education. In first language education, kanji are introduced based on the MEXT curriculum; kanji that have fewer strokes, are easier to remember, frequently refer to daily life are considered when deciding the order of introduction of kanji (Taishukanshoten, 2016). In second language education, the order of introduction varies depending on textbooks; some examples are frequency of use, easy shapes and by categorisation of meaning (Paxton & Svetanant, 2014). Second language learners often need to remember vocabulary and script at the same time, unlike first language users, and considering their lack of exposure, second language learners have a more difficult task than first language learners. JHL learners who lack vocabulary may have the same challenge as second language learners, however, the same textbooks are used for first language learners as those used for JHL learners at most hoshuu-koo. Shimizu and Green (2002) summarised three types of kanji practice strategies: rote learning, memory strategies, and using context to guess meanings. These strategies require copying model shapes, using a knowledge of kanji (structure, radicals etc.) and existing knowledge, and learning within context, respectively. Choi (2011) added that visual, aural and physical practices are also effective in learning kanji. However, Novarida (2011) found that most learners keep writing to remember kanji. Although
practicing is still necessary, it is not enough to achieve expected levels. Researchers found that appropriately combined strategies of rote learning strategies, memory strategies and metacognitive strategies should be used for kanji learning (Mori & Nagy, 1999). Thus, there are several strategies, and learning environments, as well as needs and proficiency of kanji that are different for first, second and heritage language learners (further discussion in Chapter 2.6.3).

With the recognition of the necessity to provide appropriate materials for JHL kanji learning, several hoshuu-koo have worked to address these problems; they have organised separate learning tracks for the MEXT original curriculum classes and JHL learners. Some schools have produced original textbooks, some use the MEXT textbooks but spend extra time on the material. For example, students may spend 9 years finishing the elementary school textbooks (Year 1 to 6). However, usually classes are merged at the advanced levels (Kondo-Brown, 2002). Douglas (2005b) says that there is a necessity to employ materials that suit learners’ cognitive levels if they are to maintain motivation.

1.3.4 Theoretical approach

Researchers (Choi, 2011; Mori & Nagy, 1999; Shimizu & Green, 2002) have found that sole use of rote learning is not desirable for kanji learning. Considering effective teaching strategies, both in the introduction and practice of JHL a frame that has been used to design this research project is ‘cognitivism’. Cognitivism has been defined as a learning theory that focuses on motivation and psychological structure and views the learner as an active processor of information (Suharno, 2010). In this research, meaningful learning in kanji acquisition and maintenance was explored. Cognitivism theory was adopted because in this approach mental processes, like motivation and psychological structures, including attitudes and confidence, are the focus. This theory is derived from cognitive psychology and Ausubel (1963) is one of the proponents of this learning theory (Eguchi, 2011).
Ausubel was a developmental psychologist who developed theories of how cognitivism incorporates student’ needs, personal interests and clear goals which are important for meaningful learning and the facilitation of long-term memory (Brown, 2000). He linked conceptual learning with methods of verbal learning that concentrated on speaking, reading and writing.

Cognitive theory emphasises the conceptualisation of learners’ learning process (Jonassen, 1991). The focus on building knowledge through repeating is not enough to cope with large amounts of information and also insufficient to develop complex cognitive processes, such as problem-solving and information processing. To facilitate active learners who have different levels of knowledge and learning strategies, appropriate goal-setting and learning strategies should be introduced (Ertmer & Newby, 2013; Hymes, 1972). Cultural and social factors are also incorporated in a cognitivism view (Lee, 2010). This study adopted a cognitivism theoretical construct that learners are encouraged to orientate their learning strategies, understand their strengths and ability to apply knowledge in a cultural and social context to the learning of kanji.

In this research, lexical approaches were adopted in the introduction and practice of vocabulary as kanji learning requires context and vocabulary. Introducing kanji and practice within context is important (Mori, Sato, & Shimizu, 2007). Shimizu and Green (2002) also emphasised the significance of employing reality for vocabulary introduction, such as menus and advertisements. To make vocabulary learning meaningful, a selection of words and devices for introducing vocabulary were carefully examined, such as words related to daily life, and frequently used (Akamura, 2011; Schwartz, 2001). Retaining vocabulary by including phonetic practice and images, linked to existing knowledge with an understanding of the cultural matters also provides meaningful learning and enhances long-term memory (Otomo, 2011). In adopting these ideas, kanji were introduced in context and the students
were expected to use their existing knowledge of kanji and vocabulary so that they could understand the meaning of the kanji and strengthen their use of kanji. Kanji were introduced in vocabulary and the vocabulary was categorised by meaning, such as nature, subject and daily actions. Images were added to the textbooks and PowerPoint slides in order to make the learning meaningful. Enhancing the student’s analytical skills was an aim for the class and the students were asked to evaluate their own competence and these self-evaluations were compared to results from the tests. Ke (1998) and Mori et al. (2007) commented that the use of analytical skills is helpful to build up learners’ kanji skills and aids meaningful learning (see Chapter 5 for further details).

1.4 Significance of the study

Based on prior research and a particular context, this research focused on JHL adolescent learners and aimed to improve kanji proficiency as insufficient kanji proficiency has been identified as a major factor in students losing motivation to continue studying the Japanese language. While motivation is a crucial issue, it had also been noticed that newly introduced approaches have not led to improved outcomes. From existing research, it would appear there is insufficient research on how to facilitate kanji learning, specifically in JHL education, to alleviate the identified issues. This research addressed the need to examine practices used for JHL students to learn kanji by examining underlying theories of language acquisition for JHL students and introducing methods, order, and learning strategies in a systematic way using cognitivism as a theory that could be applied to the research. Many attempts in the past have been ad hoc, with materials usually created by individual teachers, or schools and these attempts were not generally shared. Prior research also tended to focus on students in the early years (Nakajima, 2001), or college students who usually have a high motivation to learn Japanese (Kurata, 2012). Practical problems faced by adolescents in the context of heritage language learning have been acknowledged but there is a lack of applied research in this specific area (Kanayama & Fujimoto,
2018). In this research, it was argued that different methods from that used for students of other ages should be applied to assist adolescents in language learning and the methods should consider their cognitive development and their present level of knowledge. Exploring new kanji learning methods for adolescents, students’ actual proficiency and their perspectives towards kanji learning were therefore examined in this thesis.

Unique to this proposal is the investigation of kanji learning pedagogy for adolescents by adapting the use of prior knowledge and kanji language learning in context while capitalising on kanji as an integrated part of learning Japanese. The utilisation of the methods and materials investigated in this study will potentially inform other hoshuu-koo teachers around the world.

1.5 The research

1.5.1 General description of the research

This research investigated how JHL students at a hoshuu-koo improved their kanji proficiency through a newly introduced one-year kanji learning course. The kanji learning used a kanji vocabulary booklet (see sample Chapter 5) created by the researcher and writing practices were conducted throughout the year and examined to see how this development contributed to students’ learning. The contribution was measured through student’ surveys and observations (motivation, attitude, self-evaluation), class tests and writing tasks to gauge actual proficiency. Changes in attitude and performance were analysed and interpreted. Other factors influencing student learning, such as the home environment and support, were also considered. This information was collected both in multiple choice and open-ended questions in the surveys.
A hoshuu-koo in Australia, the Oceania School of Japanese (OSJ; a pseudonym), where the researcher of this study works, was chosen for this research. In consideration of the diversity of the students, their needs and encouragement for them to continue studying Japanese at an appropriate level of learning, two courses were prepared beyond Year 6: a Kokugo course and a Nihongo course. The MEXT textbooks and curriculum were used in the Kokugo course, whereas the Nihongo course focused on improving reading, writing, speaking, listening and kanji by adopting selected and relevant parts of the MEXT textbooks, the introduction of an original kanji vocabulary booklet prepared by the researcher and other related tasks. Students and their parents selected the course at the end of Year 6 based on their needs and interest in learning Japanese. The Nihongo course was established in 2011 and the curriculum and materials had been revised to meet student demands. The kanji learning method was the element that the researcher, who is the teacher of this class, identified through previous research and teaching experience to be the aspect of the course most in need of revision. The revision was based on feedback collected through observation, assessments and students’ own perceptions. Specific differences among students in kanji learning were investigated and the relationships between proficiency and the students’ learning attitudes were explored as a focus of the research.

1.5.2 Research questions

The aim of this research was to design a course of study for Japanese Heritage Language (JHL) students that would result in improved outcomes over the period of one year for JHL students in the Nihongo course.

The research aimed to explore ways to improve students’ experiences of JHL by addressing the following research questions.
· Does kanji learning in meaningful context and a focused study of radical learning contribute to enhanced proficiency for adolescent JHL?

· How do students’ feelings and attitudes towards Japanese language learning influence their attitudes towards Japanese proficiency, especially kanji skills?

· Which kanji skills do students have the most and least confidence in and what areas are they most competent?

· How have the student’s feelings and attitudes changed through one-year of kanji learning?

1.5.4 Participants

The participants were students in Year 7 and the researcher was a participant observer at a hoshuu-koo in Australia. Year 7 was selected as the focus for this research as this is a time when the expectation of learning the heritage language becomes more demanding and complex (e.g., Douglas, 2010; Willoughby, 2006). It is also a time when peer socialisation can be seen as more important than formal learning (Schneider, 2016). Therefore, this is a year when proficiency and social development can become a challenge and may influence motivation for participation in certain types of extra-curricular activities. This class had been established in 2011 but learning outcomes had not noticeably improved. A combination of factors such as characteristics of young adolescents and changes in the class not meeting the learning needs of the group may have impacted on the lack of positive result in the Nihongo course. This provided the justification for the choice of participants at Year 7 level.

Thirteen students in the Nihongo course participated in kanji learning in the new system. Four students from the Kokugo course, who wanted to take the same kanji tests as the Nihongo course, also agreed to participate in this study. These four Kokugo students did not participate in the kanji learning during
the class but used the same kanji vocabulary booklet and studied at home to prepare for the tests. Permission forms were collected from school principals, the school community, students and their parents. The participants’ data have been protected through the use of pseudonym. The questions in the surveys were carefully designed so as not to identify any participants.

1.5.5 Methodology and methods

This study adopted a mixed method approach to research (Abdülkadir, 2012; Teddlie & Tashakkori, 2003) with qualitative and quantitative data drawn from feedback in the form of surveys, tests and writing tasks. Initially the students were asked to give their opinions in a freer form fashion, but from the unstructured interviews conducted, there was a need to gain further understanding on aspects such as motivation and attitudes toward the heritage language learning. A structured questionnaire, the survey, was developed to gather qualitative information specifically on the disposition of learners in regards motivation and attitudes towards kanji learning. The quantitative analysis was based on skills-based data (kanji tests and writing assessments). At the same time to ascertain the display of common characteristics such as arising difficulties faced on the focus tasks the research had a quasi-experimental design (Mackey & Gass, 2005) as data was collected at the beginning of the research, the new materials were considered to be an intervention and data collection was conducted across the year. There was no control group but students from the Kokugo and Nihongo course participated in the study. One group of students who presented with different skill profiles were also studied in order to discuss the possible influence of the home environment.

Three types of tests were conducted: initial and final tests, regular kanji reading and writing tests, and radical tests. Regular kanji reading and writing tests and radical tests were conducted throughout the year and indicated how each student improved through one-year of kanji learning.
The accurate use of kanji in initial and final tests was calculated for each year level and compared. Nine writing assessments were integrated into the curriculum and the accurate use of kanji in the written passages was calculated. The types of errors in kanji were also identified.

For the survey multiple choice and open-ended questions were presented and students’ attitudes toward learning were the main focus. Students were also asked how they considered their own performance and knowledge of kanji. The same questions were listed in the survey at the beginning and the end of the year and compared to see if there were any changes in the students’ self-evaluations.

The data obtained in the tests, writing assessments and surveys were calculated using Excel Correl Function and discussion ascertained if there were any correlations among the students’ knowledge of kanji, their performance skills in actual use and their perspective of their own learning as expressed in the self-evaluation.

A kanji vocabulary booklet designed by the researcher was used in kanji learning. Fourteen topics were chosen based on the theoretical approach of cognitivism that supported the use of categories where students could use existing knowledge, conceptual schemas and knowledge of kanji. Approximately twenty words were listed in each topic. Each word was presented with a picture and students found the kanji for each word using a Japanese dictionary. Short reading passages, written without kanji, were also included for each topic in the booklet and students were required to change hiragana into kanji where possible. Students were always encouraged to extend their vocabulary and kanji knowledge through the use of a dictionary. PowerPoint slides were used for practice. The slides included pictures for each word, images of each kanji and a matching quiz of reading kanji and words. Images of kanji were presented to show the construction of each kanji construction so that students
could be expected to differentiate radicals and non-radical parts as a strategy designed to help in memorising the kanji.

Two weeks were allocated for each topic. The booklet also included radical pages. Students learnt the name and meaning of each radical provided and practiced forming words using the radicals that were introduced. In writing assessments, students were expected to use kanji whenever they wrote passages, and when they made errors or omitted kanji the assessment was repeated with the assistance of the teacher. The repetitions helped to reinforce the learning of kanji and awareness of their own skills and knowledge. All students in the class had equal opportunity to perform the designed tasks. (A detailed description of the booklet in terms of rationale, design and the student’s use of the material is presented in Chapter 5 and the results of the research are described in chapters 6 and 7 in this thesis).

1.6 Design of the thesis

Chapter 1 Introduction

This chapter introduces the research and provided and an overview of the project. The focus of the study is justified by describing present problems and identifying the significance of the research. The research questions derived from the research literature and personal experience were listed and the research design and method adopted in this research is described.

Chapter 2 Literature Review

This chapter introduces an overview of heritage language education and Japanese heritage language education by identifying the differences among first and second language learners, and the importance and difficulty, of maintaining heritage language based on prior research findings. The difficulties and
challenges of kanji learning faced by JHL learners have been explored and language theories relevant to this research reviewed and the choice of cognitivism justified in regards, theory and suitability for the questions, methodology, methods and analysis adopted.

Chapter 3 Context in Australia

This chapter focuses on the context in Australia and the hoshuu-koo where this research was conducted. The shift in language policies in Australia and the status of Japanese heritage language education have been reviewed. This chapter also introduces the background of the hoshuu-koo which was chosen for this research and the previous approach to the teaching of kanji discussed.

Chapter 4 Research design and methods

Investigated in this chapter is the applied language theories that have been integrated into this research. These theories include cognitivism, lexical approaches and error correction. Research questions, significance of the research and method are described as well as the design and role of a pilot study.

Chapter 5 Intervention

The design of the new materials, their theoretical base and the results of the pilot test are presented in chapter 5. A detailed explanation of the kanji vocabulary booklet designed for this research is provided and samples of the booklet and lesson plans are given.

Chapter 6 Results and findings

Chapter 6 presents the results of the data collected from the various sources for this research. The results of surveys, tests and writing assessments are discussed and analysed. First, the surveys
conducted at the beginning and the end of the year are analysed. Next the results of the three types of tests, initial and final tests, regular tests and radical tests are discussed. Lastly, use of kanji in writing assessments conducted across the year is examined.

Chapter 7 Correlations

In this chapter the results of the surveys, regular tests, initial and final tests and the use of kanji in writing assessments analysed in the previous chapter were compared and correlation coefficients among them were calculated to see if they correlated with each other.

Chapter 8 Discussion

Chapter 8 presents the results of analysis in the previous chapters, correlations, implications for the theoretical approach adopted and lessons from the research literature have all been combined to provide a picture of what has been discovered from this research.

Chapter 9 Conclusion and implications

This concluding chapter contains an overall summary of the study and a conclusion. Answers to the research questions are explored, based on the analysis, correlations and discussion of findings. Limitations of the research are discussed and implications for further research suggested.
This chapter introduces the theoretical concepts of heritage language adopted for this thesis. The difference of first and second language learning is identified, and the importance and difficulty in maintaining heritage language based on the prior research findings is discussed. Language policy and general issues in Japanese heritage language learning (JHL) are also a focus. *Kanji* learning, one of Japanese scripts, recognised as a main concern in the learning of Japanese for JHL learners, is a major focus of this research, so the difficulties and challenges faced by JHL learners have been explored in this review. Language theories that provided the foundation for this research are described in this chapter.

2.1 Introduction

The term “heritage language” is widely used and has a broad range of diverse meanings both historically and geographically. Although heritage language is defined in various ways, in the field of international language education heritage language it is the language used by people who have immigrated to countries that have a different dominant language (Compton, 2001). The number of heritage language learners has increased in recent years and the importance of heritage language education has become a focus of research. Many studies regarding heritage language education have now been conducted but there are still many issues for those involved in conducting heritage language education and teachers are struggling to create effective learning environments. In this literature review, theories regarding heritage language education and the findings from previous research are examined to provide a background for the design of this study which aims to develop a design to enhance methods for the teaching and learning of Japanese heritage language (JHL) learners. The differences among first, second and heritage language have been noted in relation to definitions, the
acquisition process, outcomes, pedagogy and proficiency. JHL education is described with a focus on historical movements, Japanese language policies and current general issues being a significant part of this discussion. One reason that emerges from the research literature for the difficulty in learning Japanese language is its complex linguistic features. Kanji learning, one of the Japanese scripts, is regarded as the most challenging task. The second half of this chapter highlights research on kanji learning and examines the history, functions and features of kanji script learning in Japan. Research related to kanji learning, JHL kanji learning, including the proficiency of these learners, difficulties they encounter, and teaching strategies implemented are discussed. Cognitivism is the theoretical frame adopted in this research and the rationale for this decision is explained in the latter part of this literature review.

2.2 Overview of heritage language education in the world

In this section definitions of heritage languages and differences among first language and second language learners are discussed. Needs in learning heritage languages and changes in the recognition of its importance are explored.

2.2.1 Definition of heritage language

The term heritage language has drawn worldwide attention but the question is: “What is heritage language and who are the heritage language speakers?”.

There are several categories of heritage language used by researchers. For example, Wang and Green (2001) and Douglas (2005b) stated that heritage languages can be classified as colonial heritage languages, indigenous languages and immigrant languages. The term heritage language was first used in Canada, indicating languages other than English and French (Cummins, 1991). Compton (2001)
also referred to “a heritage language as a language which indigenous and immigrant groups speak that is other than the dominant national language” (p. 157). The language used by colonial immigrants often merges into the local language creating difficulties in transferring the colonist’s language between generations. This results in colonial heritage languages having a tendency to disappear. For example, French was the language used by French ethnic groups when they immigrated to the United States of America (USA). In the first or second generation these groups still used French as their first language but later English became the first language for the descendants, thus making French a heritage language for these people (Lasserre, 2012). The term “heritage language speakers” is also interpreted in several ways. Valdés (2001) referred to a heritage language speaker as an individual who is raised in a home where a non-English language is spoken. Cummins (2005) categorised heritage language learners into two groups: learners who learnt the language as their home language and individuals who have a personal connection or involvement in an ancestral language, such as second or third generations.

Globalisation has brought about greater numbers of new-arrivals, migrants and foreign-born children, and the term “heritage language learner” has come to include many variations in language background. According to Compton (2001), the languages used by people that emigrate from countries where a language other than the dominant national language of the new county was spoken are referred to as heritage languages. Wang and Green (2001) referred to immigrant languages as the languages brought by immigrants over the years and also as the languages other than local languages used within a particular family or community. With more intercultural marriages and intra-company transfers, the number of children growing up in diverse language environments has increased. These children speak their parents’ language fluently as the first language when they are very young but when they start
attending local schools, they become fluent in the use of the dominant language spoken at school. This can influence their ability to speak, read and write their mother tongue. In the Australian context, the term “community language” rather than heritage, was introduced in 1975 for languages other than English and Aboriginal languages (Clyne, 1991). According to Clyne (1991) this term was widely used as second language, or immigrant language, were not appropriate expressions in a country characterised by migration. The emphasis becomes community language as the tool for communication, self-identification, cognitive and conceptual development. In Australia, JHL is one of the community languages; however, the term “heritage language” is widely used in the research literature and will be the main descriptor in this study. For this research students who had been introduced to Japanese as infants were invited to participate and their Japanese proficiency was tested. As these participants all had one, or both parents, as native speakers and there were many differences in exposure and circumstance in relation to home use of Japanese Nakajima’s definition of heritage language was adopted. Nakajima (1998) summarised heritage language as children’s skilful language shift from their parents’ language to the local language due to high-frequency usage.

Another issue when defining heritage language is one of proficiency. Polinsky (2014) stated heritage language speakers are individuals who have connections and some degree of proficiency. Valdés (2001) also reiterated that heritage language speakers are individuals “who speak or understand the heritage language, and who are to some degree bilingual in English and the heritage language” (p.38). However, Kelleher (2010) says children who belong to a community where the language is used are also called heritage language users, even if their family does not use the language at home. Van Deusen-Scholl (2003) described heritage language speakers as “those that seek to reconnect with their family’s heritage through language, even though the linguistic evidence of that connection may have been lost for generations” (p.222). In the research literature the individual’s connection to the language is emphasised in most cases. This means that regardless of the level of proficiency, if a person has a
connection to the language, he/she is a heritage language learner. This distinction is important for the participants in this study who presented with different family and language stories that resulted in varying levels of proficiency.

2.2.2 Types of bilingual proficiency

Types of bilingualism can be categorised depending on the language environment and proficiency. Fishman and Lovas (1970) classified four types of bilingual programs at schools and each has its own goal. In a “transitional bilingualism program”, learners use the mother tongue temporarily until they are able to use the dominant language in each subject at school. The aim of this bilingual program is to improve the skills of the dominant language. “Monoliterate bilingualism” aims to develop oral and aural skills of two languages but only literacy skills in the dominant language. “Partial bilingualism” aims to acquire mainly speaking and listening and some degree of reading and writing, but the dominant language is used for subject learning. The final program, “Full bilingualism”, is where equality of esteem is accorded to both languages. According to Nakajima (2003a), heritage language education belongs to the partial bilingual program.

Nakajima (2003a) also categorised bilingualism based on aural, oral and literacy skills. According to Nakajima (2003a), “aural type bilinguals” can understand what the person hears in two languages but can perform other skills in only one language, “oral type bilinguals” can listen and talk in both languages but can read and write in only one language, and “literate type bilinguals” can speak, listen, read and write in both languages. Heritage language learners may fall into one of these types; however, there is variety of characteristics among heritage language learners in terms of their proficiency. Montrul (2010) mentioned common characteristics such as interference of the dominant language and inadequate age-appropriate language skills (see details in Chapter 2.4.2) found among heritage
language speakers despite the diversity of students’ backgrounds and proficiency. Due to this diversity it is necessary to recognise the differences among heritage, first and second language education to understand the unique characteristics of heritage language learning.

2.2.3 Differences among first, second and heritage bilingual language education

In discussing the necessity of heritage language education, it is important to understand the differences among first language, second language and heritage language education. The differences among these can be described in terms of target learners, acquisition process, aims, pedagogy and proficiency.

First language learners are defined as native speakers who were born and raised in the country where the language is spoken and where they spent the critical period of their development (Department of Education and Early Childhood Development, 2010) or people who use the language for daily life (Doerra & Leeb, 2009). Heritage language education, however, is for learners who are interested in learning their parents’ language, or bilinguals who can communicate with the speakers of the language (Douglas & Chinen, 2014). Kelleher (2010) also defined heritage language learners as learners who belong to the ethnic group of the language regardless of their language proficiency. Second language education is for learners who are native speakers of languages other than the target language (Kashiwazaki, 2005). Depending on the type of learner, the process of acquisition, outcomes and strategies are different.

Different processes for the initial acquisition of language and development of proficiency can be observed among first, heritage and second language learners. Both first and heritage language speakers acquire the target language through interactions in the early years of their development. Nakajima (2001) divided children’s language development processes between birth and puberty into five stages:
yurikago (cradle) period, kodomobeya (children’s room) period, asobi tomodachi (playmates), gakkoo tomodachi zenki (friends in the first half of school) and the gakkoo tomodachi kooki (friends in the second half of school) period (p. 24). In the first period, from birth to two years’ old, children learn the concept of language and start to communicate in their first language. In the next stage, which can last up to four years, children learn how to express their emotions with words, their vocabulary increases, and they gain an intuitive knowledge of grammatical forms. Between five and six years’ old, children’s analytical skills improve, and they have an interest in using script. These understandings are the basis, in the early period of elementary school, for these children to become accomplished communicators in speaking, reading and writing.

The process of developing language across these stages is important for language acquisition. Nakajima (2001) says that appropriate input should be given to each stage. Nakajima (2001) and Moriyama (2007) both believe that children are largely exposed to language through aural input within the family and learn the rules of language through this natural acquisition process. The knowledge acquired occurs without conscious learning and is called “implicit knowledge” and it is crucial to have enough input during critical periods to develop language skills. Lack of exposure greatly affects language acquisition (Montrul, 2010). However, heritage language speakers may receive more exposure to the dominant language than the heritage language in the second and third stages due to an increase in interaction in the local language with their peers in preschool settings or the early years of school. Even though heritage language learners are in an environment where they have access to the first language at home, or within their ethnic communities, their main language shifts to the dominant language that they are exposed to at schools and in society (Saniei, 2011). As a result, their use of the heritage language in their daily lives is reduced and they start to rely on metalinguistic competence and awareness to continue to develop their understanding of the heritage language. Metalinguistic competence is the ability to use a language by reviewing the knowledge the person has already obtained.
Metalinguistic competence can be applied in many areas, such as through the combination of the phoneme and meaning of words (Okada, 1998). Second language learners acquire explicit knowledge that can be acquired through conscious learning and requires consistent effort (Montrul, 2010). Montrul (2010) also found that input and use of the target language in second language acquisition was restricted and learnt in a formal context, such as a classroom environment and involves the use of didactic materials. According to Love and Ansaldo (2010), compared to first and heritage language users second language learners are those who start to learn the language after the initial acquisition stages. Snow and Hoefnagel-Höhle (1978) report that bilingual, or multilingual, children can acquire a number of languages smoothly but by the age of puberty language learning becomes slower and less successful. Nakajima (1998) mentioned that although there are advantages and disadvantages for children to start learning a language later the actual task will be more difficult.

As the processes of learning language, or acquiring language, are different among first, heritage and second language learners, there are also differences and similarities in planned outcomes. First language education aims to develop the learner’s literacy, problem-solving, cognitive and communication skills. By learning the native language, the learner is also expected to understand his/her own identity and culture (Department of Education and Early Childhood Development, 2010). The Ministry of Education, Culture, Sports, Science and Technology (MEXT) (2017) prescribes that the four skills of reading, speaking, writing and listening should be the focus in Japanese language classes.

There are several opinions that exist regarding the purpose of learning a heritage language. The common goals in first and heritage language learning are to develop skills and nurture fluent language speakers who can interact in a variety of social contexts (Kelleher et al., 2010). As well as knowledge
of the language, an understanding of culture and community are also essential for both first and heritage language learners (Compton, 2001). Wiley (2001b) insisted that it is important to encourage and foster lifelong heritage language learners. However, Kelleher et al. (2010) concluded that the aims of heritage language learning differ depending on the learner’s needs. The goals of second language learning also vary depending on learners. Apart from developing communicative competence and understanding of culture, learning goals for second language learners include developing a global perspective, participating in the community beyond school settings, and identifying and seeking comparisons of the language between a learner’s target language and their own language (Chamotl, Meloni, Bartoshesky, Kadah, & Catharine, 2004).

Heritage language learners do not always acquire native-like language skills and the difference in the competence between first and heritage language speakers could expand in later stages although similarities can be seen in the acquisition of the first and heritage language during the critical early period, and differences between second language learning are also found (Lynch, 2003). Heritage language learners often do not have sufficient vocabulary to communicate like first language users (Kelleher et al., 2010). Moreover, heritage language users tend to make more errors in morphosyntax (Montrul, 2010). In comparing heritage and second language learners, generally, heritage language users have an advantage in oral tasks over second language learners. Montrul (2010) found that heritage language users are able to obtain native-like competency in pronunciation, speed and the accuracy of speech compared to second language learners. However, second language learners are more competent and accurate when it comes to written tasks (Montrul, 2010). Montrul (2010) also emphasised that heritage learners are often less literate than second language learners, although no significant differences have been found between them in the knowledge of semantics. Further information for characteristics of JHL learners’ proficiency is discussed in Chapter 2.4.2.
Another difference between different types of language learners is that in contrast to well-equipped and well-developed teaching methods and materials used for second language education, pedagogy for heritage language education is under researched given the variety of learners’ backgrounds, proficiency and needs. With an increasing number of heritage language learners and the recognition of the value of heritage languages research is now focusing on the benefits of maintaining the heritage language.

2.2.4 Beneficial aspects of heritage language learning and motivation for learning

Wang and Green (2001) claim that languages other than the national language are “valuable resources both for individuals and for the society as a whole” (p. 167). Over time, awareness of heritage languages has been changing, and now heritage language is regarded as valuable for the country and an important part of the social structure. Firstly, heritage languages enrich the multicultural society. Van Vleet (2010) insisted that promoting heritage language learning is essential in supporting change in the society and culture maintenance. Heritage language learning is also essential for multicultural understanding. Cultural diversity in schools and society assist in respecting other nationalities and eliminating racial prejudices (S. M. Park & Sarkar, 2007). According to Pérez (2010) and Douglas and Chinen (2014), heritage language brings economic growth in a globalised marketplace. Promoting heritage language learning also assists in solving social economic, political and business issues and assists a country to become stronger (Pérez, 2010; Takeguchi, 2007; Wang & Green, 2001). Great value can be recognised in promoting heritage language education.

For individuals there are positive gains in communication flow, linguistic advantages, internal self-development and associated personal advantages. Firstly, heritage languages are important as a
communication tool at home and in society. Communication among family is essential. Communication within a family and within one’s own ethnic community will influence children’s personal, emotional, social and cognitive development as well as language acquisition (Kawagishi, 2008). Nakajima (2001) pointed out that conveying intentions and emotions to people around them is fundamental for the developing child. Another important issue is that the heritage language may be the only language with which to communicate with extended family, like grandparents (Douglas, 2005a). Heritage language encourages learners to transmit their own culture from one generation to the next (Wang & Green, 2001).

Learning the heritage language is theoretically beneficial. Engaging in the language and culture could be important especially for adolescents discovering their place in the world. Popular culture, such as anime and movies, can motivate heritage language users to learn (Patrick, 2004). Learning culture also enables heritage language learners to know how native speakers capture the language (Siegel, 2004).

Developing identity is one of the benefits of learning the heritage language. Kawagishi (2008) and S. M. Park and Sarkar (2007) found that a sense of belonging to the culture helps develop self-identity. Kurata (2015) also researched the formation of individual identity. She found that identity can be attributed and developed not only by which language was inherited but also how individuals hope to contribute to the global community and their future professional ambitions. The opportunity to interact with peer groups that share the language through current culture such as media and literature would be effective to facilitate positive identity, especially for adolescents (Oguro & Moloney, 2015). By promoting self-identity, people know who they are, what they need, and they recognise their own values. As a result, they will find their role in society and their own value (Kakui, 2001) and can recognise that they are deeply related to the language (Takeguchi, 2007). Strong ethnic identification
provided by learning heritage language supports better understanding of social relationships with other people who speak the language and supports self-confidence (Doerra & Leeb, 2009). Curtain and Pesola (1994) indicated that heritage language learning is helpful for learners in expanding their thinking, to understand others and their values, and to promote creativity and productivity. It also helps to make the learner aware of the dangers of racial prejudice (Nakajima, 2001). Moloney and Oguro (2015) summarised that developing identity, the desire to learn, and proficiency are all related to each other. Thus, heritage language learning has a close relationship with self-identity and contributes to internal self-development.

Gaining linguistic advantage is another beneficial aspect of learning the heritage language. Nakajima (2003a) pointed out that being able to speak more than one language results in higher academic achievement. Nakajima (2001) also claimed that languages are related to each other and understanding one language helps to acquire another language. She described bilinguals, including heritage language speakers, as having a better understanding of language analysis and abstract concepts. Bialystok and Craik (2010) found that bilinguals perform better in switching between two languages and have a better understanding of the relationship between linguistic rules.

Finally, heritage language speakers have pragmatic advantages. Krashen (2000) found that bilinguals perform better at both school and in the job market. Another perceived advantage is that heritage language speakers believe they can obtain better academic scores compared to second language learners (Doerra & Leeb, 2009; Willoughby, 2006). Willoughby (2006) also found that students are motivated to learn their heritage language in order to gain qualifications and better employment opportunities.
Learning heritage languages can provide personal benefits that are deeply related to the learner’s motivation to learn a heritage language. Research on heritage language learning motivation indicates that younger learners and adolescents have different tendencies in their motivation to learn a language and researchers have found that children are motivated to learn heritage languages because they want to communicate with their friends who share the language (Nakajima, 2001). The desire to be able to communicate among family, relatives and those in the particular language community was reported as a motivation, for example, by S. M. Park and Sarkar (2007), Willoughby (2006). Muranaka (2008) described children’s motivation as enjoying the learning itself, deepening bonds with family and enjoying the culture. As the learners become more mature and gain experience, they start to have other practical reasons for learning heritage languages. Having a sense of being a part of their ethnic group, improving formal standard language knowledge, maintaining already developed language skills, the desire to be bilingual and exploring self-identity were noted by Compton (2001), Douglas (2005a) and Willoughby (2006). He (2006) also found that recognition of gaining expertise in the language and economic benefit is a large proportion of motivation for adolescents. She researched children of Chinese language heritage and suggested they hesitate to learn Chinese because, when young, they do not recognise the value of culture succession and use Chinese only as a tool of communication with their family and friends. As they become older frequency of use of the language reduces, while use of local language increases. However, when they become adolescents, they start to recognise the value of culture succession and are motivated to learn the language. As practical motivation, gaining better qualifications, more career opportunities and higher academic results were indicated by some researchers (Doerra & Leeb, 2009; Willoughby, 2006). It was also found that university students had an extrinsic motivation to learn the language, such as a desire to acquire language knowledge which can be used in formal situations and wanted to be able to confidently use the language both in academic areas and at home (Kurata, 2012)
The importance of heritage language learning is widely recognised and researchers acknowledge the importance of investigating how they can contribute to the maintenance of heritage languages. Polinsky (2014) stated that the purposes of heritage language studies are to recognise how heritage languages are maintained, or lost, how proficient learners are, how proficiency differs depending on the language, and to explore pedagogy in the classroom and at home.

As discussed, the motivation for learning a heritage language varies and the benefits of learning the language are widely recognised at both personal and social levels. How heritage language education is viewed, however, shifts depending on the policies of place and time. In the next section, the trends in the history of heritage language education have been explored.

2.2.5 Key trends in the history of heritage language education

The period in which awareness of heritage language started to increase differs from country to country. For example, it started to strengthen its foundations in the U.S. in the 1990s (Yoshimitsu, 2013). In Australia, the community started to focus on the maintaining of heritage languages other than English, Aboriginal languages and second languages in 1975 (Clyne, 1991) when Australia adopted a policy of multiculturalism.

The demographic transfer driven by increased migration has impacted on the use of heritage language in many countries. For example, as more migrants and migrant workers moved to the U.S., South America and Australia, and the importance of heritage language education was highlighted. However, there were historical movements that limited migrants and heritage language use in countries under the influence of political circumstances or wars (Douglas & Chinen, 2014). For Australia it was not until the ‘white Australia policy’ was finally unpacked in the 1970s that policies were developed to
encourage languages other than English and resources were made available to help with the maintenance of community languages.

With the changing times, the number of permanent residents from other countries has increased. In the 21st century globalisation has resulted in more people moving to other countries for the purpose of asylum, economic advancement, business, study and intercultural marriage and the number of children born overseas has increased. Not all children born into migrant families can speak their parent’s language fluently (Douglas & Chinen, 2014). Some children are bilingual in both their parent’s language and the local language, and often one language will be used more than the other as influenced by the environment (Myers-Scotton, 2006). Diversities in the background, frequency of language use, national places of birth, proficiency and learners’ needs have expanded as the number of heritage language speakers has increased in the world (Wang & Green, 2001). Society has become more culturally and linguistically diverse, hence, heritage language education has become a focus in the larger society as the ability to operate in a diversity of languages is no longer just an individual matter (Pérez, 2010).

The number of heritage language users has increased and the transmission of language and culture from one generation to the next has been acknowledged as extremely important. Therefore, maintaining languages has become the responsibility of the society as well as the family (Wang & Green, 2010, p. 177). However, social support and political recognition of heritage language education are highly susceptible to the political environment and vulnerable to shifting of policies depending on governments. Japanese education and language policies have also changed over time and with more Japanese living outside Japan attitudes to Japanese heritage language (JHL) and language policies in Japan have undergone resultant change.
2.3 Japanese heritage language education (JHL)

2.3.1 Japanese language education in the world

Current JHL education is conducted worldwide and cannot be discussed without an understanding of the history of Japanese language education. According to Matsuo (2012), Japanese language education outside Japan started in 1414 when the Korean Dynasty started to train Koreans for diplomatic service. Within Japan, Japanese language education first started in the 16th century to educator Christian Missionaries. This practice was forbidden when Japan adopted a policy of national isolation.

The present history of JHL education can be backdated to the 1900s. With the migration of Japanese people to Brazil, in 1908, the migrants started to teach Japanese to their children. In this period, in order to maintain and develop the children’s Japanese language competence, Japanese language education was conducted on the assumption that they would return to Japan in the future and this lasted until Brazil entered World War II in 1941 (T. Watanabe, 2010).

With the growth in the number of emigrants, the need for Japanese education for the children of those emigrants gained attention. JHL education was developed mainly for Sweden, Canada and Australia, for the purpose of maintaining the language skills of the children of the Japanese migrants (Nakajima, 2003a). With the progress of globalisation, JHL education has been extended to many countries, such as the U.S. and in Asia and Europe. According to Nakajima (2003a), Japanese language education outside Japan was originally for those Japanese people who emigrated to other countries and it has a long history compared to Japanese language education conducted in the world as a second language;
it is studied by more than 3.65 million people outside of Japan with the number of learners increasing by 30 times in last 30 years (Japan Foundation, 2013). Despite this long history, JHL education has not received sufficient research or investment, compared to other heritage languages or to the teaching of Japanese as a second language. This due to there being fewer institutions and professionals in the area of Japanese heritage language (Nakajima, Tanaka, & Morishita, 2011). Nonetheless, Japanese language education, both as heritage and second language, is supported by Japanese language policy.

2.3.2 Language policy in Japan

The Ministry of Education, Culture, Sports, Science and Technology (MEXT) (2017) describes the significance of language learning as promoting language skills that are important in operating the language to communicate with others and to develop ideas based on knowledge, experience, logical thinking and emotional sensibility. Japanese language education outside of Japan is categorised into three groups by the MEXT: Japanese as a second language, Japanese for students who intend to come back to Japan in the future, and heritage Japanese for migrants or children who were born overseas (Ministry of Foreign Affairs of Japan, 2014). MEXT also stated that Japanese education overseas is important for promoting cultural interchange and understanding, and for creating foundations for friendly relations among countries.

To promote the internationalisation of Japanese, MEXT (2017) introduced three policies: promoting the transmission of information about Japan and Japanese language, support for Japanese learning according to a diversity of demand and clarifying the nature of Japanese proficiency that accommodates international communication.
MEXT (2017) emphasises the significance of Japanese language education for the children of temporary residents outside of Japan. The Ministry states that it is the obligation of the Japanese government to provide adequate education to enable children to transfer smoothly into the Japanese education system when they return to Japan. However, as the number of students who study Japanese as a heritage language overseas at hoshuu-koo increases, the gap between the aims described in the curriculum organised by MEXT and actual proficiency and the needs of heritage language learners is expanding. Hoshuu-koo, schools which provide Japanese language education outside weekday schools, have been organised worldwide and are supported by the Japanese government and/or local communities. (Details of hoshuu-koo and community supports is discussed in Chapter 3.3 and 3.4).

MEXT (2017) realises that JHL education needs different teaching and curriculum to support the move from first or second language education. Thus, MEXT (2017) affirms that it is the obligation of the government to promote Japanese education to students who study Japanese overseas as a heritage language and research is planned through Japanese heritage language education surveys in the near future.

2.3.3 Current status in Japanese heritage language education

Japanese language education for Japanese people who grow up outside Japan now operates in many places around the world. Although these language learners are described by a single term “heritage language learner”, the learners’ background, environment, proficiency, interest and dialects have an infinite variety (Doerra & Leeb, 2009; Oguro & Moloney, 2012). Diversity can be also seen in JHL speakers and reasons for staying in their respective countries of residence differ – reasons could include Japanese students who arrived at a younger age but have attended a local school for years, overseas-born students as children of immigrant or intercultural-marriage parents, and Japanese students who stay overseas as temporary residents (Doerra & Leeb, 2009; Wang & Green, 2001).
In the U.S., for example, Japanese as a heritage language has been learnt by the children of newly arrived Japanese immigrants since the 1990s and local-born children with parents from intercultural-marriage (Douglas, 2005a). According to a survey conducted in 2013, 7.1 million Japanese children under compulsory education live abroad. The largest Japanese migrant society is Brazil, with almost 1.5 million people. In Australia, there were around 25 thousand Japanese speakers in the 1990s, increasing to 40 thousand migrants, or permanent residents, in 2001 (Matsuo, 2012; Mulvey, 2009). It is almost impossible to have an accurate grasp of numbers of school-age JHL learners, or the size of the Japanese community, due to a lack of formal records in Australia. Oguro and Moloney (2012) estimated, based on information from the Australian Census that the number of school-age children who speak Japanese at home is increasing. The Australian Bureau of Statistics (2017) census data indicates that almost 30% of people who live in Australia were born overseas and 18% of residents speak a language other than English, of these 43 thousand in Victoria speak Japanese at home. This number includes temporary residents as well as Japanese people who were born in Australia, have Australian nationality and at least one Japanese-speaking parent at home.

2.3.4 Difficulty in maintaining the proficiency of heritage language speakers and aspects which influence maintaining heritage language proficiency

Despite the increasing number of heritage language speakers passing JHL to the next generation is quite difficult. Nakajima (2003a) found that only 30% of the second generation can use their parent’s language and in the third generation 70% had lost the language of their forebears. Kondo-Brown (2005) found language use and the skills of third generation learners were almost the same as learners of Japanese as a second language. Nakajima (2001) researched the rate of the use of Japanese at home in intercultural families. She found that up to 80% of parents use Japanese when they talk to their children.
but only around 55% of children use Japanese to their parents. Not surprisingly, the local language was used among most siblings. Nakajima (2003a) commented that the passing of the parent’s language to the next generation is becoming harder and the purpose of heritage language education is to allow learners to use the language intentionally so that it does not disappear.

Both external and internal circumstances can affect retaining of JHL. For example, gender, family structure and the age of the learner at the time of language instruction has an impact on learning attitudes (Peyton et al., 2001; Takeguchi, 2007). The stages of language acquisition and exposure to the language are related significantly; therefore, it is not surprising that heritage language users’ proficiency stays at a certain level resembling that of the early school age as the amount of input by school friends and the community reduces as formal schooling starts (Nishimura, 2012). The earlier and more frequent use of the dominant language, the less proficient these learners remain in the heritage language. The frequency of the target language used at home also affects a child’s proficiency (Douglas, 2006). External factors also include insufficient educational support (which will be discussed in Chapter 3.3.5).

Students’ emotions and attitudes toward Japanese learning play significant roles in learning. Basically, negative emotions, such as unwillingness to use the language, do not motivate students to learn the language. Sharp, Thomas, Price, Francis, and Davies (1973) insisted that there was a clear relationship between a positive attitude towards learning and proficiency. When the learners are young, they use the language for communication with their family and they may not be conscious of any broader value for learning the language (He, 2006), however, adolescents have more different affective factors in their lives and it is easy to assume that these can influence their motivation to continue learning the
heritage language. Emotional factors which affect adolescents’ learning motivation and attitudes can be explained by recognition of self-identity and lack of confidence on their skills, and influence from external factors such as parents and peers.

Recognition of the identity of the learners can be closely related to their attitudes toward Japanese learning. Oguro and Moloney (2012) reported that many students at hoshuu-koo identified as Australians and did not think they needed the Japanese language. Kondo-Brown (2005) and Chinen and Tucker (2005) identify the strong relationship between ethnic identity and attitudes toward learning and motivation. A sense of identity develops an appreciation of belonging to society (Bourne, 2008) so learners may not be positive about learning a language in a society where the language they are learning does not connect to the country they feel they belong to. As consciousness towards belonging to a particular social group becomes serious for adolescents (see Chapter 2.2.4), they may have negative attitudes towards a language which seems to have little to do with their everyday community.

Lack of confidence in the language will also influence negative attitudes toward JHL learning. Students feel comfortable to communicate in a dominant language and may prefer not to use their parent’s mother tongue. Peyton et al. (2001) pointed out that children prefer to use mainstream language in any situation, even at home. Douglas (2005a) found that students displayed an unwillingness to learn because the content of the learning becomes increasingly more difficult each year resulting in a higher tendency to communicate in English during class. Doerra and Leeb (2009) report that students tend to be shy in using their heritage language if they recognise that their language skills are not good enough, especially speaking with native speakers. Students who are afraid of making mistakes are less likely to be involved in class activities (Koshiha & Kurata, 2012); therefore, making a safe, secure and supportive environment for making errors in the classroom is also important (Clapper, 2010). Wiley
(2001b) suggests that teachers have to value the learners’ strengths and weaknesses in the language to improve proficiency. Such recognition would help the teacher to provide a psychologically safe environment for students. In the research conducted by Aiko (2017), it was found that the majority of students, especially less competent students, overestimated their skills and the degree of overestimation was smaller among the students who were relatively competent. Thus, learners’ unwillingness to learn Japanese, a lack of recognition of their learning needs and confidence can all affect their learning.

External factors like public views towards the heritage language can significantly influence learners’ motivations for learning the language. Teenagers are especially easily influenced by their local school groups and mainstream society. According to Peyton et al. (2001), negative attitudes held by the mainstream society towards a language that is used by a small portion of people may distance the learners from their home languages and culture. Secondary school age groups, who tend to be sensitive to the negative impact of social difference, hesitate to use the language in front of others (Oguro & Moloney, 2012). Cummins (2001) says that a positive environment for linguistic minority students should be established by teachers. Wang and Green (2001) also emphasised the importance of building a healthy identity in the social group. At hoshuu-koo only heritage language is meant to be used, but students use the local language at weekday schools. How bilingual students are treated in the mainstream class at the local school may influence attitudes toward the heritage language. Inappropriate environment support for the heritage language culture at the local school can also discourage heritage language speakers from using the language when they speak the local language with a different accent from native speakers, or use code-switching (Hornberger, 2003). As a result, heritage language learners associate negative experiences with using the heritage language public. The opposite occurs at hoshuu-koo; where not many students have native Japanese pronunciation and skills and only Japanese is allowed during the class. Insufficient knowledge and skills in the class can cause
negative attitudes toward learning in this context. If the students identify themselves as not Japanese this can create further issues of confidence and motivation.

Students’ emotions are influenced by their parents. Expectations for children to acquire Japanese will vary. A study conducted by Douglas, Kataoka, and Kishimoto (2003) found that some parents expected their children to be able to communicate with their parents and Japanese friends using Japanese; some wanted their children to be able to use Japanese at workplaces in the future. Parents who planned to go back to Japan in the future had especially high expectations for their children (Douglas, 2005a). Other studies found that parents expected their children to be able to pass the language onto the next generation and also to gain high scores in their examinations (Compton, 2001). Such expectations from parents could be a burden for their children (Nakajima, 2003a).

In addition to expectations parents may lack understanding of the difficulty of learning the language and this can create another tension. According to Nakajima (1998), parents failed to understand why children should make mistakes in Japanese given the language is their mother-tongue. Parents may not recognise the contents of the textbook as difficult for their children (T. M. C. Watanabe, 2011). Douglas (2005a) reported that parents lacked an understanding of heritage language perception but were quick to judge their children’s Japanese proficiency based on their own views and expected their children to attend hoshuu-koo regardless of the child’s desires. Kondo-Brown (2006) mentioned that some parents believed their children could maintain language proficiency by attending hoshuu-koo even though they found the classes challenging. As a result children in this situation were at risk of becoming passive in their learning (Nakajima, 2001).

Expectations from other people, such as friends and teachers, also add to the pressures of having parents who are native speakers and the gap between a learner’s own identity and the expectations to
achieve native speaker proficiency themselves affects their motivation to learn the language (Kurata, 2012). As they grow the pressure related to issues of identity become more serious. Kurata (2015) found that some JHL learners experience conflict with the gap between their own perspective of their language performance and their ideal proficiency. They assume that they have to be more fluent in the language than their actual, or prospective proficiency, because of their roots in the language and this may discourage them from continuing to learn. Thus, various factors are recognised as having an effect on language proficiency and these factors may have an adverse influence on learners developing proficiency.

JHL education has extended across the world and has been supported not only by the Japanese government but also by communities and educational organisations in different countries. Social factors which affect the maintenance of JHL have been identified and another difficulty in maintaining Japanese is in the language itself.

2.4 Japanese linguistic features and JHL learners’ proficiency

The literature on Japanese linguistic features which challenge JHL learners and general characteristics of JHL learners compared to first and second language acquisition is discussed in this section.

2.4.1 Japanese linguistic features

Though common characteristics can be found among heritage language speakers (Montrul, 2010) the level of proficiency in Japanese may be different from other languages due to its unique linguistic features. Japanese linguistic features can be described in terms of a complex grammatical system, pronunciation, lexicon and script.
Regarding grammar, examples of these complexities include different word order from English, verb conjugation system, and various registers to use depending on situation and language users. In Japanese, verbs usually come last. For example, “Watashi wa kinoo banana o 3bon tabemashita” in direct word translation would read “I yesterday banana three ate”. The sentence means, “I ate three bananas yesterday”. Although Japanese has a standardised word order, the order is very flexible as long as verbs come last and the omission of words often happens. Therefore, “Banana o 3bon kinoo tabemashita (banana 3 yesterday ate)” can have the same meaning as the sentence above.

Moreover, Japanese verbs conjugate to indicate tense, negation, aspect and mood. For example, *taberu* (dictionary form of “to eat”) changes into *tabeta* (past tense), *tabenai* (present negative), *tabeteiru* (progressive) and *tabeyoo* (intention). Other examples of various registers are casual forms, polite forms and honorific forms (Miyagawa, 1999). The use of particles is another complex feature. Particles are defined as “postposition words attached mainly to noun phrases” and “they supply various kinds of syntactic, semantic and pragmatic information” (Iwasaki, 2002, p. 44). For example, particle *wa* and *o* are used to indicate “topic or subject” and “object” respectively in sentences and they do not exist in English.

Besides grammatical complexity, Japanese has particular pronunciation characteristics. Each syllable in Japanese is pronounced approximately in equal length and stress, each syllable has one vowel, and *n* is also treated like a full syllable in terms of length (Banno, Ikeda, Ohno, Sinagawa, & Tokashiki, 2011). For example, *nihon* has three syllables – two vowels and one *n*. Japanese has pitch accents – syllables pronounced at either low or high pitch – and there are words that have the same sounds but different meanings depending on the pitch (Labrune, 2012). For example, there are three words which are spelt *hashi*, and all have different meanings depending on the pitch: *ha* (in low pitch) and *shi* (in
high pitch) means “bridge”; **ha** (in high pitch) and **shi** (in low pitch) is “chopsticks”; and **hashi** (both at the same pitch) means “edge”. Pronunciation of long vowels and double consonants are also unique to Japanese; when **ou** and **ei** are included in spelling, it is pronounced “oo” and “ee” respectively, although there are exceptions. For example, **えいが** (spelt **eiga**) is pronounced as “eega” and **ありがとう** (spelt **arigatou**) is pronounced as “arigatoo”. Double consonants are regarded as independent syllables although there are no sounds; examples of double consonants are **zasshi** and **kitte**.

In relation to lexicon, there are three categories of words in Japanese: native Japanese words, words which originally came from China, and borrowed words mainly from Western languages (Miyagawa, 1999). Respective examples are **gohan** (meal), **ryokoo** (travelling) and **konpyuutaa** (computer). Several words exist depending on the level of formality and situation, even though they indicate the same meaning. **Chichi** and **otoosan** which both mean “father”; however, **chichi** is used when people talk about their own father to others, and **otoosan** is used to address someone’s own father. Both **takai** and **kookana** mean “expensive”, but the latter sounds more formal than the former. The number and the types of onomatopoeia are also a feature of Japanese. Not only are there words that indicate sounds, such as mimicking animal or human sounds, but there are also onomatopoeia describing the condition of things that do not actually make sounds, for example, **iraira** (irritated) and **utouto** (to doze off) (Fukushima, Araki, & Uchida, 2014).

Script is another feature which often discourages learners. This will be described in detail later in this chapter (Chapter 2.5). These unique linguistic features of Japanese language may present particular problems for JHL learners.
2.4.2 General characteristics of JHL learners’ proficiency

Differences in linguistic characteristics may influence learners’ proficiency. Overall, an imbalance in proficiency can be found within the four language skills of reading, writing, speaking and listening. Many researchers have found that oral and aural skills are better than literacy skills (Douglas, 2005a; Kataoka et al., 2008; Nishimura, 2012; Oguro & Moloney, 2010; Peyton et al., 2001). Nagaoka (1998) also noted that direct translation from a dominant language into Japanese is often found, especially in vocabulary and structures in writing and speech. Moreover, age-related issues of JHL acquisition can be found in speech, vocabulary, morphology and script. The language used at home is often limited to daily life topics and is not enough to acquire age-appropriate proficiency as natural acquisition at the home level tends to be restricted (Douglas, 2008; Oguro & Moloney, 2012). Age-appropriate proficiency is regarded as a knowledge of vocabulary, script, grammar and the competence to use them – which students learn at school in each grade based on the curriculum designed by MEXT. For example, Year 1 students are expected to know 80 kanji and 380 compound kanji words and to be able to express their own ideas in sentences (MEXT, 2017); however, children living outside of Japan hardly reach this expected age-appropriate language proficiency.

Generally, heritage language learners have a better competence in local language than their home language, especially as they get older; therefore, they prefer to use the local language even in heritage language classes and more gestures are used compared to native speakers of the target language when they talk, in order to compensate for their language skills (Montrul, 2010; Nakajima, 2001; Nishimura, 2012).

JHL learners’ grammar often suffers interference from the dominant language. Grammar patterns which are direct translations from English are often observed. Montrul (2010) pointed out that heritage language learners are often weak in morphology; they often have difficulty making complex sentences.
JHL learners’ knowledge of paragraph organisation is also weaker than native speakers of Japanese (Nakajima, 1998). Correct word order and use of conjunction words can be areas of weakness. Nakajima (2001) found that JHL learners’ written tasks tend to be lists of short sentences and they mix up different forms such as polite and plain forms and do not use the correct choice of scripts according to their age-appropriate language levels. Leaving out the misuse of the particle is also found (Douglas, 2006). Research by Calder (2008) indicated that JHL learners’ passages sometimes lack logic and social concepts.

Code-switching skills are also affected by the dominant language. According to Van Vleet (2010), learners often cannot control code-switching between Japanese and the dominant language. Nakajima (1988a) reported on the mixing of the dominant language or the use of pausing words when JHL learners speak Japanese. He (2013) examined the use of code-switching by heritage language learners and found a number of patterns including: less proficient learners switched single items, such as words or morphemes and a mix of higher levels of grammatical elements tended to be found among more proficient learners. The degree of mixture differs depending on learners and He (2013) referred to this as “multi-performance”. Children who are bilingual, including heritage language speakers, try to speak using the various resources they possess, and this enables structural transformation. Such multi-performance is an opportunity to deliver a wide range of performances.

Unique characteristics of heritage language users’ skills can be found in reading. Regarding reading comprehension, knowledge of grammar does not have much effect. Gambhir (2001) reported that heritage language users usually understand lengthy texts even if they do not know the meaning of each word. It has also been found that reading comprehension skills are proportional to the fluency of Japanese pronunciation (Nishimura, 2012). When students have good Japanese pronunciation, they usually have better reading comprehension skills. Although JHL learners often display better reading
skills than writing skills, research finds that JHL learners’ reading skills are usually lower than students of JFL. Douglas’s (2005a) research indicated that reading proficiency of Year 9 Japanese heritage learners was almost the same as elementary school student levels of JFL (Japanese as first language). Nonetheless, learners’ sentence patterns and reading comprehension skills will continue to increase as they get older (Kataoka et al., 2008). However, MEXT textbooks become more difficult and complicated as students’ age increases, and JHL learners face challenges coping with the standards set in the textbooks (Nakajima, 2001; Willoughby, 2006; Yoshimitsu, 2013). This suggests the necessity of textbooks and materials which are appropriate levels for their developing stages.

Lexicon is another feature of heritage language learners’ proficiency. The number of vocabulary used by heritage language users is limited. Douglas (2005a) and Oguro and Moloney (2012) reported that learners’ vocabulary is too restricted to express opinions that reflect their cognitive levels. Oguro and Moloney (2010) also found that heritage language learners, especially adolescents, face the problem of insufficient vocabulary and knowledge to discuss contemporary issues, a lack of background knowledge of culture and history further impedes creative expression. Knowledge of formal and academic vocabulary is required for students at post-secondary levels, and the difference between students’ knowledge increases as they get older (Kondo-Brown, 2010). Moreover, Douglas and Chinen (2014) distinguished knowledge of vocabulary and meaning of the vocabulary when listening and found that the number of words learners understand by sound is larger than their understanding of written script, though this varies depending on proficiency levels.

Typical features in Japanese pronunciation – such as the pitch and length of each syllable (see Chapter 2.4.1) – can also be misused by JHL learners, especially when speaking or writing (Douglas, 2005a; Montrul, 2010). For example, writing kite instead of kitte (missing double consonant) and ojisan
instead of *ojiisan* (missing long syllable). When JHL speakers learn or remember words through listening, these errors are often observed.

According to research conducted by Kataoka et al. (2008), JHL learners in early elementary schools have age-appropriate levels of vocabulary, which are regulated by MEXT, but after Year 5 their vocabulary tends to fall behind and only 37.5% of Year 9 students have age-appropriate vocabulary skills. As heritage learners usually start using the language with their parents when they are babies, as they become older, they tend to use “children words” due to a lack of formal language use (Nishimura, 2012, p. 131). Misuse or non-age-appropriate use of register has also been found. JHL learners are usually not good at using formal registers. Heritage language users often use the registers and vocabulary which they acquired when young and have problems updating their language proficiency to age-appropriate academic levels (Wang & Green, 2001; Wiley, 2001a). Therefore, informal speech, chatting, or writing are frequently used in instances where formal language and politeness are required (Krashen, 2000; Wiley, 2001b). For example, *sugoku* is informal speech for “very” and is used in casual talk. In formal speech or writing, *tometo* or *taihen* are usually used; however, JHL learners use *sugoku* in formal speech or even in written passages. Japanese has several types of polite language such as respectful language, humble language and simply polite language, and inappropriate use and misuse of formal language is frequent (Calder, 2008). Regarding the knowledge of vocabulary, Yoneda (2003) found that JHL learners tend to lack the knowledge of narrower terms. For example, “tree” is a broader term, and “trunk” is the narrower term (p. 162). JHL learners tend to use only broader terms when speaking or writing. However, Polinsky (2015) insisted heritage learners should not always think it necessary to be competent in the use of standard expressions which are used by native speakers of the language. It is usual for heritage language learners to use informal expressions or dialects and forcing them to use formal expression might discourage them from learning. Standard expression may be needed by these learners depending on their purpose within a specific context, such as a job.
interview. However, encouraging learners to desire to use the language frequently could be more important than insisting on the use of standard expressions depending on their learning needs.

Another feature of Japanese can be found in the use of different parts of speech. Montrul (2010) found that heritage language speakers are usually better at nouns than verbs and adjectives especially, they tend to use the nouns of common objects which are related to their daily lives. Onomatopoeic words and mimetic words, which are often used by children, are observed in heritage language learners’ speech (Nishimura, 2012).

Certain tendencies, especially, non-age-appropriate levels of use in morphology and vocabulary, are found in speech and literacy in JHL learners although their proficiency cannot be generalised due to the diversity of learners. In addition, Walsh and Diller (1978) found that learners use their cognitive skills as they get older to analyse languages and relate new information to existing knowledge. The length of the learning period helps improve productive skills, such as speaking and writing, according to Burstall (1975). However, if the input received is inadequate, they will not be able to express complex ideas. It is expected that continuous learning with age-appropriate materials during each stage of development helps adolescent learners improve their reading comprehension and productive skills.

The question that arises is what are “age-appropriate” level skills and knowledge required for JHL students. The required skills would be different between the students who intend to go back to Japanese education in the future and those who will not. Not all the students who live outside of Japan use Japanese consistently both at home and community, and age-appropriate levels for them will differ from those expected by MEXT.
Besides different experiences and proficiency of JHL learners, kanji, a complex Japanese script system, is identified as the element of the language in which many JHL learners do not achieve sufficient levels of performance. The three types of Japanese script and how each of them works in the Japanese writing system are important for Japanese language learning.

2.5 The Japanese script system and studies of kanji learning

Research conducted by Ishida (1984, 1986, 1989) reported that learning kanji was the most challenging (cited in Douglas, 2010) among the unique features of Japanese, such as morphologic, and lexical features. Kanji is one of the Japanese scripts which has a long history and uses a complex system.

2.5.1 History of Japanese scripts

Three types of script are used in Japanese writing: hiragana, katakana and kanji. Kanji originally came from China. It is said to have been introduced to Japan with Buddhism at the end of the 4th century AD and has a 1,600-year history in Japan (Okimori, 2011). There was no writing system in Japan prior to this. Its route and period of arrival in Japan varied. The first kanji came from the Wu (呉) region around the lower Yangtze River in the 4th century. The next kanji came to Japan during the seventh to the ninth centuries through the northwest region (漢). Additional kanji was brought to Japan by monks and merchants around the 12th and the 13th centuries (Lory, 2002). Besides the kanji that originated from China, the Japanese also created their own kanji, called kokuji.

Kanji was used to represent Japanese sounds as phonetic symbols, regardless of the meaning of each Chinese character. This was called manyogana and there were 973 in existence when it was created (Lory, 2002). However, use of manyogana made each sentence longer and the meaning was not clear. People then tried to adopt original Chinese meanings into kanji. This made the sentences shorter;
however, the reading was not clear. *Katakana* was then created in the 9th century to make the sentences clearer both in reading and meaning (Ootsuki, 2010). As the Japanese and Chinese languages have a different word order, people needed additional symbols between letters to adjust kanji reading into Japanese original reading. These signs turned into katakana (Frellesvig, 2010). Katakana was originally used by men for Buddhist scriptures or official documents, by scholars and by the government (Japan Association for Promotion of Internet Application in School Education (JAPIASE), 2003).

*Hiragana* was produced in the 10th century, the shapes and sounds developed from manyogana and was used mainly by women for personal documents or literature (Frellesvig, 2010). Only hiragana was used in writing when hiragana was developed but later it was used together with kanji and katakana and its use spread to men. Hiragana evolved over a long period; the shapes and number of letters reduced, and the current form was completed by 1900.

### 2.5.2 Current hiragana and katakana

Although both katakana and hiragana were developed from manyogana, the shapes were different. Katakana was derived from “radicals” (refer to Chapter 2.5.5 on kanji construction) which are a part of kanji and relatively sharp. Hiragana, on the other hand, was derived from the cursive forms of kanji. There are 46 characters each in hiragana and katakana. Katakana and hiragana are phonetic symbols; each character represents one sound and does not represent any meaning. As each hiragana and katakana character was originally made by single kanji, the reading of each character and its original kanji are often similar. For example, hiragana あ is pronounced “a” and it was made from the kanji 安 (on-yomi of this kanji is “an”). On-yomi is the reading of kanji adopted from Chinese pronunciation. Similarly, the hiragana い (pronunciation “i”) and う (“u”) were made from the kanji 以 (on-yomi “i”) and 宇 (on-yomi “u”) respectively. Katakana ア (reading “a”), イ(reading “i”)
and ウ (“u”) come from kanji 阿 (on-yomi “a”), 伊 (on-yomi “i”) and 宇 (on-yomi “u”) respectively. Thus, hiragana and katakana that indicate the same sounds come from either the same or different kanji, and the reading of hiragana and katakana are the same or similar to the origin kanji (Matsumura, 2006). As each hiragana and katakana represents one syllable, words can be expressed by a combination of each script; for example, the word tokorode (meaning “by the way”) is represented by the combination of to, ko, ro and de (とところ). Katakana words, such as koin (meaning “coin”) is written with the combination of ko, i and n (コイン).

2.5.3 Kanji reading, meaning and number

Kanji have multiple readings. The pronunciations of kanji are different depending on the period of introduction and the regions of China from where it was introduced to Japan. Over time, Japanese people adopted three pronunciations derived from the pronunciations used in China, these were the “go” sounds from 吳 (Wu) district, “kan” sounds from 漢 (Kan) district and the “too” sounds from 唐 (唐) district (introduced by monks and merchants). “Kan” sounds are now used as standard pronunciation in Japan. All of them are called on-yomi (Tomes, 2011).

Besides on-yomi, the native Japanese created another pronunciation, called kun-yomi. Kun-yomi uses Chinese characters as ideographs to represent the same or related meaning of Japanese words, regardless of their Chinese pronunciations (Lory, 2002). Although no manyogana is used now, there are kanji used for phonetic purposes only, with no regard for their meanings. This is called kasha (meaning “provisional-use”).

In addition to kanji reading, okurigana are sometimes required. Okurigana are kana suffixes following kanji which show grammatical functions of the word when kun-yomi is applied to verbs and adjectives; the endings are not represented by kanji and there is a need to add hiragana to the kanji. For example,
*tanoshii* (meaning fun) is written 楽しい in Japanese script. The kanji 楽 is read as “tano” and requires the okurigana “shii” as a word. As incorrect okurigana is not accepted; okurigana, therefore, is also an important part of kanji learning.

Unlike katakana and hiragana, kanji represents meanings besides sounds. Kanji came from different regions of China over a long period of time; therefore, some kanji have multiple meanings (JAPIASE, 2003).

The number of kanji in existence now is not clear. According to Suzuki (Suzuki, 1999), there are 50,000 kanji, although many kanji are not necessarily used in daily life. In 1981, MEXT designated 1,945 kanji as *joyo kanji*, which are the most frequently used kanji, and in 2010, 196 kanji were added to joyo kanji. An additional 861 kanji are used for people’s names (*jinmeiyoo kanji*) and 6,355 Japanese Industrial Standard (JIS) encoded level 1 and 2 are counted, so now 9,357 kanji are usually used in written Japanese (Tomes, 2011). Newspapers, other media and publications use mainly joyo kanji and provide furigana (reading in kana) for non-joyo kanji.

Kanji are used either separately or in compound kanji words. When two or more kanji characters are used in one-word, different readings and meanings are applied than when a single kanji is used. For example, the kanji 行 can be read as either “i” as in *iku* (行く) (meaning “to go”), “okona” as in *okonau* (行う) (“to conduct”), “koo” as in *koodoo* (行動) (“behaviour”), “gyoo” as in *gyooretsu* (行列) (meaning “queue”) or “an” as in *andon* (行燈) (“lantern”). The meaning of the kanji 行 in the examples above are “to go”, “to conduct”, “to act”, ‘line” and “journey” respectively. Even though the same readings can be applied, the meaning of each kanji can be different, such as *tsuukoo* (通行) and “ginkoo (銀行) – the meaning of kanji 行 indicating “traffic” and “bank”. The kanji 父 can be read as “too” as in *otoosan* (お父さん), “chichi” as in *chichi* (父) and “fu” as in *fubo* (父母), and these
examples of the kanji 父 all indicate “father”. Thus, the same kanji can be read differently depending on the words, either in single kanji or in compound kanji words, and the same or different meaning of each kanji are applied for words which include the kanji, depending on the kanji. Therefore, a knowledge of words is required to read kanji.

2.5.4 Current uses of each character

Kanji are used to write most content-words in native Japanese or words that come from China, (including most nouns, the stems of most verbs and adjectives, and most Japanese personal names and place names) and to represent ideas. For example, the noun “flower” is written as 花, the verb “to think” is written as 思う and the adjective “old” is written as 古い. The 思 in 思う and the 古 in 古い are the content-words of words and う and い are conjugation parts. An example of proper nouns, such as places, is 東京 which means “Tokyo”. Homonyms are represented in different kanji. For example, both 若千 and 弱冠 are read as “jakkan”, but the meanings are different, representing “slightly” and “youth”, respectively. Words like atsui can be written either as 暑い (air is hot), 熱い (temperature is hot) or 厚い (thick) depending on the meaning.

Hiragana is used for the conjugative parts of verbs, adjectives (う in 思う and い in 古い as described in the examples above), particles and small words that indicate relations of words within a sentence following nouns, such as は (topic particle) and まで (meaning “until”). They are also used for conjunctions, words that do not have kanji (or only obscure or unusual kanji), okurigana, inflectional endings for verbs and adjectives and furigana, for example, そして (means “and”) and いじめ (means “bullying”). Furigana are phonetic readings of kanji placed above or beside the kanji. Hiragana is also used when the writers or readers lack kanji knowledge.
Katakana is used for proper nouns that have no representation in kanji, for example, words borrowed from foreign languages and the names of persons, places and onomatopoeia. Examples of borrowed words or proper nouns are カメラ (reading as “kamera” and meaning “camera”) and オーストラリア (reading as “oosutoraria” and meaning “Australia”) (Ban no et al., 2011; Japanese Language Resource, 2011).

This complex script system greatly influences the kanji proficiency of JHL learners and can often discourage learners from continuing to learn Japanese.

2.5.5 Constructions in Japanese kanji

Understanding kanji construction may help in the learning of kanji. Kanji are categorised into four constructions: pictographs (shookee moji), ideographs (shiji moji), compound ideographs (kaii moji) and photo-semantic characters (keesee moji).

Shookee moji are kanji created from simple illustrations of objects in daily life or nature, such as “sun” (日), “tree” (木) and “cow” (牛). Most of these words are simple and learnt at an early age in elementary school but are often used as a part of complicated kanji. Shiji moji indicate abstract concepts – ideas that are hard to represent by pictures are represented by dots, lines or other symbols. “One” (一), “above” (上), “base” (本) are examples of shiji moji. Kaii moji are kanji created by combining two or more simple kanji. Slightly complicated ideas, which cannot be expressed by single shookee moji or shiji moji, are expressed by combining kanji and represent another meaning. It is said that 3% of kanji belong to kaii moji. Examples of kaii moji are “forest” (林: double trees 木 + 木), “bright” (明: sun 日 + moon 月) and “male” (男: rice field 田 + power 力). Finally, keesee moji is created by combining an element expressing the meaning and an element expressing the sound. An element which expresses the general meaning is called “bushu” (radicals); for example，氵 (indicates...
water), 金 (money or gold) and 疒 (illness). Non-radical parts usually represent sounds such as 羊 (yoo), 同 (doo) and 皮 (hi) when the kanji are read in on-yomi. Examples of kai moji are “ocean” (洋: water 氵 + sheep 羊 → kanji 羊 is read “yoo” and 洋 is also read “yoo”), “copper” (銅: gold 金 + same 同 → kanji 同 is read “doo” and 銅 is also read “doo”) and “tiredness” (疲: illness 疒 + skin 皮 → kanji 皮 is read “hi” and 疲 is also read “hi”). Almost 90% of total kanji are combination characters, either kai moji or keesee moji (Atsuji, 1985). The meanings, features and examples of the kanji construction are summarised below.

**Chart 2-1 Construction of kanji**

| Shookee moji | pictograph | Created from simple illustrations of objects in daily life or nature. Used as independent kanji and often used frequently as radicals within more complex kanji. | 日 (sun) 木 (tree) |
| Shiji moji | simple indicatives | Usually graphically simple and represent an abstract. Represented by dots, lines or other symbols. | 本 (base) 上 (above) |
| Kaiji moji | compound ideograph | Usually a combination of pictographs that combine to present an overall meaning. | 林: 木+ 木 (forest) 明: 日+月 (bright) |
| Keesee moji | semantic-phonetic | Created by combining an element expressing the meaning (radicals) and an element expressing the sound. | 洋: 氵+ 羊 (ocean) 銅: 金+ 同 (copper) |

Combination characters are mostly composed of radicals and simple kanji. As most kanji are combination characters, a knowledge of radicals (bushu) is essential. A radical is a common sub-
element found in different kanji characters and provide a clue to its origin, group, or general meaning, rather than exact meaning of each character (Toyoda, 2007). However, radicals are not always strongly related with the meaning of kanji; the actual meaning of kanji sometimes is only weakly related to the meaning of radicals. For example, radical 言 (indicating “speech”) is closely related to the kanji 話 (meaning to speak), is partially related with kanji 認 (“acknowledge”) and has little relation to the kanji 討 (means “avenge”), in terms of meaning (Toyoda & McNamara, 2011, p. 387). Most kanji dictionaries organise characters by radicals. There are 214 radicals divided into seven groups (hen, tsukuri, kanmuri, ashi, tare, nyoo, and kamae) (Atsuji, 1985). Kanji are often used in combination and the reading and meaning of each kanji differs when used solely or in compound kanji words. Even in compound kanji words, readings are not always the same. There are some rules for combining single kanji to make compound kanji words. The basic rules of compound kanji words are:

- combining similar or same meaning of kanji, for example, 開始 (starting) is the combination of 開 (to be released) and 始 (to start);
- a combination of the opposite meaning of kanji, such as 左右 (left and right) which is the combination of 左 (left) and 右 (right);
- modifying second kanji with the first kanji, for example 急病 (sudden illness) is the combination of 急 (sudden) and 病 (sick)
- modifying first kanji with the second kanji, such as 乗車 (riding vehicles) is the combination of 乗 (to ride) and 車 (vehicles);
- when second kanji is the subject of the second kanji, for example, 頭痛 (headache) is the combination of 頭 (head) and 痛 (pain);
- and first kanji that give a denial to the second kanji, such as, 無料 (no charge) is the combination of 無 (nothing) and 料 (charge) (Kuwahara, 2011).

Knowledge of these rules may help learners to remember how to write and read kanji correctly. These rules of compound kanji words are summarised below.
Chart 2-2 Construction of kanji

<table>
<thead>
<tr>
<th>Compound kanji words patterns</th>
<th>Examples</th>
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</thead>
<tbody>
<tr>
<td>Combination of similar or same meaning of kanji</td>
<td>開始 (starting): 開 (to be released) + 始 (to start)</td>
</tr>
<tr>
<td>Combination of opposite meaning of kanji</td>
<td>左右 (left and right): 左 (left) + 右 (right)</td>
</tr>
<tr>
<td>Modifying second kanji with the first kanji</td>
<td>急病 (sudden illness): 急 (sudden) + 病 (sick)</td>
</tr>
<tr>
<td>Modifying first kanji with the second kanji</td>
<td>乗車 (riding vehicles): 乗 (to ride) + 車 (vehicles)</td>
</tr>
<tr>
<td>Second kanji is the subject of the second kanji</td>
<td>頭痛 (headache): 頭 (head) + 痛 (pain)</td>
</tr>
<tr>
<td>First kanji give a denial to the second kanji</td>
<td>無料 (no charge): 無 (nothing) + 料 (charge)</td>
</tr>
</tbody>
</table>

Besides the combination patterns above, some kanji indicate supplementary meanings by adding to words as prefixes and suffixes; for example, kanji 的 can be added to indicate “characteristics” and 再 indicates “again”, as in 伝統的 (“traditional”) = 伝統 (“tradition”) + 的 (“-al”), and 再放送 (“re-broadcasting”) = 再 (“re-”) + 放送 (“broadcast”), respectively (Toyoda, 2007, p.23). Knowledge of these rules may help learners to remember how to write and read kanji correctly. Learners who acquire certain levels in kanji can use this knowledge as clues to identify compound kanji words (Toyoda, 2007).

2.5.6 Script learning in Japan

In Japan children are expected to know hiragana and katakana before entering elementary schools. Japanese is taught according to the curriculum arranged by MEXT. Kanji learning is also set strictly to each grade level (Doerra & Leeb, 2009). In Year 1 at elementary school, students start learning kanji; 80 kanji are introduced in the first year and almost 120 kanji in Year 2. By the end of elementary school (Year 6), 1,006 kanji are introduced. An extra 20 kanji will be added in 2026, but this is
Currently under deliberation (Asahishinbun, 2016 May 18th). In junior high schools, which are Years 7-9 and the end of compulsory education, students learn another 1,129 kanji (MEXT, 2017). Besides the forms of kanji, the meaning, reading and stroke order for each kanji are taught at schools. Kanji must be written according to a fixed stroke order so that it looks neat and well-balanced (Lory, 2002). Radicals are introduced in Year 3 and Year 4. Students learn new kanji that are introduced in reading passages in the textbooks, by practicing writing and reading using supplementary materials such as kanji exercise books. Originally, kanji was expected to be introduced to students along with the textbooks; however, Minematsu (1999) suggested introducing related kanji together or kanji used in other subjects during the year, rather than sticking to the textbooks.

*Chart 2-3 Japanese Script System (Characteristics of each script)*

<table>
<thead>
<tr>
<th></th>
<th>Hiragana</th>
<th>Katakana</th>
<th>Kanji</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of script</td>
<td>Conjugation parts of verbs and adjectives, particles, and furigana conjunctions, okurigana, words that do not have kanji or have only obscure or unusual kanji.</td>
<td>Loan words from foreign words and names of people and places, and onomatopoeia.</td>
<td>Most nouns, the stems of most verbs and adjectives, Japanese people or place names.</td>
</tr>
<tr>
<td>Number of script</td>
<td>46</td>
<td>46</td>
<td>Around 50,000 in existence. The total of commonly used kanji is approximately 10,000.</td>
</tr>
<tr>
<td>Shape</td>
<td>Cursive, derived from whole part of kanji.</td>
<td>Relatively sharp, derived from one part of kanji.</td>
<td>Basically, similar to Chinese character. Japanese original forms also exist.</td>
</tr>
<tr>
<td>Reading</td>
<td>One letter, one sound.</td>
<td>One letter, one sound.</td>
<td>Multiple readings.</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------</td>
<td>-----------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Meaning</td>
<td>No meaning</td>
<td>No meaning</td>
<td>Each kanji has one or more meanings.</td>
</tr>
<tr>
<td>Learning</td>
<td>Expected to learn before entering elementary school.</td>
<td>Expected to learn before entering elementary school.</td>
<td>1,006 by the end of elementary school education, and another 1,129 kanji by the end of compulsory education (Year 9).</td>
</tr>
</tbody>
</table>

2.5.7 General problems in kanji acquisition

It is suspected that kanji proficiency is decreasing among Japanese people. In 2012 the agency for Cultural Affairs released the results of a public opinion poll regarding kanji proficiency. According to the survey, more than 70% of Japanese people felt that their kanji skills had declined, 66.5% of participants answered that their writing skills in kanji had declined and 57.2% answered that they did not write letters, e-mails or text messages in kanji anymore. People can still recognise the meaning and reading of kanji but as the opportunity to use handwriting has reduced many do not maintain written kanji skills (Sankei News, 2012). Ishikawa (2010) says that reading habits are in decline due to the widespread use of mobile phones, the internet and computers. This has had a significant influence on kanji, especially writing skills. Computers enable an automatic change from kanji reading into kanji, and vice versa, as well as the choice of correct homonyms for the context, resulting in people’s kanji recognition and handwriting skills declining.

Passages can be written without kanji, using only hiragana and katakana if the correct kanji characters are not known. Hiragana allows people to express their ideas without kanji. Children often write essays
using only hiragana or easy kanji. Thus, the use of kanji and kanji proficiency has become a significant concern.

2.6 Prior studies regarding kanji learning

Despite the long history and usefulness of kanji, reduction of kanji proficiency has become a social issue in Japan.

2.6.1 Kanji proficiency and required skills

Kanji proficiency of JHL learners is highly influenced by its complexity. Ariyama and Ochiai (2012) consider that it is important for learners of Japanese to read and write kanji correctly, to select appropriate kanji in a dictionary, and to understand the meaning of kanji within words. Yanagida (2011) pointed out the knowledge of radicals and stroke orders is also important. Ishii (2013), on the other hand, insisted that being able to understand what the kanji indicates, to read the kanji, to recognise where kanji should be used when they write passages and to check the words with a dictionary are fundamental skills that learners need. People, especially JHL learners, seldom write kanji by hand in daily life in this highly technological society. With the spread of the Internet and smart phones, searching for unknown kanji is not just quicker than with a hard copy dictionary but it also accesses a wider variety. It is necessary to acquire the skills to use the tools to check unknown kanji effectively (Hamakawa, 2010).

According to a large-scale investigation conducted on hoshuu-koo teachers worldwide, 30% to 40% of teachers in Asia, Europe, Oceania, and North America reported that they have students who need furigana (reading of kanji) to read written passages at school (Fujimori et al., 2006). This indicated that a significant number of JHL learners do not reach required MEXT levels of kanji proficiency.
Kataoka and Shibata’s (2011) research found that it is hard to reach expected levels of kanji for JHL learners, especially for Year 5 students or higher and half of Year 6 to Year 9 students did not reach the expected levels for their ages.

Nakajima (2003b) researched kanji writing and reading levels separately and found that the kanji writing levels of Year 7 to Year 9 was almost same as Year 2 levels, and their reading skills remained at Year 4 level. The results indicated that JHL learners’ kanji proficiency was not progressing satisfactorily to the expected levels for each age, regardless of the period of learning of Japanese, although Burstall (1975) mentioned length of time learning helps to improve productive skills.

Errors in writing kanji are often found in JHL learners. Chikamatsu (2005) compared native speakers of Japanese and JSL learners and found that errors made by native speakers of Japanese consisted of guessing correct kanji using prior knowledge, but they often chose wrong ones, in contrast, JSL learners tended to use incorrect shape of kanji. Hatta, Kawakami, and Tamaoka (1998) also found that popular errors by JSL learners were use of the wrong shapes of kanji, such as omitted or added strokes, substitution use, and mixture of orders of compound kanji words.

There is also the issue that learners may not use kanji appropriately when they write passages even if they know kanji. Nakajima (1998) found this in her study. Novarida (2011) found that JHL learners had difficulties understanding how to use kanji they know. These findings indicate learners need to recognise where kanji should be used. University level JHL learners also have problems using kanji. Douglas (2010) found that university JHL students have problems in writing and reading compound kanji words, although they could read and write each separate kanji relatively well.
Matsunaga (2003) stated that JHL learners’ reading comprehension skills are quite close to JFL learners when the number of kanji is limited in the passages, which also advantages JSL learners. When more kanji, which JHL learners understand, are used in passages, they have better reading comprehension, but the type of passages will influence comprehension. Matsunaga (2003) found that JHL learners can perform better in reading narrative passages than descriptive passages. This may be because narrative passages allow learners to guess the meaning and reading of kanji by the flow of the story even if they do not have sufficient kanji reading skills.

Similar patterns can be found regarding kanji proficiency among Japanese heritage and second language learners and Chinese heritage language learners. Ke (1998), who researched Chinese-English bilingualism, compared the proficiency of Chinese students in using Chinese characters. Ke could not find any significant differences between Chinese heritage language learners and second language. Findings of research conducted by Douglas (2008) reported that JHL students’ kanji reading skills are very similar to those of JSL learners at university. These findings indicate that kanji learning for young adolescent JHL learners is closer to second language learning, rather than the first language learning; therefore, difficulties in kanji learning in JHL learning may be similar to the difficulties encountered by second language learners.

2.6.2 Difficulties in kanji learning

Even in a single word kanji, there are many components that learners need to acquire, such as radicals and meaning. Most learners regard kanji writing as the part of kanji learning where they are weakest regardless of whether they learn Japanese as a second language (JSL) or heritage language. Ishida (1984, 1986, 1989) found that JSL learners regarded writing kanji as the hardest task, followed by reading, meaning of kanji, compound kanji words and radicals in kanji learning (cited in Douglas, 2010, p.3). Novarida (2011) conducted a survey of students who study Japanese as a second language
and summarised the aspects of kanji learning that the students felt was hard: they reported that there are many kanji that have similar shapes; some kanji have similar readings and it is hard to recognise where to use the kanji they remembered.

According to a survey conducted by Yanagida (2011) on JSL learners, students at all levels answered that the reading of kanji is difficult. Yanagida (2011) suggests that this is because there are many kanji that have the same readings, especially compound kanji words which make students feel confused as the reading and meaning of each kanji change when single kanji is used in compound kanji words. Even if learners remember kanji, it does not mean the learner can maintain this knowledge. Toyoda (1995) stated that learners cannot use kanji in writing passages if they do not maintain their knowledge of kanji.

Learners found difficulty in understanding the context of where kanji should be used, not just in practicing kanji use. Knowing the context of where kanji should be applied is hard for learners of both JHL and JSL who have high levels of kanji knowledge. Hamakawa (2010) found that students prefer to be given authentic situations where kanji are to be used, such as signboards or documents. Ariyama and Ochiai (2012) conducted a survey of learners of Japanese language who live in Japan, to ask when and in what situation they are exposed to kanji. They found that these learners needed kanji for daily necessities, letters, signs around the town and on official documents.

Learners who live in Western countries have another problem. Western written languages are not ideographic and therefore do not contain the concept that script indicates meaning. People who grow up in Western language environments are reluctant to work with the ideographic nature of kanji leaving aside the complex shapes and stroke orders (Tollini, 1994). Nakajima (2003a) added that drill practices that learners’ practice for kanji writing are not familiar in a Western context.
A lack of vocabulary knowledge makes kanji learning difficult for heritage and second language learners. Japanese students who grow up in Japan learn kanji according to the allocation list set for each grade level. This kanji list is organised based on the students’ cognitive level, vocabulary and grammar knowledge; therefore, they develop knowledge of the vocabulary and learn the kanji that are used for the vocabulary. However, JHL learners and JSL learners need to remember both vocabulary and kanji together and sometimes the vocabulary, which includes the kanji, is not used in their daily lives. This places further burden on these learners to learn kanji (Ishii, 2013).

2.6.3 Kanji learning strategies

As kanji learning can be a burden for learners, strategy plays an important role in devising appropriate learning environments and teaching materials. Learning strategies along with the proficiency levels and exposure to kanji in the everyday should be considered for JHL learners, especially for higher year students. Shimizu and Green (2002) suggested three methods in introducing and practicing kanji: rote learning, memory and context (p. 238). The rote learning strategy is where students practice kanji repeatedly by copying the shapes. Memory strategy requires knowledge of radicals and sounds and also the ability to link existing knowledge and new knowledge. Context strategy involves learning kanji within a situational context.

Copying model shapes is important but is not conscious learning; however, adding sounds of the words hastens the memory of kanji and promotes conscious learning. Novarida (2011) found that most learners will just keep writing in order to remember the kanji. In research conducted by Shimizu and Green (2002), it was found that most of the teachers believed rote learning was the most effective way
to remember kanji. Although most scholars believe rote learning does not enhance meaningful learning, it is a widely used traditional teaching strategy.

Rote learning can enhance kanji skills when the meaning of kanji is added in practice. Understanding the meaning of kanji is essential. As kanji characters have a background, when the story of each kanji is provided students can find a point of interest (Shimizu & Green, 2002). Choi (2011) researched three types of the kanji practice: visual, aural and physical (p. 116). According to Choi (2011), script recognition is not only done visually but also requires listening skills and handwriting skills.

Yamaguchi (2013) interviewed Japanese teachers and observed their classes. She found that most of the teachers used memory strategies. Yamaguchi (2013) concluded that memory strategies were privileged by these teachers because of the design of the textbooks. Ishii (2013) insisted that kanji should be used as key words to understand the meaning of a passage while Gruneberg (1998) pointed out that the keyword method emphasises rote learning and facilitates long-term memory. Keywords or hints about kanji provide assistance for remembering the kanji when it is tested immediately after introduction.

Radical learning is one of the effective strategies that require conceptual or problem solving skills. Williams (2013) research supported the idea that radicals are useful to remember when learning new kanji and assist in understanding the meaning of each kanji. Douglas (2010) also justified the usefulness of radicals. The shapes of radicals are comparatively simple, and their position is regulated, making it easier for learners to remember as visual units. Moreover, by recognising radicals, non-radical parts can be easily distinguished. Non-radical parts help to access the sounds of the kanji. Toyoda (2000) found the meaning of radicals can be acquired relatively smoothly in the early stages of training by comparing the sounds of non-radical parts. Flaherty and Noguchi (1998) compared two
methods for remembering kanji – remembering each kanji as whole and splitting each kanji into components. They found that the latter was more effective. Splitting kanji into component parts required an understanding of the meaning and roles of each part. On the other hand, Toyoda and McNamara (2011) found in their study, conducted with JSL University students, that learners who have high levels of kanji knowledge can recognise and remember unfamiliar kanji by identifying whole parts of kanji, rather than radicals and non-radical parts separately.

Ke (1998) researched Chinese-English bilingualism and thought that learners should follow a sequence of steps in kanji learning. Step 1 was to be familiar with kanji and have a period of building up their knowledge; step 2 was a transition period, when learners are on the way to the next stage; and step 3 was the period of handling kanji components, where learners become capable of dealing with the components of kanji (p. 92). Stages of learning and proficiency are key points in the selection of teaching and learning strategies.

Enhancing metacognitive skills is also significant. Metacognition requires the ability to recognise one’s own proficiency and understand what one knows or does not know. Even if learners understand kanji that is introduced by the end of Year 6, actual proficiency might be differ from their perception. Understanding the weakness and strength of a student’s own learning may help to improve his/her skills. Shimizu (2009) suggested that metacognitive activities should be applied when learners can manage, and these could be effective in enabling learners to understand actual proficiency and the areas where they struggle. In a study by Aiko (2018b) it was found that underestimation and overestimation were mainly found among the students with relatively less understanding of kanji and many did not recognise their weaknesses and strengths when studying kanji components. However, their self-evaluation skills improved as their kanji proficiency improved.
Besides cognitive strategies, employing context in learning is an important strategy. Context as a strategy is where learners acquire kanji within the context of a specific situation. Mori et al. (2007) found that rather than solely relying on kanji knowledge, identifying each kanji within a situated context helped advanced JHL learners’ kanji recognition. Yamaguchi (2013) explained that learners can make educated guesses about what the word indicates within the context, even if they do not know the kanji.

As Japanese has many homonyms often making a guess within context is essential. Yamaguchi (2013) insisted on the importance of employing textbooks designed to improve these skills as kanji learning tends to focus on meaning, reading and shapes but the actual purpose of learning kanji is being able to write appropriate kanji in passages and to read written texts. Shimizu and Green (2002) found that reading specific topics requires a specific vocabulary which relates to the topics and kanji which indicates the vocabulary and goes beyond just focusing on remembering kanji itself. When considering context Shimizu and Green (2002) emphasised the importance of reality. When authentic materials are provided, such as menus and advertisements, the context becomes more realistic and helps facilitate remembering for students. Learning can become more meaningful. No single strategy can be a comprehensive approach and method. Mori and Nagy (1999) pointed out that employing multiple methods is most effective.

Strategy is not the only element of concern for teachers. Paxton and Svetanant (2014) insisted on the necessity of motivation in learning kanji, especially when learners have limited exposure to kanji in their daily lives. Making learners aware of the culture of kanji is one of the ways to elicit learner’s motivation to learn kanji. Shimizu and Green (2002) agreed on the importance of affective factors for learning, such as introducing cultural discussions and artefacts while teaching kanji. Just and Carpenter (1987) suggested it could be less of a burden for both learners and teachers if single characters that
correspond to one shape and syllable, such as hiragana and katakana, are replaced with kanji. However, according to the research results conducted by Shimizu and Green (2002), although learning kanji itself can be a difficult task they did not want to stop introducing kanji as teachers recognise the relationship of kanji and culture. The recognition of the relationship between language and culture may encourage learners to keep learning kanji. Hamakawa (2010) mentioned that students are interested in learning symbols that have cultural meaning. The image of each kanji may provide learners with the cultural and historical understanding that underlies each kanji as kanji were produced over many generations and represent nature and people’s lives. For example, kanji “台所 (daidokoro)” indicates “kitchen” has “台 (means table)” and “所 (means places)”. In the Heian era (794 – 1185) the Imperial family used a table on which food was placed. Later the room where the table was set up was called “台所”. As food and households are deeply connected. “台所は火の車” (a direct translation: kitchen is a fire car) indicates the family may have difficulties in making a living because of lack of money” ("Nihongogen daijiten," 2005). Thus, how the word “kitchen” is spelled as “台所” and how the word is used other than the literal meaning can be explained to learners. Adapting manga, a Japanese pop-culture that has spread worldwide, can also be an effective way to incorporate cultural messages. Yamaguchi (2008) suggested that manga could be used effectively in teaching as the pictures in manga help learners grasp ideas of the story even if they do not have adequate kanji knowledge. It is crucial to make kanji learning attractive and this can be done by introducing cultural symbols and meanings and allowing students to understand the usefulness of kanji (Shimizu & Green, 2002).

Yamaguchi (2008) says that kanji learning becomes effective when learners have a rich vocabulary. Paxton and Svetanant (2014) also noted that kanji should be treated as vocabulary, not as letters, such as in the alphabet. The kanji that are necessary for each learner will be different depending on the learner’s environment and the purpose of learning and the learning environment should be considered in the selection of kanji.
It is important to consider the order of introducing kanji. In JFL education, 1006 kanji are introduced in elementary schools. According to Taishukanshoten (2016) kanji introduced in schools are called *kyoiku kanji* (educational kanji) and 881 kanji were first introduced in 1947 by Monbusho (the previous name for MEXT); however, the allocation of kanji at each year level was not specified at that time. In 1958, the list of kanji by school year level was created. In allocating kanji into each school year, four concepts were considered: the kanji introduced first should be frequently used socially, related deeply to students’ daily lives, have a small number of strokes and be easy to remember.

In contrast, the order of kanji introduction in JSL education differs depending on the textbooks. Paxton and Svetanant (2014) summarised some typical orders and the advantages and disadvantages of each order. First, introducing kanji starting with etymology gives a visual formation of images and provides useful mnemonic clues, however, the number of kanji belonging to this category is very limited. Second, using component-based criteria, which introduces kanji by combining separate or two or more components, such as radicals, rather than teaching the whole kanji as a single entity. As each component is basically simple and introduced at an early stage, learners can remember kanji logically; however, some components are not introduced first even though kanji which uses these components are frequently used. For example, the kanji 店 is often introduced at an early stage, but its component 占 is usually introduced later. Thirdly, the order is frequency based, such as in everyday kanji. As learners use the kanji frequently, it may help them remember the kanji; however, sometimes difficult kanji are introduced at an early stage. A form-based order is a fourth strategy. Simple forms, such as kanji with fewer strokes, which are more easily distinguishable, are introduced first. Symmetry, horizontal or vertical division, is also a form-based strategy. However, kanji with multiple strokes are not always hard to recognise for learners. Paxton and Svetanant (2014) also add groups of kanji order,
which introduce kanji through a meaning-based category, which allows a degree of overlap (pp. 97-101).

The MEXT textbooks are used for JHL kanji learning. Kataoka and Shibata (2011) contended that kanji teaching using the textbooks provided by MEXT is not appropriate for heritage learners. Ariyama and Ochiai (2012) agreed and suggested choosing vocabulary which learners need in their current daily lives or for their future needs. Adapting the kanji materials that examine the vocabulary and setting for learners is essential. Yamaguchi (2013) stated that materials which introduce related kanji in selected topics are important however, as Miura (2009) concluded, finding appropriate materials might be difficult. Yamaguchi (2013) found that the teachers participating in her research said that they did not have the opportunity to discuss and share their knowledge and materials with other teachers in other schools.

Multimodal texts and materials would be useful for adolescent JHL learners. Multimodal texts were defined as texts which combined two or more semiotic systems, such as text, image, sound and movement (Bull & Anstey, 2010). An array of activities, not available through traditional printed materials, are possible through the use of multimodal materials. Internet and Interactive Boards games are also parts of multimodal materials. The Internet enables the use of hypertext. Hypertext refers to the structuring of information in blocks of text which are connected by electronic links. Some relational links, such as menus, audio files, are available through hypertext and learners have opportunities to learn about different text types in ways that enhance the expansion of written texts (Ajayi, 2009).

Along with the development of technology, the possibility of multimodalisation of teaching materials can spread and expand knowledge and a wider range of teaching is possible. To be effective teachers need a knowledge of what is included in a text, as well as how different text elements relate to each
other, and what are the effects of these relations (Bull & Anstey, 2010). How these materials can be used to support the achievement of the learning tasks is important (Kitson, 2011).

In kanji learning, image of kanji, structure of kanji, can be made available by visual materials such as PowerPoint slides. By pronouncing words or using audio files, audio input is also possible. Not only looking at the written information but also searching for meaning, understanding, writing and answering questions from the textbooks may help to expand learners’ activities and the usefulness of the textbook.

In this research, the enhancement of the kanji proficiency of JHL adolescent students was the main focus. Kanji is regarded as one of the most challenging areas for JHL learners, and this is an area in which further development is desired. Despite the recognition of problems with kanji proficiency and the necessity to develop targeted teaching materials, kanji learning materials designed by MEXT or second language learners are still mainly used for JHL learners. Some schools use original materials but there is little evidence of sharing materials between teachers or across schools. By adapting findings from previous research to explored solutions to improving kanji proficiency this research consisted of the development of original kanji materials and these were tested in the classroom context. Teaching and learning plans were examined and their effectiveness in the classroom environment for JHL learners analysed. Chapter 5 has a full description of the principles used to develop the original materials and the learning strategies applied. To theoretically justify the practices and analysis in this research the approach applied in this intervention have been adapted from cognitivism theory to explain how language can be acquired and optimal conditions for planning for heritage language learning can be provided.
2.7 Language theories

This research adopted a cognitivism approach to language learning and provided an analytical frame for design, data collection, analysis and conclusions. As language theories cannot be described independently and according to Inoue (2015), structuralism, nativism and cognitivism are in a triangular relationship a brief explanation to justify choices is provided below.

2.7.1 Overview of language theory

Structuralism is a theory which is based on the idea that language is not a collection of separate components but consists of function and structures. De Saussure (1857-1913), known as “the father of modern linguistics”, thought that presence or absence of language skills is the difference between humans and animals (Tsuchiya, 2005, p. 26). According to de Saussure, individual languages differ, and he described the language system by analysing sounds and grammar symbols. He stated that a language symbol was one which linked a concept and sound or image and the rules were decided by social agreement, the relationship between words and things being arbitrary (de Saussure, Bally, Sechehaye, Riedlinger, & Harris, 1983) Thus, each language has its own rules. Communication can be established only when the listeners and speakers have common ideas about language symbols and how they work within the culture.

The second theory in the triangular relationship was developed by Chomsky who did not support structuralism or Skinner’s theories of verbal behaviour (Skinner, 1957). Chomsky (1975) regards language as a tool of thought and self-expression (Hauser, Chomsky, & Fitch). He insisted that learner’s internal factors, not only environmental factors, contribute to language learning. Thus, behaviourism is not enough to describe both human psychology and their actions (Palmer, 2006). Chomsky’s theory is called “nativism” or the “Innatist model” and is based on the notion of universal
grammar which does not rely on social and cultural learning experiences but is innate. Universal grammar assists people to acquire language in the first two years of life. He also suggested that there are essential features that are common to all languages. Thus, native language is acquired if the child is exposed to the native language environment (Moriyama, 2007). Learning language, therefore, changes to a learner-centred approach from a teacher-directed one. In Chomsky’s theory, “competence” and “performance” were distinguished. According to Chomsky, competence is the knowledge of the language and performance is the actual use of the language in social context; syntactic rules are emphasised in his theory of universal grammar and semantics are not disregarded (Chomsky, 1975; Yanase, 2004).

Cognitivism (Hymes, 1927 –2009), the third approach to language in the three part relationship identified by Inoue, is used to argue that language activities cannot be consistent with grammar alone. According to Hymes, communicative competence consists of tacit knowledge and ability for use which cultivates appropriate utterances and sentences within particular social contexts (Hymes, 1972). This is called “cognitivism”. His point was that the meaning of vocabulary is decided in context; therefore, people can understand and apply the rules when they use them. In response to Hymes’s theory, Canale and Swain (1980) described competence from three points of view: grammatical competence, sociolinguistic competence and strategic competence. In addition, Canale (1983) added the necessity of discourse competence, which people need to apply for cohesive and coherent and communicative discourse.

Inoue (2015) summarised the relationship between structuralism, nativism and cognitivism. First the difference between structuralism and nativism is the existence of sociality; Structuralism is premised on the existence of society, but nativism does not, and ultimately individual innate ability was the
focus. Next, it is important to note that nativism is autonomous, while cognitivism is related to general cognitive ability and individual motivation. From a cognitivism point of view the premise is advanced that linguistic development occurs as the results of progressive evolution. Differences between structuralism and cognitivism can be explained as arbitrariness or rational relationships between language and meaning (Inoue, 2015, pp. 60-66). Cognitivism is not independent or in profound conflict with other structuralist or nativist theories but differs in perspective in that it has a compensatory view that finds a fit with this research in that it has an emphasis on human perceptions, affect, well-being and motivation.

2.7.2 Cognitivism

Cognitivism is a theory which focuses on human perception and cognition. This study emphasises motivation and psychological attitudes and it views the learner as an active processor of information (Suharno, 2010). Yamamoto (2010) summarised cognitivism as a repetition of language use which helps to acquire grammar patterns and leads to abstract schema. Ausubel (1966) was an early proponent (Eguchi, 2011).

Ausubel (1966) emphasised the importance of meaningful learning and claims learning is meaningful by using the “instructional materials that have been non-arbitrarily and substantively incorporated in relation to an existing concept or principle in cognitive structure” (p. 195). Ausubel also suggested that incorporating students’ needs, personal interests, and goals are essential (Brown, 2000). According to Ausubel, meaningful learning and rote learning are clearly distinguished. as meaningful learning will lead towards long-term memories, rote learning combines unrelated information and makes retention of knowledge more difficult (Suharno, 2010).
As cognitivism has a focus on complex forms of learning, such as problem solving and information-processing (Schunk, 1991), providing instructive explanation, demonstrating, illustrating examples are strategies to be applied when facilitating learning (Ertmer & Newby, 2013). Brown (2000) also discussed the notion that learning will have more meaning when learners are aware of their own learning needs and are highly motivated.

Additionally, cognitivism emphasises the importance of language custom and recognition of native speakers’ use of the language. Lee (2010) found social, cultural and cognitive factors of language users influence the use of language as well as linguistic factors. Moreover, cognitivism explains the different use of expression among languages that result in different viewpoints (Sakai, 2013). For example, different viewpoints on subjectivity and objectivity between English and Japanese have been identified; it was found that stories that were described from the character’s viewpoint in Japanese were depicted objectively in English translation. This is due to the different perspective taking between Japanese and the English language (Hasebe, 2012). Hasebe (2012) points out different perspectives are also reflected in vocabulary; he explained Japan has more onomatope than Western languages because of this. Thus, learning vocabulary using translation may not be enough to enable sophisticated use and aspects of cultural, social, historical, contextual and cognitive factors should be considered in the design of the learning environment.

2.7.3 Lexical Approaches
Theories of lexical approaches to the idea of meaningful language learning have also been applied. Lexical proficiency includes understanding the meaning of words, being able to write and pronounce words correctly and to be able to use words in context (Akamura, 2011). In the 1990s, the importance of vocabulary knowledge became a focus in studies of communication activity (Akamura, 2011).
Moudraia (2001) insisted that a lexicographic approach is one of the most important principles in a meaning-centred syllabus. Abdülkadir (2012) supports the notion that vocabulary learning is a key element in achieving a high level of language proficiency. Lewis (1993) argued that vocabulary is more important than grammar learning for effective communication.

The significance of vocabulary learning has been researched. Abdülkadir (2012) found that a lack of vocabulary affects students’ ability to express themselves. Nation (2001) emphasised that the need for learning vocabulary should be acquired cumulatively. According to Akamura (2011), an increase in vocabulary will lead to higher reading and listening comprehension.

There are several elements that result in enhanced vocabulary learning. First, the selection of vocabulary instruction should be carefully considered. According to Schmitt (2000), frequency is not the only important element in choosing vocabulary for classroom teaching. Besides the frequency of use, universality, subject range and colloquial styles are also important factors. According to Ushiyama (2011), vocabulary differs depending on the proficiency and prior knowledge of learners; for example, family, hobbies, jobs and current affairs are the required vocabulary for beginner levels and interests of students are important. Nishigaki, Chujo, and Kashimura (2007) argue that the learner’s proficiency and interests should be considered when choosing vocabulary.

In introducing new vocabulary, each word should not be taught individually; the enhancement of vocabulary occurs when vocabulary is introduced with correct pronunciation, spelling and meaning (Akamura, 2011). Learning by chunks is also necessary. Meanings of words are not singular; a word can have multiple meanings depending on how it is used. For example, when one word is used within collocations or idioms, where two or more words often go together, the meaning may be different from
the original one; therefore, vocabulary should be introduced in a coherent text (Moudraia, 2001). Students are expected to understand the meaning of words within a certain context (Moudraia, 2001). Nation (2001) mentioned that an understanding of cultural background is also required in the use of vocabulary; appropriate choice of words, such as register, casual and formal use, is a part of vocabulary competence. The use of dictionaries is also important in vocabulary learning. Ikemura, Kadota, Mizohata, and Izumi (2006) stated that the ability to select the appropriate vocabulary in the specific context and to use words correctly in sentences is necessary. Akamura (2011) summarised that learners need both vocabulary knowledge and vocabulary performance. These aspects of language in use have been influential principles in the design of teaching and learning materials used in this study.

Retaining vocabulary is another issue in the lexical approach. Vocabulary is maintained more easily when phonetic practice and images are provided together (Otomo, 2011). Otomo (2011) mentioned that images help to understand word derivation and to develop language expression. Repetition of pronunciation practice also help in retaining vocabulary, although this is not enough to retain vocabulary in the long-term. Ikemura et al. (2006) claimed that linking new vocabulary to existing knowledge is essential for long-term memory and insisted on the importance of practicing vocabulary across contexts to assist in being able to generalise meaning and use. Brainstorming words that are related to each other also contribute to the retention of vocabulary. Takada (2006) claimed that the introduction of vocabulary by themes helps students to increase their vocabulary.

Lexical approaches are related to the cognitive view of language acquisition and have been adopted for this thesis as the importance of teachers making vocabulary learning meaningful is a tenet of the research. Besides, cognitivism and lexical approaches, theories related to error correction are applied
as errors in kanji are pointed out as a serious problem (Chikamatsu, 2005; Hatta et al., 1998) (See Chapter 2.6.1).

2.7.4 Error correction

Many researchers consider that teacher correction is not really helpful in improving students’ writing skills (Ferris, 2004). Truscott (1999) argued against error correction, insisting it is ineffective. Ferris (1999) argued that error correction with appropriate feedback could be effective in the long run and also commented that a lack of feedback gives students anxiety or reduces their motivation (Ferris, 2004). However, there is no definite conclusion as to what the appropriate feedback is. Ferris (1999) stated that the most appropriate feedback will be different for each individual as each learner will have different patterns and frequency of making errors so feedback will be needed depending on the specific errors occurring. This could be very difficult and prohibitively time-consuming.

There are three main types of error correction, teacher correction, peer correction and self-correction. Makino (1993) supported the efficiency of self-correction as it provides students with the opportunity for active participation. Some error correction styles take the form of reports that identify points of errors, the number of errors in each line and providing comments on error content (Kubota, 2001). The use of error codes is another method of self-correction; teachers can point out the type of errors by code, such as “tense”, “vocabulary” and “spelling”. Although Kubota (2001) mentioned she received positive feedback from students regarding error code correction, she commented that the effectiveness of error code correction differs by individual. She mentioned, however, that feedback helps learners to enhance their awareness and to promote further development.
Ishibashi (2005), on the other hand, insisted that learners have self-monitoring competence and it is important for them to be able to self-correct. Schmidt (1990) defined “a hypothesis that input does not become intake for language learning unless it is noticed, that is, consciously registered” (p. 130). Without having errors identified by teachers, learners should notice their errors and correct them using their knowledge and dictionaries to assist their language learning. It is expected that completing the tasks on kanji learning materials also requires the skills of error correction as students often do not realise their errors without a teacher’s assistance. If the errors are not specified by their teacher, and some cues are provided, they would be able to improve their self-correction skills. Self-correction skills can also be applied for the use of appropriate kanji in writing assessments.

2.8 Chapter summary

Heritage language education is conducted throughout the world and its demand is growing. The term “heritage language” is defined in many ways, such as by colonial heritage language, indigenous language and immigrant language. In this research language in which children’s language skills shift from their parents’ language to the local language due to high-frequency of use (Nakajima, 1998) was applied and investigated.

As the number of heritage language learners has increased, heritage language education has started to attract research attention and its benefits have been investigated. Many researchers agree that heritage language education is valuable for both the individual and the society. Despite the recognition of its value, heritage language education has faced many issues. In order to identify these issues, different acquisition processes, outcomes of education, teaching methods and proficiency among first language, second language and heritage language learning were examined. Japanese education as a heritage
language also has a long history and the Japanese Government now recognises the necessity to include it in its own language policy.

Despite typical tendencies in JHL learners’ proficiency such as a lack of vocabulary, inappropriate use of register and misuse of grammar have been reported, researchers have agreed that learning kanji, one of the three Japanese scripts, is a burden for JHL learners. In this study, the improvement of kanji learning for adolescents is the focus. Cognitivism, lexical approaches and error correction theories were adopted in this study and aspects of these theories which accommodate to the research were described.

In the next chapter, the context where this study was conducted is explored by identifying how JHL learning is facilitated in Australia.
This chapter is focused on the context in Australia and the hoshuu-koo where this research was conducted. The shift in language policies which frames heritage language education in Australia is discussed.

3.1 Introduction

Heritage language has been significant in Australia as it is a country characterised by migration and has a multitude of different languages in common use. Heritage language education, both formally and at the community level, has been conducted country-wide over a long period of time but demand and social position have changed depending on national policies. The situation of where languages are taught differs, depending on the language. The curriculum for language education as a second language taught formally at schools is developed by each state, however, heritage education, especially for young learners, does not have a formal curriculum regulated by the states.

In this chapter, the shift in language policies and the issue of Japanese heritage language (JHL) education in high schools is the focus, different circumstances in the states and the specific type of school where this research was conducted are discussed to provide a broader context for the study.

3.2 Heritage Language Education in Australia
The shifts in language policies in Australia have been greatly influenced by social policy and there have been changing practices in relation to the various approaches undertaken towards both language learning and language maintenance.

3.2.1 Demographic shift in Australia

Globalisation has led to a dramatic increase in the number of learners with a language other than English in Australia. Migration, intercultural marriages and long-term residency for study or work in Australia are examples of this phenomenon. According to the national census, approximately 28.5% of Australia’s population was born overseas. This percentage of people born overseas has increased in recent years: 28.2% in 2015 and 24.6% in 2006. The percentage of people who have at least one overseas-born parent was 26% in 2016, increasing from 22% in 2011. The census also indicates that 21% of Australians speak a language besides English at home and 42% of the overseas-born population spoke only English at home in 2016. Census results from 2011 revealed around 18% residents spoke languages other than English at home (Australian Bureau of Statistics, 2017). These figures may vary as historical circumstances change but an increase in the use of English at home suggests a decrease in the use of the parents’ own, or first language. Understanding the shift in language policies is important if it is accepted that the maintenance of a heritage language is desirable (King & Ennsner-Kananen, 2013).

3.2.2 Brief history of movements in language policies in Australia

In Australia, a shift in policies can be found in English education for immigrants, heritage language learning for immigrants and learning immigrant languages as second languages at schools (Baldauf, 2005; Cardona, Noble, & Di Biase, 2008; Lo Bianco, 1987). Australia is a multicultural country consisting of people from many different ethnic and language backgrounds. As Hetherington (2012)
reported, the language circumstances in Australia are quite complicated; these policies include Indigenous groups with many different languages, migrants from English speaking countries and immigrant groups from all over the world, increasingly from Asia. Language policies have shown a consistent shift historically (Djite, 2010). Many kinds of languages other than English were brought to the country and used by migrants. This background has meant discussions regarding language education for both English and languages other than English (LOTE), has shifted over time. Changing attitudes towards language has been reflected in policy and has had an impact on language education historically (Bale, 2010).

The National Language Policy, announced in 1987, was the first language policy for the whole nation (Lo Bianco, 1987). There had been a number of movements and discussions regarding the status of migrant languages as migrants coming to Australia increased and the number of languages represented increased. Policies were formulated at national and state levels and views and attitudes varied depending on the governments and educational systems of each state (Aoki, 2005).

Language policy has had a checkered history in this country. Australia was colonised by the British in 1788. The Commonwealth of Australia was established at Federation in 1901, and although not officially stated, English has been the dominant language. After World War II, the number of people migrating from non-English speaking backgrounds increased dramatically and the languages and cultures of these migrants started to become a focus of government policies (Yui, 1991). In the late 1950s, migrant languages were spoken by large migrant populations from countries such as Italy, Greece and Turkey, and then more languages were introduced in 1970s by migrants from Asia, especially refugees from Vietnam (Cardona et al., 2008). Educational policies were formulated to address these changes, although in the early 1970s monolingual English education was dominant for
all. Foreign language education across the country would become a gain attention in educational policies in the late 1970s (Jonak, Wood, & Matsumoto, 2008). By 1973/74 there was a demand to provide opportunities to learn community and regional languages other than English for both Australian-born and foreign-born children (Cardona et al., 2008). In 1975, The Committee on the Teaching of Migrant Languages found that 15% of students in elementary schools were bilingual, and only 1.4% of them had a chance to learn their languages at school (Djite, 1994). The Migrant Task Force responded by recommending the promotion of migrant language education within school education (Cardona et al., 2008).

In 1979 support for ethnic schools was an emphasis and English as a second language, community languages, and studies about ethnic and cultural diversity within school education became recognised. However, only one-eighth of children who spoke a heritage language received formal heritage language education in the 1980s, according to the Australian Communications and Media Authority research (Willoughby, 2006). In 1981 the Commonwealth-run Ethnic Schools Program (ESP) started and provided support for communities that were teaching more than 60 languages, other than English, for the purpose of the maintenance of languages and cultures of students who came from non-English speaking backgrounds (Baldauf, 2005).

In the 1980s, Community Language and Bilingual Programs that focused on ethnic minorities were set up in Victoria, South Australia and New South Wales (Lo Bianco, 1990). In the same decade, the ESP was established with public support for ethnic schools for the purpose of the maintenance of languages and culture for migrant children. The ESP involved “After-hour classes” or “Weekend classes” which were conducted outside of normal school hours as extracurricular education at ethnic schools, and “Insertion classes” where community language classes were inserted into mainstream school teaching
programs (Department of Education, 2017). After-hour classes and Weekend classes were established to maintain migrant languages (Department of Education, 2017) while Insertion classes aimed for the improvement of English skills by the learning of the mother tongue (Lo Bianco, 1990). This provided opportunities for English speaking students to gain an awareness of different languages and cultures (Aoki & Hagino, 2010).

Improvement of English competence, maintenance and development of languages other than English, and opportunities for learning second languages were emphasised in The National Policy on Languages released in 1987 (Lo Bianco, 1990). This policy meant many areas of language education, such as deafness and sign language, Indigenous languages, community and Asian languages, cross-cultural and intercultural training in professions and English as a second language, in terms of foundation and program coordination, were supported (Linguistic Policy for the Labour Market, 2014). The policy strongly promoted the importance of learning languages other than English by all Australian students in the expectation of gaining social, economic and educational benefits (Aoki & Hagino, 2010).

The Australian Language and Literacy Policy, released in 1991, focused on English as a second language for minority language groups while also focusing on the maintenance of minority languages. The policy aimed to connect outcomes of school education, economic development and language education at school for all Australians. Ethnic language education was expected to be organised along with mainstream language education at school (Baldauf, 2005). Thus, educational places for ethnic languages moved from communities into schools (Aoki & Hagino, 2010) and four languages – Japanese, Korean, Chinese and Indonesian – were considered to be priority languages (Jonak et al., 2008).
With the establishment of the *Australian Language and Literacy Policy* the Commonwealth-run Ethnic Schools Program, supported by the States, was incorporated into school language programs. Ethnic schools were regarded as institutions which would provide specialist education for language and culture, regardless of the priority languages identified for schools (Aoki & Hagino, 2010). The emphasis of language policies had changed and would influence new policies when they were developed (Hetherington, 2012). The policy *Literacy For All*, released in 1998, focused on literacy for all students, especially English literacy for students who used English as a second language.

In 2005, the *National Statement for Languages Education in Australian Schools* emphasised the importance of learning a foreign language in language classrooms. The government aimed to implement quality language education and to provide a high level of language education for all students at all schools (Jonak et al., 2008).

However, Language Other Than English (LOTE) education at school does not always provide enough education to support heritage language. Requirements for LOTE education differs across states. For example, all students must study at least 100 hours LOTE between Year 7 and 8. In Victoria, students need to take LOTE throughout the compulsory years of education, but this differs from other states; LOTE is compulsory for Year 9 in some schools, and some other schools commence language study after Prep. In Queensland, all students learn LOTE between Year 6 and Year 8 (Stretton, 2005). Policy is, therefore, a moveable feast dependent on national and state governments and their respective education departments. There is no reliable system to ensure LOTE is always supported or that a relevant suite of languages will be available.
3.2.3 Community Language Australia

In 2005 the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) insisted on the enhancement of ethnic schools as supplementary educational institutions (Aoki & Hagino, 2010) to compensate for insufficient levels of language education in the compulsory school system. Community Language Australia (CLA) was one of the organisations supporting community languages. The role of CLA includes promoting the development of community language programs that help maintain and assist ethnic schools in achieving their goals and support collaboration across these schools and their teachers (Australian Federation of Ethnic Schools Associations Inc (AFESA), 2015). The Australian Federation of Ethnic Schools Associations (AFESA) (2015) considers that ethnic schools play an important role in fostering community and encouraging the benefits of multiculturalism and, in 2015, 719 overseas community language schools, 115,328 students and 248 languages were registered. Community Language Schools (CLS) provide educational programs to teach the home language, encourage cultural awareness for the purpose of maintaining students’ mother tongue or heritage languages. CLSs involve Prep to Year 12 students after school or on weekends (AFESA, 2015). Schools registered as CLS receive funding through the Australian Government’s School Language Programme (Department of Education Government of Western Australia, 2015). AFESA (2015) requirements clearly state that the schools must be not-for-profit organisations in order to receive financial support. Insufficient funding can be a crucial issue for community language schools. Erebus Consulting Partners (2002) reported that only 20% of the costs of CLS programs were covered by capital grants and another 80% needed to be supplied by parents and the community. This also involves the contribution of volunteer teachers who are often not qualified (Vaidyanathan, 2016).
3.2.4 Family language policy

Language policies have changed with the time. Early policies mainly focused on the language educational use, and macro level issues, including public attitudes to supporting multilingual program in schools and communities. Policies which focused on micro level issues, such as patterns of use and language input in the context of the home was part of the Family Language Policy (King et al., 2008). The ideological importance of language (how parents consider their language), language practice (how to use the language) and management (what parents try to do with the language) are acknowledged in this policy (p.907). As language use at home seriously influences children’s language proficiency, a language shift away from assimilation practices alone needs to be negotiated and this is part of the value of the Family Language Policy. The Family Language Policy involves community, as well as families, so it is necessary to make visible the relationship between the private domain and the community. In recent years parents have also seen political issues that have affected learners’ experiences (Curdt-Christiansen, 2013). Attitudes among the general public to being exposed to LOTE means that families, government, community and schools are at the forefront of encouraging inclusive approaches to language and culture. The relationship between these players is significant and necessary if policies like the Family Language Policy are to be successfully implemented.

3.3 Japanese Heritage Language in Australia and hoshuu-koo

As Japanese immigrants and international marriages increase, more children use Japanese as a heritage language in Australia bringing greater, but different demands for language support.

3.3.1 Japanese language education in Australia

Japanese migration to Australia started late in the 19th century but ceased during World War II and emigration did not start to increase again until 1966. While LOTE education aimed at maintaining
some languages from non-English speaking countries, the amount of Japanese spoken by migrants was very little. Japanese language education was focused on second language learning as a resource for Australia, together with traditional school subjects like French, rather than as a heritage or community language (Lo Bianco, 1987). By 1994 Japanese was nominated as a priority language in schools, together with Chinese, Indonesian and Korean as part of Australian economic strategies in the Asia Pacific (Shimazu, 2010). This was part of the Keating government’s policy to encourage Asian languages (Stretton, 2005). The number of learners of Japanese increased 40 fold in the 20 years between the end of the 1970s and 1998, but Japanese was not promoted as a heritage or community language in the National Statement for Languages Education in Australian Schools (2005), which mainly promoted Japanese as a foreign language (Shimazu, 2010).

Japanese education as LOTE has been continuously promoted. The Australian Curriculum indicates that all students should be engaged in learning a language other than English. The Australian Curriculum Assessment and Reporting Authority (ACARA) (2014) stated that learning a language provides great opportunities for learners in the future – socially, culturally politically and economically. Therefore, the Australian Government aims to involve more than 40% of Year 12 students in studying a language other than English, especially focusing on Asian languages (AFESA, 2015).

The responsibility of language education in schools primarily belongs to each State and Territory, although community language learning is supported nationally (AFESA, 2015). Japanese is one of the popular languages taught in Australia and is widely integrated into the school curriculum. In 2014, a new curriculum was created in Australia (ACARA, 2014) in which the relationship between Australia and Japan was stated in terms of history, needs, and language education.
Thus, Japanese education as a second language has a history of over 100 years in Australia, and the number of Japanese learners has dramatically increased since the 1960s. The economic relationship between the two countries and tourism, has been a main reason for promoting Japanese learning in Australia. The connection between the countries provides collaborative programs in education, such as intercultural exchange and sister schools. Japanese education at schools has given learners a strong desire to be able to speak Japanese and to learn Japanese culture in areas such as, art, design and literature. The curriculum has been developed for learners to study Japanese as an additional language and the curriculum from Foundation to Year 10 are described in detail (ACARA, 2014).

Japanese language learning in Australian schools is also supported by the Asia Education Foundation. The Asia Education Foundation provides schools and teachers with curriculum resources, innovative programs and networks for the purpose of developing Asian language education (Asia Education Foundation, 2017). According to the Asia Education Foundation, Japanese had become the most widely taught language in Australian schools and universities by 2000; however, enrolments both at elementary and secondary schools have started to decline in the last decade.

The policies of Japanese language education have been influenced by the government’s language guidelines. Although maintaining Japanese as a migrant language was an aim in the early stages, the focus of Japanese language education was mainly as a second language in school education. However, globalisation has brought more children to Australia who speak Japanese as a heritage language, and the implementation of JHL education for these children has been a state responsibility. This is an
important factor as JHL education at high school level has a serious impact on maintaining learners’ attitudes toward learning JHL and their proficiency.

3.3.2 Japanese heritage language education in Australia

With the support of Japanese and Australian governments, community language schools for Japanese language, usually called hoshuu-koo, in Australia were opened in 1968 in Perth and in 1972 in Melbourne; after that, they have spread to other states (Mulvey, 2009). Financial conditions and teacher employment vary depending on the schools. As limited hoshuu-koo are financially supported by the Japanese government other hoshuu-koo are run by their communities and/or the CLA. Registered hoshuu-koo with the CLA receive financial support and the main income source of most hoshuu-koo are tuition fees (Kaneko, 2015). The employment system also varies; some hoshuu-koo have teachers sent by MEXT, while teachers at other schools are employed locally. Most hoshuu-koo use the MEXT curriculum and textbooks, but the differ materials used may vary depending on each hoshuu-koo (Nagata, 2005).

JHL education in Australia is mainly operated in hoshuu-koo and the curriculum and methods are left to each state. However, the content of JHL education after Year 10 at schools is strongly influenced by the high school curriculum of each state. For example, NSW introduced four language courses based on students’ language background in 2011: beginners, continuers, heritage, and background speakers. According to the criteria, students who have had a formal education where Japanese is the medium of instruction beyond 10-years’ old are registered as background speakers and those who use Japanese as a communication tool outside the classroom are registered in the heritage course (The Board of Studies Teaching and Educational Standards NSW, 2015). In Western Australia second language, background language, and first language courses were established in 2009 (School
Curriculum and Standards Authority Government of Western Australia, 2015). These changes presented serious problems for Japanese language learning. In order not to be enrolled in heritage or background speakers’ courses, some students stopped learning Japanese (Nishimura, 2012; Oguro & Moloney, 2012). Described by the simple term “heritage language learner”, the learners’ backgrounds, environment and proficiency under this general title represented a wide variety. There is a range in proficiency; advanced, and less so. Exams for heritage language courses are often beyond a student’s proficiency and taking this exam can be an elaborate process. In Victoria, there are still two categories of language learners – first and second language learners – and this has not caused any reduction in JHL learners. However, looking at practices in other states, it can be seen how learning experiences need to be considered and how heritage language learning is accorded its status.

3.3.3 Policy and goals of hoshuu-koo

Most JHL education around the world, up to Year 9, or equivalent, is conducted at hoshuu-koo, and diversities among JHL learners make the hoshuu-koo task very challenging.

As described earlier hoshuu-koo are schools for Japanese children abroad which have been established by the Japanese government, or local communities, with the aim of providing these children with access to part of the Japanese compulsory education curriculum (MEXT, 2017). They are commonly known as “Saturday schools”. Hoshuu-koo provide Japanese language education for first grade to ninth grade students who go to local schools during the week. The purpose of hoshuu-koo is to provide basic knowledge and skills of the core subjects and knowledge of Japanese culture using Japanese language as a medium (MEXT, 2017). The Japanese government-prescribed curriculum and Japanese government-certified textbooks are used in hoshuu-koo (Doerra & Leeb, 2009).
MEXT (2017) clearly identifies the target Japanese proficiency that is listed in the curriculum and students and teachers are expected to achieve the outcomes by using official Japanese textbooks. Hoshuu-koo are expected to improve students’ reading, writing, kanji and shisha (looking at written sentences or scripts and copying them correctly) skills. Moreover, MEXT (2017) defines the outcome of each year level; for example, Year 1 aims to be able to write script correctly with appropriate stroke orders and Year 7 aims to be able to deepen the understanding of various vocabulary and expressions in context.

The textbooks are provided to all hoshuu-koo students free of charge. MEXT also prepares a teacher’s manual. MEXT describes how hoshuu-koo teaches Japanese language according to the content presented in the textbooks, while each school is responsible for the teaching of other subjects. Allocation of time per lesson are left to each school’s discretion (Doerra & Leeb, 2009).

MEXT (2017) states that hoshuu-koo are community-based and independent schools and are operated by the Japanese society in each community. In Australia, hoshuu-koo are regarded as community language schools and are also supported by the Australian government (AFESA, 2015).

3.3.4 Status of hoshuu-koo

Hoshuu-koo are now operated worldwide. They were first established in 1958 in Washington. In 2005, there were 184 hoshuu-koo worldwide (Kataoka et al., 2008) and this increased to 203 by 2014. The number of the hoshuu-koo includes schools operated by the community. Besides hoshuu-koo, that are supported by MEXT, there are other supplementary schools that provide Japanese education to Japanese learners outside Japan. Some of these are supported by local governments, while others are privately established by Japanese associations.
According to statistical data, in 2013 the number of the students studying overseas with the intention to go back to Japan was 11,000 (MEXT, 2017). This included 2,339 Japanese students studying in Oceania, and 403 of these students attended a hoshuu-koo (Japan Foreign Trade Council, 2013). This number does not include permanent residents and foreign-born children. There are 11 hoshuu-koo registered by MEXT in Oceania and more schools are operating at the community level (Japan Foundation, 2013). Although the exact number of students who have registered at individual schools is not known it would seem that most of the students who study at hoshuu-koo are not temporary residents, but are migrants, or were born overseas and study Japanese as a heritage language.

Students at hoshuu-koo have diverse backgrounds. According to Doerra and Leeb (2009), students can be categorised into three groups; short-term residence students, who live temporarily in the country due to a parent’s intra-company transfer; long-term residence students who plan to stay longer for the purposes of studying or for other purposes; and permanent residence students who were born and raised in the country and do not plan to live in Japan. Globalisation has led to a higher number of permanent residents and the number of Japanese heritage learners has increased at hoshuu-koo. Despite the increasing demand for hoshuu-koo, issues have arisen regarding the hoshuu-koo curriculum and teaching resources.

3.3.5 Issues in hoshuu-koo and approaches

There are a range of factors that shape the heritage language learner, such as their background environment (e.g. nation of birth, length of time in the country), the age of the learner at the time of attending a language institution, the use of Japanese as a language medium at home, and proficiency. This diversity makes it complex to deliver JHL education at hoshuu-koo that is relevant for all students (Mulvey, 2009). In addition to student’ emotional factors (see Chapter 2.3.4), an insufficient learning
environment at hoshuu-koo has become an issue in JHL education arising from a diversity of the learner’s background.

### 3.3.5.1 Learning environment

A major problem is that the number of institutions for JHL learners is insufficient (Schwartz, 2001). Hoshuu-koo are available in each state in Australia; however, due to a lack in the number of these schools, some students are required to travel long distances to attend, and the schools cannot always provide adequate learning environments as buildings are borrowed from local schools (Nakajima, 2001). Nakajima (2001) also claimed that attending the school only once a week is insufficient to maintain language proficiency. As well as the problems of inadequate physical environments there is insufficient educational support for teachers. There is no teaching manual for JHL education and teachers have differing knowledge about how to teach Japanese as a heritage language (Douglas, 2008). Nakajima (2001) pointed out insufficient funding and a lack of qualified teachers for JHL education as important concerns. As the time spent at hoshuu-koo is limited language support at home is important but learning materials for home are insufficient (Nakajima, 2001).

Opportunities to use the language in authentic situations is important. Students’ communicative skills will be enhanced by using the language in day-to-day communications (Douglas, 2008). However, when it is hard to set up a simulated everyday situation in the classroom, Leeman, Rabin, and Román-Mendoza (2011) have suggested visitor sessions outside the classroom where Japanese can be the language of communication across different situations like restaurants, exhibitions or lectures.

### 3.3.5.2 Curriculum at hoshuu-koo

Curriculum is an important factor to be considered. As previously mentioned the curriculum used at hoshuu-koo was designed by MEXT for Japanese native speakers and is not suitable for JHL learners (Douglas, 2005a). The proficiency levels of hoshuu-koo students in any one may vary widely.
Willoughby (2006) claimed that where first and heritage language learners study together, there are big gaps in knowledge and experience in Japanese among the learners and this has an impact upon improving individual proficiency. Apart from the linguistic proficiency levels, students may also struggle with a lack of knowledge of Japanese history and culture. Nakagawa (2008) stated that children who grow up outside Japan do not have the chance to gain an understanding of social and cultural mores which will influence their conceptual understanding of Japanese and present difficulties with the use of abstract words. Lacking a concept of Japanese culture may make textbook learning difficult for heritage learners and be a discouragement.

Cognitive development is one of the important issues related to curriculum design. Huitt and Hummel (2003) have used Piaget's Theory of Cognitive Development to suggest how curriculum must be adjusted to meet different developmental needs at different stages. Piaget divided the developmental process into four stages: sensorimotor stage (Infancy), pre-operational stage (Toddler and Early Childhood), concrete operational stage (Elementary and Early Adolescence), and formal operational stage (Adolescence and Adulthood). In the sensorimotor stage, physical senses and motor activities form the basis of an infant’s cognitive development. Some language abilities are developed by the end of this stage. In the next stage, children become able to use symbols and start to understand abstract matters. During the concrete operational stage, children demonstrate their intelligence by manipulating logical and rational ideas against physical objects. Finally, in the formal operational stage, children start to understand abstract concepts and thinking logically. Especially, in the third stage, which involves school-age children, consideration is required in the design of relevant curriculum. Douglas (2005b) was of the opinion that Piaget’s theory of cognitive development was appropriate for curriculum development for children of school age but thought it needed to be broken down by age to form the curriculum.
Cognitive development stages are considered in the curriculum design for first language learners and also for JHL learners at hoshuu-koo. As the exposure to the daily use of the language will reduce when children start to attend local schools, their acquisition of language knowledge will be disrupted as they enter the concrete operation stage of cognitive development. Nakajima (2001) also suggested that age-appropriate knowledge becomes more difficult as the students are not used to learning other subjects in Japanese, such as social studies or history, which would enhance their ability to think and problem solve in Japanese. Thus, curriculum for native Japanese speakers is not suitable for JHL learners.

JHL learners have acquired the basic linguistic knowledge of Japanese including the contextual understanding that comes with JFL in the early years. The move into a different language environment means their knowledge is not adequate when confronted with textbooks designed for first language learners (Yoshimitsu, 2013). Willoughby (2006) thought that existing curriculum can be too easy or too difficult for JHL learners but in neither case would they be adequately provided with necessary skills and knowledge to become bilingual. Another issue as learners grow and their peer group gains in social importance is that their motivation and purpose for learning changes. Koshiba and Kurata (2012) found that language expertise can depend on the learners’ future goals. Curriculum for first language, second language and heritage language learning should be differentiated because existing knowledge of students differs and imagined futures will influence motivation. Given these considerations it has been argued that if JHL are to maintain and grow existing proficiency a new curriculum would be appropriate.

Given the above situation some hoshuu-koo have started operating two types of classes: kokugo and heritage curriculum (Doerra & Leeb, 2009). Kokugo curriculum is the one designed by MEXT. Calder (2008) found that some hoshuu-koo tried to adjust the curriculum for the heritage learners by reducing the content or teaching at a lower academic level for the actual age recommended in the curriculum.
Students could complete the curriculum for elementary school (6 years content) in 9 years. However, while the linguistic knowledge levels may suit JHL learners, the content may be not age-appropriate this and could further affect the students’ learning motivation. Moreover, it is hard to obtain parent’ support for this system which has not been well established. Kondo-Brown (2002) added that even if separate tracks for JHL learners are prepared, it is usually for younger students and the course merges into the mainstream course at higher levels. When separate tracks are provided it is at a risk of insufficient opportunity to interact with higher proficient learners and a lack of such models might influence the quality of the learning environment. Moreover, merging the class at higher levels makes it difficult for adolescents to keep learning Japanese. Therefore, as Nakajima (2004) suggests a long-term vision for curriculum support is necessary for each educational level.

3.4 Hoshuu-koo approach

The original teaching styles in hoshuu-koo were suggested by MEXT but this becomes challenging as student circumstances change and as a result, hoshuu-koo are expected to adapt their teaching methods to accommodate new demands.

3.4.1 Separate tracks for JHL learners

One example of adapting to change was a hoshuu-koo in the US that created two courses within the school – one for students who were in the U.S. temporarily and the other for students who will not return to Japan. The latter was called the “Jackson School” (Doerra & Lee, 2009). The Jackson School introduced multi-age classes for students between nine to fifteen years’ old. The school developed an original curriculum took a holistic approach while also incorporating content from the MEXT textbooks. In kanji learning, 678 kanji were selected and introduced according to groups based on the
meaning of the kanji and their shapes, regardless of the curriculum organised by the MEXT. Students learnt these kanji by the end of Year 6 (Doerra & Leeb, 2009).

Princeton hoshuu-koo in the U.S. offers alternate courses for JHL learners who were born outside of Japan and have no plan to return to Japan. In the JHL course at the Princeton hoshuu-koo, the textbooks used are not the ones designed by MEXT. The books used at this Princeton school were designed for foreign language education, which includes different kinds of communication functions, range of vocabulary, degree of accuracy and flexibility for the students for different levels. The reason for this choice is that the textbook involves authentic Japanese and the content is appropriate for the students’ cognitive levels. Princeton hoshuu-koo also uses the textbooks from other subjects, introducing literature, newspapers and other materials to enhance learning. Regarding kanji, students are divided into five groups depending on their kanji proficiency level and are expected to learn four to five kanji each week (Calder, 2008).

According to Douglas (2005a), there are some other hoshuu-koo in the U.S. that have also prepared separate tracks for JHL learners. However, most of these schools only employ this system partially and often only for earlier or higher year levels. Kondo-Brown (2002) noted that students on separate tracks are usually merged in advanced levels.

The Oceania School of Japanese (OSJ) (pseudonym) also applies two separate tracks for students from Year 7 to Year 9. This is discussed in detail in chapter 3.6.

3.4.2 Integrated Studies

Apart from separate tracks for JHL learners the design of the curriculum is an important factor. The effectiveness of incorporating approaches in curriculum is reported in Douglas’s (2006) study, for
example, the learning environment plus social issues. It is expected that students who experience using the language real life situations can obtain knowledge that can be generalised to improve their learning skills. This is an integrated teaching method that focuses on language and subject learning based on content-based approaches, and consists of brainstorming, setting goals, designing learning activities and evaluation.

Integrated Studies is one of the approaches introduced by MEXT in 1998 as a part of the revised national curriculum with the aim of promoting students’ problem-solving abilities and self-correcting skills. Integrated Studies involve students in interdisciplinary, task-oriented learning activities (Hamamoto, 2009).

In a hoshuu-koo in Madrid, in addition to textbook learning, Integrated Studies was incorporated in order to enhance Japanese language learning (Nagai, 2013). In the Integrated Studies classes students are expected to interact with each other and with students of different ages and engage in project-based leaning. Textbooks other than Japanese textbooks are also used over and students are provided with opportunities to present their project/research results, or deliver a performance, to parents and other students (Japan Overseas Educational Services, 2015).

Touraine hoshuu-koo in France also employs an Integrated Studies approach. The periods of Integrated Studies are placed in the curriculum every week and students work on specific themes or seasonal events (Japan Overseas Educational Services, 2015).

3.4.3 Other initiatives

One bilingual Japanese school in Germany has another policy regarding curriculum for JHL learners. As classes are held only once a week in hoshuu-koo, usually very limited time can be spent on each
unit of the textbook. This German school tried to complete the curriculum at a slower pace than the expected time. The school’s original curriculum was written to enable students to complete Year 1 to Year 8 by the end of Year 11 under this policy of enjoying learning at a slow pace (Bilingual Japanische Schule, 2015).

Japan Overseas Educational Services (2015) has reported on other hoshuu-koo approaches. Houston hoshuu-koo focuses on subject learning using Japanese. Students learn mathematics and social studies in Japanese at elementary schools and mathematics, history and science in Japanese at junior high school. The Islamabad hoshuu-koo schedules a 15-minute warm-up time before the first period starts every week. During this warm-up time students are encouraged to conduct communicative activities to enhance their content knowledge. The parents sometimes visit the class in this period and read books to the children. Other schools incorporate into the curriculum events such as field trips to Japanese companies or factories.

Each hoshuu-koo tries to develop its own curriculum for effective Japanese education to meet the various needs of its students. Nonetheless, textbooks organised by MEXT are regarded as the main materials and there are no textbooks specifically prepared for JHL learners. This limits the ability for JHL teachers to share ideas and solutions and to create standard materials for JHL learners. Another consideration is that JHL education should not only be conducted at hoshuu-koo but also at home and in society. When hoshuu-koo, home and society work together the effectiveness of JHL education can be expanded.

3.5 Enhancement of the learning environment
Effective heritage language education can be enhanced through a collaboration between family, schools and society. Support from family, schools and society is essential for the maintenance of the heritage language. Fishman (2004) has claimed that intergenerational and demographically concentrated home-family neighbourhood efforts are needed to help transmit heritage language effectively. According to Isajiw (1984), one role of the hoshuu-koo is to provide parent education that can assist parents in their interactions with children at home. S. M. Park and Sarkar (2007) stated that “lack of support from schools may lead immigrant parents and family to take the sole responsibility for their children’s heritage language maintenance” (p. 8). School education provides children with the opportunity to learn what they cannot learn at home. Oota (2005) reported that using Japanese in daily conversation may not be sufficient and that this necessitates the use of Japanese as a language medium in school so formal knowledge continues to grow in conjunction with informal use in the home. Thus, both schools and family contribute children’s JHL learning by offering complementary learning experiences.

3.5.1 Enhancement of learning at school

How schools and teachers can motivate students by eliciting their positive attitudes toward learning heritage language and provide comprehensive learning is a key issue when designing effective learning environments.

3.5.1.1 Learning contents

The importance of introducing cultural studies is emphasised by researchers; King and Mackey (2007) stated that learners will be motivated by cultural learning and connections are important to strengthen language learning. Adolescents are easily discouraged from learning that has no cultural context. The maintenance of heritage language can be difficult (H. Park, Tsai, Liu, & Lau, 2012) and N. Liu, Musica, Koscak, Vinogradova, and López (2011) suggest activities, such as singing or cooking are examples
that can enhance language learning. Reading Japanese literature and learning history is an essential part of learning and understanding a language (Nishimura, 2012). Even students who have experienced living in Japan often lack historical and social knowledge and concepts; therefore, interpretation and comparisons based on diverse perspectives should be part of the school education (Calder, 2008).

Van Vleet (2010) saw the necessity of education which elicits a learner’s social knowledge and helps build identity. Promoting a positive social image by employing group work and mutual cooperation are also effective strategies (Dornyei, 2001). Adolescents need the sense of belonging to a group. He (2010) insisted the importance of social interaction, and social and cultural knowledge should be provided by the school by providing opportunities for social exchange in the wider Japanese community. It is desirable that exchange beyond grade or course is encouraged. Visitors can be invited into the school and activities outside the school organised when possible. Using mass and social media is an effective way to promote social activities (He, 2006). However, as Kurata (2015) found the pressure that a person who has Japanese heritage feels could be discouragement when moving between different contexts and languages when the dominant language environment is not Japanese. To maintain motivation the learner needs a pedagogy which supports achievement of their own learning goals and planned outcomes.

A learner’s motivation can be enhanced through achievement of gains in academic proficiency. In examining the curriculum consideration proficiency needs for JHL students should help dictate what content should be selected. Helping to create realistic learners’ beliefs and goals, which are meaningful for the individual, is essential (Kondo-Brown, 2009). As self-confidence and motivation are closely related (Nazarova & Umurova, 2016), appropriate levels of difficulty in activities and scales are also essential. Therefore, learning activities which suit learners’ cognitive levels should be carefully examined in order to enable learners to be confident and motivated by enjoying success. Improving
vocabulary, literacy skills and grammar accuracy related to the JHL students are important, as well as understanding the difference between spoken language and written language. The transfer between the heritage language and the language in the mainstream is also an important consideration (Montrul, 2010; Schwartz, 2001).

When developing new curriculum for JHL, Douglas (2005b) suggested steps required in the making of curriculum. Firstly, teachers should analyse learners’ interests and knowledge. Next, it is necessary to generate topics and themes. The object of each theme will then be described. After that, teachers need to develop materials and activities. Finally, an assessment can be planned (pp. 73-74). Calder (2008) and Douglas (2006) also argued for the importance of relating to other subject learning, or knowledge, that students acquire at local schools, rather than focusing on maintaining language skills. Douglas (2006) added that these approaches enhance problem-solving, imagination, self-evaluation skills and social ability. Several approaches, such as interactive learning, learner-centred approaches and activity-based approaches, are recommended when designing curriculum (Douglas, 2005b). Although heritage language learning is different from first language or second language learning, employing some of the pedagogy of first or second language learning for JHL learning should be utilised when creating new curriculum. Montrul (2010) stated that the extent to which pedagogies for second language acquisition can work effectively in heritage language learning should be examined.

Employing scaffolding in JHL education is recommended (Saito, 2004). Scaffolding was first used by Bruner (1976) as a metaphor to explain how a learner can be supported when in the process of gaining new understanding of a concept. This metaphor has been developed by Hammond and Gibbons (2001) in the area of second language education. Scaffolding is one of the strategies that has become a focus in heritage language education. Scaffolding is defined as “the steps taken to reduce the degrees of freedom taken in carrying out some task so that the child can concentrate on the difficult skill she is in
the process of acquiring” (Bruner, 1978, p. 19). Hammond (2001) stated that it involves “identifying what and how to scaffold by focusing both on language and on relevant aspects of curriculum knowledge (aspects of science, history etc.)” (p. 24). According to Hammond (2001), it is important to focus on “how” and “what” teachers do to support students’ learning to acquire new knowledge and concepts so that they will be able to work by themselves towards their outcome. Dansie (2001) described macro-level scaffolding, where teachers need to make the goals clear, as assistance where the teacher has a deep understanding of the concepts and linguistic demands of the task and organise activities that help students to obtain the skills for achieving their goals (p. 50). Dansie (2001) stated that “micro-level scaffolding occurs within the broader macro scaffold. It is evident in the interactive student-teacher dialogue that occurs within individual activities” (p. 50). As practical steps for scaffolding, Dansie (2001) mentioned that teachers need to “build the field” by providing ideas of vocabulary and concepts of the tasks, then demonstrate through “modelling”, for example, reading books or making sample tasks. Next, students collaborate with other students or teachers to work on tasks as “joint construction”. In “independent construction”, the next step, students work individually. Finally, students develop their skills and knowledge through further related tasks (p. 54). Saito (2004) stated that teachers need to provide a clear idea of the knowledge of vocabulary and concepts before introducing the main tasks so that students are able to approach and develop the tasks through these steps. Thus, scaffolding strategies can help heritage language learners who do not have the linguistic or cultural knowledge to acquire the knowledge independently. Scaffolding requires the teacher to have a deep understanding of both content and the students’ present level of comprehension.

3.5.1.2 Teaching methods

How to teach the content of the curriculum is important. Nakajima (2001) thought that language in the mainstream society should not be used to teach the heritage language and the target language should be delivered at normal speed. However, teachers may need to be tolerant of code-switching, especially
by adolescents. Code-switching can indicate a positive attitude by which students try to express what they want to say using the most of their knowledge (He, 2013). If expression is limited because code switching is discouraged students might hesitate to use the language itself out of frustration and they are not given the opportunity to correct mistakes in meaning.

The use of real life materials in class, such as films and digital technology, can build a direct connection with the learners and the target language (Schwartz, 2001). Error correction is important as students may not notice errors without them being pointed out (Nakajima, 2001) but how errors are corrected needs to be thoughtfully done. Error correction could be discouraging for the students who lack the confidence to make errors in front of others. Krashen (2000) recommended reading practice as it provides heritage learners with the opportunity to practice without the risk of making errors in interacting with others, especially for shy learners (see Chapter 2.7.4 for further discussion on error correction).

3.5.2 Enhancement of learning at home

Nakajima (1998) contended that there is no critical age for language acquisition although younger learners have more advantage in acquiring the language. In fact, it has been found that older learners have better techniques to analyse the language. Nonetheless, Nishimura (2012) argues that language deficiencies established at a young age will continue as the child grows older. For heritage language learners this is a significant point and there are suggestions of what can be done both at home and school, to help develop proficiency.

The use of the heritage language at home is effective. Home is the first place where children are exposed to language. Draper and Hicks (2000) stated that children’s language proficiency is greatly related to the use of language at home and that proficiency would not be improved without the family’s
support. H. Park et al. (2012) also claimed that lack of the support at home could lead to the loss of the heritage language.

A study by Nakajima (1998) found that Japanese language proficiency was higher in children who frequently used Japanese at home. The same was found for heritage Chinese language speakers (R. Liu, 2008). Children use their mother tongue language more when they are young and then less frequently when they are older; however, the maintenance of the language within the family plays an important, especially for adolescents.

For the development of bilingual literacy, a balance between the use of heritage language and local language is needed. Families should be aware of how frequently each language is used in the home and for what purpose (King, 2008). Children tend to use the language they find easier so it might be necessary to establish rules at home as to when the heritage and local language should be used (Nakajima, 1998). Such rules are important for adolescents as this is an age when they may avoid using Japanese if their peers do not speak the language and they do not realise they may regret this in the future. However, rules need to be carefully negotiated with adolescents (Kawagishi, 2008). A “one-parent, one-language” approach, first introduced by Maurice Grammont in 1902 is widely known as an effective way to raise bilingual children (Grosjean, 2015). When parents use a different language and each of them uses their own language to their children, the children are stimulated to acquire both languages. Using separate languages from the earliest stages of language acquisition may avoid code-mixing, according to Grammont (Grosjean, 2015). Fujiu (2014) also found that the “one-language, one parent” approach provides advantages in acquiring two languages. However, in an actual situation it may be difficult to use the heritage language when parents, who have different mother tongues and children gather together to communicate, for example at the dinner table. Iwata (2002) was aware of the dinner table being for socialisation, not just for language teaching and a balance between the family
enjoying joint activities and using language for didactic purposes should be maintained. Takeuchi (2006) said that consistent use of heritage language in daily lives is important rather than use for special events, such as visiting Japan.

Organising the language environment at home is an important factor for promoting the heritage language. Parents can consider what kind of resources, such as books or websites, they can prepare for their children (King et al., 2008). Reading books to children provides the opportunity for them to be exposed to formal use of the language, depending on the books helps to develop imagination, gain general knowledge, improves vocabulary and – through listening – helps with pronunciation (Nakajima, 2001). Nakajima (2001) encourages the presence of Japanese resources in the home and says the use of Japanese audio and visual resources, such as television and books are important. Conversation topics among families using Japanese language require more attention. Parents should consider age-appropriate topics when they talk with their children (Nakajima, 1998). When the topic is not interesting for the child they may not be motivated to talk back. This may hinder children in building vocabulary and expressing ideas and discussing interests and hobbies. Ishii (2013) states that it is important to read Japanese scripts, including kanji, rather than just using them as visual materials. When parents read the script, children understand what the words and symbols refer to.

Another important factor at home is the correction of errors as this draws attention to any mistakes that are made. When children make mistakes in their speech, parents should tolerate and provide the correct expression rather than pointing out the mistakes or errors themselves (Nakajima, 1998). However, Kasuya (1998) found that clear instruction and correction of errors had a high rate of success on children’s language development rather than implicit strategies, such as repeating correct expression. However, frequent correction by parents may cause hesitation, especially for adolescents, to want to speak out at home. As learning has a strong emotive side the parent child relationship is of utmost
significance when considering the role of the family as educator. At a minimum a balance of how, why and when to correct should be considered carefully for each situation.

Parents as partners with the school are considered an important part of the education process. Parent’s contribution towards school can have an effect on children’s achievements. In Desforges and Abouchaar (2003) research, it was found that parent’s support and involvement in the schools will provide a positive model supporting social and education values. Parental/school partnerships, such as the sharing of information, joint participation in school events and sharing responsibility for school work will be beneficial for student learning. Intellectual and physical support from parents can encourage their children in their studies (Nakajima, 2003a). Fujiu (2014) also thought it is important that parents’ support should be consistent and they need to be a source of encouragement as school and homework content becomes harder and difficulties may be experienced. Fujiu (2014) added that communication and relationships among parents/parents and parents/teachers also helps to promote a healthy learning environment. Children can learn how to communicate with people of different ages by observing their parents (Nakajima, 2001). In Japanese, different expressions are used depending on age and social situation, where children may use limited expressions among friends and family it is important, they can observe and be involved in the communication of different groups.

MEXT (2017) stated that learning at home and textbook learning at hoshuu-koo should be weighted equally but according to the Family Language Policy, the importance of the family is vital (King & Lanza, 2017). Differences among children’s proficiency are found even though they share the same education at school. In the research conducted at a hoshuu-koo home language environments, differed the home environment appeared to influence proficiency in vocabulary, structures and script (Aiko, 2017).
As described in Chapter 2 and Chapter 3, many challenges have been experienced in hoshuu-koo, throughout the world, especially with a changing student demographic and needs and a curriculum regulated by MEXT that is aimed at only part of the student cohort. The Oceania School of Japanese (pseudonym), where this research conducted, faces similar challenges and this was a central aspect for the design of the research.

3.6 Context of the Oceania School of Japanese (OSJ) in Australia

In this section, the background of this research is identified.

3.6.1 Overview of the Oceania School of Japanese

This research was conducted at one of the hoshuu-koo in Australia: the Oceania School of Japanese (OSJ: pseudonym). OSJ was established as a supplementary Japanese school for Japanese children abroad and has a thirty-year history. This school provides Japanese education ranging from kindergarten to high school. Students can learn the Japanese language, Japanese culture and have access to part of the Japanese compulsory education. Despite the original purpose of the school the number of permanent resident students who were born in Australia, or newly arrived residents, has been increasing and short-term residents are decreasing (Oceania School of Japanese (OSJ: pseudonym), 2017). The school now needs to include a different group of students who want to learn Japanese as a heritage language and who will probably not return to Japan, and many have no opportunity for immersion outside the school.

By the end of Year 6 all students have been taught Japanese using the MEXT textbooks designed for native Japanese speakers. However, the content of the textbooks becomes extremely difficult in Year 7 and the differences in Japanese proficiency among students increases as they get older (OSJ, 2017).
The aim of Japanese education at the elementary school level focuses on the knowledge and ability to convey student’s own ideas about everyday events; in contrast, by Year 7 students are developing advanced problem-solving skills, need more technical language to communicate their existing and growing knowledge and need language for imaginative and attitudinal tasks (MEXT, 2017). The teachers, including the researcher of this study, often hear from the parents of the students that their children no longer want to learn Japanese.

3.6.2 New curriculum at OSJ
Like other hoshuu-koo, which have started to organise separate classes to cope with the differences between the curriculum designed by MEXT and actual needs and proficiency of the students, OSJ adapted the curriculum that was provided by MEXT for students beyond Year 6 in 2011 (OSJ, 2017). In the new system two classes are offered for Year 7 to Year 9; one is called the Kokugo course, the other is called the Nihongo course. The term kokugo means Japanese as the first language, and nihongo means Japanese as a non-native language. The researcher for this thesis was one of the curriculum developers for the newly introduced courses. In the Kokugo course, students learn Japanese following the existing curriculum using the textbook provided by the Japanese government. The curriculum includes reading, writing, speaking and grammar units. Kanji are introduced according to the textbook. Kanji is one of the Japanese scripts that was focused on as a hurdle due to its complexity and the number of characters that students are required to remember (Yamaguchi, 2013). The students learn new kanji using a kanji exercise book in which all new kanji are listed for each unit from the textbook. They then have regular kanji tests based on the kanji exercise books.

On the other hand, in the Nihongo course, students learn Japanese through selected readings from textbooks, tasks related to the reading materials, and kanji. Nihongo course students learn relatively
slowly and more thoroughly compared to students in the Kokugo course. Students learn the vocabulary that is used in each reading text and kanji reading practice focuses not on new kanji, but rather on elementary school level kanji. This difference in the level of kanji being taught is significant for the students because the proficiency level achieved by the end of Year 6 and the numbers and types of kanji, they need for their future study are different. As stated in Chapter 2.3.4, as the difficulty in kanji introduced in the curriculum organised by MEXT increases many students drop out. The new curriculum and the two approaches to JHL education was introduced to try to address the retention problem.

Students choose either the Kokugo or Nihongo course when they graduate from elementary school depending on their needs, personal interests and goals. For example, students who plan to go back to the Japanese education system in the future or to take the Japanese, as a first language, for university entrance exams choose the Kokugo course, and those who do not plan to study in Japan, or to take Japanese as a second language for university entrance but want to improve their basic skills in Japanese may choose the Nihongo course. Several years have passed since this new course started; it is now established at the school and students and parents appear happy with the course choices being offered. The number of students who stop learning beyond Year 6 has decreased since the introduction of the new curriculum. However, the proficiency of the students in the Nihongo course has not improved greatly. This is a dilemma that deserves attention.

3.6.3 Previously used kanji learning style in the OSJ Nihongo course

Kanji has been identified as a particular hurdle for JHL in both acquiring and maintaining literacy skills. This is due to the complexity of the kanji system and the number of characters that need to be learnt (Ootsuki, 2010). The way kanji was taught in the Nihongo course is described below. Kanji from
the elementary school level focused on kanji learning. The students used the kanji vocabulary booklet designed by the class teacher when the course was established. Most of the kanji introduced by the end of Year 6 were categorised by the meaning of the kanji; for example, kanji related to nature, food, actions, etc. Twenty kanji were listed on each page and there were 50 pages in total. *On-yomi* and *kun-yomi* for each kanji were written below the kanji and also example sentences that included the target kanji were written on the booklet. *On-yomi* is the reading of kanji adopted from the Chinese pronunciation and *kun-yomi* reading has a Japanese origin (see Chapter 2.4.1).

Students were expected to work on one kanji page each week. First, they looked up the example compound kanji words using a kanji dictionary. Then, they practiced kanji words in example sentences in the booklet at home (see Chapter 5.2.1 for more details and samples).

The following week the students would take a kanji test. Each test consisted of 20 words which were written in example sentences. Students could proceed to the next page when they gained a satisfactory score on the test, otherwise they would take the same test the following week. The reason this system was applied was to cater to each student’s kanji proficiency; each student had a different amount of kanji knowledge and they could work on kanji at their own pace. Moreover, it was expected that students would be motivated to learn more kanji to pass each stage and to go on to the next one.

The summary of kanji learning for each class is outlined in the table below.

*Chart 3-1 Year 7 current kanji learning at OSJ*

<table>
<thead>
<tr>
<th>Kokugo course</th>
<th>Nihongo course</th>
</tr>
</thead>
</table>

121
<table>
<thead>
<tr>
<th>Target kanji</th>
<th>Year 7 level; 380 kanji</th>
<th>Elementary level; 1006 kanji</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Materials</strong></td>
<td>Kanji exercise books conforming to the textbook</td>
<td>Original kanji practice books which summarise elementary level kanji. There are 20 kanji on each page.</td>
</tr>
<tr>
<td><strong>Learning</strong></td>
<td>Students learn and practice kanji in the specified number of pages at home by themselves. There are usually around 20-25 new kanji in each page.</td>
<td>Students look up kanji from each page of the practice book in the kanji dictionary and find example uses of each kanji. They then practice the kanji at home.</td>
</tr>
<tr>
<td><strong>Testing</strong></td>
<td>Test 20 words which include kanji in the specified page each week. Every student takes the same test together.</td>
<td>Test 20 words which include kanji that each student practiced in each week. When the student gains a satisfactory score on the test, he/she can go on to the next page; otherwise, students repeat the same test the next week.</td>
</tr>
<tr>
<td><strong>Other learning related to kanji</strong></td>
<td>Kanji learning units in the textbook: • on-yomi and kun-yomi • history of kanji • radicals • construction of kanji</td>
<td>Kanji learning units in the textbook: • radicals</td>
</tr>
</tbody>
</table>

Through weekly activities, observations during class and systematically revising the test over three years of teaching of using this booklet, the following patterns of the proficiency of the students were identified.

**General performance**

- Most students were able to speak Japanese to convey their ideas although their vocabulary was limited.
- The students seemed to understand what other people said.
- Their pronunciation tended to be influenced by English pronunciation.
- There were some common errors in writing, use of oral language, wrong registers, direct translation from English, limited vocabulary, other grammatical errors and less use, or misuse, of kanji were often found.
- In reading comprehension, students seemed to understand the content when kanji readings (furigana) were written and when the vocabulary used was familiar to them. However, when there was no furigana, they seemed to hesitate to read the passages. Most of the students were not keen to read books.
- The students showed strong hesitation in the use and reading of kanji in text.

Kanji performance

Beneficial aspects:
- Checking the dictionaries became a habit for students and they could use the dictionary quickly after the introduction of this strategy.
- The students seemed to be quite familiar with some parts of kanji structures and could write whole parts of kanji when some clues were given.
- The students seemed to have a strong wish to pass each test.
- The students started to practice kanji regularly.
- Some students started to use kanji in their writings.

Problems:
· Some students tended to remember the shapes of kanji but could not remember the reading of the words.

· The students seemed to apply rote learning to remember kanji for the test.

· The students seemed to forget the kanji easily after the test and could not use the kanji in their writing and reading assessments.

· The students could not use okurigana properly in the tests and writing assessments.

· The students could not say the meaning of the words when they were asked.

· The students mentioned that they did not know where to use kanji when writing passages.

· Some students checked words in the dictionary automatically and could not choose the appropriate kanji from the homonym for each word.

· The students could not write radicals and say the names of radicals when they were asked.

A few years into the implementation of this system there was an identified need to address the problems the students were generally experiencing. This thesis reports on the research designed to improve the learning outcomes for students enrolled in the Nihongo course.

3.7 Chapter summary

In this chapter, the circumstances of language education, including Japanese heritage language education in Australia, was a focus in order to contextualise the presence and status of Japanese language learning in Australia. The shift in language policies, the diversity of language used, changing circumstances of students have all influenced Japanese language education. With the recognition of the important role of supplementary educational institutions for JHL education, the teaching the
language itself has become a focus. Hoshuu-koo’s approaches need to be adjusted to meet additional demands. The newly introduced course between Years 7 and 9 at the hoshuu-koo where the research was conducted became the source of data for the study. Among the new curriculum and teaching materials, kanji, one of the Japanese scripts was highlighted and the teaching of kanji under the new regime described. Investigating the issues in kanji teaching methods and exploring alternative methods for kanji as a major aspect of JHL education was built into the design of this thesis.

In order to develop alternative kanji learning materials and learning methods and to guide students’ learning experiences the learning theories and associated methods identified in the literature review were applied to the design of this thesis presented in the next chapter.
This chapter describes how the applied language theories adopted for this were integrated into the research design. These theories include cognitivism, lexical approaches and error corrections. Research questions and the methods used for data collection and analysis are explained in this chapter. The results of a pilot study are presented.

4.1 Introduction

The theoretical frame adopted in this research was cognitivism. As kanji learning, a major theme in this research, requires introduction of kanji and practice in context, meaningful learning can be promoted by the inclusion of lexicon approaches. The rationale for choosing this framework is justified and its use in this thesis explained.

4.2 Flow chart of this research

A flow chart representing the relationship between the different elements of the research is provided below (Figure 4-1).
Figure 4-1 The design of this thesis

- Chapter 1
  - Research
    - Research questions
    - Literature review
    - Context
    - Methodology and Method
    - Intervention
    - Results and analysis
      - Quantitative
        - Questionnaires
        - Tests
        - Writing assessments
      - Qualitative
        - Questionnaires (open-ended)
      - Correlations
      - Discussion
      - Conclusion

- Chapter 2
- Chapter 3
- Chapter 4
- Chapter 5
- Chapter 6
- Chapter 7
- Chapter 8
- Chapter 9

- Heritage Language
- Japanese Heritage Language
- Kanji learning
- Language theories
- Language education in Australia
- JHL in Australia
- Hoshuu-koo
- OSJ
- Materials
- Lesson plan
4.3 Application of cognitivism to this research

From the observations of this researcher, during five years of teaching at the Oceania School of Japanese (OSJ: pseudonym), there was a lack of improved proficiency in Japanese language performance. Through planning classes and systematically revising tests over the five years I came to a conclusion that lack of progress could be due to inadequate input. Most of the students in the Nihongo course used English at their local school and at home. They reported that they preferred not to read written materials in Japanese. As heritage learners these students lacked the more complex knowledge needed for easy access to Japanese interaction and were experiencing difficulties. The issue of kanji was identified as a particular issue from my observations and this was strongly supported by the literature (e.g., Douglas, 2008; Novarida, 2011). Without knowledge of kanji, students could not read books, or other reading materials, had limited vocabulary which in turn affected their reading comprehension and language production. When these students finished Year 6, 1006 kanji had already been introduced. However, if they do not remember the meaning of each kanji and where they are expected to use those kanji, they cannot apply their knowledge when they read and write passages. This was a problem.

The complexity of kanji enforces the self-belief with the students that they cannot use kanji appropriately and this will affect their motivation to learn Japanese. Ke (1998) and Mori et al. (2007) commented that allowing learners to use their existing kanji knowledge and knowledge of kanji components, as well as using their analytical skills, will help to build up kanji skills. It was expected that vocabulary would increase if the students acquired a knowledge of radicals. Knowing the construction rules of kanji and background of each kanji could help remember kanji. Such a strategy meant not only assisting the students to remember scripts, vocabulary and rules, but to also consider
how these elements could be introduced within suitable cultural and social contexts make the script learning meaningful.

When learners try to memorise kanji by rote-learning only, it is hard to manage due to the large amount of kanji they need to know. It was expected that facilitating learners to analyse how they can acquire and use kanji relevant for their needs, how they can connect new information into their existing knowledge and to understand how native speakers of Japanese use kanji and vocabulary in cultural context would assist in their learning. In addition, in order to develop learners’ cognitive processes, such as problem-solving, goal setting and devising their own individual learning strategies will make them aware of themselves as learners and significance of the task. Thus, using cognitivism as a frame to approach language learning, in the context of reinforcing kanji learning, developing conceptual understanding, self-recognition skills of proficiency and learning and management skills was the target of the research.

4.4 Methods

The description of methods was based on the literature review and the professional experience of the researcher. Key issues related to kanji learning for heritage language learners of Japanese. The research methods used aimed to answer the research questions which arose from the combination of existing research, personal observation and identification of an appropriate theoretical frame. Principles adapted in revising a kanji vocabulary booklet, used for kanji learning and the rationale for choosing particular methods was explored by conducting a pilot study. The details of the pilot study, analysis and implications for the main study and revised teaching materials are described here.
4.5 The research question

This research has taken the form of an empirical study, the aim of which was to design a course of study for Japanese Heritage Language (JHL) students that would result in improved outcomes over the period of one year.

The research aimed to explore ways to improve students’ experiences of JHL by addressing the following research questions.

・ Does kanji learning in meaningful context and a focused study of radical learning contribute to enhanced proficiency for adolescent JHL?
・ How do students’ feelings and attitudes towards Japanese language learning influence their attitudes towards Japanese proficiency, especially kanji skills?
・ Which kanji skills do students have the most and least confidence in and what areas are they most competent?
・ How have the student’s feelings and attitudes changed through one-year of kanji learning?

4.6 Significance of this research

Finding methods to improve heritage language proficiency is important if heritage language is to be maintained. Many researchers agree (Wang & Green, 2001; Wiley, 2001b) that learning heritage language provides great benefits both for individuals and society. However, it is hard to maintain the language if a supportive environment and appropriate content and pedagogy are not provided. Nakajima (2003a) noted that 30% of second-generation children do not understand their parents’
language and 70% of third generation children lose their heritage language. Thus, despite the importance of heritage language, it is difficult to maintain. Identifying specific problems in learning and exploring solutions is one of the contributions towards improving the maintenance of heritage language education that this research offers.

Japanese language acquisition in English speaking countries presents difficulties because of its unique linguistic characteristics (Nakajima, 1998). Japanese linguistic complexity makes it hard for heritage language learners to maintain language proficiency; these include a different word order from English, verb conjugation system and various registers depending on situations and users. The script system is another complex characteristic which can discourage learners. Ootsuki (2010) commented that Japanese is not very different from other languages in terms of the difficulty of acquiring the system even though Japanese grammar is unique; however, the most difficult part of Japanese learning is the script system because of their number and complexity. It is suspected that learners who lack self-assurance in Japanese often do not have confidence in kanji which is the most sophisticated of these scripts. Improving kanji skills may be one of most important aspects of designing teaching strategies for developments for JHL (e.g., Ishii, 2013; Douglas, 2008).

As an experienced teacher of JHL, I have noticed that students often cannot express what they really want to say because of insufficient vocabulary and tend to use simple sentences with familiar expressions which they acquired in childhood. In whole language classrooms with second language learners, a more contextual approach is taken but studies in this field tend to be with younger children who are not JHL learners (Douglas, 2010). When the learning is not meaningful, and the learners do not recognise the necessity of learning and improving proficiency they can become disinterested or discouraged. Therefore, age-appropriate vocabulary and kanji proficiency levels and learning methods should be considered when designing curriculum. The approach in this thesis combines building on
students’ present levels of expertise, instead of a pre-determined level based on the curriculum and utilising prior knowledge and experience within the present classroom context. Unique to this proposal is the use of prior knowledge, language learning in context, and identifying kanji as an integral part of learning Japanese. Aspects of this pedagogy have not been previously explored and the trialling of newly proposed content material was tracked over a year. The students’ voices, about being JHL learners, have been included in the research to explore their attitudes to heritage language learning and the difficulties that they face. The research is innovative and potentially significant for teachers, students and policy-makers in the field of JHL.

Despite the amount of research in heritage language education, JHL educational support has not been satisfactorily developed. Most of the research on Japanese heritage learners pertains to what parents and teachers can do when their children are very young. Some research has investigated learning problems and the grammar errors of adolescents (Douglas, 2010); however, there has been little focus on teaching methods for Japanese scripts. Understanding students’ competence in kanji proficiency and how to address typically arising difficulties is expected to help develop a teaching system that will motivate students to be engaged in their learning (Matsunaga, 2003). Despite the recognition of the importance of appropriate kanji learning materials most hoshuu-koo continue to use the content designed by MEXT for students who live in Japan, or for second language learners. Some hoshuu-koo may use their own original developed materials but this is not widespread and there is no system of sharing such materials. The results of this study will lead to further research on the importance of kanji as foundation knowledge for learning Japanese and pedagogical practices when working with JHL adolescent learners. The research will contribute to the provision of resources for teachers of JHL at hoshuu-koo around the world.
4.7 Method design

The study had a quasi-experimental design (Mackey & Gass, 2005) in that data was collected at the beginning, an intervention was introduced in terms of original material being developed, and data collection was conducted over the year. Pre-tests and post-tests were expected to provide a measure of the effect of the developed materials and the teaching and learning (Mackey & Gass, 2005). In this research, there was no control group. In the Nihongo course, the same questionnaires and similar assessments were conducted at the beginning and end of the year. Four students from the Kokugo course, who wanted to participate in the same kanji learning, voluntarily joined the research. These students did not share in the classroom teaching but studied by themselves at home using the same materials. Although the number of students from the Kokugo course was small, the results of both groups were compared to examine the effectiveness of classroom teaching and learning.

4.8 Method

In order to verify the potential of the theorising about the importance of kanji and context in supporting JHL education, data were collected through tests, surveys and writing samples.

4.8.1 Participants

Year 7 students in the Nihongo course at the Oceania School of Japanese (OSJ) were approached to be participants in this activity. The researcher was a participant observer at the hoshuu-koo. There were thirteen students – seven boys and six girls – in the Nihongo course in the 2015 Japanese academic year. None of the students planned to return to the Japanese education system in the future. The students were given the opportunity to opt into this research as the only extra activity required of
them was the surveys. Regular assessments were conducted as a part of the class. Four students (boys) from the Kokugo course who wished to take the Nihongo course kanji assessments also volunteered. These latter students studied kanji using the kanji vocabulary booklet at home by themselves to prepare for the tests.

4.8.2 The analysis

A mixed method research design with skill-based data (assessment across the year) and learners’ dispositions (surveys) were collected and analysed in order to identify the efficacy of the intervention planned for this research. By mixing both quantitative and qualitative data, rather than adopting one approach, it was expected that a deeper and broader analysis would be available and a more meaningful interpretation of the data would be achieved (Teddlie & Tashakkori, 2003). Two surveys, the results of assessment tests and writing assessments across the year were collected. In the surveys, both multiple choice and open-ended questions were used as student perceptions of experience and attitudes were sought.

Fowler (2009) recommended multiple choice questions for an effective analysis of quantitative data. According to Punch (2009), “quantitative research is empirical research where the data are in the form of numbers” (p. 3) and it requires a collection or cluster of methods and data. Richards and Morse (2007) also recommended that quantitative research is suitable when the researchers wish to build a theory and a theoretical frame which reflects a reality and observes a phenomenon in detail. In this research, the correlation between students’ perceptions and assessment results was carried out. A triangulation of the data collected helps to make the results more accurate than applying single data, as Maxwell (2005) stated.
Open-ended questions have been used to ascertain students’ attitudes and perceptions towards Japanese learning. According to Bryman (2001), in qualitative approaches great amounts of descriptive data provide a high level of validity through open-ended questions. Descriptive information data not collected by multiple choice questions were collected from the open-ended questions. All the information was recorded and classified, and emerging sub-themes were explored. Test results were used to examine how each student improved their kanji skills in reading, writing and radicals. This was used to see if the kanji learning was meaningful for the participants.

4.9 Focus of the method

The motivation of students is vital. The materials developed for this research were based on the idea that there is potential in employing meaningful and practical study methods of kanji, providing students a context in which they can recognise and use appropriate kanji, and in creating activities that would appeal to them.

In order to achieve this, from my own teaching experience and a study of the research literature, I believed it would be effective to:

- focus on vocabulary learning combined with kanji learning.
- select kanji and vocabulary that students may need in their daily reading and writing, rather than all of the kanji that should be introduced by Year 6.
- organise kanji tests and activities according to context, not just words.
- make visually attractive texts.
- provide visual images which link each kanji shape and meaning in order to help students understand the meaning of kanji.
• employ a combination of individual, pair and whole class work in kanji learning.

• employ multimodal materials which include texts, reading and writing, meaning, construction and image.

• make the achievements tangible for students.

• provide practice opportunities for oral skills.

• employ a quiz-style practice to motivate students.

• incorporate the practice of using a dictionary to support students and encourage choosing appropriate kanji for their needs.

• reduce teacher’s help gradually in order to let students work independently in the later stages based on a scaffolding approach.

4.9.1 Surveys:

In the survey, students’ attitudes towards Japanese learning, how they evaluate their kanji proficiency and how they practiced kanji were sought. Multiple choice and open-ended questions which asked the reasons for their choice were included. The surveys were conducted at the beginning and the end of the year to ascertain if students’ attitudes had changed. Multiple choice questions were used to determine attitudinal tendencies among students towards the learning of Japanese. The multiple-choice questions were designed for students to report on their own performance and knowledge of kanji (see Appendix 1 and Appendix 2). Their home environment regarding Japanese, such as the number of Japanese books they have, and frequency of using Japanese were also enquired about at the end of the year in order to see if there was a relationship between their improvement in kanji proficiency and the home environment.
4.9.2 Kanji assessment:

Three types of kanji tests were conducted. Firstly, reading comprehension tests that included kanji recognition and writing in selected passages were conducted at the beginning and the end of the year to see how each student had improved their kanji skills. In order to see if the students understood the meaning of each word and the whole passage, reading comprehension quizzes were included in each test. The quizzes consisted of several questions to see if the students could identify the main idea of the passage, if they could find out the specific information in the passage and if they could apply the knowledge they gained from the passage into a real-life situation. The answers emphasised each student’s understanding of the meaning of vocabulary in context, rather than a knowledge of reading and writing each kanji.

Secondly, regular kanji tests were conducted throughout the year. These kanji tests were conducted weekly after learning the kanji and vocabulary for each page from the new kanji vocabulary booklet. Fourteen sets of kanji tests were conducted throughout the year. The kanji tests consisted of two sessions: kanji readings in short passages, including small reading comprehension quizzes, and kanji writing.

Finally, nine radical tests were conducted. These tests were scheduled to be conducted on non-kanji assessment days to avoid giving students too much pressure. In the radical tests, the names of radicals, example of kanji that use the radicals, example words including the kanji, and readings of the word were included. This was to observe students’ knowledge of radicals and how they could apply the knowledge into making kanji and words (see Chapter 5 for more details).

The summary of the tests to be conducted through the year is as below.
- 1 x Initial test (kanji reading, writing, reading comprehension and vocabulary quiz)
- 14 x Regular kanji reading tests and comprehension quizzes
- 14 x Regular kanji writing tests
- 9 x Radical tests
- 1 x Final test (kanji reading, writing, reading comprehension and vocabulary quiz).

4.9.3 Kanji teaching

Classes were conducted throughout the year. The teaching plan consisted of three parts: kanji recognition and writing in context, knowledge of kanji construction, and writing. Multimodal materials were used; textbooks, practice using visual slides, tests and writing assessments.

A: Kanji recognition and writing in context

Vocabulary and kanji were categorised into groups by meaning or theme and listed in the newly prepared kanji vocabulary booklet. The new booklet was reviewed in order to address problems identified in the old booklet through participant observations and the results from assessments (as listed in Chapter 3.6.2). In order to solve identified problems, the following principles were applied in the development of the new booklet.

1) Meaningful introduction of kanji

For the selection and the order of introducing kanji in the new booklet, students’ needs were considered. Although there has been some discussion on the order of kanji introduction (see Chapter 2.6.3) the students had already been introduced 1006 kanji at the elementary level. Therefore, rather than including visually simple kanji, such as kanji under the category of pictographs, more frequently
used kanji and kanji related to daily lives was considered more practical. Problems in component order, such as some components not being introduced at an early stage was therefore avoided. If students do not remember components but often see the whole kanji that includes these components, they will become familiar with them. The number of strokes may also be treated in a similar manner for these students as they have learnt and used complex kanji. Therefore, in choosing kanji for adolescent JHL learners it would be practical and effective to consider kanji that are related to daily life, are more frequently used and in demand socially and which are grouped by meaning categories as well as by component-based order.

It is believed that when students feel that learning has meaning for them, they will be more motivated. As kanji have individual meanings and the reading of kanji changes depending on words, the kanji are introduced in a vocabulary context. In this way, students can understand the meaning of the kanji linking to words and also include okurigana as a part of the word. Learning vocabulary and Japanese culture through kanji is a joint focus rather than only learning kanji itself.

2) Meaningful practice

In order to employ meaningful practice several methods became a focus. Strategies included how to search for kanji using dictionaries, oral practice with PowerPoint slides, use of existing knowledge applications of new information, and contextual learning by reading selected passages. (Principles applied to making the kanji vocabulary booklet and kanji learning, as well as actual samples of the booklet, are described in Chapter 5.)
B: Knowledge of Kanji construction

Kanji construction pages were inserted in the kanji vocabulary booklet. Radicals indicate the fundamental concept of each kanji and provide a clue for understanding the meaning of the kanji. As it is believed that knowledge of radicals helps learners acquire kanji, learning kanji construction can, therefore, facilitate cognitive learning, rather than memorising the entire shape of each kanji (see Chapter 5 for more details).

C: Writing

In the writing practices that were scheduled in the new curriculum, students were encouraged to use kanji where applicable. After students completed each written assessment, the teacher checked the students’ writing and assisted them if they needed help in the use of kanji, or if they had used hiragana words instead of kanji. The students were then encouraged to self-correct their writing using dictionaries. Self-correcting provides “more consciousness” for the students and they were expected to improve their kanji judgement skills by repeating this process. Before adopting this, errors in kanji or hiragana words where the students were expected to use kanji were highlighted. There was a tendency for some students to check the dictionary and change hiragana into the kanji that they found in the dictionary, regardless of the meaning of word; then, they often selected the wrong kanji, as Japanese has many homonyms a knowledge of the vocabulary is needed to choose the correct kanji. This often happened. It was expected that students would improve their kanji skills when they self-corrected kanji using a dictionary. Assistance from the teacher was reduced as students became accustomed to working independently in the later stages as a scaffolding approach, mentioned earlier, became more prevalent. This exercise helped students to acquire skills in the use of appropriate kanji in an authentic writing text. The students were encouraged to understand where they needed to use kanji in context.
4.10 Data collection methods

4.10.1 Survey

In the initial survey, the students’ attitudes towards overall Japanese learning, their kanji learning styles at home and recognition of their own kanji proficiency were analysed. The data were then compared with the final survey data to see how the students’ attitudes may have changed throughout the year. Also, the students’ perspectives toward their own performance and knowledge of kanji were compared with their actual proficiency as evidenced from the kanji tests conducted at the beginning and at the end of the year. Moreover, if there was any change in practicing kanji at home compared to the previous year, how the change affected their kanji skills was explored.

4.10.2 Regular kanji tests

Kanji recognition assessments and kanji writing assessments were analysed separately. In the kanji recognition tests, the percentages of correct answers were recorded. In each test, the number of target kanji (which were listed on each page in the booklet) and non-target kanji (that were not included on each page but were introduced by the end of Year 6) were counted separately and accuracy rates were calculated. The correlation between the rate of accurate kanji recognition and reading comprehension skills were calculated to see if recognition of kanji contributed to the comprehension of reading passages. In the kanji writing tests, the percentage of correct kanji use, both target and non-target kanji, in each test was recorded separately. Data from the students in the Nihongo course (the first group) and the students from the Kokugo course (the second group) were analysed separately for reading and writing to see if there were significant differences between the two groups. After one-year of teaching and learning, individual improvements were calculated.
4.10.3 Radical assessments
Nine radical tests were conducted. In each radical test, six radicals were listed, and students wrote the radical’s names, single kanji which use the radical, words which include the single kanji, and the readings of the words. The number of correct answers were recorded, and accuracy rates were calculated. The first and the second group were analysed separately. Moreover, the correlation between individual averages of radical test scores and the scores of kanji reading and writing in the final test and the use of accurate kanji in writing assessments were calculated to see how knowledge of radicals contributed to the students’ kanji proficiency.

4.10.4 Initial and final kanji assessment
In each test, the percentage of the correct use of kanji and reading was calculated for each kanji level (Year 1 to Year 6) and totalled. As well as the accuracy rates of single kanji, the number of words that included at least one kanji were calculated so that the students understanding of the use of kanji in context could be examined. These were compared with the results of the survey to see how accurately each student perceived their kanji proficiency. Moreover, correlations between accurate answers in reading comprehension quizzes and kanji reading scores were calculated to see how their kanji skills contributed to their scanning and skimming skills. The data in the initial tests were compared with the final test results and how each student’s kanji proficiency had improved was analysed. The first group and the second group were analysed separately to see if there were any differences in growth in their kanji proficiency after one-year of kanji learning.

4.10.5 Writing assessment
The writing assessments conducted throughout the year were photocopied and collected. In each writing assessment, the use of kanji, accuracy of kanji used, and incorrect use of kanji were counted and analysed for both the first and the second group. The progress of individual and group averages
was explored. Inappropriate uses of kanji were identified and sorted by the type of error. The types of errors made and individual performance in kanji tests were compared and correlations sought. The correlation between the use of kanji in writing assessments and test scores in the initial and the final tests were also calculated to see if there were any relationships between them. Finally, words which include kanji used in the writing assessments were taken out and compared with the vocabulary used in the kanji vocabulary booklet so that the validity of the booklet could be verified and areas that need improvement identified.

4.11 Ethical Considerations

Ethical Approval was obtained from the RMIT Human Research Ethics Committee (see Appendix 3). Permission to recruit students for this research was gained from the Oceania School of Japanese community, principal and parents of the students. As this research involved students at an independent school, how this research satisfied school policy and ethical issues were explained in the participant information and consent form (PICF).

Before seeking permission, a courtesy email was sent to the parents of the students. This email explained the purpose of the study, how the results would be used, and how the research satisfied school policy. This email clearly stipulated that the analysis of the data would not impact on students’ course grades and that their confidentiality would be protected.

A permission form was given to the parents via the students for them to agree to their children participating in the research. They were asked to read the participant information sheet and, if willing
to have their child volunteer as a participant, sign the consent form and return it to the researcher (see Appendix 4, 5 and 6).

The data collected from the participants were protected by confidentiality. The questions in the surveys were carefully designed not to identify individuals.

4.12 The Pilot Study

4.12.1 The pilot study

A pilot study was conducted before the main study was carried out to assess the feasibility, validity and reliability of the kanji teaching and assessment proposed for the new kanji booklet.

A pilot test is a small piece of research that is used for the preparation of a larger study (Stachowiak, 2014). It is carried out to find out whether the method that a researcher intends to apply works appropriately for the main research by conducting the research with a few participants (Tobacco Control Evaluation Center, 2011). There are various purposes for conducting a pilot study, such as comparing original and revised instruments and identifying problems (Presser et al., 2004; Rothgeb, 2008), and testing the validity, reliability, feasibility and practicality of the methods (Arain, Campbell, Cooper, & Lancaster, 2010; Australian Institute of Health and Welfare, 2007). Stachowiak (2014) mentioned that a pilot study is useful for administrative purposes, such as identifying possible problems in recording methods and scheduling. It is important to have a clear objective and methodology in conducting a pilot study (Arain et al., 2010).
4.12.2 Expectations of findings from the pilot study

Qualitative approaches were used in the pilot test. Classroom activities using the new kanji vocabulary booklet and sample tests were conducted and percentages of correct answers were calculated. The pilot test especially aimed to:

- Gain students’ feedback on the activities;
- Examine ambiguities or difficulties of the assessments and the tests;
- Check the length of time taken to complete the assessments and the tests;
- Check students’ attitudes towards Japanese language learning;
- Check the data analysis form and method; and
- Check the clarity of the instructions in the booklet.

4.12.3 Participants

The pilot sample included eight Year 7 participants studying Japanese in the Nihongo course at the Oceania School of Japanese (OSJ) in the 2014 Japanese academic year. None of them expected to return to Japan. The pilot was conducted in Term 4 (February to March 2015). Four girls and four boys agreed to join the pilot study and consent forms were received from the participants and their parents.

4.12.4 Methods and instruments used

The new kanji vocabulary booklet was used on a trial basis prior to the formal introduction of the new system. Two pages of kanji and a vocabulary session on “weather” and “buildings”, and one radical session were selected for the pilot.
4.12.4.1 Kanji vocabulary learning

The reasons for choosing the “weather” and “buildings” sessions are explained below:

Weather

- Kanji and vocabulary used for this session were relatively familiar to the students, although there are some abstract words;
- Some words have different concepts from English, so students need to know the exact use of the words in Japanese; and
- Some words require the use of okurigana, which students often misuse.

Buildings

- This topic includes concrete noun concept words which are easy for the students to understand the meanings of;
- The kanji for each word is not simple and requires practice to be able to write correctly, although the words themselves are relatively familiar to the students; and
- The quiz on the page requires a knowledge of the function of each building in Japan, and students could then be anticipated to associate this to Japanese culture.

Two weeks were allowed for each topic. For each topic, the confirmation of the meaning of each word, looking up the kanji, checking the correct kanji, and mini quizzes were conducted in the first week. Oral practice of the words was also conducted. In the second week, a kanji reading and comprehension test was conducted, after some revision, using PowerPoint slides. After the test the students brainstormed the vocabulary related to the topic during a class discussion. The students then wrote down words which contained the same kanji, but were not listed in the booklet, using a kanji dictionary. They also wrote a reading of each kanji. After that, they worked on the last task of reading a passage
written without kanji, changed words into kanji where applicable, and then gave a title to the passage. Finally, a kanji writing test was carried out in the following week, after some revision.

The approximate times used for each activity are given below:

- Checking the meaning of words: 5 minutes.
- Looking up the kanji for each word and checking the correct kanji: 20 to 25 minutes.
- Mini quiz: 5 to 10 minutes.
- Brainstorming: 5 to 10 minutes.
- Oral practice: 5 minutes.
- Checking for other words with the same kanji: 20 minutes.
- Reading comprehension and changing hiragana into kanji in the passage: 10 to 15 minutes.
- Kanji reading and comprehension test: 10 minutes.
- Kanji writing test: 10 minutes.

4.12.4.2 Radical learning

For the pilot study one radical page was used. First, the name of each radical was checked, and the meaning discussed in the class; as well, students chose pictures of the source of each radical. Students then combined radicals and non-radical parts and looked up the words which included the kanji. After checking their answers, the students brainstormed more kanji with the radicals. In the next class, a radical test was conducted.

Approximate times used for each activity are listed below:
• Checking the names and the meaning of radicals: 7 minutes.
• Combining radicals with non-radical parts: 25 to 30 minutes.
• Looking up words which use the kanji and class discussion: 15 minutes.
• Radical test: 5 minutes.

4.12.5 Data collection and analysis
The results of the three tests were collected and the students’ opinions sought. In the reading tests the accuracy and rate of kanji introduced from each page and other kanji were calculated. The numbers of correct answers in the reading comprehension quiz were also recorded. In the kanji writing test, the accuracy rate of kanji writing, which was listed on each page, and other kanji introduced by the end of Year 6 were calculated separately. In the radical test, the names of radicals, words that were combined with listed non-radical parts, and the readings were recorded, and correct answers were counted.

4.12.6 Results and discussion
Kanji and vocabulary learning
The average percentages of correct answers in the kanji reading and writing tests are recorded below:

*Chart 4-1 Kanji reading and writing tests*

<table>
<thead>
<tr>
<th>Topic</th>
<th>Target kanji</th>
<th>Non-target kanji</th>
<th>Reading comprehension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weather”</td>
<td>Reading</td>
<td>41.6%</td>
<td>31.0%</td>
</tr>
<tr>
<td></td>
<td>Writing</td>
<td>60.12%</td>
<td>35.5%</td>
</tr>
<tr>
<td>Building</td>
<td>Reading</td>
<td>58.5%</td>
<td>48.75%</td>
</tr>
<tr>
<td></td>
<td>Writing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Writing</td>
<td>62.62%</td>
<td>52.0%</td>
<td></td>
</tr>
</tbody>
</table>

In the kanji reading and writing tests both sets of scores were higher for the second topic. It was anticipated that students had become aware of the test style and understood clearly what they were expected to do in the second test. It was unexpected that the accuracy rate in the reading of the target kanji was lower than the accuracy of writing kanji. The students were required to practice kanji at home every week as homework, although some students did not submit their homework. It was anticipated that students believed they could obtain a good score in the reading tests. Students who submitted their kanji practice notebooks tended to gain good scores in reading target kanji. In kanji writing tests, the scores of target kanji writing were relatively good for both topics. Most of the students submitted their homework before the writing tests. the scores for the writing tests appear to be influenced by the amount of practice students did at home.

During these two weeks, I noted the following points based on observations and the results of the tests:

- Most of the students seemed to actively participate in each task.
- By introducing vocabulary learning prior to kanji learning, the students seemed to understand the meaning of kanji.
- The students collaborated to work on the tasks.
- The students seemed to start paying attention to okurigana.
- The students seemed to understand where they were expected to use kanji in mini writing practice.
- It took longer than expected for students to check kanji in the kanji dictionary.
- Some students did not do their homework before the reading tests.
The order of the words on the PowerPoint slides that were used for reading practice, with an animation function, was the same order as in the worksheet. Some students seemed to memorise the words and readings in the order on the kanji vocabulary booklet and answered without looking at the pictures on the slides.

Some students misremembered long vowel and double consonants. This was not easily recognised in oral practice but was identified when students wrote the reading of each kanji word. Although hiragana reading was written on the booklet, no hiragana was used in the PowerPoint slides and some students wrote the wrong furigana in the test.

Some students seemed not to relate the shape of the kanji and its meaning.

Each task required more time than I expected, and it was hard to organise the time to do the brainstorming in the class.

Some students were not actively working on changing hiragana into kanji in the reading passages.

The students’ opinions obtained following the pilot tests are summarised below:

- The kanji used for the new booklet looks easier than the ones in the previous booklet and felt easy to remember.

- Visual materials help in remembering kanji and vocabulary better.

- Each page had a theme, and this helped to remember kanji.

- The vocabulary introduced in the new booklet was closely related to daily life and this vocabulary was helpful for Japanese learning.

- Having pictures on the booklet looks fun.

- It was good that the answers could be checked using the PowerPoint screen.
It was more fun to work together in class rather than do individual work.

It was hard to find the correct kanji from the homonyms in the dictionary.

Some activities were time-consuming, and it felt stressful to complete the tasks.

Radical learning

The results of the radical test are listed below:

*Chart 4-2 Radical test*

<table>
<thead>
<tr>
<th>Radical</th>
<th>Name of radicals</th>
<th>Words</th>
<th>Reading of words</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>83.25%</td>
<td>79.0%</td>
<td>70.25%</td>
</tr>
</tbody>
</table>

In radical learning, the test score was relatively high. Most of the students practiced the words in kanji for homework and wrote them accurately during the test. From the observation of the class activities and the results of the test, I noted:

- Students seemed to start paying attention to the meaning of radicals.
- When I displayed the pictures, which indicated the source of each radical, the students quickly answered which radical each picture indicated.
- After learning the name of the radicals, most students could say them during the class.
- The students spontaneously used a kanji dictionary to answer the questions on the booklet.
- The students were required to match 20 pairs of radical and non-radical parts, but this took a very long time.
When the students worked in pairs, some of them just copied from the other and did not pay attention to the correct shape of the kanji by focusing on completing the task – as a result, a lot of mistakes were found in their work.

Some students did not understand the task on the test and could not work appropriately.

Students could say and choose the radical names correctly; however, some students wrote them incorrectly

Student feedback included:

- Matching radicals and non-radicals was fun as it looked like a game, but it was too much work.
- Radical learning was not really interesting.
- Prefer group or class activities to individual work.

Compared to kanji and vocabulary learning, the students seemed not to be engaged in radical learning. In calculating the percentages in both kanji and radical tests, Excel forms were used, and this seemed appropriate even for the large amount of data. Regarding the instructions on the booklet, some students seemed to have clear ideas of what they were expected to do, but some did not. Nonetheless, all of the activities were time-consuming, and some students required more time than others.

4.12.7 Discussion and implications for the main study

In reviewing the test results, my observations, and student feedback, some future challenges are considered below.
The time that can be used for kanji learning is limited. In order to provide students enough time to work on each task, the amount of work each task requires should be examined so that students are less burdened. Although individual working time is important, some students become tired when they needed to work for a long time by themselves. In order to make the activities more attractive for the students, it would be effective to increase the time spent on whole class activities. For whole class activities, brainstorming and quizzes would be efficient so that all students can feel involved and motivated. To avoid practicing by rote without thinking, the design and order of the PowerPoint slides should be revised. Images can be added to slides as images provide a link between the meaning and the shape of kanji. Moreover, even if students can read and say the vocabulary, some cannot spell out the reading of each kanji correctly. To support these students, the reading of kanji and the name of radicals should be presented on the PowerPoint slides. Moreover, the time each student needs for each task is different; therefore, some tasks should remain optional. Finally, instead of providing test instructions, letting everyone work on the first test together with the teacher’s instructions would give a clearer idea of the test content.

Based on the discussion above, the following amendments were made for the main research.

Kanji and vocabulary learning

- The order of the slides was changed to be random so that students would remember the words and kanji rather than looking at the booklet.

- The number of kanji in Part 4 of the booklet was reduced so that students could work on all of them within class time and not feel too stressed to check all the kanji. The six most important kanji were chosen for each page.
The word brainstorming section was retained for the students who finish working early, but no class discussion was conducted as it is time-consuming and could not be finished within class time.

Hiragana reading was added to the slides so that students might then be able to use the model to see if they remembered the reading correctly.

Mini quiz sessions were added to the PowerPoint slides. Students could read hiragana words and find the appropriate kanji from the list. It was expected that students would work on this for fun and acquire correct furigana.

Picture images of each kanji were added to the PowerPoint slides as a quick quiz.

The minimum number of kanji characters that students were expected to change from hiragana into kanji in the passage part were provided when they worked on the task.

Regular kanji practice at home was clearly directed so that taking the test without practicing beforehand would be avoided.

All students worked together with the teacher’s instructions on the first test.

Radical learning

The number of matching radicals and non-radical parts were reduced.

Words which use radicals were listed in the discussion in the class before students worked on the matching task individually.

The names of radicals and images were added to the PowerPoint slides as a quiz exercise.

Student’s work was checked by the teacher individually to see if they wrote the kanji correctly.

All students worked together with the teacher’s instructions on the first test.
In this pilot study, limited topics were chosen in order to see how students using the new system compared to the existing kanji learning as they were the only students who knew both approaches. With the amended system, Year 7 students in the 2015 academic school year kept learning and any improvements in their kanji performance were observed. Samples of the revised kanji vocabulary booklet and PowerPoint slides are provided and described in detail later (see Chapter 5).

4.13 Chapter summary

The application of cognitivism, lexical and error correction approaches in this study was discussed by analysing the background of this research which consisted of research and issues identified in hoshuukoo as the number of JHL learners increases. The research questions were developed by identifying the significance of this study and the necessity of exploring new kanji teaching material for young learners. Although many linguists have argued for the importance of maintaining heritage language, not many studies have been satisfactorily conducted in this field, especially in the area of Japanese learning for adolescents and the potential methods to improve proficiency. As cognitive development and received prior knowledge of adolescents differs from younger students, unique methods for these adolescents are needed. Among the discussed concerns regarding the difficulties in maintaining learning Japanese as a heritage language, kanji was a focus because of difficulties in maintaining kanji knowledge. It was anticipated that identifying learner’s competence in the use of kanji and investigating effective kanji teaching methods would help to motivate learning and improve proficiency. In the pilot research described here, data obtained from test results were used to analyse.
For the main study, Year 7 students were invited to participate in the research and one-year of kanji teaching and learning, including radical learning, was conducted. Based on the results of surveys, tests and writing assessments, data were analysed to examine how each method could contribute to improving students’ kanji proficiency. In the next chapter, the new kanji vocabulary booklet, learning and tests, and samples of these materials and lesson plans are described.
Chapter 5 Intervention

In this chapter, detailed explanations of the kanji vocabulary booklet used in this research are presented. The ideas applied in the booklet were based on prior research findings, personal observations and framed using a Cognitive approach to language learning.

5.1 Introduction

Based on prior research, language learning theories and the results of the pilot study, a new kanji vocabulary booklet and new pedagogical methods were designed for improving adolescent JHL learners’ kanji proficiency and their attitudes toward kanji learning. In this chapter, the development of the new vocabulary booklet is described and differences from the previous vocabulary booklet identified. Samples of lesson plans for kanji and radical learning are presented.

5.2 Kanji vocabulary booklet and methods

The sample of the newly designed kanji vocabulary booklet has been compared to the old version and differences explained. The principles applied in the design are discussed. Lesson plans and testing with the kanji vocabulary booklet are described.

5.2.1 Previous version of the kanji vocabulary booklet

Picture 5-1 is an example of the previous version of the kanji booklet used between 2011 and 2014. The aimed was to review the kanji that students had learned by the end of Year 6 rather than introducing new kanji for Year 7. The kanji were categorised by meanings, such as time, expressions and nature, as it was believed that categorisation helped learners remember kanji. It was also expected that students
would be good at using a kanji dictionary, understanding reading kanji and how each kanji was used within words. The system was that students could move onto the next page when they had obtained certain scores in tests and this strategy was employed to motivate students to actively work on their kanji learning.

Picture 5-1 The previously used kanji booklet (sample)

Below is an explanation of each section labelled (from a to e) in the above picture.

*a*: 20 kanji were introduced on each page. These target kanji were basically categorised by topics, such as kanji related to time expressions, nature and people.

*b*: The on-yomi of each kanji was written in this column.

*c*: The kun-yomi of each kanji was written in this column. Okurigana were also written in brackets where applicable.
$d$: These columns were kept blank; students used dictionaries and found words which included each target kanji. Students were expected to write two words other than the one used in column $e$. This exercise was conducted during the class every week after the kanji tests.

$e$: Example sentences that included the words with the target kanji were listed here. Readings of each kanji were also provided. Sidelined parts were the words that students were expected to remember to write and read. On the kanji test, sidelined words were written in hiragana and students were required to change the words into kanji.

5.2.2 New kanji materials

Issues that needed to be considered were found through the weekly activities, observations, assessments and feedback from the students (see Chapter 3.6.3). Based on the issues identified, new kanji learning materials and methods were devised.

The fundamental principle in this revision of the vocabulary booklet and methods was that of meaningful learning using a learning theory approach that sees the learner as an active participant in their own learning. The intention was to elicit conscious learning by introducing an approach that incorporated thinking, memory, problem solving and previous knowledge so the students could develop new understandings of how parts of the language worked together. Kanji and vocabulary were introduced together, with continuous practice with images and pronunciation and learning of the construction of kanji in order to facilitate long-term acquisition (e.g. Montrul, 2019; Douglas and Chinen, 2014).

Picture 5-2, below, shows an example from the newly-designed kanji vocabulary booklet. An explanation of the new methods follows:
a: Vocabulary and kanji

In part a, pictures of the target words and their readings were written. Basically, around 15 words were introduced on each page. Students filled in the brackets under the hiragana for each word in kanji and okurigana where applicable, either by checking dictionaries, or using existing knowledge. It was expected that this exercise would help students to understand the meaning of words and choose appropriate kanji, rather than remembering the shape of the kanji. Pictures provided the meaning of the words so that students could understand and remember the meaning of each word. This method was suggested by Choi (2011). On each page, the vocabulary was presented before the kanji was introduced as, according to Paxton and Svetanant (2014), kanji should be treated as a part of vocabulary. Students might know some of the words on each page and could then apply their existing knowledge to finding the correct kanji. The vocabulary listed on each page was categorised along
themes. Examples of the themes adapted in the new vocabulary booklet were time expressions, buildings in the town, counting (units of measurement), hobbies, adjectives, verbs and school subjects. In the selection and order of the introduction of vocabulary, frequency of use, daily use, universality, subject range and cognitive levels were considered (e.g., Ariyama & Ochiai, 2012; Yamaguchi, 2013). This selection helped to reduce the burden on learners in expressing opinions that were relevant to their developmental levels (Douglas, 2005a; Oguro & Moloney, 2012). Categorising by theme made the learning outcomes for each page clear for students so that they could see what they would be able to do if they learnt each page (Douglas, 2005b).

b: Quizzes and tasks

Several tasks that required using the words listed in a or related quizzes were given to the students. For example, the topic of the sample page above was the weather and the task was describing the weather for each season, in the locality of the school, in sentences. It was expected that this practice could provide students with ideas on how to use the words they learnt on each page, rather than just memorising the words. As Douglas and Chinen (2014) stated, knowledge of vocabulary and the ability to understand the meaning of the vocabulary are different, so this exercise would enable students to use vocabulary and kanji in context.

c: Expanding vocabulary

This part c was originally prepared for brainstorming so that students could broaden their knowledge related to the themes on each page. As Ikemura et al. (2006) claimed, linking new vocabulary to existing knowledge is essential for long-term memory and relating words to each other by brainstorming helps to generalise meaning and expand vocabulary (Takada, 2006). However, brainstorming required a long time and it was found in the pilot test that allocating enough time for
this exercise was difficult. Although brainstorming as a class activity was a problem, this activity was kept as an additional challenge for those students who finished working on the required tasks during the class.

d: Kanji knowledge

As each kanji has multiple meanings and readings, the use of the target kanji in other words were focused on in this section. As Yanagida (2011) found, many students find reading kanji hard as the readings and meanings of kanji change when used in compound kanji words. It was expected that students could apply their knowledge of the target kanji from other words and improve their use with a kanji dictionary. A kanji dictionary was used for checking the reading of individual kanji, radicals, stroke orders, the meaning of solo kanji and example words which use the kanji. Students look up the reading of each kanji and the example words that included the target kanji. A kanji dictionary will be necessary when students encounter unknown kanji in the future; therefore, knowledge of how to use it is important.

e. Reading comprehension and kanji conversion

The passages in section e were written in hiragana rather than kanji. Students were required to change the hiragana into kanji, where applicable. The kanji they were expected to use in the passage included the ones previously introduced besides the target kanji on each page, and students could use a Japanese-Japanese dictionary (a Japanese-Japanese dictionary is used for checking kanji and the meaning of each word) to find the appropriate kanji. As many homonyms exist in Japanese, understanding or making a guess from the context is required for this task, as suggested by Yamaguchi (2013).
Some researchers found that students do not recognise where kanji should be used and cannot maintain their kanji skills if they do not use kanji in written passages (e.g., Nakajima, 1998; Toyoda, 1995). Using kanji in written passages facilitates students’ skills to apply kanji knowledge in context and then students would understand where they were expected to use kanji in context. The minimum number of kanji that students needed to write was specified so that students might try to reach the requirement, rather than giving up because they could not see any goals. Adding a title for the passage was also added as a way to determine if a student understood the meaning of the passage. Reading comprehension skills differ depending on the topic being studied (Matsunaga, 2003); therefore, various types of topics were employed. As Walsh and Diller (1978) suggested, adolescents can improve their reading comprehension skills with an appropriate topic for their age and be more engaged in their learning. The passages included Japanese culture, social, historical and linguistic concepts so that students could obtain ideas related to the Japanese cultural and social context. For example, the different use of adjectives and verbs compared to English (such as two ways to say “help” in Japanese) and the “giving and receiving” culture in Japan, as well as manga culture.

5.2.3 Kanji practice

To make regular kanji learning meaningful, steps were carefully considered. Firstly, students were required to fill in sections a and b individually and their answers were carefully checked by the teacher; sometimes students chose the wrong kanji or copied the kanji incorrectly. Students might need the teacher’s help to select the correct kanji at the beginning of the year but it was expected that this help would gradually be reduced and students would develop their own learning strategies with the adoption of scaffolding principles (Dansie, 2001; Saito, 2004).
In practicing vocabulary and kanji, several patterns of PowerPoint slides were used. An example of the slide is presented below (Picture 5-3).

*Picture 5-3 PowerPoint slides (kanji and vocabulary check) (sample)*

Animation was also used in the slides; the students saw the image of each word first and said the words. The words with kanji were given after that. Being able to read words correctly is essential. Lexical proficiency can be improved by understanding the meaning and pronouncing the words correctly (Akamura, 2011). The images were the same as the ones used in the kanji vocabulary booklet but were arranged in a different order than the booklet; to encourage students to understand the words rather than looking at the booklet and reciting the words. The use of images and phonetic
practice were employed as it was expected these would help students to retain vocabulary and kanji, as suggested by Okada (1998) and Shimizu and Green (2002).

After practicing vocabulary orally, recognition practice of each kanji was conducted. The next picture (5-4) is a sample of the individual kanji images.

*Picture 5-4 PowerPoint slides (kanji images) (sample)*

All of kanji used in the kanji and vocabulary booklet were listed with images on the PowerPoint slides. The images were shown to the students one by one using animations and students were expected to guess the kanji that was implied by the image. The kanji were presented after students said the kanji and students were asked to say the example words that used the kanji. This practice
allowed students to understand how each kanji element is used within kanji and be aware that kanji is a part of vocabulary rather than an independent script (Paxton & Svetanant, 2014). The images provided a clue of each kanji’s shape and meaning. For example, the kanji 温 (meaning “warm”) consists of the radical 氵 (which indicates “water”) and 日 (meaning “sun”) and 皿 (meaning “dish plates”). These images can give students an impression of each kanji and supply a knowledge of radicals and the kind of components that each kanji includes. The images were explained with stories to help remember the shape of kanji and the meaning, for example, “a whole cake on the plate becomes warm under the sun, so water is needed”. The stories were devised to show the construction of kanji, radical and non-radical parts, so that the students would focus on the construction. As adolescents the students were thought ready to understand the structures of kanji which would help them to memorise the kanji and apply this information to other kanji using their conceptual understanding of structure (Douglas, 2010; Nakajima, 2001). In addition, some images could provide Japanese contextual concepts, so students could recognise learning kanji as a part of their cultural learning (see Picture 5-5).

Picture 5-5 Examples of kanji images that imply culture

The kanji 両 means “both”. Culture: In the Edo era (1603 to 1867 AD), merchants carried goods by balancing the yoke upon both shoulders.
The kanji 祖 means “ancestor”. In Japanese culture, Japanese people show their honoured spirits toward their ancestors by looking after jizo (statues of ancestor spirits found alongside roads).

As Choi (2011) argued, learning would be more meaningful with a combination of visual, aural and physical activities. The images of individual kanji were used in some kanji textbooks and with internet resources for both second language and first language education. For Japanese as a first language learning, images usually explain the origin of each kanji. The images for second language learners often illustrate stories that indicate the whole shape of the kanji. Each textbook usually has different images and the types of kanji introduced also differ. Not all the kanji introduced in JHL education are available in textbooks for second language education. Some existing images that would be appropriate for JHL learners were used in the class, but original images were created by the researcher when appropriate images could not be found. It was also expected that students would be interested in kanji images and try to find more examples of suitable images on the internet or in existing textbooks.

The example images of the kanji 夏 (meaning “summer”) for first and second language learners and the one created by the researcher for heritage language learners are illustrated in pictures 5-6 5-7 and 5-8 respectively.
**Picture 5-6 Images of kanji for first language learners**

Image of kanji for first language learners

(The shape indicates the person’s head with crown or mask)

(Retrieved from https://okjiten.jp/kanji91.html)

**Picture 5-7 Image of kanji for second language learners**

Image of kanji for second language learners

Story: Cool off in summer with a big handful of ice cream.


**Picture 5-8 Image of kanji created by the researcher**

Image of kanji created by the researcher

Story: In summer the man takes off his hat to show his face as he runs.

The top part indicates the person’s head (face), and the bottom part indicates the legs crossing.
This section was conducted in a quiz style so that students might enjoy working on it and active participation was expected (Makino, 1993).

Another sample of the slides (Picture 5-9) was used to practice kanji reading and to confirm the spelling in hiragana.

*Picture 5-9 PowerPoint slides – reading and kanji matching (sample)*

<table>
<thead>
<tr>
<th>No. 2 気象 読み→漢字</th>
</tr>
</thead>
<tbody>
<tr>
<td>ぐも あたたかい はれ</td>
</tr>
<tr>
<td>きおん つゆ かぜ</td>
</tr>
<tr>
<td>すずしい あつい あめ</td>
</tr>
<tr>
<td>たいよう にじ ゆき</td>
</tr>
<tr>
<td>たいふう さむい</td>
</tr>
<tr>
<td>てんきよほう</td>
</tr>
<tr>
<td>1. 気温 2. 雨</td>
</tr>
<tr>
<td>3. 風 4. 暑い</td>
</tr>
<tr>
<td>5. 涼しい 6. 雪</td>
</tr>
<tr>
<td>7. 太陽 8. 寒い</td>
</tr>
<tr>
<td>9. 晴れ 10. 梅雨</td>
</tr>
<tr>
<td>11. 天気予報</td>
</tr>
<tr>
<td>12. 雲 13. 台風</td>
</tr>
<tr>
<td>14. 虹 15. 暖かい</td>
</tr>
</tbody>
</table>

It is important to match kanji and its spelling in hiragana. Especially as some Japanese pronunciations such as long vowels, double consonants and contracted sounds (Banno et al., 2011) are hard to spell in hiragana. It was found in the pilot tests that the students often misspelled when they wrote the
hiragana reading of kanji even though they could pronounce the kanji correctly. For example, they spelled “ときょ” (Tokyo) instead of “とうきょう” (Tookyoo), therefore missing the long vowels. Similarly, “きさてん” (kisaten) instead of “きっさてん” (kissaten), missing the double consonants, and “りよこう” (riyokoo) instead of “りょこう” (ryokoo), writing the よ (yo) in a bigger size. By showing the readings in hiragana and letting students read them and choose the kanji corresponding to the hiragana from the right side of slides, students were expected to remember the correct spelling. This method was also conducted in a quiz style to make the learning attractive.

5.2.4 Kanji tests

Reading tests and writing tests were conducted weekly in turn. Samples of these tests are below in Picture 5-10 and Picture 5-11.
1. 読める漢字にアンダーラインを引いて、その下に読み方を書きなさい。

天気予報の時間です。明日は午前中は暗れでしょう。

太陽がきれいに見えるでしょう。

雲も少し見られます。午後から雨が降ります。

雨の後、虹が見られるかもしれません。

暖かい一日になるでしょう。最高気温は30度でしょう。

台風が近づいています。雨と風が強くなるので気をつけてください。

今月終わりから、梅雨に入ります。来月の中ごろまで続くでしょう。

その後は暑い日が一か月ぐらい続くでしょう。

2. クイズに答えましょう。

① あしたの天気はつぎのうち、どれですか。
   a.  
   b.  
   c.  

② 今月は何月ですか。
   a. 四月  b. 六月  c. 九月
In the kanji reading tests, kanji that were introduced in the MEXT textbooks by the end of Year 6 were used in the passages. The students were expected to write how to read the target kanji that were introduced on each page in the vocabulary booklet and other kanji, where possible, to make the learning
meaningful. The reading tests included reading comprehension quizzes so that students’ understanding of the meaning of words and sentences could be assessed. In the kanji writing tests, all the passages were written without kanji and the students were expected to underline what they could change into kanji, and then change the hiragana into kanji where possible. Even if they could not write kanji correctly, the tests would indicate if the students understood where the kanji should be applied. As previous research had found students tend not to recognise where kanji should be applied (Toyoda, 1995), this exercise provided opportunities to improve these skills.

The topics of the test passages were related to the themes of each page in the kanji booklet and the words introduced on each page were included. Students were expected to use as much kanji as they knew, regardless of the amount of kanji they learnt each week. If the students understood where kanji should be used, then an accurate knowledge of kanji and okurigana could be tested. In both kanji writing and reading tests, the target kanji were in bold fonts. The tests were returned to the students on the day and students were required to write the correct answers. By self-error correction, students would realise how much they understood and improve their skills (Makino, 1993). For both reading and writing kanji tests, students could gain around 80 or 90 points out of 100 if they could write all the correct answers for the target kanji, and extra scores were given to students if they could answer correctly for any additional kanji. The total score could, therefore, be more than 100 points depending on whether students wrote the correct reading or writing of non-target kanji. It was expected that this system would motivate students to learn as much kanji as possible.

To facilitate long-term memory, students practiced the same pages of kanji over two weeks; the first week was for learning vocabulary and reading kanji, and the second week was for writing the kanji. As Ishii (2013) mentioned, JHL learners need to learn both vocabulary and kanji together because a lack of knowledge of Japanese vocabulary makes it difficult to learn both reading and writing together.
By providing a time-lag between kanji reading and writing tests, it was expected the burden for the students could be reduced. The students were also expected to practice writing kanji at home for each test; although students who grew up in Western countries may not be accustomed to doing “drill” practice (Nakajima, 2003a), the students at hoshuu-koo have practiced since they were young. Moreover, the results of the pilot test indicated that the students that practiced writing kanji at home performed better than the students who did not. As Shimizu and Green (2002) stated, even copying the model shapes becomes meaningful learning when pronunciation is added; therefore, the teacher instructed the students to pronounce each word as they practiced writing kanji.

5.2.5 Lesson plan

Samples of the lesson plan for kanji learning are below. One hour was used for kanji learning every week.

*Chart 5-1 First week: Revision of previous week and moving onto a new page*

<table>
<thead>
<tr>
<th></th>
<th>Students’ activities</th>
<th>Form</th>
<th>Teacher’s support</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Revision</td>
<td>Oral practice using “kanji and vocabulary check” (Picture 5-2), and “kanji image” (Picture 5-4) slides.</td>
<td>Whole class</td>
<td>Show the slides using animation and elicit students’ answers.</td>
</tr>
<tr>
<td>2. Test</td>
<td>Take kanji writing test (kanji from the previous page).</td>
<td>Individual</td>
<td></td>
</tr>
<tr>
<td>3. Kanji search</td>
<td>Find appropriate kanji using Japanese-Japanese dictionaries and fill in section a (Picture 5-2).</td>
<td>Individual</td>
<td>Carefully check the kanji that students write and give feedback. Provide clues, when needed, to choose appropriate kanji.</td>
</tr>
</tbody>
</table>
4. Quiz or task
   Work on section b (Picture 5-2).
   Individual
   Check the answers and help students as necessary.

5. Brainstorming
   Write down more words on section c (Picture 5-2) if students finish the previous work early.
   Individual
   Encourage students and give feedback.

6. Vocabulary and reading of kanji practice
   Say the words by looking at the images on the slides (Picture 5-4).
   Whole class
   Show words and images using animation.

7. Error correction
   Students receive the test back and write the correct answers where applicable.
   Individual
   Provide feedback.

Homework
Practice kanji (150 letters)

---

Chart 5-2 Second week

<table>
<thead>
<tr>
<th>Students’ activities</th>
<th>Form</th>
<th>Teacher’s support</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Revision</td>
<td>Oral practice using “kanji and vocabulary check” (Picture 5-2), “kanji images” (Picture 5-4), and “reading and kanji matching” (Picture 5-9) slides.</td>
<td>Whole class</td>
</tr>
<tr>
<td>2. Test</td>
<td>Take kanji reading test</td>
<td>Individual</td>
</tr>
<tr>
<td>3. Kanji search</td>
<td>Find the reading of solo kanji, words that include the kanji using kanji dictionaries and fill in section d (Picture 5-2).</td>
<td>Individual</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Change hiragana into kanji where applicable and put a title on the passage in section e (picture 5-2).</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>4. Reading passage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Error correction</td>
<td>Students receive the test back and write the correct answers where applicable.</td>
<td>Individual</td>
</tr>
<tr>
<td>Homework</td>
<td>Practice kanji (150 letters)</td>
<td></td>
</tr>
</tbody>
</table>

5.3 Radical learning

Nine radical learning sections were incorporated in the kanji vocabulary booklet. Radical learning was conducted according to the new curriculum, and for the week where radical learning was the focus the kanji tests and learning described in Chapter 5.2 were not conducted.

5.3.1 Radical learning materials

A sample of the radical learning page in Picture 5-12 is followed by an explanation of each section. As Douglas (2010) and Williams (2013) argued, radical learning helps learners to provide clues to recognise kanji and elicits more meaningful learning. Moreover, radical learning helps in retaining kanji as understanding the construction of each kanji rather than memorising each as whole is effective (Flaherty & Noguchi, 1998).
a: Radical names and meanings

The students were required to write the names of the radicals and their meanings in this section. As each radical has meaning, understanding the meaning of it helps to remember kanji (Williams, 2013). When the students learn kanji, the names of radicals were often used to describe or give a clue to writing the kanji.

b: Source of the radicals

The shapes of radicals are basically derived from objects of nature. Providing the source of each radical with images would be helpful for students in remembering and understanding radicals (Choi, 2011). When the teacher explained the meaning of each radical in section a, students linked the shapes of radicals, the images of radicals and their meanings and this was expected to facilitate long-term memory (Gruneberg, 1998).
c: Non-radical parts

Most kanji consist of radical and non-radical parts. Radical parts indicate the meaning and non-radical parts usually represent the reading (on-yomi) of the kanji. This exercise was designed to help students understand the system of kanji construction and to increase their knowledge of radicals. Students were likely to be familiar with the shapes of non-radical parts, as radicals are basically simple and used within various kanji. Students would be required to use their existing knowledge of radicals and kanji and have the competence to apply this knowledge in combining radical and non-radical components of kanji (Otomo, 2011). The number of non-radical parts in this section was reduced in response to the results of the pilot test and it was expected that students would finish working on all the sections within one hour.

d: Kanji

Students wrote the kanji that were made by combining radical and non-radical parts in section c. In order to assist and encourage students to make correct combinations, class discussion was used in completing this task, including some explanations from the teacher so that students could obtain a better understanding of each kanji.

e: Words and reading of words

Students wrote words, and the meaning of the words, using the kanji introduced in section d and its reading in this section. Writing words in kanji is often difficult for students even if they know each kanji, as found in Douglas’s (2008) study. This might be because of a lack of knowledge of the meaning of each kanji and how it is used. By making words using specific kanji, it was expected that the student’s knowledge of words would be improved, and they could apply their knowledge of kanji into writing the words that include the kanji.
5.3.2 PowerPoint slides

A sample of PowerPoints slides below (Picture 5-13) was used in the radical practice in the class. The images are of the source of radicals, and the radicals and their names were written on the slides. Students were asked to say the name of the radicals as they viewed the images; the teacher would then show the shape of the radicals and their names. This can enhance the link between radicals and images (Shimizu & Green, 2002) and students could check the spelling of the names. In the pilot test, it was found some students could vaguely remember the radicals but could not write the name correctly.

*Picture 5-13 The sample of PowerPoint slides (radicals)*

5.3.3 Radical tests
Radical tests were conducted in the week after the learning of radicals. A sample of the tests is below (Picture 5-14).

*Picture 5-14 A sample of the radical tests*

<table>
<thead>
<tr>
<th>形</th>
<th>部首の名前</th>
<th>部首を使った漢字</th>
<th>部首を使った言葉</th>
<th>その言葉の読み</th>
</tr>
</thead>
<tbody>
<tr>
<td>土</td>
<td>つちへん</td>
<td>場</td>
<td>場所</td>
<td>ばしょ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>地</td>
<td>土地</td>
<td>どち</td>
</tr>
<tr>
<td>矢</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In the radical test, students were required to write the name of each radical introduced on each page and two kanji that used that radical. They also wrote the words that include the kanji, and the reading of those words. It was expected that students would obtain clear ideas of the relationships among radicals, single kanji and words. The test style was explained to the students in advance so that they could prepare and practice for the test and the test would encourage students to study to obtain good scores. This test aimed to enhance the skills of applying radical knowledge to make kanji and words (Douglas, 2010).

5.3.4 Lesson plan

Samples of the radical lesson plan are shown below. Radical learning was included in the new curriculum. Two or three radical learning sessions were conducted each term so that students’ familiarity with working on radicals would be maintained. One hour was set aside for each page; both individual and whole class activities were conducted.

*Chart 5-3 Lesson plan*

<table>
<thead>
<tr>
<th></th>
<th>Students’ activities</th>
<th>Form</th>
<th>Teacher’s support</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Revision</td>
<td>Revise the previous kanji learning; either kanji writing or radicals. In the revision of radicals, practice saying the name of the radicals by looking at the slides (Picture 5-13) and say the kanji and word that use the radicals.</td>
<td>Whole class</td>
<td>Show the slides and elicit students’ answers.</td>
</tr>
<tr>
<td>2. Test</td>
<td>Take the kanji writing test or radical test</td>
<td>Individual</td>
<td></td>
</tr>
</tbody>
</table>
### 3. Name of radicals

Using the slide (Picture 5-13), to check the names of radicals and discuss what each image (the same images were used for section b) indicates and the meaning of radicals and write these down in section a (Picture 5-12).

<table>
<thead>
<tr>
<th>Whole class</th>
<th>Show the slides and elicit students’ answers.</th>
</tr>
</thead>
</table>

### 4. Combining radicals and non-radical parts

Discuss in class how to make solo kanji by combining radicals and non-radical parts. Then, brainstorm words that include the kanji. Write the kanji and words in section c (Picture 5-12).

<table>
<thead>
<tr>
<th>Whole class</th>
<th>Write each radical and the kanji that are elicited from students on the board. Help students brainstorm words that include the kanji, but do not write these words on the board.</th>
</tr>
</thead>
</table>

### 5. Writing words

Write down the words that were discussed in the class using kanji in section d and e (Picture 5-12). Use the dictionary if necessary.

<table>
<thead>
<tr>
<th>Individual</th>
<th>Check the words and the kanji that students write and provide feedback. Mark radical tests while students work on this section.</th>
</tr>
</thead>
</table>

### 5. Error correction

Students receive the test back and write the correct answers where applicable.

<table>
<thead>
<tr>
<th>Individual</th>
<th>Provide feedback.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Homework</th>
<th>Practice kanji (150 letters)</th>
</tr>
</thead>
</table>

Kanji cannot be treated as independent learning as it is a part of learning Japanese. As Mori and Nagy (1999) pointed out, employing multiple methods is more effective for language learning. By incorporating kanji with writing and reading comprehension tasks, kanji learning should be more meaningful. This could be an integral part of learning, as recommended by Douglas (2006).
In this chapter the new kanji vocabulary booklet and teaching and learning methods were discussed. The principle underlining development of the new system was that of meaningful learning which was predicated on a view of the learner as an active participant who applied prior knowledge to tasks that required memory, problem solving, generalisation of conceptual knowledge and an ability to think symbolically. In order to make the learning meaningful, a selection of words and categorisation, tasks and tests were devised. Images were used in the booklet and on PowerPoint slides to give students ideas of the concepts of kanji and words. Topics relevant to students’ daily lives and purpose, as well as cultural concepts, were included in the passages in the booklet and tests. Activities were also devised to elicit students’ positive attitudes for learning and to lead to long-term in-depth learning.
This chapter presents the results of the data collected from the various sources for this research. The results of surveys, tests and writing assessments are discussed and analysed.

6.1 Introduction

The results of surveys, tests and use of kanji in writing assessments are discussed and analysed. As the theoretical frame chosen for this thesis was cognitivism then student's perceptions of themselves as JHL learners is emphasised (Ausubel, 1966; Brown, 2000; Curtain & Pesola, 1994; Doerra & Leeb, 2009) and it was expected meaningful learning with multimodal materials would contribute to their kanji skills (Bull & Anstey, 2010; Ertmer & Newby, 2013; Suharno, 2010). Surveys, tests and ability to use kanji in different situations were measured and analysed to see the effectiveness of one-year kanji learning. First, the surveys conducted at the beginning and the end of the year are analysed. Next the results of the three types of tests, initial and final tests, regular tests and radical tests are discussed. Lastly, the use of kanji in writing assessments conducted across the year are examined.

6.2 Survey results

The results of two surveys were compared. Surveys were designed based on previous research studies that indicated the motive for learning changes when learners enter puberty and how they recognise their own skills are important (see Chapter 2.2.4).
6.2.1 Attitudes toward learning

As adolescents have different motivation from younger children (Douglas, 2005a; He, 2006; Willoughby, 2006), Question 1 to 4 on the survey asked about students’ attitudes toward learning Japanese.

Question 1: Why did you decide to continue studying?

As indicated in graph 6-1 below, at the beginning of the year, eight students answered that the purpose of learning at hoshuu-koo in middle schools was related to improving their Japanese proficiency, three students aimed to be able to communicate with their family and relatives, and three students answered their purpose in continuing to learn at the school was to enjoy spending time with their friends. At the end of the year, all of the students decided to continue to learn the next year. Obvious differences among their purposes for continuing to learn at the hoshuu-koo were not found between the beginning and the end of the year; however, more students answered that preparation for university entrance examinations was the main purpose, which was considered as pragmatic advantages (Doerra & Leeb, 2009; Nakajima, 2003a; Willoughby, 2006).

![Graph 6-1 Question 1](image-url)
Question 2: What do you enjoy most about learning Japanese?

At the beginning of the year, almost half of the students did not answer this question; however, at the end of the year, all students answered this question. The most obvious difference, as shown on Graph 6-2, was the number of the students who answered group work as their favourite activity.

*Graph 6-2 Question 2*

![Graph showing the number of students who enjoy different activities]

Question 3: How do you think a knowledge of Japanese will benefit you personally?

The findings on Graph 6-3 show that at the beginning of the year, although almost half of the students answered that learning Japanese at this school was for academic purposes, more than 60% of the students answered that learning Japanese was beneficial to be able to speak with their relatives or people in Japan. However, at the end of the year, more students answered that learning Japanese was beneficial for university entrance examinations and future application for adolescents.
Question 4: How do you think you might use your knowledge of Japanese in the future?

Findings presented on Graph 6-4 demonstrated that almost half of the students answered that they might use their knowledge of Japanese for “examination to enter universities”, both at the beginning and the end of the year. The number of students who answered that they might use Japanese for the purpose of communication in the future increased at the end of the year.
6.2.2 Japanese skills

The next section of the survey explored the students’ Japanese skills. Analysing their own proficiency requires metacognitive skills and these skills help to learning, especially for adolescents (Shimizu, 2009).

Question 5: Which skill is the one you feel most confident about when learning Japanese?

Graph 6-5 reported that at the beginning of the year, all the students answered that they had confidence in either listening or speaking. At the end of the year, most of the students continued to choose listening or speaking as they were more confident with promoting these skills, but two students selected either reading or kanji. The students were asked the reasons of their choices using open-ended questions. Some positive attitudes in choosing listening or speaking can be found, such as “It is easy”, “I always use at home”, “I understand it”, “I had more chance to listen to it” and also negative perspectives such as “I don’t need to use kanji in listening and speaking” and “I cannot do other things” were often found at the beginning of the year. These may come from unwillingness to learn (Douglas, 2005a). At the end of the year, these negative perspectives were reduced. A majority of the students answered that they always use kanji at home, and they had more chance to listen.

**Graph 6-5 Question 5**
Question 6: Which skill is the one you feel least confident about when learning Japanese?

In the next questions, the skills the students were not confident in were explored (Graph 6-6). More than half of the students answered they were not confident in kanji at the beginning, but this reduced to around one-third by the end of the year. When individual’s answers were compared, five students answered that kanji was their least confident area both at the beginning and the end of the year. Some students changed from kanji to other skills after one year; three students chose writing, two chose vocabulary and one chose reading as the area where they were least confident. Only one student indicated writing as the skill where they had the least confidence at the beginning, but this increased to five students. Writing practice was conducted consistently throughout the year and students were always encouraged to use kanji in writing. As demonstrated in finding, students were more confident in learning kanji shown in the reduced number on Graph 6-6.

**Graph 6-6 Question 6**

The reason for choosing kanji was that students displayed the least confidence with kanji skills. There were four students who answered kanji was their least confident skill both at the beginning and at the
end of the year. Three of these wrote the same reasons both at the beginning and the end, such as “too many” and “not good at”. This meant that the perceptions of these students did not change after one-year of study. On the other hand, the students who chose “kanji” as their least confident area at the beginning and then changed, at the end of the year mentioned that they were not confident in newly nominated skills like writing and vocabulary because they had not had much chance to use or practice them. As the students repeatedly practiced kanji throughout the year, they became more confident.

Question 7: Rate your proficiency in these areas below from 1 to 6 (1 being the most proficient).

The students were asked to rate their proficiency in the areas of six skills: reading, writing, speaking, listening, vocabulary and kanji. First, the results of the survey at the beginning of the year were examined (Graph 6-7). Although some variations were observed, it was found that many students had least confidence in kanji proficiency, followed by vocabulary and reading. Listening and speaking were the skills that the majority of the students were most or second most, confident with. Confidence in listening and speaking proficiency, and lack of confidence in kanji proficiency was found in prior research (Douglas, 2010; Kataoka et al., 2008). The rating for writing differed depending on the students; some were very unconfident; some were relatively confident in their writing abilities. Overall, most of the students had similar attitudes toward Japanese language learning.
Graph 6-7 Question 7 at the beginning of the year

The results of the final survey have been summarised in Graph 6-8 and each line indicates a different trend. The lines for kanji and writing skills stayed relatively outside the circle but the lines of other skills are mingled, especially, in the results for vocabulary and speaking. The students were then rated on their perceived levels of their proficiency.

Graph 6-8 Question 7 at the end of the year
These results were graphed by each skill. Graphs 6-9 to 6-14 show the distribution of student confidence for each skill. The graphs for reading and vocabulary were bell curves. This means that most of the students scored themselves in the medium range. The graphs for speaking and kanji had opposite shapes. Many students were confident in speaking but not for kanji. These trends can be observed both at the beginning and the end of the year. However, the graph for writing skills indicated that the distributions were different at the beginning and the end of the year. This change in students’ attitudes to writing were obvious in contrast to other skills.

*Graph 6-9 Question 7 reading*

![Reading Graph](image)

*Graph 6-10 Question 7 writing*

![Writing Graph](image)
**Graph 6-11 Question 7 speaking**

**Graph 6-12 Question 7 listening**

**Graph 6-13 Question 7 vocabulary**

**Graph 6-14 Question 7 kanji**
Question 8: Which skill do you want to improve most?

The students were asked which skill they wanted to improve the most. Almost half the students answered that they wanted to improve kanji at both the beginning and the end of the year. The number of the students who answered “reading” was reduced by half at the end of the year, but more students wished to improve their speaking or writing. None of the students answered improvement in listening at the end of the year. Many students did not give reasons for their choices at the beginning of the year but more indicated specific reasons at the end of the year and opinions were generally positive, such as “I want to perform well” and “it is useful for the future application.”

Graph 6-15

Which skill do you want to improve most?

<table>
<thead>
<tr>
<th>Items</th>
<th>Beginning of the year</th>
<th>End of the year</th>
</tr>
</thead>
<tbody>
<tr>
<td>reading</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>writing</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>speaking</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>listening</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>vocabulary</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>kanji</td>
<td>3</td>
<td>8</td>
</tr>
</tbody>
</table>

6.2.3 Kanji learning

JSL learners tend to regard writing and reading of kanji as the hardest part of kanji learning (Novarida, 2011; Yanagida, 2011). Douglas (2008) found that for JHL university students’ kanji reading and writing skills were similar to JSL learners. Research by Aiko (2018a) found that students tend to underestimate their skills. To explore how the students perceived their kanji skills questions in the next section focused on confidence in kanji learning.
Question 9: Which year level of kanji are you confident to read?

Firstly, each student was asked which year level of kanji they were confident in reading (Graph 6-16). At the beginning of the year, the answers of most students were divided into three, almost equally between Year 2 and 4. No one was confident in kanji for Year 5 and 6. After one-year of kanji learning, no one chose Year 1 level; instead, almost half of the students answered they were confident at Year 3 level kanji. Moreover, some of the students showed their confidence in higher levels of kanji.

*Graph 6-16 Question 9*

![Graph showing the transition of individual answers. Most of the students gained more confidence and some students stayed at the same level. Some students increased their confidence by two-year levels.](image)

Graph 6-17 demonstrates the transition of individual answers. Most of the students gained more confidence and some students stayed at the same level. Some students increased their confidence by two-year levels.
**Graph 6-17 Question 9 Change in individual answers**

Which year level of kanji are you confident to read?

<table>
<thead>
<tr>
<th>Items</th>
<th>Number of students</th>
<th>Beginning of the year</th>
<th>End of the year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1 levels</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Year 2 levels</td>
<td>7</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>Year 3 levels</td>
<td>4</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Year 4 levels</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Year 5 levels</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Year 6 levels</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

**Question 10: Which year level of kanji are you confident to write?**

The students had different attitudes toward writing kanji (Graph 6-18) At the beginning of the year almost two-thirds of the students answered they were confident to write up to Year 2 level kanji, and no one had confidence in Year 5 and 6 level kanji. This distribution changed at the end of the year. While the number of students who chose Year 2 level of kanji as their confident kanji level was still the highest there were several students who were confident at Year 3, 4, 5 or 6 levels.

**Graph 6-18 Question 10**

Which year level of kanji are you confident to write?

<table>
<thead>
<tr>
<th>Items</th>
<th>Number of students</th>
<th>Beginning of the year</th>
<th>End of the year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1 levels</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Year 2 levels</td>
<td>7</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>Year 3 levels</td>
<td>4</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Year 4 levels</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Year 5 levels</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Year 6 levels</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>
When individual shifts in perception were explored, as Graph 6-19 indicates, no one dropped their confidence levels and ten students recorded increases. Five out of these ten students increased their confidence level by more than two-year levels. This rate was higher than that recorded for reading kanji.

*Graph 6-19 Question 10 Change of individual answers*

<table>
<thead>
<tr>
<th>Which year level of kanji are you confident to write?</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="chart.png" alt="Radar Chart" /></td>
</tr>
</tbody>
</table>

Question 11: Which is the hardest part in kanji learning?

In Question 11, students were asked about the hardest part of kanji learning (Graph 6-20). At the beginning of the year, the number of the students who chose writing kanji, compound kanji words, okurigana and reading kanji as the hardest parts of learning were almost equal. At the end of the year, big changes were found; more than half of the students answered that the compound kanji words were the hardest part. More students felt reading kanji was harder than writing kanji.
Question 12: How did you practice kanji?

Students were asked about their study habits, in Years 6 and 7, at the beginning and end of the year respectively (Graph 6-21). The first question in this section was about the frequency of practicing kanji at home. Most students did not study kanji at all or only once a week when they were in Year 6. The number of the students who studied twice a week did not change much between the current and previous year, but it was obvious that the students who studied more than three times a week in the current year had increased. This meant that more students spent more time studying kanji compared to Year 6.
The next question inquired about the method of kanji learning at home (Graph 6-22). Except for the students who never studied kanji at home, in either the current or previous year, more students practiced writing kanji than looking at kanji or conducting self-tests at home. Although five students answered they never studied at home, they mentioned that they looked at kanji and remembered it in the car when they travelled to school in the previous year. However, submitting kanji practice notebooks was compulsory and their notebooks were checked every week during the year. From the results of this survey, practising and writing kanji had become a habit.
How many times the students practiced each kanji was asked in the next question (Graph 6-23). The number of students who practiced less than 10 times for each kanji in Year 7 was not very different from the number of times students practiced in Year 6. However, the students who studied each kanji between 10 and 20 times every week dramatically increased during the current year. The results of these three questions indicated that more students practiced kanji frequently at home by practicing writing.

**Graph 6-23 Question 12-3**

![Bar graph showing the number of students practicing each kanji](image)

<table>
<thead>
<tr>
<th>Items</th>
<th>Year 6</th>
<th>Year 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>more than 20 times</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>10-20</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>less than 10</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>never</td>
<td>5</td>
<td>0</td>
</tr>
</tbody>
</table>

**Question 13: Which kanji learning method/item was most useful for you?**

In Year 7 many methods were used in class to improve student’s kanji skills and these included regular kanji tests, radical learning, PowerPoint slides, use of the dictionary, the kanji vocabulary booklet, and writing assessments. All methods listed in the survey were chosen by an almost equal number of students (Graph 6-24). Same number of the students chose kanji vocabulary booklet and use of dictionary. Lower but equal number of students preferred methods such as test item, radical learning and PowerPoint slides.
The students’ answers on the surveys and the results of the tests have been compared and discussed in Chapter 7.

6.2.4 Summary of survey results

The results of the surveys conducted at the beginning and the end of the year were compared and discussed. The skills where the majority of the students displayed confidence were in listening and speaking, both at the beginning and the end of the year. In contrast, most of the students acknowledged difficulties in kanji at the beginning of the year but this changed, some students reported vocabulary or writing passages were the tasks they were least confident in at the end of the year. There were still some students who answered that kanji was the hardest skill at the end of the year, but the reasons became more specific. At both the beginning and the end of the year, most of the students chose kanji as the skill they wanted to improve the most.
Regarding kanji learning, it was found that most students were confident only in low year levels of kanji, especially writing kanji at the beginning of the year. At the end of the year, more students had confidence in higher year levels of kanji in both reading and writing kanji. At the end of the year most of the students answered compound kanji words were the hardest part of learning kanji. There were also changes in learning styles at home; more students practiced kanji by writing more frequently than the previous year. Thus, some changes were identified in the students' attitudes toward learning Japanese, especially kanji learning.

Kanji learning and tests, including the use of kanji in writing passages was part of planned learning experiences across the target year. In the next section the results of the tests are discussed.

6.3 Test results: Findings and analysis

In the following section, three types of tests are analysed: regular kanji tests, radical tests, and initial and final tests. The results of these tests were analysed separately between the first group and second group. The first group were the students who belonged to the Nihongo course, and the second group were the students who belonged to the Kokugo course and chose to take the same kanji test as the first group. The second group of students studied by themselves at home using the same kanji vocabulary booklet and took the same tests during the class.

6.3.1 Regular kanji tests

Researchers have found many JHL learners’ kanji proficiency does not reach age-appropriate levels as regulated by MEXT (Kataoka & Shibata, 2011; Nakajima, 2003b). The test results revealed actual kanji proficiency and this proficiency changed through kanji learning. In the Nihongo course, kanji
learning was conducted using the kanji vocabulary booklet designed for the class. The textbook included 14 topics and each page had around 15 target words. Two weeks were spent on each topic and the reading and writing tests were conducted in alternate weeks. In order to see how each student improved their reading and writing skills throughout the year the results were graphed. The reading and writing of kanji were tested and analysed separately. As the tests were conducted during class, students who missed the class on the day did not take the tests; thus, not every student took all of the tests.

6.3.1 Regular kanji reading tests

Regular reading tests were conducted throughout the year to see how each student improved on their kanji reading skills. Besides the target kanji, which were listed on each page, non-target kanji that were introduced by the end of Year 6, were also included in each test and marked.

Students practiced the target kanji at home, but they could not practice non-target kanji as these were not identified before the tests. Target and the non-target kanji were analysed separately to see if there were any differences.

The results of the target kanji have been analysed in Graph 6-25. Different shapes of transition lines were observed for each student. Some tasks showed obviously different accuracy rates from other tasks; for example, most of the students obtained relatively low scores in task 8 and the opposite trend can be seen in task 4. Some tasks, like task 11, revealed big differences among students. Regarding individual transition, nine students did not change much throughout the year, five students had decreasing trends, and the rest of the students had quite big fluctuations. Overall obvious improvement was not found in reading the target kanji and it is difficult to find a common pattern.
The group average, for each task, varied between 50% and 90%, except for task 8 with some fluctuations in group 1 (students in the Nihongo course). The overall average was 70.3%. There was no clear evidence that students improved their reading kanji proficiency. The average score of the second group was 82.3%. A higher accuracy rate for this group was recorded than the first group, except for task 8, which showed a big drop, similar to the first group. As there were only four students in the second group, the number of students who took the test obviously affected the average score. In the tasks with only two student participants, quite high scores were recorded for these tasks. However, averages dropped when other students took the tests. The topic for task 8, in which both groups recorded the lowest accuracy rate, was measurement words. Measurement words are used after numbers when something is counted. Unlike English, different measurement words are used in Japanese depending on the objects or concepts and each measurement word is represented in single
kanji, most of them using *on-yomi* which comes from Chinese reading (see Chapter 2.4.1). It would appear from these test results that students struggled to remember reading measurement words.

Next, the students’ performance on non-target kanji was analysed. Graph 6-26 indicates the transition of individual accuracy rates. No clear overall trend was found in the graph. Although each task showed different average accuracy rates, overall more than 50% of accuracy rates were maintained except for some students who always obtained relatively low scores. When individuals were the focus, it was found that 15 students had no obvious improvement overall, although there were some fluctuations. Two students, who obtained around 20% of accuracy rates at the beginning of the year, were able to slowly increase their scores toward the end of the year.

*Graph 6-26 Change in individual accuracy rates in kanji reading tests (non-target kanji)*
With the group’s average focus, there were fluctuations depending on tasks but, overall, the average changed between 45% and 75% for the first group and the second group had some large fluctuations. Similar to the target kanji section, the number of students who took each test influenced the average score in the non-target kanji test, however, individual students showed no big differences throughout the year.

The students who obtained relatively low scores showed some improvement although neither the first nor second group showed any obvious improvement in kanji learning. When the accuracy rates of target kanji and non-target kanji were compared, there was a difference in the first group. Bigger fluctuations were found in the target kanji than in the non-target kanji. The non-target kanji consisted of small changes, depending on the tasks and slightly better performances were observed at the end of the year than at the beginning of the year. In contrast, for the target kanji there were big differences between tasks. The students could practice for the target kanji each week, as these kanji were listed in the kanji vocabulary booklet; however, they could not practice the non-target kanji. Slight ascending trends in the non-target kanji could imply that the students’ kanji proficiency was increasing but the big fluctuation in the target kanji could be due to different abilities to memorise the target kanji. The students were expected to practice at least 450 kanji characters each week. At the beginning of the year, they practiced every week and submitted their notebooks. After a while some of them submitted their notebooks less frequently. It was also found that some students practiced kanji by just copying the shapes rather than trying to memorise them, according to their parents. In the second group, less differences were found between the target and the non-target kanji, except in tasks 4 and 5. The scores in both target and non-target kanji showed the kanji proficiency that students originally displayed had not improved through practicing kanji each week.
Regarding the types of errors in reading kanji, incorrect readings similar to correct readings were often found for the target kanji at the beginning of the year but as the students practiced these types of error were reduced.

Reading comprehension quizzes were included in each reading test. It was expected that students’ reading comprehension skills would be enhanced when their kanji reading proficiency improved (Yamaguchi, 2008). To see if there was any correlation between kanji reading skills and reading comprehension skills, the correlation between the scores in reading comprehension and the accuracy rates of kanji reading for each test were calculated. The comprehension quizzes in each test required skills to understand the specific information included each reading passage.

Firstly, the correlation between the comprehension scores and the accuracy rates in kanji reading tests by individuals was calculated. The results and the average accuracy rates of individuals are in Chart 6-1. The results indicate there were big variations between correlation coefficients. When correlation coefficients are between 0.7 and 0.9, it indicates variables can be considered highly correlated (Rumsey, 2015). Only one student obtained a correlation coefficient greater than 0.7. Two students’ correlation coefficients were between 0.5 and 0.7, indicating moderately correlated. Correlation coefficients between 0.3 and 0.5, indicating a low correlation, were recorded by six students. Seven students had correlation coefficients less than 0.3 and very little correlation was recognised. Most of the students whose correlation coefficients were more than 0.3 obtained less than 70% for average accuracy rates in the kanji reading tests, and the students whose correlation coefficients showed little correlation obtained more than 70% for average accuracy rates.
Chart 6-1 Correlation between the comprehension scores and the accuracy rates of kanji reading tests by individual

<table>
<thead>
<tr>
<th>student</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
<th>f</th>
<th>g</th>
<th>h</th>
<th>i</th>
<th>j</th>
<th>k</th>
<th>l</th>
<th>m</th>
<th>n</th>
<th>o</th>
<th>p</th>
<th>q</th>
</tr>
</thead>
<tbody>
<tr>
<td>correlation</td>
<td>0.398</td>
<td>-0.046</td>
<td>0.465</td>
<td>0.415</td>
<td>0.689</td>
<td>0.703</td>
<td>0.139</td>
<td>0.557</td>
<td>0.475</td>
<td>0.328</td>
<td>-0.012</td>
<td>0.125</td>
<td>0.014</td>
<td>0.038</td>
<td>0.006</td>
<td>0.388</td>
<td>0.381</td>
</tr>
<tr>
<td>average score</td>
<td>69.8</td>
<td>71.7</td>
<td>41.3</td>
<td>67.4</td>
<td>41.2</td>
<td>68.9</td>
<td>70.6</td>
<td>71.4</td>
<td>92.2</td>
<td>29.5</td>
<td>90.3</td>
<td>81.9</td>
<td>90.0</td>
<td>87.6</td>
<td>83.9</td>
<td>52.8</td>
<td>76.0</td>
</tr>
</tbody>
</table>

The accuracy rates of group averages in kanji reading differed depending on tasks. The students understood the contents more easily when the tasks contained more readable kanji (Matsunaga, 2003). The correlation between the average accuracy rates of kanji reading and the comprehension scores in each task were calculated in Chart 6-2. The average accuracy rates for each task were also listed in the chart. Correlation coefficients in tasks 5 and 7 were more than 0.7. Other tasks remained between 0.4 and 0.7, except for tasks 10 and 13; therefore, there was moderate, or lower correlation. The correlation coefficients in tasks 10 and 13 were less than 0.3 and had little correlation.

Chart 6-2 Correlation between average of accuracy rates and comprehension in each task

<table>
<thead>
<tr>
<th>task</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>correlation</td>
<td>0.532</td>
<td>0.634</td>
<td>0.451</td>
<td>0.421</td>
<td>0.733</td>
<td>0.429</td>
<td>0.610</td>
<td>0.496</td>
<td>0.659</td>
<td>0.228</td>
<td>0.658</td>
<td>0.447</td>
<td>-0.242</td>
<td>0.749</td>
</tr>
<tr>
<td>average accuracy rate</td>
<td>73.6</td>
<td>78.4</td>
<td>72.4</td>
<td>82.0</td>
<td>79.4</td>
<td>62.7</td>
<td>75.1</td>
<td>55.7</td>
<td>57.5</td>
<td>67.9</td>
<td>57.5</td>
<td>77.6</td>
<td>69.1</td>
<td>73.9</td>
</tr>
</tbody>
</table>

As far as reading kanji skills were concerned, an overall improvement was not obvious after one-year of learning. However, some improvement was found in the students who obtained relatively low scores at the beginning of the year. As far as the target kanji was concerned, improvements were found among the first group of students who had kanji learning in class throughout the year. There was no improvement for the second group of students who studied kanji by themselves at home.
calculation of the results of the correlation between kanji reading skills and reading comprehension suggest that the amount of kanji that students could read, their comprehension skills were not related for the students who already had a certain level of kanji reading skills. However, the students who did not reach this level of kanji reading skills at the beginning could understand the passages more easily when they could read more kanji.

6.3.1.2 Regular kanji writing test
The target kanji and the non-target kanji scores in each test were calculated separately. Graph 6-27 presents the individual accuracy transition of the target kanji. The accuracy rates varied depending on the students and tasks. At the beginning of the year, accuracy rates were distributed between 40% and 100%. The differences between the highest and the lowest accuracy rates among the students in each task differed by the tasks and it was found that half of the students obtained relatively high scores and the rest of the students stayed under 30%. As far as individuals are concerned, four students showed no significant change in the last third of the year and most others had declining trends. Similar to the reading kanji tests, the students knew which target kanji they were required to remember; therefore, the scores of the tests were influenced, depending on how much students studied for the tests. Writing kanji in the notebooks was required homework every week; some students kept working hard but others did little, or no, work at all.
The average for the first group was calculated and there were gradual declines with some fluctuations. The difficulty of kanji slightly increased, for each task but it was inferred that a lack of motivation also influenced the results of the tests.

Compared to the first group, the second group displayed obvious declining lines and bigger fluctuations. However, the tasks that indicated low accuracy rates were under specific conditions; when one of the students joined the tests, the averages always dropped. The number of the students in the second group was small and each student’s score directly influenced the group average. Therefore, the credibility of the average accuracy rates was low. It was found that individual accuracy rates of the other three students in the second group had a declining tendency.
The results of the non-target kanji analysis are discussed next. Different transitions were found from the target kanji transition. Throughout the year distribution of accuracy rates for non-target kanji was between 10% and 80%. At the beginning of the year, the majority of the students were under 50%, but most of them obtained higher accuracy rates by the end of the year and majority of them were higher than 50% at the end. With the target kanji, the differences among students did not obviously change, unlike the tasks for the non-target kanji and was mostly stable. When focusing on individuals, ten students had rising trends, three students experienced no obvious improvement, two students showed big fluctuations, and two students had a declining trend. Out of the five students whose accuracy rates did not change or decreased, four students were from the second group. This means that most of the students in the first group had improved their kanji writing skills (Graph 6-28). Students could not prepare for non-target kanji in the tests as they did not know which kanji would be examined. Therefore, the results of the tests were highly-related to the students’ actual kanji proficiency. As these accuracy rates indicated a rising trends these students’ kanji writing proficiency had increased throughout the year. Moreover, the differences between students did not change much throughout the year and the order of the results among the students was mostly stable; this means everyone’s skills were on a gradually upward trend.
The first group’s average transition showed the different trends from one of the target kanji. Although there were some fluctuations depending on tasks, the accuracy rates of non-target kanji had rising trends towards the end of the year compared to the target kanji. At the beginning of the year the group average of accuracy rates was 31.3%, and this reached 52.9 at the end of the year with some fluctuations. In contrast to the target kanji, no declining trends were found in non-target kanji suggesting the students’ kanji proficiency had improved.

In contrast, the second group’s results did not show obvious improvement or a decline, although there were some fluctuations throughout the year. Overall, accuracy rates were higher than the first group; however, accuracy rates for the first group almost reached those of the second group by the end of the year. As commented upon above the average dropped dramatically when one of the students joined the test for target kanji. However, the degree of decline was not large for non-target kanji so that one
student’s score did not have a serious impact on the group average and the declining trend was the result of the whole group’s performance.

In the kanji writing tests, different trends were found compared to the kanji reading tests. The differences among students were bigger in the writing tests than the reading tests. There were big fluctuations in the target kanji by task, especially for the second group. Considering the homework submission for kanji, which was checked by the teacher every week, it was easily inferred that the amount of practice at home influenced the results of the tests. In contrast, the accuracy rates for non-target kanji had increased towards the end of the year. Kanji writing skills improved, especially in the early stages and were either maintained or kept improving towards the end of the year. This pattern was not found for reading kanji.

6.3.2 Regular radical tests

Besides the regular reading and writing kanji tests, radical practices and tests were also included in the curriculum and nine radical tests were conducted throughout the year. It was expected that a knowledge of radicals, focusing on functions and structures of kanji would help improve kanji proficiency (Douglas, 2010; Toyoda & McNamara, 2011; Williams, 2013). On each radical page, six radicals were included. The names of the radicals, their meaning, kanji that use each radical, and words that included the kanji were tested. In radical tests, students knew what would be tested in advance; therefore, students could prepare for the tests.

Individual average scores of the names of radicals, single kanji, words and reading of words were graphed together (Graph 6-29). First, individual and the group averages of the tests of radical names were calculated. There were four students who obtained less than 50%; most of the others reached
60% or higher. Two students, who did not reach 40%, belonged to the second group and they did not study radicals in class. The radical names were not new information for the students; radicals were introduced at elementary school. Therefore, a refresher session was conducted during the class and it was predicted that remembering radical names would not be difficult for the students. It seemed that this practice provided good revision for most of the students.

The next section of the tests was to write single kanji that use the target radicals. How many single kanji each student could write correctly was calculated. The accuracy rates varied between 30% and 100%. Big differences were identified between individuals; however, it was found that 11 out of 17 students obtained higher scores in the single kanji section than in others.

Next, accuracy rates in writing compound kanji words which use the single kanji in the previous section was the focus. Knowledge of vocabulary that use the target radicals was tested. Compared to the single kanji, the group average of the second group similar but the average of the first group dropped more than 10%. Differences among students became smaller; however, the students lacked an understanding of vocabulary that use the specific kanji, as the average indicates.

Some common errors were missing okurigana or using incorrect okurigana and the wrong order of single kanji for compound kanji words. Okurigana are kana suffixes that follow kanji show grammatical functions of the word (see Chapter 2.4.1 for examples). Some students did not write any words or made wrong compound kanji words even when they wrote correct single kanji. It was also observed, through assisting students during the class, that some students seemed not to recognise even a word that can consist of only one kanji; for example, when kanji 花 is used by itself, it means “flowers”, and it was also used in compound kanji words, such as 花見 (flower viewing). Some
students seemed not to recognise that single kanji that make words with okurigana cannot be recognised as a word without okurigana.

The accuracy rate for the reading of words for each student was much smaller than for writing words. The group average for both groups was under 50%. The differences among students was larger than for writing single words. Four students achieved more than 70% but seven students obtained less than 40%. Common errors were dropping double consonants and long vowels and the misuse of voiced-sound symbols. A lack of vocabulary often caused these mistakes. However, most students who lost marks in this section did not write anything.

*Graph 6-29 Radical tests, individual and group averages (all elements)*

![Individual and group average (radicals) graph](image_url)
The correlation between the results of the radical tests and final kanji tests have been investigated in Chapter 7 to see how kanji learning, including radical learning, affects kanji knowledge.

6.3.3. Initial and final tests

How JHL learners perform for each year level of kanji was studied by researchers. (Kataoka & Shibata, 2011; Nakajima, 2003b). The tests in this study were conducted at the beginning of the year and the end of the year to see how each student improved their kanji proficiency after one-year of kanji learning and compared with prior research results. All of the uses of kanji in each test were counted according to year levels (Year 1 to 6) and the accuracy rates for each year level were calculated.

6.3.3.1 Kanji reading section

The results of the kanji reading section were analysed. Graph 6-30 shows the group average of the results of the kanji reading section. Besides the kanji for each year level, the totals for single kanji and compound kanji words, reading comprehension quiz scores were calculated. Even when students read each single kanji correctly, sometimes they could not read the kanji when the kanji was used within words, as each kanji has multiple readings and the readings differ depending on words. Therefore, accuracy rates for reading compound kanji words were also counted. The reading comprehension quizzes consisted of two parts; understanding the overall content and capturing specific information. The results of the initial and the final tests were compared. The averages for the first group and the second group were calculated separately.

In the initial test, the first group obtained the highest accuracy rate for Year 1 levels of kanji and this declined towards Year 4 level. The accuracy rates of Year 5 and Year 6 level kanji were almost the same as the Year 4 level. The accuracy rate in the total of each single kanji stayed at 36.3%, and
compound kanji words was 36.7%. Therefore, the students’ performance in reading each single kanji and compound kanji words were almost the same. In the second group, the average of the accuracy rates was obviously higher than the first group for any year level of kanji. More than 70% of accuracy rates were maintained in Years 1, 2, 3 and 6, and around 50% was obtained in Year 4 and 5. The results of the reading of each single kanji and compound kanji words were almost the same, around 65%.

Next, the results of the final test were examined. Through one-year of kanji learning the students in the first group reached 70% accuracy rate in Year 3, and around 50% for Year 4 and 6 level of kanji. The reasons their performance in Year 5 was lower than other year levels could be lack of familiarity of kanji in Year 5 as not much of the kanji from Year 5 was included in the booklet (See Chapter 6.3.5). That indicates the students increased their knowledge of reading kanji when they practiced with the booklet. The accuracy rates of the second group were higher than the first group for all levels but the rates in the final test were not always higher than the initial test; the accuracy rate for Year 2 level in the final test was lower than the initial test. In Year 3 level of kanji there was a big difference between the first group and the second group, in the initial test but the accuracy rates were almost the same in the final test. The difference between the accuracy rates of the first and second group in Years 2, 5 and 6 levels also became smaller in the final test than the initial test.
The growth rates in the final test, compared to the initial test, are represented in Graph 6-31. The first group increased their growth rates by more than 1.5 times in Year 3 and Year 4. This then dramatically increased to 2.29 times in Year 5. The growth rate in Year 6 was not as high as Year 5, but still increased more than twice. The students obtained more than 70% accuracy rate in Year 1 and Year 2 level kanji in the initial test and their performance in the final test was similar; therefore, the growth rates were not big. This result indicates that the improvement in the students’ reading skills at an advanced level of kanji was higher than the lower levels of kanji reading.

For the second group growth rates were much lower than the first group, although improvements were still observed in all but Year 2 level kanji. The highest growth rate was 1.40 times for Year 6 level, but all the year levels stayed under 20%. This implies that little improvement in kanji reading was found.
in this group compared to the first group. As a result, the difference in averages between the two groups in the final test was smaller than the initial test.

Growth rates of total of single kanji and compound kanji words were examined. Both groups displayed slightly higher growth rates in compound kanji words than single kanji, although the first group improved more than the second group.

*Graph 6-31 Growth rates in the reading section*

Individual growth in reading single kanji and compound kanji words are summarised in Graph 6-32. In the initial test, four out of 13 students in the first group and three out of four in the second group obtained more than 50% in reading single kanji. In the final test, eight students from the first group and three from the second group reached more than 50% accuracy rates. Moreover, everyone’s accuracy rate in reading single kanji increased, except for one student from the first group and two students from the second group. This result suggests that most of the students improved their single kanji reading skills after one-year of kanji learning, especially the students in the first group.
In compound kanji words three students in the first group and four students in the second group achieved 50% accuracy rates in reading compound kanji words in the initial test, and this increased to eight in the first group. The rate for one student in the second group dropped slightly. In the initial test, some performed reading single kanji better than compound kanji words and others were the opposite. However, in the final test, most of the students performed better in compound kanji words than single kanji. In summary, as far as reading kanji is concerned, most of the students improved their kanji reading skills especially, in compound kanji words. Obvious improvement was found especially in higher year levels.

*Graph 6-32 Individual growth in reading single kanji and compound kanji words*

The results show a correlation between high kanji reading skills and skimming skills. This was observed in the middle range of students with some exceptions. The results were unclear if the same
levels if correlation were present in the higher and lower range of students. To see if the same can be said for initial and final tests, and how scanning and skimming skills are different, comprehension quizzes included in both the initial and the final tests were examined. The comprehension quizzes included skimming, how much each student understood by an overview of the content, and scanning, how much they grasped the specific information.

Both groups obtained high scores in comprehension quizzes in the initial and final tests. Accurate answer rates for scanning questions were higher than the ones for skimming questions in both groups. Contrary to the accuracy rates of reading kanji, the first group’s scanning and skimming scores were higher than the second group’s in both tests. The differences between the groups were 11% in the initial test and 23% in the final test for skimming (Graph 6-30). This result implied that kanji reading skills were not really influential on comprehension skills.

In order to see the relationship between kanji reading skills and comprehension skills, the correlation among the group averages of accuracy rates in reading single kanji and compound kanji words, and the percentages of accurate answers in comprehension quizzes were calculated.

The summary of correlation coefficients in the initial and final test is shown in Chart 6-3. The first group’s correlation coefficients indicate that both reading single kanji and compound kanji words had quite low correlations with scanning skills and moderate correlation with skimming skills in the initial test. This implies that students with relatively high kanji proficiency were likely to understand a whole passage or to grasp the main idea of the passage when the students read kanji in the passage, but their kanji reading skills did not relate to their understanding of specific information. In contrast, the second group showed different trends; scanning and both reading single kanji and compound kanji words were
highly correlated, but little correlation was found between reading compound kanji words and skimming skills. Their skimming skills and skills in reading single kanji showed moderate correlation. As the number of students in the second group was small, it cannot be said that students are always good at grasping specific information in the passage when they have high kanji reading proficiency, but some tendencies can be identified.

In the comparison of initial and final tests, the results of the first group did not show any obvious change between the initial and final tests regarding the correlation coefficients; a correlation between their scanning skills and kanji reading skills was not found, however a low correlation was still identified between kanji reading and skimming skills. In contrast, some differences were found in the second group; a high correlation was observed between kanji reading and skimming skills, although reading kanji and scanning skills had low correlation. The correlation coefficients in the final tests also indicated that when students had high kanji reading skills, they were likely to understand a general overview of the content.

*Chart 6-3 Correlation between reading comprehension and the initial test*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Group average of accuracy rates of reading single kanji (a)</th>
<th>Group average of accuracy rates of reading compound kanji words (b)</th>
<th>Correlation with (a) and skimming</th>
<th>Correlation with (a) and scanning</th>
<th>Correlation with (b) and skimming</th>
<th>Correlation with (b) and scanning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial test</strong></td>
<td>First group</td>
<td>36.3</td>
<td>36.7</td>
<td>0.407</td>
<td>0.039</td>
<td>0.537</td>
<td>0.188</td>
</tr>
<tr>
<td></td>
<td>Second group</td>
<td>66.1</td>
<td>67.3</td>
<td>0.629</td>
<td>0.748</td>
<td>0.186</td>
<td>0.698</td>
</tr>
<tr>
<td><strong>Final test</strong></td>
<td>First group</td>
<td>54.6</td>
<td>61.2</td>
<td>0.401</td>
<td>0.061</td>
<td>0.514</td>
<td>0.103</td>
</tr>
<tr>
<td></td>
<td>Second group</td>
<td>76.8</td>
<td>79.6</td>
<td>0.868</td>
<td>0.203</td>
<td>0.793</td>
<td>0.112</td>
</tr>
</tbody>
</table>
Improvement in kanji reading was identified after one-year of kanji learning in the first group. There were some improvements, in the second group but the growth rates were lower than the first group. This result suggests that kanji learning in the classroom contributed to enhancing students’ kanji reading skills, especially in the higher year levels. Not only kanji reading skills, but also the students’ vocabulary skills, increased.

6.3.3.2 Kanji writing section
In Graph 6-33, the accuracy rates of kanji writing were calculated by each year level for each group. In the initial test, the accuracy rate of the first group was less than 30% for all year levels of kanji. Especially low achievement was recorded between Year 4 and Year 6 levels of kanji. In the final test, the first group reached almost 80% for Year 1 level kanji. Other levels of kanji were much lower than Year 1, but students still obtained more than 20% in Year 2, 3, and 4 levels. Overall, the first group obtained higher accuracy rates in the final test for all year levels of kanji compared to the initial test, although the accuracy rates decreased as the year level increased, except for Year 6 level of kanji. Similar to the reading section, the second group obtained higher accuracy rates than the first group for any year level of kanji, in both the initial and the final test. They maintained more than 30% accuracy rates except in Year 4 and Year 5 levels in the initial test. The highest accuracy rate of the second group was 85.3% at Year 1 level and lowest was the 8.3% in Year 5. Unlike the first group, higher accuracy rates were not always obtained in the final test compared to the initial test. Overall, the first group’s average did not reach satisfactory levels for any year level in the initial test; however, they obtained 50% up to Year 3 levels, and the reasons Year 4 and 5 levels were lower than Year 6 level could be due to lack of familiarity and frequency of use compared to other year levels.

The totals for single kanji writing and writing kanji as words were compared. There were no significant differences between writing single kanji and compound kanji words for both the first and second group
in the initial test; the first group obtained around 15% and the second group obtained around 38%. In the final test the average of the first group accuracy rates increased from around 15% to 38% for both single kanji and compound kanji words; the second group obtained slightly better scores in single kanji than compound kanji words. As far as writing kanji, both groups of students could perform similarly in both single kanji and compound kanji words. In other words when students can write single kanji they seem able to write compound kanji words correctly.

*Graph 6-33 Initial and final kanji writing section results group average*

Similar to the reading section, how much each group improved their kanji writing skills in each year level was calculated (Graph 6-34). The growth rates of the first group in the writing section were higher than the reading section. The highest growth rate in the reading section was 2.29 and the lowest was 1.08 (Graph 6-31). In the writing section, the highest recorded score was 27.20 and the lowest was 1.56. No correct answer in Year 5 level kanji was found in the initial test; therefore, the growth rate
was not calculated, but in the final test the accuracy rate reached 5.11%. Dramatic growth was found at Year 4 level for the second group as well, which was 9.6%, but no clear growth was found in other year levels of kanji and some even showed reductions. In the comparison between the first and second group, the growth rates of the first group was higher than the second group for all year levels and in total for single kanji and compound kanji words.

*Graph 6-34 Growth rates in the writing section*

The individual accuracy rates of whole levels were compared between the initial and the final tests. The summary of the results for both single kanji and compound kanji words are represented in Graph 6-35. In the initial test, most of the students in the first group obtained less than 20% of accuracy rates in writing single kanji; however, in the final test, the majority of these students attained more than 20% accuracy. Most of the second group of students obtained more than 30% in the initial tests and all of them increased their results in the final test, albeit with different growth rates. A similar figure to the single kanji scores can be seen in the kanji writing compound kanji words.
The data indicates that more improvements were recognised in writing kanji than reading. The reading and writing accuracy rates have been compared to see the differences between initial and final tests.

In the initial test, reading skills were higher than writing skills for all year levels of kanji and the differences between reading and writing were almost maintained for all categories for the first group. However, in the final test, the difference between the reading and writing scores changed and almost the same accuracy rates were recorded for Year 1 and Year 4 level kanji (Graph 6-36). Accuracy rate itself was increased for all the categories compared to the initial test and this result also indicates higher improvement in writing kanji section.
In the second group, the accuracy rates for reading kanji were always higher than for writing kanji in both initial and final tests. Big differences between reading and writing scores were found in Year 4 and Year 5 kanji but the differences were maintained for other levels and in total for single kanji and compound kanji words in the initial test. In the final test, the differences between reading and writing kanji were almost stable expect Year 1 level of kanji (Graph 6-37). Almost the same tendency was seen in the final test, meaning that little change was observed in the second group.
Graph 6-37 Comparison of reading and writing, initial tests (second group)

The result suggested that the kanji learning was more effective in kanji writing, especially for the higher than Year 3 level of kanji. However, the question arises: Is there any necessity to focus on kanji handwriting skills in such a high technology society? Text can be converted automatically into kanji when it is typed or input by voice on computer. The ability to choose correct kanji from homonyms is necessary; however, if the person can recognise the correct kanji, then the ability to write kanji may not be necessary. Frequent use of handwriting has been reduced with the development of technology.

At one of the schools for heritage Chinese language in Belgium, Chinese characters (called Hanzi) were taught in the same way as for native Chinese speakers, and handwriting practice was conducted (Hsiu-Pei, Ching, & Wim, 2012); however, it was also mentioned that the students tended to rely on romanisation (Pinyin), spelling the pronunciation using the English alphabet in a Western environment, rather than using traditional characters. Xu (2009) also mentioned that typing on a
keyboard has started to replace handwriting. It is suspected that the same can be said for Japanese heritage language education. It was predicted when students have high reading kanji skills, they also have high writing skills. How students’ reading and writing kanji skills correlated with each other has been calculated. Chart 6-4 indicates the correlation coefficients between reading and writing kanji scores for both single kanji and compound kanji words in the initial and final tests. The results indicated that there was quite a high correlation between reading and writing kanji. The coefficients were higher in final tests than the initial tests. The highest coefficient was found in single kanji of the final test. Moreover, the correlation became higher when students had a higher proficiency in kanji as the correlation was higher in the final test than the initial test. The result indicates reading and writing kanji skills correlated, especially for single kanji.

*Chart 6-4 Correlation between reading and writing kanji scores in the initial and final tests*

<table>
<thead>
<tr>
<th></th>
<th>Initial test</th>
<th>Final test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single kanji</td>
<td>0.664</td>
<td>0.718</td>
</tr>
<tr>
<td>Compound kanji words</td>
<td>0.594</td>
<td>0.658</td>
</tr>
</tbody>
</table>

6.3.4 Summary of test results

In this section, three types of tests have been examined; the regular kanji tests, the radical tests and the initial and final tests. Two groups of students joined in this research; the first group was the group of the students who belonged to the Nihongo course and took kanji learning during the class throughout the year as a part of the curriculum. The second group were the students who belonged to the Kokugo
course but wished to take the same kanji test as the first group and studied by themselves at home using the same kanji vocabulary booklet. Regular tests were conducted throughout the year to see if the students could demonstrate kanji reading and writing skills that were practiced in each class. Besides the target kanji for each week’s learning, kanji that was introduced by the end of Year 6 were also included and marked. In addition, reading comprehension quizzes were incorporated into the reading tests to see if there was any correlation between kanji reading skills and comprehension. The comprehension quizzes in the regular reading tests examined students’ scanning skills. The findings indicated that their kanji reading skills showed slight improvement. Although clear progress was not found in the reading section in regular tests, improvement in writing kanji skills were found. It was found that the writing skills for non-target kanji, especially for the first group of students improved, and revealed that kanji learning contributed to enhancing kanji proficiency. This was supported by the initial and final test results. The improvement in writing was clear in higher levels of kanji. Regarding reading comprehension skills, the correlations between kanji reading skills and scanning skills in both regular reading tests and the initial and final tests were not clear; however, it was found that when students had relatively higher kanji reading skills, better skimming skills were observed.

Nine radical learning sessions and tests were conducted with the expectation that knowledge of radicals could contribute to improve the students’ kanji proficiency. Although the students performed relatively well in writing the names of each radical and the single kanji that included the target radicals, they struggled to make words that used the target radicals. This indicated that the students had some understanding of how each radical was used in kanji but their knowledge to make compound words from each single kanji was insufficient.
Thus, each test indicated how kanji learning contributed to students’ kanji proficiency. In the next section, the use of kanji in writing assessments is analysed to see how the students incorporated their kanji skills into their writing.

6.4 Use of kanji in writing assessments results

This section focused on the results of the use of kanji in writing tasks. The students were strongly encouraged to use kanji when they wrote essays in order to be able to use their kanji skills in context which was insisted by Toyoda (1995). Ten writing practices were conducted as a part of the curriculum throughout the year. As Nakajima (1988b) and Novarida (2011) stated, JHL learners have problems in how to use kanji in writing passages. Therefore, how kanji learning contributed to their use of kanji in passages was explored, so that further enhancement would be identified. The use of kanji in the writing assessments in the first group (the Nihongo course) were recorded and summarised in graphs. The results of the students in the second group (Kokugo course) were discussed separately as the topics and the number of the writing assessments was different to the Nihongo course.

6.4.1 Results of the first group’s use of kanji

The content and the schedule of the writing practices were decided by the curriculum content and a variety of styles were included, such as creative writing, letter writing, informative essays and interpreting textbooks. Each writing assessment had a different topic and the lengths varied. The number of kanji that was expected to be used in each task was different. Therefore, the number of kanji that a student actually used correctly and the kanji that was expected to be used in each task were counted and the rates of kanji use, and correct kanji use were calculated. In written passages students were encouraged to use Japanese dictionaries but they needed to work by themselves to find the words that they were expected to use and to choose the appropriate kanji from homonyms.
Firstly, the individual rates of kanji use for each task were graphed (Graph 6-38), although the graph does not reflect if the student used the correct kanji. The rate of kanji use changed for each task. At the beginning of the year, the rate of kanji use was spread widely between 10% and 90% but gradually the number of students who used more than half of the kanji they were expected to use increased. Students’ attitudes toward using dictionaries required time. They sometimes hesitated to use dictionaries and gave up using kanji; however, checking kanji in dictionaries became faster as they practiced. At the end of the year, the differences among the students became smaller and most of them reached between 40% and 100%. Although some fluctuations were found rising trends were observed for seven students, four students showed some improvement with big fluctuations, and two students kept high rates throughout the year. From this result, it was concluded that the use of kanji in writing assessments had increased overall; but this was not consistent, and the use of kanji changed depending on the task.

Next, transaction of accuracy use of task was the focus. The results indicated that the students started to use kanji in writing passages after practicing but the type of tasks also influenced the use of kanji. In the first four tasks, the rate of kanji use was relatively low and showed slightly declining trends. After that, it started to rise. Task 9, which indicated a low average, required interpreting textbook reading material. Tasks 3 and 4 also had low averages; task 3 was writing thank-you letters and task 4 was essay writing. Tasks 7, 8 and 10 had relatively high rates of use of kanji overall. The type of writing tasks in 7 and 10 were letters which would have actual recipients – they were authentic tasks rather than just practice. The highest average was recorded for task 10, which was for students to introduce themselves to their new teacher for the next year. Although task 3 had authentic recipients for the letters, the use of kanji was not high.
Even when the students used kanji in their writing assessments, misuse of kanji was found. How accurately individual students used kanji in each task was calculated and summarised in Graph 6-39. The rate indicated the accurate kanji writing within the number of kanji they wrote. As can be seen, the accuracy rate was quite high in the second half of the year. The use of dictionaries was encouraged throughout the year. Many students struggled to choose appropriate kanji from homonyms at the beginning of the year and chose the first listed kanji in the dictionary regardless of the meaning of the kanji; however, as they practiced, they started to ask the teacher if the kanji from the dictionary was correct or not. By using scaffolding (Dansie, 2001), the teacher reduced the amount of help and in the middle of the year, almost 80% of the students could choose the correct kanji without asking the teacher, although they still needed to use dictionaries.
The graph above shows the accuracy of the kanji that each student used in the writing assessments; even if the ratio of the use of accurate kanji to the number of kanji used in the passage was high, it does not mean that the student had a high level of kanji proficiency where the number of kanji used in the writing assessments was insufficient. Then, the ratio of the accurate use of kanji to the total number of kanji that were expected to be used in each passage was calculated (Graph 6-40).

Similar patterns were found between Graph 6-40 below and Graph 6-38 in the second half of the year, as the number of kanji used in writing increased as students practiced. However, at the beginning of the year, the use of kanji itself was not satisfactory as the number of incorrect kanji used in writing assessments was high and this made the rate of the accurate use of kanji quite low; it was under 50% in the first task. The results indicate that the ratio of accurate use of kanji to the total number of kanji
expected to be used gradually shifted to 100% with some fluctuations, although the differences among students in each task varied.

Graph 6-40 The ratio of the accurate use of kanji to the total number of kanji that was expected to be used in each passage (first group)

The group average of kanji use and the accuracy of the first group are presented in Graph 6-41. The graph shows gradual rising trends towards the end of the year. The bars show the rate of kanji use and the lines show the ratio of correct kanji use to the number of kanji expected to be used in each passage. The difference between the bar and the line indicates the amount of misuse of kanji. In the first task, it was found that only half of the kanji used were written correctly. After that task, the difference was smaller and in task 9 all kanji written in the passage were correct. As the use of kanji itself increased, except for task 9, the students started to use more correct kanji.
6.4.2 Results of the second group’s use of kanji

The results of the kanji used in writing assessments for the second group were analysed. The second group had a different curriculum from the first group; therefore, the tasks and the number of writing tasks were different.

Firstly, the use of kanji in each task are summarised in Graph 6-42. The use of kanji at the beginning of the year was higher than the first group. However, the rate of kanji use did not increase very much in the first 4 tasks and kanji use was minimal in tasks 5 and 6. The topics of tasks 5 and 6 were interpreting a textbook reading and letters to the new teacher, respectively. When focusing on individuals it was found that one student had an increasing trend in kanji use while others maintained the same rate, except in task 5. At the beginning of the year the kanji use of half of the students in the first group was under 50%, no student in the second group was under 50% and there was no obvious increase in kanji use observed overall. There are some possible reasons for this, one being that writing practice was not regularly conducted in this class. Moreover, the use of a dictionary was not strongly encouraged during the class as the students in the Kokugo course were assumed to be able to use kanji.
How accurately individual students used kanji in each task was calculated and is summarised in Graph 6-43. Mostly, the kanji was written accurately. Incorrect kanji found in the second group were mostly because of the wrong use of okurigana. The choice of wrong kanji from homonyms, as was observed in the first group, was not found in the second group. This indicates that the students in the second group had quite an accurate knowledge of kanji and understood the meaning of each of kanji compared to the students in the first group.
The transaction of the accurate use of kanji to the total number of kanji that were expected to be used in each passage is presented in Graph 6-44. As the second group’s accuracy rate of kanji was quite high, the shape of the graph is very similar to Graph 6-42. While the first group showed increasing accuracy rates overall, the second group did not, except for one student. The result does not support any clear improvement in the students’ use of kanji in writing assessments.

Graph 6-44 The ratio of the accurate use of kanji to the total number of kanji that was expected to be used in each passage (second group)
Graph 6-45 presents the average kanji use for the second group and the accuracy of kanji use. The bars show the rate of kanji use and the line indicates the ratio of correct kanji use to the number of kanji expected to be used in each passage. In any task the difference between the bar and the line was small and this indicates that the students used accurate kanji.

**Graph 6-45 Average kanji use and accuracy (second group)**

![Graph 6-45](image)

Obvious improvement was not found in the second group, although types of tasks seemed to influence the use of correct kanji.

6.4.3 Error types in kanji writing assessments

Errors of kanji in writing tasks are found not only in JHL learners but in native speakers of Japanese and JSL learners. Both native Japanese speakers and JSL learners have a tendency to use incorrect shapes when writing kanji and use substitutes (Chikamatsu, 2005; Hatta et al., 1998). Tendencies of JHL learners were examined to see if any similarities were identified. Types of errors are summarised in Graph 6-46. In order to see the strengths and weaknesses in the area of kanji, the types of errors that students made were explored. Overall, the errors most frequently made – almost one-third of all errors
were writing another kanji that had a similar shape to the correct kanji. For example, 入 instead of 人, 或 来 instead of 乗 were used. The meanings and readings are both different, but students did not remember, or did not recognise the differences as they made the same errors repeatedly. The next most frequently made error was writing shapes of kanji that do not exist; such as adding extra lines or dropping dots. Not remembering or being confused could be a cause here as students sometimes practiced the wrong shapes of kanji in their notebooks or did not practice the kanji. Errors in the use of the wrong okurigana were also found relatively often. Another example of errors was the use of wrong radicals. For example, in writing 家, “入” was used instead of the correct radical “火”. In these cases, the students might have had some idea of the correct shape of radicals and non-radical parts but did not understand the meaning of radicals. If they understood the meaning of the radicals in each kanji, the wrong use of radicals would presumably be avoided. There were less mistakes in the use of homonyms in the students’ writings. This indicates that when the students used kanji in context, they could cope with homonyms better than the exercises for changing hiragana into kanji in written texts. Moreover, the wrong order of kanji in compound kanji words, which use more than two kanji to make one word, were sometimes found, such as 球野 instead of 野球.

Individual performance was also a focus. The main errors made by students, c, d, f, g, and j was writing shapes of kanji that do not exist. These students obtained relatively lower scores in the kanji writing section of the final test than other students. The main errors made by students a, b, k and m, was the selection of kanji that had a different meaning and reading from the kanji they were expected to use. A high rate of kanji use in the writing assessments was found in these students work and big fluctuations were found in kanji use in student b’s writing assessments. The students who wrote the wrong okurigana more often than other errors were students, b, h and i. Regarding student e, his/her writings were short and the number of kanji used was small; therefore, not many kanji mistakes were made, making the percentage of each type of error large. In the second group, one student made some
mistakes in the kanji writing assessments and the other three students made fewer mistakes. Writing the wrong shape of kanji, wrongly selected kanji, and wrong okurigana were found in their writings.

Some common characteristics were found among the students who wrote kanji scripts neatly, there were students, c, e, i, k, l, m, o and p. The use of the wrong shape of kanji was not often made although there were some exceptions. Errors in writing wrong shapes were often found among the students who did not write scripts neatly. Thus, types of errors in kanji use were different depending on students’ kanji proficiency and writing styles.

**Graph 6-46 Types of errors made in kanji writing assessments**

Overall, an increase in the use of correct kanji was found and learning and practicing kanji within vocabulary seemed helpful in increasing the use of kanji in writing. In other words, the words that are
introduced and practiced should include ones that students actually use in their writing; relating kanji and words to their topics is necessary. In the next section, how the kanji vocabulary booklet used in the class to ascertain the validity of this instrument is examined.

6.4.4 Validity of kanji vocabulary booklet

Practice in writing passages using dictionaries was conducted throughout the year. The results of the analysis suggested that encouraging dictionary use was effective. However, it was uncertain how much each student could use kanji in their writings without dictionaries. The selection of vocabulary for practice was essential and influenced textbook design to improve learners’ appropriate use of kanji skills (Yamaguchi, 2013). The kanji vocabulary booklet was designed by the researcher of this study based on prior research (e.g., Schmitt, 2000; Ushiyama, 2011) and therefore, the frequency of use, subject range, relation to daily lives and colloquial styles were considered. However, there may be a need for different categories of words and kanji.

In order to examine the validity of the selection of kanji in the kanji vocabulary booklet, the vocabulary in the booklet and the kanji that the students actually used, or were expected to use, in their writing assessments were compared (Chart 6-4). The number of kanji introduced up to Year 6 was 1006 characters and 290 kanji were listed in the kanji vocabulary booklet. The number of kanji for Year 1 level included in the booklet was small as they are very basic kanji, such as numbers, and were not included in the kanji vocabulary booklet. More than 40% of kanji presented in the booklet were in Year 1, 2 and 3 levels and the smallest percentage was found in Year 5 level kanji. This was because most of the kanji in Year 5 were less frequently used for writing about general topics.
It was found that almost the same amount of kanji in total was offered in the booklet as was the actual number of kanji students used their writing, although there were some differences for each year level. For example, more kanji at Year 4 and Year 5 levels were actually used or expected to be used in students’ writings than the ones listed in the kanji vocabulary booklet. Overall, the number of kanji in the booklet for each year level represented a reasonable expectation.

**Chart 6-4 The number of kanji applied in the kanji vocabulary booklet**

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of kanji listed in the curriculum</td>
<td>80</td>
<td>160</td>
<td>200</td>
<td>200</td>
<td>185</td>
<td>181</td>
<td>1006</td>
</tr>
<tr>
<td>Number of kanji applied in the booklet</td>
<td>34</td>
<td>99</td>
<td>80</td>
<td>37</td>
<td>14</td>
<td>26</td>
<td>290</td>
</tr>
<tr>
<td>Ratio of the number of kanji applied in the booklet to the kanji listed in curriculum (%)</td>
<td>42.5</td>
<td>61.7</td>
<td>40.0</td>
<td>18.5</td>
<td>7.6</td>
<td>14.3</td>
<td>28.8</td>
</tr>
<tr>
<td>Number of kanji used in the writing assessments</td>
<td>42</td>
<td>93</td>
<td>82</td>
<td>43</td>
<td>22</td>
<td>24</td>
<td>306</td>
</tr>
<tr>
<td>Ratio of the number of kanji used in the writing assessments to the kanji listed in the curriculum (%)</td>
<td>52.5</td>
<td>58.1</td>
<td>41.0</td>
<td>21.5</td>
<td>11.9</td>
<td>13.2</td>
<td>30.4</td>
</tr>
</tbody>
</table>

Regarding the type of kanji in the booklet, this differed depending on the topic of the writing assessments. The topics covered in Year 7 in the Nihongo course are below.

1. Self-introduction
2. Interpreting a textbook reading (diary style)
3. Thank-you letter
4. Essay (introducing the hoshuu-koo)
5. Essay (introducing the student’s own local school)
6. Interpreting a textbook reading (letter style)
7. Thank-you letter
8. Book review
9. Interpreting a textbook reading (creative writing)
10. Letter to the new teacher (informative writing)

Three out of ten writing topics were interpreting textbook passages and letters were the main tasks considered authentic practice. The vocabulary and kanji used in each task was restricted by the limited types of topics. To see if the vocabulary and kanji in the kanji vocabulary booklet were helpful for the students to write passages, it was necessary to check each vocabulary and kanji in the booklet carefully against the kanji used or expected to be used, in the actual writing assessments. The vocabulary used or expected to be used, in the students’ writings and the vocabulary in the booklet were compared. The chart below (Chart 6-5) shows the number and percentage of kanji and vocabulary matching the ones that were used in the booklet and the students’ writings. Kanji that were expected to have been used in the writings were also included.

Firstly, the kanji used in writing assessments and the kanji listed in the booklet were compared (row c). Around 60% or more kanji used in the writing assessments were listed in the booklet, except for Year 4 and Year 5 levels. Although it was not realistic to cover all of the kanji in the booklet the gap between the kanji used in writings and listed in the booklet was considered reasonable. Row d indicated the number of kanji used in writing assessments which were not listed in the booklet; this means that a total of 109 kanji were missing in the booklet and may need to be added. In contrast, the percentage of kanji that were listed in the kanji vocabulary booklet but not used in the actual writings were relatively low (row g), but was more than 40% in Year 4, Year 5 and Year 6. Therefore, around 30% of kanji in the booklet were not used in the actual writings.
The booklet was designed with a focus on vocabulary. Therefore, the amount of vocabulary in the booklet that was used in the students’ writings was counted. It was found that 106 words were used in the writings out of 256 words listed in the booklet. The number of words which were used in the writing assessments and listed in the booklet was 162. This means that 39.5% of words used in the writings were covered by the booklet. The number of words used in the writings included beginner level words, which are usually introduced at the beginning of a Japanese course for the second language, such as numbers, days of the week and position words that were often used in student’ writings. This influences the ratio of words in the booklet to those used.
The results indicated that the booklet covered an appropriate number of single kanji that students used in their writing assessments, but it could have contained an increased vocabulary. This is because kanji can have multiple readings and the kanji listed in the booklet were not always used as words that were introduced in the booklet with students sometimes using the kanji in different words than those listed in the booklet. When each word used in the writings and words in the booklet were compared, it was found that the following categories were used by the students but not in the booklet:

- Words which express feelings (e.g., respect, nervous, positive, believe, concentrate);
- Words related to school life (e.g., school-house, local school, subjects, research);
- Words related to future and occupations (e.g., future, jobs, doctor, lifestyle); and
- Words related to the globe (e.g., Earth, world, peace, environment)

Words representing abstract ideas were not really included. On the contrary, vocabulary that was listed in the booklet but not used in the students’ writings were:

- Words representing building types (e.g., bank, post office, café, police station);
- Words related to nature and places (e.g., nature, rice field, lake); and
- Words related to daily necessities (e.g., pencils, mirrors, desks).

Vocabulary in the booklet was selected based on the prior research that considered learners’ needs and cognitive levels (Douglas, 2005a; He, 2006; Nishigaki et al., 2007), however, the vocabulary and kanji used varied depending on the topics. Reading materials are also important when selecting vocabulary, therefore, the topic and type of tasks need to be more examined when developing the booklet in the future to support kanji learning.

6.4.5 Summary of writing assessment results
In this section, how accurately each student used kanji in their writing assessments was examined. Different patterns were found between the first and the second group. The differences suggested that regular practice and encouragement in the use of kanji helped students to perform better in using appropriate kanji in writing passages. However, the types of tasks could be influenced by students’ attitudes to using kanji. In order to maintain their motivation, the use of authentic tasks and continuous encouragement to use kanji was implemented. When examining errors made in kanji several types of errors were found. It was found that the students who did not have enough proficiency in writing kanji often wrote the wrong shapes of kanji. The reasons for this could be that they memorised the kanji carelessly or incorrectly copied from the dictionary. If students wrote scripts neatly this influenced the number of errors in writing the shapes of kanji. The use of incorrect radicals was also found, implying that the students did not have enough knowledge of radicals or did not pay attention to the function of radicals.

The validity of the kanji vocabulary booklet was examined. There were some discrepancies in kanji and words in the booklet and words actually used in students’ writing assessment. The vocabulary and kanji used in the writing assessments differed depending on the topics; therefore, it will be important to examine the categories and themes of the booklet carefully to enhance the content.

In this chapter, fourteen writing assessments from the Nihongo class were used to analyse the students’ uses of kanji in writings. Other tendencies apart from kanji were also analysed by the researcher (Aiko, 2017) using the same writing assessments for these 13 students to see if there were any notable characteristics. Each writing assessment was marked based on six criteria: organisation of structure; grammatical accuracy and appropriateness; accurate and appropriate use of vocabulary; coherence; complexity of sentences; and script. It was found that the biggest differences among students in scores were in the use of grammar, followed by vocabulary. The smallest differences were found in script
and the use of kanji, and the lowest scores were obtained in the class averages among these six criteria. The results indicated that competence in grammar and vocabulary varied depending on students, but script was a common challenging area for most of the students. It was also found that the number and type of errors were different depending on the language used in daily life, such as the amount of use and input of Japanese at home and Japanese books or audio materials that students were exposed to. However, findings suggest that the skills that most of the students faced difficulty with were in the use of kanji, regardless of their backgrounds. This finding is in keeping with previous research findings (Matsunaga, 2003; Ootsuki, 2010).

In this chapter, survey results, test results and writing assessment results were analysed separately. In the next chapter, how each of these correlate is explored.
In this chapter the results of the surveys, regular tests, initial and final tests and the use of kanji in writing assessments, analysed in the previous chapter, were compared and correlation coefficients among them were calculated.

7.1 Introduction

The results of the surveys, tests and the use of kanji in writing assessments have been discussed in the previous chapter. It was expected meaningful learning strategies would provide learners with positive attitudes towards learning and their perceptions would influence their motivation. Improved motivation is especially important for adolescents (He, 2006). As was predicted appropriate self-evaluation contributed to improving language skills (Shimizu, 2009; Wiley, 2001a). How the students improved their self-evaluation skills were explored. This chapter reports on the investigation into how the students’ perspectives, actual test results and the use of kanji in context were correlated with each other.

7.2 Correlation between surveys and test results

Heilenman (1990) found that proficient learners can evaluate their skills appropriately. Joo (2016) stated that appropriate self-evaluation helps learners become active participants in learning. Therefore, understanding how learners recognise their own skills could contribute to enhanced teaching in the future. The students’ recognition of their skills, found in the survey conducted at the beginning, and the end of the year, and actual test scores, were compared and interpreted.
7.2.1 Correlation between confidence and test scores

In questions 5 and 6, students were asked in which areas of Japanese learning they were confident, and many students answered they were most confident in speaking and listening and least confident in kanji. At the end of the year some changes in these answers had occurred. To see how kanji learning influenced the students’ attitudes towards learning each student’s survey answers and their initial and final test results were contrasted.

In the final survey, one student \( k \) answered kanji and another student \( q \) answered reading as their most confident area of performance. The scores of these students in the final test increased by 1.6% and 1.5% in the kanji reading tests and by 2.0% and 1.9% in kanji writing tests, respectively. Although both students performed better in both reading and writing tests at the end of the year, the rate of the improvement did not differ very much from the other students. The students, whose areas of confidence changed from kanji into other areas at the end of the year were examined. Six students \( (a, c, l, n, o \text{ and } p) \) changed their areas of confidence from kanji to others. Two of these six students had slightly lower scores in the final test, than in the initial test but the other four students increased their scores in different rates. The students who answered kanji as their least confident area at the end of the year \( (g, h, j, m \text{ and } q) \) also showed similar tendencies to those who did not choose kanji as the least confident area in the survey. Improvement in kanji proficiency was the next focus. Students, \( c \) and \( e \), more than doubled their accuracy rates in the final test, compared to their initial tests for reading kanji. Student \( c \) answered that kanji was his/her least confident area, at the beginning of the year but this changed to vocabulary at the end of the year. On the other hand, student \( e \) did not select kanji as the least confident area either in the initial or final survey. Regarding kanji writing, nine students obtained more than double their scores in the final test compared to the initial test. Out of these nine students, four students \( (c, f, j, \text{ and } m) \) showed obvious improvements; however, students \( j \) and \( m \) still mentioned that kanji was their least confident area in the final survey. Therefore, no specific relationship between the
students’ most/least confidence area and actual performance in kanji reading and writing were observed. The results implied that confidence in kanji was not enhanced even if their performance in kanji tests improved. Also, it was found that even if students had less confidence in kanji, it did not mean that they were not good at kanji. Their confidence in kanji was not associated with the results of their performance in the tests. Even if students obtained good scores in tests some still regarded kanji as an area where they lacked confidence. The same situation existed in reverse, however, the number of the students who believed that kanji was the most difficult area was reduced.

7.2.2 Correlation between the hardest skills in kanji learning for each student and test scores

Students changing perspective regarding kanji learning has been correlated. The correlation between the test results and each students’ perspective on the hardest part of kanji learning was analysed. No obvious improvements were found in writing kanji in the final test for the two students who answered that kanji writing was the hardest at the end of the year (students a and h). There were four students who answered that kanji reading was the hardest in the final survey (students c, e, n and q). The improvement rate of two of these students (n and q) in reading kanji was limited but the other two students’ kanji reading scores showed clear improvement. Therefore, no clear relationship between the students’ actual kanji proficiency and their awareness of kanji learning was found.

Regarding kanji reading, word-based reading performance in the tests was calculated as it was predicted that what students recognised in reading kanji would be word-based rather than single kanji reading. Student e had improved more than other students and the improvement rates of students c, n and q were similar to other students.
7.2.3 Correlation between self-evaluation and test scores

The students did not reach age-appropriate kanji proficiency required by MEXT in the tests. How each student recognised his/her kanji proficiency levels and actual performance in the initial and final tests were explored. Each student’s accuracy rates in tests were represented in a bar graph and their confidence levels were surrounded in lines. Graph 7-1 and 7-2, and Graphs 7-4 and 7-5 present the results of the reading and writing tests for both initial and final tests, respectively.

Firstly, the results of the initial test and the students’ answers in the initial survey are discussed. The accuracy rates for each year level of kanji that each student was confident in at the beginning of the year were calculated. The first group’s average was 59.7% and second group’s average was 77.8% in reading kanji. In the kanji writing section, the average of the first and second group were 25.6% and 51.9% respectively. This indicated that the first group’s performance was not satisfactory even at the kanji levels for which they felt confident, especially in kanji writing. Next, the results of individual students in the initial test were examined. In the kanji reading section, three students in the first group did not reach 50% for any year level of kanji that they were confident in (students a, c and e), while other students in the first group and all of the second group of students obtained more than 50% in at least one of the year levels of kanji that they were confident in. There were some students who could read accurately at the rate of 50% for all the year levels of kanji for which they were confident (students d, e, f, i, k, l, n, o and q). Therefore, most of the students in both groups could read at least half of the kanji in the year levels for which they were confident. In writing, on the other hand, only three students in the first group (students, k, l and m) and all of the students in the second group obtained more than 50% for at least one of the year levels that they were confident in. Only two students (l and q) obtained more than 50% for all the year levels of kanji in which they were confident. In Graph 7-3, the overall accuracy rates of the kanji year levels that individual students were confident in are summarised. It was found that accurate self-evaluation rates in reading kanji were higher than writing kanji. In the
reading section, only two students (c and j) obtained quite low accuracy rates for the kanji they felt confident in, but others obtained at least 50%. In the writing section most of the students in the first group were under 30%. The actual proficiency of kanji was lower than students assumed, especially for writing kanji.

Some students performed better than they expected. In the reading section, four students in the first group (f, g, i and m) and two students in the second group (n and o) recorded accuracy rates greater than 50% in at least one of the higher year levels of kanji that they felt confident in. For the writing section, two students in the first group (a and m) and all of the second group members achieved greater than 50% accuracy in higher year levels than the one in which they felt confident. The students in the second group tended to underestimate their proficiency in both reading and writing kanji. In the first group, on the other hand, performance levels for both reading and writing were usually lower than they believed.

*Graph 7-1 Comparison between self-evaluation in the surveys and the initial test (reading)*
Graph 7-2 Comparison between self-evaluation in the surveys and the initial test (writing)

Graph 7-3 Accuracy rate of kanji year levels for which each student is confident (initial test)
Secondly, the results of the final test and the students’ answers in the final survey are discussed. The accuracy rates of each year level of kanji for which individual students felt confident in at the end of the year were calculated. The first group’s average was 61.5% and second group’s average was 74.7% in reading kanji. In the writing kanji section, the averages for the first and second group were 52.8% and 51.0% respectively. The average of the first group in the reading section was almost the same as in the initial test but there were dramatic improvements in kanji writing where almost double the accuracy rates were recorded. However, the averages of the second group, for both reading and writing kanji, were almost the same as the initial test.

When focusing on individuals only one student (student j) in the first group could not read 50% for any year level of kanji that she was confident in and other students in the first group and everyone in the second group obtained more than 50% in at least one of the year levels of kanji for which they were confident in. Five students in the first group (students e, g, i, l and m) and two students in the second group (students n and o) obtained more than 50% in all year levels of kanji for which they felt confident. On the other hand, eight students from the first group (students e, f, g, h, i, k, l and m) and all students in the second group obtained more than 50% in the higher year levels of kanji than they were confident in. This indicates that the students who slightly underestimated their kanji reading proficiency improved compared to the beginning of the year (Graph 7-4).
In the writing section, only one student (student j) did not reach 50% for any level of kanji that he/she was confident in and only one student (student m) obtained more than 50% for all the levels of kanji that he/she felt confident. In the second group all the students reached 50%, in at least a one-year-level of kanji in which they were confident. No one reached 50% in all the levels of kanji that they felt confident in. Moreover, no one in either the first or second group obtained more than 50% in the year level of kanji higher than the levels they were confident in (Graph 7-5).
Graph 7-5 Comparison of self-evaluation in the surveys and the final test (writing)

In Graph 7-6, overall accuracy rates for kanji in the year levels for which individual students were confident were represented. Most of the students had similar results to the initial test in the kanji reading section but the differences between reading and writing were smaller when compared to the initial test. The same pattern was found in group averages. All students obtained at least 30% of overall accuracy rates in the kanji for which they were confident.
From the results, it was found that the number of students in the first group who did not reach the levels that they were confident in was reduced, especially in the writing section; however, the number of the students who performed better than they estimated was also reduced. This indicates that the students in the first group could estimate their kanji proficiency more accurately than at the beginning of the year, although no significant differences were found among the students in the second group.

7.2.4 Correlation between learning conditions at home and test scores

Finally, the scores of the tests and the students’ learning conditions at home were compared. Correlation coefficients between scores on tests and learning conditions at home were calculated in Chart 7-1. The first question in this section asked for the frequency spent practicing kanji each week. Overall, the frequency for practicing kanji increased when the students were in Year 7, compared to the previous year. In the initial test, low correlation coefficients between the frequency of practicing and scores were found both in reading and writing kanji indicating that the students who studied more at home could attain higher scores than the students who did not study at home, although the correlation
was still low. At the end of the year the correlation coefficient was quite low. The scores of the tests increased overall but it cannot be said that the improvement was due to the frequency of practice at home.

The correlation between the scores and how each student studied at home was examined. In the initial test, the method and the scores were moderately correlated; the students who practiced kanji by writing or testing by themselves obtained better scores than the students who studied by just looking or who never studied. However, during Year 7, more students practiced writing than the previous year and the correlation coefficient showed little or no correlation. This may be because most of the students answered “writing kanji” as their practice method and the scores varied. Although very little correlation was found between practice methods and the scores during Year 7, as most of the students practiced writing and scores increased, it suggests that practice writing kanji is an efficient method of study.

Question 12 in the survey asked how many times each student practiced each kanji. The amount of kanji practice by writing increased during Year 7; eleven students answered that they practiced more than ten times. The correlation coefficients between the amount of kanji practice by writing and test scores indicated a high correlation between the number of times kanji was practiced and the scores in reading and writing kanji for both years. Thus, students who wrote kanji more often obtained better scores in the kanji test, especially the writing tests. Therefore, writing practice by hand is efficient in the acquisition of kanji.

**Chart 7-1 Correlation coefficient**

<table>
<thead>
<tr>
<th>Correlation coefficient between</th>
<th>the time spend for study a week and score</th>
<th>practice method and score</th>
<th>the amount of practice and test score</th>
</tr>
</thead>
</table>

259
<table>
<thead>
<tr>
<th></th>
<th>reading</th>
<th>writing</th>
<th>reading</th>
<th>writing</th>
<th>reading</th>
<th>writing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial</td>
<td>0.397</td>
<td>0.404</td>
<td>0.530</td>
<td>0.622</td>
<td>0.588</td>
<td>0.541</td>
</tr>
<tr>
<td>Final</td>
<td>0.106</td>
<td>0.223</td>
<td>-0.087</td>
<td>0.097</td>
<td>0.518</td>
<td>0.750</td>
</tr>
</tbody>
</table>

The scores in the kanji tests were not correlated with the frequency and method of kanji practice at home but they were related to the number of times students practiced each kanji. Also, regardless of the frequency and method of kanji practice at home, the scores in the tests were improved.

7.3 Correlation between radical tests and final tests

The survey results indicated that students had a lack of confidence in using radicals, and misuse of radicals in kanji writing were found in the writing assessments. It was expected when students had knowledge of radicals and could apply the knowledge when writing kanji, their kanji skills would improve. As Douglas (2010) stated, recognising radicals helps learners to understand non-radical parts. Radical learning was conducted throughout the year with the expectation that the knowledge of radicals contributes to kanji proficiency. To see if radical knowledge provided advantages in performance in the kanji tests the results of the radical tests and the final tests were compared.

The accuracy rates for writing single kanji in the radical tests and for reading and writing single kanji and words in the final tests were used in a correlation coefficient calculation. Individual results of radical tests and final tests were compared. Graph 7-7 shows the results of the final test and the average score of the radical tests. Individual lines show similar traces except for the radical tests. When individual students were the focus it was found that eight students \((a, b, d, e, j, k, l \text{ and } o)\) obtained higher accuracy rates in radicals than in reading kanji and most of the students obtained higher accuracy rates in radicals than in writing kanji. To summarise, the performance level of kanji reading
and writing in both single kanji and words were correlated but radical knowledge was not related to kanji reading and writing.

**Graph 7-7 The results of radical tests and final tests**

![Graph 7-7 The results of radical tests and final tests](image)

The correlation between radical knowledge and the results of the final test, correlation coefficients were calculated in Chart 7-2. Writing kanji had higher coefficients than reading kanji, although other variables show very low correlations. Especially, some correlation was found between writing single kanji and radical knowledge. Therefore, knowledge of radicals was not related to kanji reading skills but writing skills for single kanji had some relationship with the knowledge of radicals. This indicates that students who had knowledge of radicals could perform better in writing each single kanji but could not necessarily write words that use specific kanji correctly. Thus, radical learning was somewhat efficient and contributed to kanji learning. It seems that the students’ knowledge of single kanji, which consist of radical and non-radical parts, increased.
Chart 7-2 Correlation between radical knowledge and results of the final tests

<table>
<thead>
<tr>
<th>Reading single kanji</th>
<th>Reading words</th>
<th>Writing single kanji</th>
<th>Writing words</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.243</td>
<td>0.215</td>
<td>0.409</td>
<td>0.271</td>
</tr>
</tbody>
</table>

7.4 Correlation between the use of kanji writing assessments and test scores

The importance of recognising when and where kanji should be used in context have been reported by researchers (Mori et al., 2007; Yamaguchi, 2013). In order to improve these skills, the practice of kanji use in context was included in the kanji vocabulary booklet and students were always encouraged to use dictionaries in writing assessments. It was expected that kanji proficiency would be improved by using kanji in these writings. To see if encouraging the use of kanji in writing assessments contributed to the proficiency of kanji, correlations between the use of kanji in writing assessments and the results of the tests were calculated. Data for both initial and final tests and the first and last writing assessments made during the year were used to calculate if the students had improved in their kanji proficiency. The correlation coefficients between the use of accurate kanji in the first and last writing assessments and the accuracy rates of single kanji reading and writing have been calculated in Chart 7-3.

In the initial kanji test, both the reading and writing kanji sections were highly correlated to the use of accurate kanji in the first writing assessment. This indicated that students who used more correct kanji in writing assessments could perform better in kanji tests than the students who did not use kanji often in writing assessments. In contrast, only a slight correlation was found in the final kanji test results and the use of correct kanji in the last writing assessment. This may be because most of the students in the first group used kanji quite accurately in the final writing assessments and scores for the test varied.
In order to investigate more accurate correlations, the average use of accurate kanji in the writing assessments throughout the year and the average scores for the kanji reading and writing sections of the initial and final tests were calculated and the correlations measured. Moderate correlation in the kanji reading section (0.581) and slightly higher than the reading section (0.668) in the writing section were found. Therefore, the use of accurate kanji in writing assessments corresponds to kanji reading proficiency.

7.5 Chapter summary

In this chapter the correlation among outcomes of different types of methods were explored. How the results of the surveys, the initial and final tests, the radical tests and the use of kanji in writing assessments were correlated has been explained.

There was no clear correlation between confidence in kanji and actual performance in kanji tests at the beginning of the year. The students tended to underestimate their kanji proficiency at that time; however, through the one-year of learning, their self-evaluation in writing kanji became more accurate. This could be the result of kanji learning in the class throughout the year.
The contribution of kanji learning in the class can be identified in the correlation between learning styles at home and the test scores. It was found that when students repeatedly practiced writing each kanji their scores were higher. However, no clear correlation was found in the frequency and method of kanji practice at home and the scores.

Regarding radical learning, it was found that radical practices were not really helpful in improving kanji reading proficiency, although there were some positive correlations between writing single kanji in the tests and radical test scores. The use of kanji in the writing assessments and the test scores were compared. The use of kanji in writing assessments had increased and it was found that this contributed to enhancing kanji writing skills.

In the next chapter, findings examined in Chapter 6 and 7 are discussed in relation to prior research findings.
In this chapter the results of analysis in the previous chapters are discussed. Correlations to identify the differences and similarities between those previously discussed in the literature review are explored.

8.1 Introduction

The analysis of surveys, tests and use of kanji in writing assessments and the correlation between them are discussed here. Implications for the theoretical approach adopted and lessons from the research literature have all been combined to provide a picture of what has been discovered from this research. Discussions for each data analysis are summarised.

8.2 Survey results discussion

First, the results of surveys, students’ attitudes towards Japanese learning, their perception of their kanji skills and opinions about kanji learning are examined.

8.2.1 Attitudes toward learning

Surveys conducted at the beginning and the end of the year were compared. In terms of attitudes toward Japanese language learning the students’ assessments of their own skills became more realistic after one-year learning of study. The students started to be aware of their own learning outcomes and think more realistically about their future learning. Previous researchers who had examined the experience of adolescents found they became aware of beneficial aspects of learning, such as gaining academic qualification, this differed from the attitudes of younger children (Doerra & Leeb, 2009; Willoughby,
Although He (2006) stated recognition of identity draws on learning motivation, it seemed the participant students in the hoshuu-koo also focused on extrinsic rewards. However, as some students identified communication as a main purpose for learning intrinsic motivation was also important for these adolescents. They anticipated that the knowledge would be useful for future communication with family members and relatives from Japan. In any case, as Sharp et al. (1973) stated, positive attitudes toward learning have a close relationship with motivation, therefore teachers need to deal with supporting students in both intrinsic and extrinsic motivation. Class activities are one important factor to motivate learners. During the year, group work was employed with the expectation that interacting with a peer group is effective way to encourage a sense of identity (Oguro & Moloney, 2012) and to enhance skills in working effectively with others (Bennett & Gadlin, 2012). The activities designed for the class helped the students involve themselves in active learning.

8.2.2 Japanese skills

Some changes were identified in confidence as the students’ perspective towards Japanese skills in different areas was reassessed as they participated in the class and differences in the reasons of their choices in identifying areas of confidence were identified. The students started to develop more affirmative attitude in their areas of confidence. As Sharp et al. (1973) suggest a clear relationship between a positive attitude towards learning and proficiency exists, it was expected confidence came from improved proficiency. The number of the students who answered that kanji was the least confident area was reduced. Some students answered lack of practice in vocabulary or writing passages was the reason of being least confident in these two areas. Continuous and regular kanji learning was therefore provided in the class. Shimizu and Green (2002) stated that rote learning helps learning although other strategies such as practice with pronunciation are still needed so multimodal materials and methods were used in this study. Frequent practice combined with other methods was provided to increase the students’ confidence. Some of the students recognised kanji as a tool for writing rather
than as a main component of learning and this realisation was one that Shimizu and Green (2002) found to be important. Overall, there were still many students who were not confident in kanji at the end of the year, other students had changed their perception towards other learning areas which indicated that students started to be aware of how their proficiency levels of each skill have changed. Their ability to analyse their proficiency in different areas had improved.

Regarding the skills students wanted to improve, it is commonly discussed that heritage language learners are usually better in listening and speaking than writing and reading (Kondo-Brown, 2005), and in this survey these findings were confirmed as the students believed they could perform better speaking and listening than other skills. Nishimura (2012) also stated that receptive skills tend to be maintained compared to other skills. However, the students’ opinions in this research were different regarding reading skills. Most of the students had the stereotypical idea that “kanji is difficult” at the beginning of the year, but this perception started to disappear as they gained more relevant recognition of their own proficiency and more specific and positive reasons for their choices appeared. The change in the students’ recognition of their skills suggests awareness of growing cognitive skills which is supported by the research of Gertsen (2006).

On the questions of how the students recognised their kanji levels, the majority expressed confidence in higher year levels of kanji, especially in kanji writing, by the end of the year. The students had increased their confidence in writing kanji, more than reading kanji. This increased confidence in both kanji reading and writing would contribute to their willingness to being involved in learning according to Nazarova and Umurova (2016).
8.2.3 Kanji learning

The students’ opinions regarding fields of kanji learning varied, although more than half of the students recognised that compound kanji words were one of the hardest tasks at the end of the year. This suggests that they focused on each component of kanji rather than “kanji” as one large frame. As kanji reading changes depending on the combination, students tend to consider reading of compound kanji words the hardest part (Douglas, 2010; Yanagida, 2011), and the students in this research had the perception by the end of the year the compound kanji was hard, thus agreeing with previous research.

During the year multimodal methods were employed and the findings indicated students found all of the methods were meaningful. Practicing kanji at home was a required task and an increased amount of practice time indicated the students started to be aware of the importance of practicing. Recognising what they need to learn by themselves illustrates a metacognitive approach to learning as reported in the research of Ehrlinger and Shain (2014).

8.3 Test results discussion

Discussion on tests results are divided into regular kanji reading and writing tests, radical tests, and initial and final tests.

8.3.1 Regular kanji reading tests

In regular kanji reading tests, obvious changes were not identified throughout the year, but some improvement was found among the students who did not perform well at the beginning of the year. As far as the target kanji was concerned, it was hard to reach a conclusion regarding the improvement as fluctuation was found depending on the tasks, as the type of tasks influenced the scores. No regular practice seemed to affect the scores in the target kanji tests. Although Shimizu and Green (2002)
mentioned rote-learning itself is not enough to improve kanji skills the writing practice did improve skills. Maintaining the motivation to practice kanji was hard to manage for both students and the teacher.

In reading kanji tests, students tended to write incorrect readings which had similar sounds as correct readings at the beginning of the year. Pronunciation practice was employed as a learning strategy as Akamura (2011) and Otomo (2011) recommended aural and oral practice as important when practicing vocabulary. This strategy was not always effective to assist in the acquisition of correct reading as the students often remembered how to pronounce words by listening, but spellings was a different task. Demonstrating how to spell vocabulary in hiragana, on PowerPoint slides in regular kanji learning, in the class was a method designed to help the students acquire correct spelling. The amount of the errors did reduce as they practiced.

Students will have better understanding of the contents of reading passages when they can read kanji according to Yamaguchi (2008) who stated that kanji is recognised as a crucial skill in reading and lack of kanji skills will affect reading comprehension. The results in this research indicated that the students reading comprehension skills and their kanji reading skills were related. When the students had high kanji reading proficiency, better understanding skills were expected. A clear correlation was not found among these students who had high levels of kanji reading proficiency. However, by enhancing kanji skills of other students, especially those who were in the middle range, reading comprehension skills improved. It was also expected that students would understand the content when the tasks contained more contextual kanji (Matsunaga, 2003). The results indicated no clear relationship between students understanding of the context of the passages in the tests and the number of readable kanji. Therefore, reading comprehension skills may be more related to the type of task (Kuwana, 2016) than the number of readable kanji, although accuracy of kanji reading was still related.
It can be surmised that the difficulty or familiarity, of the topic influenced reading comprehension but the number of the kanji students could read was also related to comprehension.

8.3.2 Regular kanji writing tests

Compared to the kanji reading section, more improvement in non-target kanji was recognised overall. Introducing multimodal materials, such as images, aural and vocabulary learning (Akamura, 2011; Anstey & Bull, 2010; Choi, 2011; Otomo, 2011), and continuous learning in class mainly had an effect on kanji writing skills. Although accuracy rates of target kanji were influenced by students’ attitudes toward kanji practice, improvements in kanji writing were found in the long run.

8.3.3. Radical tests

Analysis of regular radical tests implied that the students understood what each radical indicated and how it was used in kanji. At the same time some students found use of radicals in actual kanji hard, even when they knew the shapes and meanings of radicals. Douglas (2010) found that learners would be able to understand non-radical parts by understanding radicals. More than half of the students in this study seemed to understand how each radical works in each single kanji, but others did not. The type of errors in making words indicated the students seemed to have a poor memory of words and they could not write correctly when they had not practiced enough. From the analysis of the radical tests it was found that the students understood which radical should be used in each single kanji and understood the meaning of radicals; however, they could not necessarily connect their kanji knowledge into words. Low accuracy in reading the words indicated a lack of vocabulary knowledge. Paxton and Svetanant (2014) insisted kanji should be introduced as vocabulary and the kanji learning in this study focused on vocabulary with kanji. The students were not familiar with making words using specific
kanji. In order to help them understand how each kanji was used in words, the practice of including correct use of okurigana in radical learning could be a useful strategy to adopt.

8.3.4 Initial and final tests

In the reading section there was some improvement in higher year levels of kanji, especially Year 3 and 4. It was found that single kanji had a bigger improvement than compound kanji words. Nakajima (2003b) reported that kanji levels of Year 7 to 9 were almost same as Year 4 in reading, however, for the students in this research, the first group could read around half of the Year 3 level of kanji at the beginning of the year and some reached that level or higher, by the end of the year. The study facilitated the students to approach a higher level of kanji proficiency which is important as Nakajima (2003b) pointed out this is a weak area for JHL adolescents. More improvement was found in compound kanji words than single kanji; even when the students read single kanji, they could not read compound kanji words correctly if they did not have enough vocabulary knowledge. Ishii (2013) stated that knowledge of vocabulary influences kanji proficiency and higher scores for reading compound kanji words suggested that the students vocabulary skills had improved.

In relation to the reading comprehension skills, students in the middle ranges had a relatively high correlation between high kanji reading skills and skimming skills, whereas such a correlation was unclear for lower or higher ranges of students. Matsunaga (1996) stated that kanji makes skimming easier; however, when their kanji reading skills were insufficient the students’ reading kanji skills and skimming skills were moderately correlated. Grasping specific information and kanji reading skills were unlikely to be related to each other regardless of kanji reading skills.
Regarding kanji writing Nakajima (2003b) said the average JHL learners’ kanji writing skills for Year 7 to 9 were similar to the Year 2 level. The students’ writing skills in this study were lower than Nakajima’s findings but they reached much higher levels by the end of the year. Improvement rates in the writing section was higher than the reading section and improvement in Year 4 and 5 levels was especially obvious. The students’ skills improved effectively through continuous learning in writing, rather than reading, although it is generally reported JHL learners’ kanji writing proficiency is weaker than kanji reading (Nakajima, 2003b). Unlike the reading section, both compound kanji words and single kanji skills improved, and accuracy rates of compound kanji words and single kanji were almost same. Therefore, it was found that when the students wrote single kanji correctly, they could write compound kanji words, and vice versa.

Relations between reading and writing skills were analysed. It was found reading and writing skills were highly correlated, especially in single kanji; when students had high kanji reading skills, they could perform well in writing kanji and vice versa. Thus, improving kanji writing appears necessary to develop kanji reading skills. This is why, despite less opportunity to use handwriting in a modern society, developing written kanji skills is an essential skill.

8.4 Kanji use in writing assessments

How well students used kanji in their writing assessments and error types of kanji are discussed in this section. Validity of the kanji vocabulary booklet is also explored for further development.

8.4.1 Use of kanji in writing assessments

Students were strongly encouraged to use dictionaries in writing passages and the use of correct kanji quickly improved. Thus, accurate use of kanji is improved when teachers encourage the use of
dictionaries. Improvement in the accuracy of kanji use suggested that introducing and practicing kanji within words in kanji learning enabled students to recognise which words should be written in kanji and to choose correct kanji. This practice is supported by the research of Yamaguchi (2013) and Novarida (2011).

Use of kanji in writing passages gradually increased as the students practiced, but fluctuation in use was found depending on the tasks and they used more kanji in authentic tasks, such as letters which had actual receivers. Therefore, choice of topics is the key element. Douglas (2008) and Kondo-Brown (2009) stated the use of authentic reading materials are important and reality should also be adopted as much as possible in writing tasks. It seemed to encourage students to use kanji; students had positive attitudes to using kanji when they were motivated.

Students in the Nihongo course (group 1) and a group of students from Kokugo course (group 2) were analysed separately in this study. Although the students in group 2 usually had higher kanji skill results in both tests and the use of kanji in writing tasks their improvement was lower than group 1 students. Group 2 students did not join in class learning and practiced by themselves at home using the same materials, and these results supported the value of the kanji learning in the class.

8.4.2 Types of errors in kanji

Several types of errors in kanji were found in the writing assessments; incorrect choice of kanji which has similar shape to the target kanji, wrong shape of kanji which does not exist, wrong use of radicals and, wrong order of kanji in compound kanji words were mainly found. The research results conducted by Benesse (2007) with elementary school students who live in Japan, found that most frequently made mistakes were choice of writing kanji from homonyms, followed by wrong shapes of kanji. Common
mistakes by JSL learners are wrong shapes of kanji, and mixture of orders of compound kanji words (Hatta et al., 1998). Therefore, JHL learners display some different trends from native speakers and vary slightly from JSL learners. This might be due to lack of opportunities for JHL learners to see kanji in their daily lives but might have more kanji knowledge than JSL learners. Different learning methods to cope with the unique characteristics of JHL learners are needed.

Some tendencies were identified between type of errors and characteristics of students. For example, the students who used kanji which does not exist tended not to perform well in the tests and the students who used neat hand writing usually did not display this error. Incorrect choice of kanji was often found among the students who used kanji a lot in writing passages.

8.4.3 Validity of kanji vocabulary booklet

The kanji vocabulary booklet was used as the main material presented to the students and multimodal methods were employed. An appropriate textbook for the individual is necessary (Yamaguchi, 2013). The kanji vocabulary booklet was designed based on prior study and the vocabulary and kanji selected were expected to be relevant for students participating in the research. The validity of the booklet was examined after analysing use of kanji in writing assessment and some categories, such as words related to emotion, school life and the globe, were identified as suitable. Vocabulary needs for adolescents should be identified rather than the previously discussed categories, such as frequency of use and related to daily life (e.g. Schmitt, 2000; Ushiyama, 2011).

8.5. Correlation

The correlation between the survey and test results and kanji use in writing assessments are discussed.
8.5.1 Correlation between survey results and test scores

Correlation between students’ perspective about their confident areas and actual kanji proficiency were calculated but a clear relationship was not found. Kanji proficiency improved overall, but students did not clearly recognise which area of kanji they were proficient at. Shimizu (2009) stated that actual proficiency in kanji can be enhanced when metacognitive activities are introduced, encouraging students to be conscious of areas of Japanese learning and kanji that may help them to generalise existing knowledge and therefore improve their use of kanji.

In the comparison between kanji year levels students were initially confident. Through actual test scores it was found most of the students overestimated their skills at the beginning of the year, but after one-year of kanji learning, the degree of overestimation was less and self-evaluation skills were enhanced, especially in writing kanji. In the study conducted by Aiko (2018b), it was found that overestimation in earlier levels of kanji was reduced though long-term kanji learning although overestimation in higher levels of kanji still remained. In this study, the accuracy of self-evaluation in writing developed and writing skills were also improved. As Kondo-Brown (2009) claims students’ recognition of improvement of their proficiency is important. Clear and realistic goal setting is important. Learning is more effective if students have concrete outcomes in mind, such as being able to write and read up to Year 3 levels, rather than just “improve kanji skills”.

As far as kanji learning at home and test scores are concerned, it was found the scores in the kanji tests were not correlated with the frequency and method of kanji practice at home, but they were related to the number of times students practiced each kanji. There are several opinions regarding rote-learning (Novarida, 2011; Shimizu & Green, 2002; Yamaguchi, 2013) and some researchers suggest rote
learning becomes effective by adding sound and images (Choi, 2011; Douglas & Chinen, 2014; Novarida, 2011; Otomo, 2011; Shimizu & Green, 2002; Yamaguchi, 2013). For their study, at home, it was not clear if the students practiced writing kanji by pronouncing, which was the recommended method from the teacher, but the practice itself seemed to be effective. To make new knowledge part of the long-term memory combining the learning with other strategies would be necessary as Gruneberg (1998) indicated and practice at home and learning in the class seemed to contribute the improvement of the scores on tests.

8.5.2 Correlation between radical tests and the final test scores

Radical learning is one of the memory strategies (Shimizu & Green, 2002) that enhances the effectiveness of kanji learning (Williams, 2013), especially for adolescents. Therefore, it was expected that an increase in radical knowledge would enhance the students’ kanji skills. Although some relation was found between radical knowledge and single kanji writing skills there was little correlation between radical knowledge and writing compound kanji words as well as reading kanji. It is necessary to devise a method of radical learning to enhance the correlation between radical knowledge and both kanji reading and writing, although students still need to be aware of how to apply single kanji into compound kanji words.

8.5.3 Correlation between use of kanji in writing assessments and test scores

Use of kanji in writing passages aimed to improve kanji skills in context was pursued throughout the year and it was found skills to use kanji correctly, in context, were related to kanji writing proficiency. Hamakawa (2010) and Nakajima (1988b) stated students had difficulty in using kanji in context appropriately, however, by strengthening skills, kanji proficiency was improved. Moreover, the correlation coefficient was higher in writing than reading. Thus, the results imply the kanji learning
using the materials specifically designed contributed to the development of kanji writing skills for the participating students.

8.6. Chapter summary

The analysis of the data discussed in chapter 6 and 7 have been examined and gaps and similarities with the research literature reviewed in this study were identified. The students’ recognition regarding their study, test results and use of kanji in writing assessments were discussed. Some unique findings in this study include how one-year of kanji learning devised for this research contributed to the improvement of the students’ kanji proficiency and self-recognition skills. Several characteristics of adolescent JHL learners were indicated by researchers in prior studies and some similar results were found before one-year kanji learning commenced while some changes were identified at the end of the year. Implications for further teaching strategies for JHL have emerged from this research. In the next chapter the research question is reviewed and implications for further study is discussed.
This concluding chapter contains answers to the research questions, based on the analysis, correlations and discussion of findings. Limitations of the research are discussed and implications for further research suggested. In conclusion, the contribution this research adds to the field of JHL is listed.

9.1 Introduction
As the concluding chapter, this chapter summarises key aspects of the research based on the discussion of findings, in relation to the research questions. Implication for further teaching are presented as well as a discussion on limitation of the research.

9.2 Key aspects of the research, findings and discussion
The aim of the research was to design a course of study for Japanese Heritage Language (JHL) students that would result in improved outcomes over the period of one year.

The research questions.

- Does kanji learning in meaningful context and a focused study of radical learning contribute to enhanced kanji proficiency for adolescent JHL?
- How do students’ feelings and attitudes towards Japanese language learning influence their attitudes towards Japanese proficiency, especially kanji skills?
- Which kanji skills do students have the most and least confidence in and what areas are they most competent?
- How have the students’ feelings and attitudes changed through one-year of kanji learning?
Question 1.

- Does kanji learning in meaningful context and a focused study of radical learning contribute to enhanced kanji proficiency for adolescent JHL?

In this research, kanji learning in a meaningful context was conducted throughout the year. Major methods included kanji learning using the kanji vocabulary booklet specifically designed for these students, radical learning and writing practice. The kanji vocabulary booklet was designed to introduce vocabulary based on a particular order to improve students’ vocabulary skills with the expectation that students would recognise kanji as part of words, not just as symbols, and students were encouraged to use dictionaries to find the kanji for each word. Reading passages were prepared for each page so that students practiced using kanji within context. Cultural aspects were given in introduction of kanji and in reading passages to make the learning meaningful (Compton, 2001; Douglas, 2010; Koshiba & Kurata, 2012). Dictionaries were also used to find other words that used the target single kanji so that students could understand how each single kanji is used within words and enhance the skills to choose correct kanji in the dictionary, which is a strategy emphasised by Ariyama and Ochiai (2012) and Hamakawa (2010). Moreover, in order to enhance the knowledge of radicals, the most frequently used radicals were selected and their meanings, the single kanji that use the radicals and words that include the single kanji were practiced as a part of kanji learning as it is believed radical knowledge helps learners to understand whole parts of kanji (Douglas, 2010). However, the students were not keen to learn radicals and neither their home practice or test performance reached satisfactory levels.

In the classroom practice PowerPoint slides were used to provide images of parts of each kanji, so that students could understand the structure of each kanji including radicals (Choi, 2011). It was also intended that the students would feel involved in learning by joining classroom discussion. Quizzes
such as reading words and checking vocabulary were included on PowerPoint slides so that the students participated actively and received input visually and audibly, rather than learning by rote (Akamura, 2011; Otomo, 2011). In the tests, passages were given so that the context was provided, and students were required to change hiragana into kanji, and vice versa. Comprehension quizzes were included to prompt understanding. The words that were expected to be changed from hiragana into kanji were not supplied and students were expected to find which words should be written in kanji in the writing passages, which was pointed as an exercise fitted to JHL learner characteristics (Yamaguchi, 2013); thus, it was hoped students would improve their vocabulary and kanji.

Another focus regarding meaningful learning was the writing assessment practice. Practicing kanji using dictionaries in writing assessments was encouraged throughout the year so that students were able to experience using single kanji and words in authentic situations, as emphasised by Douglas (2008) and Leeman et al. (2011).

As discussed in the analysis sections (Chapter 6.3), reading at higher year levels of kanji improved and the number of students who were able to write up to Year 5 levels of kanji accurately increased through the one-year study. Year 5 and Year 6 levels of kanji, however, were not reached to a satisfactory level (Chapter 6.3). The rates of kanji use in writing assessments varied depending on the tasks; however, appropriate and correct use of kanji in writing assessments increased and the students started to use dictionaries more quickly and find correct kanji more accurately than at the beginning of the year (Chapter 6.4). In this study, other students also joined in from the Kokugo course as they wished to learn kanji. They practiced kanji at home using the same kanji vocabulary booklet as the Nihongo course and took the tests in their class. However, the improvement of these students in the use of kanji in writing assessments was no higher than the students in the Nihongo course and their improvement in regular kanji tests and radical tests were not identified (Chapter 6.3). This indicates that kanji
learning in meaningful context benefitted from a combination of practice at home and class activities using multimodal materials to improving kanji skills, especially kanji writing. Radical learning did not elicit students’ positive attitudes, although some improvements were recognised.

Kanji learning within meaningful context contributed to students recognising their own proficiency, enhancing students’ kanji skills, especially in kanji writing, and also helped develop realistic perspectives on learning. However, it would be necessary to explore effective radical learning methods and the development of materials that would take advantage of adolescent-specific features of learning.

Questions 2 and 4.

・ How do students’ feelings and attitudes towards Japanese language learning influence their attitudes towards Japanese proficiency, especially kanji skills?

・ How have the students’ feelings and attitudes changed through one-year of kanji learning?

These two questions overlap and are discussed together. The students’ purposes for learning Japanese varied at the beginning of the year. There were also a number of opinions regarding what they enjoyed most about learning Japanese and how they intended to use Japanese in the future. Some students did not respond to the questions at first. However, changes were identified by the end of the year and the students started to articulate specific ideas about their own learning. By the end of the year, many students gave the answer that they considered an important reason to study Japanese was to prepare for university entrance examinations, a reason mentioned by Doerra and Leeb (2009); (Willoughby, 2006). Adolescence is a period of great growth as seen from a cognitive development view (He, 2006). It was found that recognition of identity and learning outcomes differ from those of early and middle childhood. For the participants in this research it was found that improved conversation skills with
friends and families was another popular reason for learning Japanese, which is usually identified among young children (Muranaka, 2008; S. M. Park & Sarkar, 2007; Willoughby, 2006) (Chapter 6.2).

Changes in self-recognition towards student individual proficiency were identified. Most of the students answered kanji was the skill they felt least confident about in overall Japanese learning at the beginning of the year. There were more variations in this at the end of the year, such as writing and vocabulary (Chapter 6.2). Stereotypical ideas such as “kanji is difficult” started to disappear and students applied and developed more relevant recognition of their own proficiency.

The change in attitude toward kanji learning was reflected in the skills the students said they wanted to improve. A greater number of the students wished to improve their kanji proficiency rather than other skills and the number who saw a need for this was almost the same as at the beginning and end of the year. However, the reasons had changed; at the end of the year most of the students expressed clear ideas about why they wanted to improve their skills, such as “to be able to perform well”, “need for their university entrance exam” or “helpful for the future” (Chapter 6.2). Change in motivation in adolescence both in extrinsic motivation, which was identified among university students (Kurata, 2012) and intrinsic motivation can be found in these reasons. As Sharp et al. (1973) stated, positive attitudes, caused by both intrinsic and extrinsic motives toward learning have a close relationship, therefore “being motivated” is important for any age-group of learners.

The students had developed more refined and practical ideas about Japanese learning. One-year of kanji learning had led to enhanced recognition of the value of the heritage language and it was expected that this would help individuals to have a more explicit direction toward learning in the future. Adolescence are at a specific stage in life and learning with realistic goals is useful at a time when they
are considering how to organise study and their attitudes toward life and learning (He, 2006; Kondo-Brown, 2009; Wang & Green, 2001). Kanji learning possibly contributed to their development as more directed learners.

Question 3

・ Which kanji skills do students have the most and least confidence in and what areas are they most competent?

Areas in kanji learning which the students were confident about and their actual performance were reported and discussed based on the results of the surveys and kanji tests.

Most of the students answered that either kanji reading, writing or compound kanji words were the hardest areas for kanji learning in the survey at the beginning of the year. The number of the students who chose compound kanji words as the hardest skills increased dramatically by the end of the year (Chapter 6.2). The increase of recognition of difficulty in compound kanji words might be because of more attention to multiple readings of kanji. In the final test, reading compound kanji words had improved more than single kanji compared. Many compound kanji words were introduced through vocabulary learning during the class and this assisted the students’ recognition of compound kanji words. Douglas (2010) found university students also identified difficulty in writing and reading compound kanji words and the result here indicates learning kanji within words can make students pay attention to specific parts of kanji, rather than kanji as whole. The test results indicated that both reading single kanji and compound kanji words improved and improvement of compound kanji words suggests that their knowledge of vocabulary had developed (Chapter 6.3). Vocabulary based kanji introduction, based on the researchers’ observations of the students might have contributed to the
improved vocabulary. However, the students were cautious about compound kanji words and they underestimated their performance levels. Regardless of their improvement of reading and writing compound kanji words, it was found that the students could not make compound kanji words that used specific single kanji even if they could write single kanji properly (Chapter 6.3). This result indicates the necessity of practice to recognise how single kanji is used in words.

Okurigana and the meaning of kanji proved more difficult in practice. Although only one student identified this as the study areas he/she found hard in the survey, many students used incorrect okurigana in their writing assessments (Chapter 6.2). Douglas (2010)’s study also found many students did not recognise okurigana as a difficult area of learning. These misunderstandings may occur because students focused on the shape of the kanji when they practiced and did not pay much attention to the okurigana. It seems that they did not have a realistic recognition of their understanding of okurigana. Overestimation in okurigana was also found in another study (Aiko, 2018a). It was observed that the students often chose incorrect kanji, albeit with a similar shape to the target kanji, or selected incorrect homonyms (Chapter 6.3). These mistakes may arise through insufficient knowledge of the meaning of each single kanji, although the number of the students who answered single kanji was the hardest part of learning Japanese were only one-fifth of the students. Thus, both incorrect okurigana and the choice of incorrect single kanji might cause misunderstanding of their skills of kanji writing and okurigana. Observations revealed that the students often made mistakes in okurigana and shapes of single kanji when they did not use dictionaries in their writing assessments. The use of dictionaries was encouraged in writing and the students started to use the dictionaries more often as the year progressed. Students used dictionaries when they had no idea how to write the kanji they wanted to use but they did not use dictionaries to check okurigana. This may be because they did not recognise okurigana as important and it might be bothersome to use dictionaries when they already had some knowledge about the specific kanji. Therefore, the students tended to make mistakes when they did not differentiate between
different challenges. During the class students were required to use paper dictionaries, rather than an electronic dictionary. If they were allowed to use electronic dictionaries, they would find it easy to check words, but there is also a problem in that electronic dictionaries are designed for both high school students and adults and the descriptions of the words and example sentences are hard for younger learners to understand. The use of the internet during class was also hard to organise as the hoshuu-koo usually borrowed local school equipment and this impacted on the resources available.

Another area of focus was radicals. Among those surveyed, the largest group of students initially had varied opinions regarding the most difficult skills, radicals being one of them. They later transitioned to perceiving compound kanji words as the most difficult. (Chapter 6.2). However, this did not indicate that those students were confident in radicals, as their radical knowledge in the tests did not improve and negative attitudes towards radical learning during the class was identified. This attitude manifested itself in that the students were not willing to learn radicals and not many students practiced radicals at home. As radicals help to understand the structure of kanji (Aiko, 2018a; Douglas, 2010; Flaherty & Noguchi, 1998; Toyoda & McNamara, 2011; Williams, 2013), it is necessary to engage students to work in this area.

Students’ self-recognition regarding areas of confidence changed through the year of kanji learning but there were discrepancies between actual performance and confidence. Sometimes the area where students felt most confident was not their strongest. This finding was valuable in recognising the difference between students’ understanding of their strengths and how teachers can improve their approach to assisting students’ ability to gauge their own work as high proficiency is expected with appropriate self-evaluation skills (Joo, 2016; Kondo-Brown, 2009). As understanding of strength and weakness helps to improve proficiency and to manage their own learning using metacognitive problem solving skills (Shimizu & Green, 2002), so learning to increase self-evaluation ability is needed.
9.3 Implications for future teaching

This study has focused on adolescents. There are some differences in learning kanji between elementary school students and adolescents. A certain amount of kanji had been introduced in the elementary studies and the research focused on enhancing the kanji the students may need for their own learning purposes rather than the required level for native speakers of Japanese as determined by MEXT.

This study contributes to the discussion of effective teaching and attempts this from various viewpoints, such as classroom activities, tests and writing assessments, providing effective results, although further exploration is needed. The following suggestions for future teaching activities are offered.

9.3.1. Kanji vocabulary booklet

The appropriate vocabulary for adolescents is different from the vocabulary of elementary school students. The kanji vocabulary booklet was designed by the researcher of this study based on prior research (Nishigaki et al., 2007; Schmitt, 2000; Ushiyama, 2011) and an understanding that general things and matters related to daily life would be acquired more easily as they would be supported by context and, therefore, the choice of such vocabulary was given priority.

In an analysis of the use of vocabulary in the students’ writings, various types of vocabulary, from concrete words to abstract ones, were identified (Chapter 6.4). Not many abstract words were included in the kanji vocabulary booklet; therefore, the students own use and knowledge of vocabulary should
be examined when seeking to provide more choice of vocabulary. Abstract expressions were missing in the booklet but were necessary for students to express their opinions and to help develop a line of argument.

Designing the writing assessment curriculum to link with textbook readings and learning topics should be carefully examined and possible vocabulary carefully selected. However, it was found that vocabulary used by these adolescents was not always the same as the vocabulary chosen. It would appear necessary to explore students’ interests and how they can relate to essential categories by examining various possible topics for writing in collaboration with the students. It is also important to help students understand that kanji is a tool for the use of Japanese (Shimizu & Green, 2002) and the outcome of learning kanji is greater than memorising kanji.

9.3.2 Writing assessments

As discussed, the topics of the writing assessments need to be examined carefully to meet the curriculum design, the purpose of the course and to encourage student interest. This research found that the students worked positively and were motivated to use kanji in their writing when the tasks were authentic, such as letters which had actual recipients. Douglas (2008) and Kondo-Brown (2009) insisted on the importance of the use of authentic reading materials; however, some writing assessments were difficult to make authentic but devising the tasks to make students feel motivated and engaged is still necessary; for example, posting letters and publishing tasks such as newsletters. Even creating opportunities to present informative essays or research reports might motivate students to write neatly and use more kanji. Also, there were changes in the stated purpose for learning the language and most students said that their present purpose was in preparation for university entrance examinations. The use of kanji in writing assessments was emphasised as a part of exam preparation
which made attention to learning kanji important and might encourage students in the use of kanji for writing assessments.

A rubric was used to assess the motivation of students to use kanji. A rubric is a descriptive scoring or marking scheme to assess, or to give feedback, on a student’s work (Brookhart, 1999). In the rubric, students’ attitudes towards the work, use of accurate and appropriate kanji, grammar and vocabulary, coherence and cohesion and cultural awareness were included. During data collection a description of the measurements for each criterion was explained in writing. For example, under the category expression for the use of conjunction words, various sentence patterns, correct use of sentences, and a variety of vocabulary were included. Descriptions were different depending on the type of tasks, but the kanji category was always included in the writing tasks. Use of a variety of kanji, correct okurigana, and accurate shapes of kanji were listed under the kanji category. However, students did not read each sentence. When this became apparent the teacher described the sentences, but many students still focused on the total scores. As a solution, data collection in the following academic year saw each category in the rubric broken down into pieces and smiling faces (emojis) were used instead of sentences (Picture 9-1). The pictures of smiling faces vary depending on how well students performed, from very smiley faces to crying faces. Some of the students were obviously motivated and asked the teacher if there were any words they could use kanji for other than the kanji they had already used in order to gain more smiling faces. The students were not young children but were still happy to receive smiling faces with less emphasis on the overall score. More effective and attractive category descriptions could be sought in further rubric design.
The research found the students who wrote neatly made less errors in writing kanji (Chapter 6.4). It would be effective to ask students to rewrite their task and show their work inside or outside the classroom as one possible solution. Making a habit of writing neatly could be related to improving their kanji skills in the long term.

9.3.3 Kanji practice at home

The students were expected to practice writing 450 or more kanji each week. Some students wrote more than 450 letters every week, some often forgot. Their parents mentioned their children practiced writing kanji more than the previous year and it became more of a habit. The scores were clearly influenced by the amount of practice. It was found that the scores in the initial tests and the amount of
the practice at home during Year 6 were moderately correlated (Chapter 7.2.4); therefore, the results supported the importance of writing practice. It was also found that students who practiced writing each kanji obtained higher scores in kanji writing tests.

However, it was not easy to keep up this motivation over the long-term. As the results of the surveys and the tests indicated, maintaining motivation throughout the year was quite hard (Chapter 6.3, Chapter 6.4). Many fluctuations were found in weekly kanji practices during the year. As the academic levels were different from elementary students, learning styles at home might be different. When they were elementary school students they might practice as instructed by teachers and parents, but now they were expected to find and devise their own learning styles; investigating kanji practice methods by themselves might be more effective way of encouraging the students to take responsibility for their own learning.

According to Toyama (2011), Year 7 is the period that motivation toward learning declines; therefore, more independent and responsible attitudes are required. Toyama (2011) suggested letting students set their own learning outcomes that are specific and achievable both in the long and short-term view and for teachers to provide appropriate support and expectations, while always encouraging the students’ effort. Learning spontaneously and continuously and working positively in the long-term could be an expected outcome.

9.3.4 Enhancement of self-awareness and maintaining motivation

It was found that some students underestimated their kanji proficiency although their written kanji skills had improved. In both the initial and the final tests, students had opportunities to identify the level of kanji they could read and write correctly but they did not have the chance to measure this
during the year. Regular tests were conducted along with the kanji vocabulary booklet and the booklet did not show the year level of each kanji; therefore, the students could not recognise which year level of kanji they had acquired. The words appearing in the tests were listed in the booklet; therefore, the scores of the tests did not always represent proficiency. Research also found that the students’ academic performance correlates with their confidence (American Society for Horticultural Science, 2011). Although year level is not always necessary for students beyond Year 6, this is one of the measurements to recognise their own proficiency. Therefore, the opportunity for students to measure their improvement in proficiency is important. Employing the quizzes had a similar role to the initial and final tests to give students some idea about their performance levels. It was expected that understanding their own proficiency would stimulate students in learning and experiencing achievement would result in the maintenance of motivation.

Another suggestion for regular kanji tests would be to give extra scores when students improved their performance. In regular kanji tests the students were expected to write or read target kanji for each week as well as non-target kanji. When all the target kanji and some of the non-target kanji were read and written correctly, students could get full marks. Some students asked the teacher why they could not obtain a full score when they wrote or read all of target kanji correctly. The teacher decided to change the scoring system so that students could obtain full scores when they answered all of the target kanji correctly and get additional scores for non-target kanji (Picture 9-2 & Picture 9-3). After this, the students were excited to get higher scores in the test. This was a strategy that successfully motivated the students.
### 1. 読める漢字の下に読み方を書きなさい。

天気予報の時間です。明日は午前中は晴れでしょう。

太陽がきれいに見えるでしょう。

雲も少し見られます。午後から雨が降ります。

雨の後、虹が見られるかもしれません。

暖かい一日になるでしょう。最高気温は30度でしょう。

来週には台風が来るでしょう。風が強くなるでしょう。

今月終わりから、梅雨に入ります。来月、七月の中ごろまで続くでしょう。

その後は暑い日々が一か月ぐらい続くでしょう。

凉しくなるのは、その後、九月に入ってからです。

寒くなるのは11月ぐらいです。12月には雪も見られるでしょう。

### 2. クイズに答えましょう。

1. あしたのてんきはつぎのうち、どれですか。
   a. 
   ![Image 1]
   b. 
   ![Image 2]
   c. 
   ![Image 3]

2. 今月は何月ですか。
   a. 四月  b. 六月  c. 九月
9.3.5 Radical learning

Nine radical learning sections were included throughout the year. The students did not show much passion towards radical learning compared to regular kanji learning. Even when the students could correctly answer names, shapes of radicals and single kanji using the radicals, not many students could write words that included the single kanji using the target radicals. The use of incorrect radicals was
sometimes found in writing assessments (Chapter 6-3, 6-4). This indicates that the students knew the shapes of radical but did not understand the meanings of the radicals. If they understood what each radical indicated, then the incorrect use of kanji would have been avoided. The research did not find any specific correlation between kanji reading skills and radical knowledge. However, this does not mean that radical knowledge was not necessary; when the teacher asked the class which radicals should be used in specific single kanji, some students could answer correctly and write the appropriate single kanji. It was also found that the students who had knowledge of radicals could perform better in writing each single kanji.

In order to make the radical learning more effective and to encourage students, the learning method should be examined. One possible solution was brainstorming in the class. It was expected that students would pay more attention to radicals and improve their knowledge of radicals by explaining which radicals were used in individual kanji using illustrations. It was also expected that their knowledge of vocabulary would be increased by practicing compound kanji words using specific single kanji, as many students could not perform well in making words from single kanji.

In the 2016 academic year, several methods were tried to improve radical learning based on these expectations. First, the shape of radicals, names and the meaning of radicals were discussed using the image of origin of each radical. There were six radicals on each page and students in the class divided into six and each group or pair worked to explore one radical. They started by brainstorming single kanji from each radical. Then they searched in dictionaries for compound kanji words that used the single kanji. The students used dictionaries to find single kanji and compound kanji words. The information was then shared in the class and students wrote down single kanji and words in their kanji vocabulary booklets. It was expected that students would increase their knowledge of radicals and
expand their vocabulary. However, the students often picked up words that they did not know from the dictionaries and just memorised them. Some students copied words incorrectly.

As a solution, another style of learning was employed. Brainstorming was conducted in the class, not in groups, without using dictionaries. After learning the names, meanings and the shapes of radicals, single kanji were tested orally, and the teacher wrote them on the whiteboard. In writing single kanji, clues were provided to elicit students’ answers. Moreover, the words that used each single kanji were discussed to make sure that the students understood how each single kanji was used in the words. After brainstorming, the students wrote down words that had been discussed in the class. The teacher always encouraged the students and gave clues to elicit ideas from students to create a positive atmosphere. This was an effective strategy to make students avoid the practice of copying words without understanding the meaning. Some students wanted to write more words, so more spaces were prepared for students to write more if they wanted. Students could obtain more scores when they wrote more words (Picture 9-4).
By employing this method, students were more likely to write words correctly and use dictionaries; however, they still preferred to work on normal kanji and vocabulary pages instead of radical learning. More attempts could be employed to include students’ opinions.

Another possible solution is learning radicals without conducting tests. There may be other ways to assess students’ radical skills. Kanji cannot be learnt without radicals; therefore, the knowledge of radicals and skills to apply this knowledge are needed for learning kanji.

9.3.6 Enhancement of the knowledge and skills of compound kanji words
The students’ knowledge of compound kanji words and their underestimated self-evaluation on compound kanji words were identified in this research (Chapter 6.3, 7.2.3). Students often wrote
incorrect compound kanji words or okurigana in writings. The choice of incorrect single kanji in compound kanji words possibly came from insufficient knowledge or misunderstanding the meaning of each kanji. There are some rules in combining single kanji to make compound kanji words; basic rules of compound kanji words are explained in Chapter 2. 4. 1. Students learn these rules by the end of Year 6 but mistakes occur if they cannot apply this knowledge to their existing understanding. It was planned that students would acquire compound kanji words and single kanji through quizzes and games.

9.6.7 Enhancement of skimming and scanning skills

Scanning and skimming skills have been associated with more confident reading (Matsunaga, 1996). It was found that students in the middle ranges of kanji proficiency had a high correlation between kanji reading skills and skimming skills, but not in scanning skills (Chapter 6.3.3). It is expected that scanning skills would be enhanced if students use kanji to find specific information. Students can skip unknown kanji, but by picking up words with familiar kanji rather than reading each word, they may have less stress. Ikegami (1996) supported the idea of the necessity of skills to skip unknown words and kanji. She found students could realise that there were readable books for them by encouraging scanning. Even if students cannot read kanji, if they guess the meaning from radicals, and can find specific words they need. Kanji learning by images and radical learning would be useful to enhance scanning skills.

9.4 Limitations of the research

Data for this study were collected throughout the year and observations on how each student improved his/her kanji and vocabulary skills were conducted. Enhancement and maintenance of proficiency requires a long period of time. To improve results, it would be necessary to continue the research for
the coming year based on the research findings and implications of an independent one-year study. Unified kanji textbooks for three years in middle school would help students learn kanji and vocabulary consistently. A systemised curriculum is essential. When data is collected in continuous years, more practical and supportive curriculum would be created.

Another issue for research is that the number of the students for each school year is limited. Seventeen students joined this study, but this was not sufficient. Several students often missed classes or left early due to sports activities that were part of their local school curriculum, and this made obtaining consistent data difficult. When students missed a class, they were expected to study by themselves at home but studying time or family support at home were not always secured. Alternatively, if nation-wide data was collected at hoshuu-koo, more accurate and valuable results could be obtained for the development of JHL kanji learning.

9.5 Conclusion

The following results emerged from this study and suggestions of how they can be pursued in the future was discussed in the implication section of this chapter.

- Many findings from previous research were confirmed (Chapter 8).
- Although extrinsic motivation is important for adolescents, extrinsic motivation has also an important role to play (Chapter 8.2.1).
- Necessity of rote learning to enhance kanji writing skills although multimodal methods are necessary (Chapter 8.2.2 & 8.5.1).
• Kanji learning with newly developed methods contributed to let students be more confident in kanji writing rather than reading (Chapter 8.2.2).

• Pronunciation practice is important to learn kanji but spelling how to read is also important to avoid memorizing incorrect reading (Chapter 8.3.1).

• Kanji reading and comprehension skills are related to skimming, but not really to scanning, especially among students who do not have high kanji proficiency (Chapter 8.3.1 & 8.3.4).

• Difficulty in applying the knowledge of single kanji into compound words (Chapter 8.3.3 & 8.5.2)

• Differences in types of errors in kanji were found with JHL, JSL and native language learners that went beyond previous research (Chapter 8.4.2).

• An association between hand writing and visual memory of shapes was found (Chapter 8.4.2)

• Contextual use of language needs to be enhanced with choice of topics for adolescents (Chapter 8.4.3)

This research examined the question of Year 7 students studying Japanese as a heritage language. The focus was on JHL adolescent learners and it aimed to improve kanji proficiency as a lack of kanji proficiency had been identified as a major factor in students losing motivation to continue studying the Japanese language. After an intervention of one year the findings suggest that hoshuu-koo schools can potentially improve outcomes by addressing the diversity of student backgrounds and designing relevant curriculum, teaching and learning methods. This thesis had success in encouraging the use of kanji in written tasks. By challenging further development of kanji learning styles, it is expected hoshuu-koo worldwide can benefit from this study.


Choi, J. (2011). Kanji gakushuu no kizuki ni kansuru kousatsu : Nihon no kankoku gakkou no koukousei o taishou ni shita gohyouki kenkyuu kara. [Study of "awareness" of kanji learning:
Mistaken spelling research within high school students at Korean schools in Japan}. (Doctoral thesis), Waseda University, Tokyo. Retrieved from https://waseda.repo.nii.ac.jp/?action=pages_view_main&active_action=repository_view_main_item_detail&item_id=25250&item_no=1&page_id=13&block_id=21


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Kasuya, Kashiwazaki, Kaneko, Kanayama, Just, Joo, Jonassen, Jonak, Ji

Japanese

Japan -xian, M.

Overseas Foundation.

Foreign Association C., M.

International overseas. Education, first nihongo

Retrieved

Developmental Boston:

Educational Japanese the Than & hiragana from

http://www.jpf.go.jp/e/project/japanese/

Kanji expansion


Japanese

Japan

Japan

Japan

Japan

Japan

Japan


Sankei News. (2012, September 20). 7 wari ga "kanjiryoku teikashita" keitai meeru fukyuude. [70 % says "kanjiproficiency was reduced" due to mobile phone and email]. Retrieved from [http://www.litera-arts.com/kotolabo/lab0/737](http://www.litera-arts.com/kotolabo/lab0/737)


Appendix 1 Survey questions (beginning of the year)

**Attitude questions**

1. Why did you decide to continue studying Japanese in middle school?
   1) Be able to talk with family and relatives
   2) For VCE exam
   3) Useful when travelling to Japan
   4) Want to learn more
   5) To spend time with friends
   6) To be bilingual
   7) Events at school are fun
   8) Other

2. What do you enjoy most about learning Japanese?
   1) reading 2) kanji 3) speaking 4) group work 5) culture 6) homework 7) writing 8) project 9) others

3. How do you think a knowledge of Japanese will benefit you personally?
   1) Can speak in Japan 2) Enjoy learning 3) VCE 4) Others

4. How do you think you might use your knowledge of Japanese in the future?
   1) Trip to Japan 2) VCE 3) Job 4) Talk with family and relatives 5) Others

**Language questions**

5. Which skill is the one you feel most confident about when learning Japanese? Select one.
   ( ) reading, ( ) writing, ( ) speaking, ( ) listening, ( ) kanji

   Why?

6. Which skill is the one you feel least confident about when learning Japanese? Select one.
   ( ) reading, ( ) writing, ( ) speaking, ( ) listening, ( ) kanji

   Why?

7. From the list above can you rate your proficiency in these areas from 1 – 5? (1 being the least confident)
   Reading ( )
   Writing ( )
   Speaking ( )
   Listening ( )
   Kanji ( )
8. Which skill do you want to improve most? Select one.
   ( ) reading, ( ) writing, ( ) speaking, ( ) listening, ( ) kanji
   Why?

9. How many kanji are you confident to read?
   1) Year 1 level kanji  2) Year 2 level kanji  3) Year 3 level kanji  4) Year 4 level kanji
   5) Year 5 level kanji  6) Year 6 level kanji

10. How many kanji are you confident to write?
    1) Year 1 level kanji  2) Year 2 level kanji  3) Year 3 level kanji  4) Year 4 level kanji
     5) Year 5 level kanji  6) Year 6 level kanji

11. Which is the hardest part in kanji learning?
    1) reading  2) writing  3) compound words  4) radicals  5) meaning  6) okurigana

12. How did you learn kanji when you were an elementary student?
    1) How often did you study at home?
       ( ) every day  ( ) more than 3 times per week  ( ) once a week  ( ) never
    2) How did you study kanji at home?
       ( ) by writing  ( ) by looking at kanji  ( ) by testing by yourself
       ( ) nothing  ( ) others:
    3) How many times did you write each kanji for practice?
       ( ) more than 20 times  ( ) 10 - 20 times  ( ) less than 10  ( ) never
Appendix 2 Survey Questions (end of the year)

Attitude questions

Name:

1. Will you study Japanese at this school next year? Why?
   1) Be able to talk with family and relatives
   2) For VCE exam
   3) Useful when travelling to Japan
   4) Want to learn more
   5) To spend time with friends
   6) To be bilingual
   7) Events at school are fun
   8) Other

2. What do you enjoy most about learning Japanese?
   1) reading 2) kanji 3) speaking 4) group work 5) culture 6) homework 7) writing 8) project 9) others

3. How do you think a knowledge of Japanese will benefit you personally?
   1) Can speak in Japan 2) Enjoy learning 3) VCE 4) Others

4. How do you think you might use your knowledge of Japanese in the future?
   1) Trip to Japan 2) VCE 3) Job 4) Talk with family and relatives 5) Others

Language questions

5. Which skill is the one you feel most confident about when learning Japanese? Select one.
   ( ) reading, ( ) writing, ( ) speaking, ( ) listening, ( ) kanji
   Why?

6. Which skill is the one you feel least confident about when learning Japanese? Select one.
   ( ) reading, ( ) writing, ( ) speaking, ( ) listening, ( ) kanji
   Why?

7. From the list above can you rate your proficiency in these areas from 1 – 5? (1 being the least confident)
   Reading ( )
   Writing ( )
   Speaking ( )
   Listening ( )
   Kanji ( )
8. Which skill do you want to improve most? Select one.
   ( ) reading, ( ) writing, ( ) speaking, ( ) listening, ( ) kanji
   Why?

9. How many kanji are you confident to read?
   1) Year 1 level kanji   2) Year 2 level kanji   3) Year 3 level kanji   4) Year 4 level kanji
   5) Year 5 level kanji   6) Year 6 level kanji

10. How many kanji are you confident to write?
    1) Year 1 level kanji   2) Year 2 level kanji   3) Year 3 level kanji   4) Year 4 level kanji
     5) Year 5 level kanji   6) Year 6 level kanji

11. Which is the hardest part in kanji learning?
    1) reading   2) writing   3) compound words   4) radicals   5) meaning   6) okurigana

12. How did you learn kanji during this year?
    a) How long did you study at home?
       1) every day   2) more than 3 times a week   3) once a week   4) never

    b) How did you study?
       1) by writing   2) by looking at kanji   3) test by yourself
          4) never study   5) other (               )

    c) How many times did you write each kanji at home?
       1) more than 20 times   2) between 10 to 20 times   3) less than 10 times   4) never

13. What do you think the most effective kanji learning during Year 7?
    1) PowerPoint slides   2) use of dictionaries   3) tests   4) radical learning
       5) kanji vocabulary booklet   6) writing
Appendix 3 Ethics approval

Design and Social Context College Human Ethics Advisory Network (CHEAN)
Sub-committee of the RMIT Human Research Ethics Committee (HREC)

Notice of Approval

Dates: 20 October 2014
Project number: CHEAN B 0000018924-09/14
Project title: Improving Kani: proficiency of adolescent Heritage Japanese Learners
Risk classification: Low Risk
Investigator: A/Professor Berenice Nyland and Mizue Aiko

Approved: From 20 October 2014 To: 30 April 2018

I am pleased to advise that your application has been granted ethics approval by the Design and Social Context College Human Ethics Advisory Network as a sub-committee of the RMIT Human Research Ethics Committee (HREC).

Terms of approval:
1. Responsibilities of Investigator
   It is the responsibility of the above investigator/s to ensure that all other investigators and staff on a project are aware of the terms of approval and to ensure that the project is conducted as approved by the CHEAN. Approval is only valid whilst the investigator/s holds a position at RMIT University.
2. Amendments
   Approval must be sought from the CHEAN to amend any aspect of a project including approved documents. To apply for an amendment please use the ‘Request for Amendment Form’ that is available on the RMIT website. Amendments must not be implemented without first gaining approval from CHEAN.
3. Adverse events
   You should notify HREC immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.
4. Participant Information and Consent Form (PICF)
   The PICF and any other material used to recruit and inform participants of the project must include the RMIT university logo. The PICF must contain a complaints clause including the project number.
5. Annual reports
   Continued approval of this project is dependent on the submission of an annual report. This form can be located online on the human research ethics web page on the RMIT website.
6. Final report
   A final report must be provided at the conclusion of the project. CHEAN must be notified if the project is discontinued before the expected date of completion.
7. Monitoring
   Projects may be subject to an audit or any other form of monitoring by HREC at any time.
8. Retention and storage of data
   The investigator is responsible for the storage and retention of original data pertaining to a project for a minimum period of five years.

In any future correspondence please quote the project number and project title.

On behalf of the DSC College Human Ethics Advisory Network I wish you well in your research.

Suzana Kovacevic
Research and Ethics Officer
College of Design and Social Context
RMIT University
Ph: 03 9925 2974
Email: suzana.kovacevic@rmit.edu.au
Website: www.rmit.edu.au/dsc
INVITATION TO PARTICIPATE IN A RESEARCH PROJECT

PARTICIPANT INFORMATION

Project Title: Improving Kanji proficiency of adolescent Heritage Japanese Learners

Investigators:

- Supervisor: Dr. Berenice Nyland
  Associate Professor.
- Researcher: Mizue Aiko (Doctoral candidate)
  Master of Applied Linguistics.

Dear Principal/ Council members,

You have been approached to give permission for a research project to be conducted by RMIT University as part of the Nihongo Class of 2015. Please read this sheet carefully and be confident that you understand its contents before deciding whether to permit the research in your school. If you have any questions about the project I would be pleased to answer your questions or you could contact my supervisor, contact details above.

Who is involved in this research project? Why is it being conducted?

Mizue AIKO is the researcher for this project and the research is being conducted as part of my doctoral studies. The project has been approved by the RMIT Human Research Ethics Committee.

Why have you been approached?

You have been approached as the main governance body of [ ]. In this capacity you are asked to give permission for my research to be carried out in the Year 7 Nihongo class 2015. Students will be approached to participate in this research as they
will be students in the Nihongo class I will be teaching. Parents’ permission will also need to be obtained.

**What is the project about? What are the questions being addressed?**

This research project aims to conduct special Kanji training throughout the year and the students’ progress in Kanji proficiency will be observed. This will be done through regular tests. I would like the whole class to participate but if there are students who do not wish to participate, they would not answer the surveys and the data will not be used for analysis.

**If I agree to participate, what will I be required to do?**

As the governing body of the school your role is to grant permission for this research to be conducted. The participants will be given a survey about learning Japanese at the beginning and end of the year. Kanji training will be conducted throughout the year as part of the Japanese class, based on a kanji vocabulary booklet I have designed. The participants will be asked to take tests on their proficiency with Kanji based on the content of the booklet.

**What are the possible risks or disadvantages?**

There are no predicted risks for this study. As your classroom teacher I will conduct this project. All the assessment will be done through tests and writing/oral tasks using the pre-established criteria to assure impartiality.

**What are the benefits associated with participation?**

There is a potential advantage that this extra Kanji tuition may help the Japanese proficiency of the students in the class.

**What will happen to the information I provide?**

Test results and survey responses will be kept at RMIT for 5 years after completion of the research and the data will be destroyed after 5 years and will be destroyed after 5 years. The school will not be identified and the participants will all be given pseudonyms. I would hope to publish my results, for example in “Journal for Children Crossing Borders”.

**Whom should I contact if I have any questions?**

You can contact the supervisor or myself.

_Yours sincerely_

_Mizue AIKO_
CONSENT FORM

1. I have had the project explained to me, and I have read the information sheet

2. I agree to give permission for this research project to be conducted as described.

Principal/ Council member Consent

Principal: __________________________ Date: ________________

(Signature)

Council member (if applicable): __________________________ Date: ________________

(Signature)
INVITATION TO PARTICIPATE IN A RESEARCH PROJECT

PARTICIPANT INFORMATION

Project Title: Improving Kanji proficiency of adolescent Heritage Japanese Learners

Investigators:

- Supervisor: Dr. Berenice Nyland
  Associate Professor.
- Researcher: Mizue Aiko (Doctoral candidate)
  Master of Applied Linguistics.

Dear Parents of Year 7 Nihongo class students,

Your child has been invited to participate in a research project being conducted by RMIT University to conduct research in the Nihongo Class of 2015. Please read this sheet carefully and be confident that you understand its contents before deciding whether to participate. If you have any questions about the project I would be pleased to answer your questions or you could contact my supervisor, contact details above.

Who is involved in this research project? Why is it being conducted?

Mizue AIKO is the researcher for this project and the research is being conducted as part of my doctoral studies. The project has been approved by the RMIT Human Research Ethics Committee.

Why have you been approached?

Year 7 Nihongo class students have been approached as they will be students in the Nihongo class I will be teaching in 2015. I will be conducting research as part of the Nihongo class this year and would like you to give your permission for your child to be an active participant.
What is the project about? What are the questions being addressed?

This research project aims to conduct special Kanji training throughout the year and the students’ progress in Kanji proficiency will be observed. This will be done through regular tests. I would like the whole class to participate but if there are students who do not wish to participate, they would not answer the surveys and the data will not be used for analysis.

If I agree to participate, what will I be required to do?

The participants will be given a survey about learning Japanese at the beginning and end of the year. Kanji training will be conducted throughout the year as part of the Japanese class, based on a kanji vocabulary booklet I have designed. The participants will be asked to take tests on their proficiency with Kanji based on the content of the booklet.

What are the possible risks or disadvantages?

There are no predicted risks for this study. As your classroom teacher I will conduct this project. All the assessment will be done through tests and writing/oral tasks using the pre-established criteria to assure impartiality.

What are the benefits associated with participation?

There is a potential advantage that this extra Kanji tuition may help your child’s Japanese proficiency.

What will happen to the information I provide?

Test results and survey responses will be kept at RMIT for 5 years after completion of the research and the data will be destroyed after 5 years. The school will not be identified and the participants will all be given pseudonyms. I would hope to publish my results, for example in “Journal for Children Crossing Borders”.

What are my rights as a participant?

- The right to withdraw my child from participation at any time
- The right to have any unprocessed data withdrawn and destroyed, provided it can be reliably identified
- The right to have any questions about the research answered on request

Whom should I contact if I have any questions?

You can contact the supervisor or myself.
Yours sincerely

Mizue AIKO

If you have any concerns about your participation in this project, which you do not wish to discuss with the researchers, then you can contact the Ethics Officer, Research Integrity, Governance and Systems, RMIT University, GPO Box 2476 VIC 3001. Tel: (03) 9925 2251 or email human.ethics@rmit.edu.au

CONSENT FORM

1. I have had the project explained to me, and I have read the information sheet

2. I agree to give permission in the research project as described

3. I agree:
   - To give permission for my child to:
     - Complete two surveys
     - undertake extra Kanji tuition as part of the regular Nihongo class

4. I acknowledge that:
   (a) I understand that my child’s participation is voluntary and that I am free to withdraw my child from the project at any time and to withdraw any unprocessed data previously supplied (unless follow-up is needed for safety).
   (b) The project is for the purpose of research. It may not be of direct benefit to my child.
   (c) The privacy of the personal information I provide will be safeguarded and only disclosed where I have consented to the disclosure or as required by law.
   (d) The security of the research data will be protected during and after completion of the study. The data collected during the study may be published, and a report of the project outcomes will be provided to Mizue AIKO. Any information which will identify me will not be used.

Participant’s Consent

Parents of the Participant: ____________________________ Date: ______________________

(Signature)
INVITATION TO PARTICIPATE IN A RESEARCH PROJECT

PARTICIPANT INFORMATION

Project Title:  Improving Kanji proficiency of adolescent Heritage Japanese Learners

Investigators:

- Supervisor: Dr. Berenice Nyland
  Associate Professor.
- Researcher: Mizue Aiko (Doctoral candidate)
  Master of Applied Linguistics.

Dear Year7 Nihongo class students,

You have been invited to participate in a research project being conducted by RMIT University to conduct research in the Nihongo Class of 2015. Please read this sheet carefully and be confident that you understand its contents before deciding whether to participate. If you have any questions about the project I would be pleased to answer your questions or you could contact my supervisor, contact details above.

Who is involved in this research project? Why is it being conducted?

Your teacher Mizue AIKO is the researcher for this project and the research is being conducted as part of my doctoral studies. The project has been approved by the RMIT Human Research Ethics Committee.

Why have you been approached?

You have been approached as you will be students in Nihongo class I will be teaching in 2015. I will be conducting research as part of the Nihongo class this year and would like you to give your permission to be an active participant.
What is the project about? What are the questions being addressed?

This research project aims to conduct special Kanji training throughout the year and your progress in Kanji proficiency will be observed. This will be done through regular tests. I would like the whole class to participate but if there are students who do not wish to participate, they would not answer the surveys and the data will not be used for analysis.

If I agree to participate, what will I be required to do?

You will be given a survey about learning Japanese at the beginning and end of the year. Kanji training will be conducted throughout the year as part of the Japanese class, based on a kanji vocabulary booklet I have designed. You will be asked to take tests on your proficiency with Kanji based on the content of the booklet.

What are the possible risks or disadvantages?

There are no predicted risks for this study. As your classroom teacher I will conduct this project. All the assessment will be done through tests and writing/oral tasks using the pre-established criteria to assure impartiality.

What are the benefits associated with participation?

There is a potential advantage that this extra Kanji tuition may help your Japanese proficiency.

What will happen to the information I provide?

Test results and survey responses will be kept at RMIT for 5 years after completion of the research and the data will be destroyed after 5 years. The school will not be identified and you will all be given pseudonyms. I would hope to publish my results, for example in “Journal for Children Crossing Borders”.

What are my rights as a participant?

- The right to withdraw from participation at any time,
- The right to have any unprocessed data withdrawn and destroyed, provided it can be reliably identified,
- The right to have any questions about the research answered on request.

Whom should I contact if I have any questions?

You can contact the supervisor or myself.

Yours sincerely
If you have any concerns about your participation in this project, which you do not wish to discuss with the researchers, then you can contact the Ethics Officer, Research Integrity, Governance and Systems, RMIT University, GPO Box 2476 VIC 3001. Tel: (03) 9925 2251 or email human.ethics@rmit.edu.au
CONSENT FORM

1. I have had the project explained to me, and I have read the information sheet

2. I agree to give permission in the research project as described

3. I agree:
   - to undertake the tests or procedures outlined as part of the regular Nihongo class
   - to complete a survey

4. I acknowledge that:
   (a) I understand that my participation is voluntary and that I am free to withdraw from the project at any time and to withdraw any unprocessed data previously supplied (unless follow-up is needed for safety).
   (b) The project is for the purpose of research. It may not be of direct benefit to me.
   (c) The privacy of the personal information I provide will be safeguarded and only disclosed where I have consented to the disclosure or as required by law.
   (d) The security of the research data will be protected during and after completion of the study. The data collected during the study may be published, and a report of the project outcomes will be provided to Mizue AIKO. Any information which will identify me will not be used.

Participant’s Consent

Participant: ___________________ Date: ________________
(Signature)

Where participant is under 18 years of age:
I consent to the participation of ____________________________ in the above project.

Parents or guardians: ___________________________ Date: ________________
(Signature)

As you are under 18 I also need consent from your parent.
Appendix 7 Publications

Articles:


Conference presentation:
JSL kanji Gakushuu Kenshuukai (JSL kanji learning research) Title: Shishunki no keishou nihongo gakshuusha no kanji ryoku ni kansuru jikohyoukaryoku to gakshuuukankyou tono kanren (The relationships between the accuracy of self-evaluation, kanji proficiency and the learning environment for adolescent Japanese heritage language learners), Osaka, Japan. To be published in March 2019 (Conference proceeding).