Kanji learning of Japanese language learners on a year-long study exchange program at a Japanese university:

An investigation of strategy use, motivation control and self-regulation.

by

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A thesis submitted in fulfillment of the requirements for the award of Doctor of Philosophy

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March, 2010
Author’s Declaration

This is to certify that:

1. this thesis comprises only my original work towards the Doctor of Philosophy (Education) degree.
2. due acknowledgement has been made in the text to all other material used.
3. the thesis does not exceed the word length for this degree.
4. no part of this work has been used for the award of another degree.
5. this thesis meets the University of Sydney’s Human Research Ethics Committee (HREC) requirements for the conduct of research.

Signature: 

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Date: 24th March, 2010
Acknowledgments

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For Jim

Thanks for your support
during this mad journey together.
Abstract

This study investigates the kanji learning (the learning of Japanese written characters) of twelve university students of Japanese who were studying in an exchange program at two universities in Japan. The purpose of the study was to investigate kanji learning strategies and self-regulation of kanji learning using in-depth qualitative methods to broaden the understanding of how learners approach this difficult writing system. Previous studies into kanji learning suggest that kanji are a major obstacle for learners to progress in the Japanese language, and are also a major contributing factor to the high attrition rate in Japanese language courses at universities. Therefore, the study makes a significant contribution to the field in broadening our understanding of how learners cope with the memorization of this script. The study is also significant in its application of relatively new theories of motivation control and self-regulation to the task of kanji learning. Data were collected over the duration of a year in the form of bi-weekly interviews, stimulated recall sessions, and two questionnaires administered at the beginning and end of the study. The study confirmed the task of kanji learning to be complex and diverse according to the individual learner. In terms of strategies, the study highlighted a tendency to over-report pictorial strategies, revealed problems of an over-reliance on mnemonic strategies, and emphasized the importance of component analysis strategies. In terms of self-regulation, the study found the ability to control emotions, manage commitments and control boredom and procrastination to be intertwined. Moreover, it was found that advanced learners were most prone to a loss of motivation control in terms of frustration caused by a lack of progress in learning, or self-criticism over an inability to reach goals or to control procrastination. The study also revealed strategies some students used to regulate these negative motivational forces, such as goal-setting techniques and regulation over the learning environment.
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Chapter 1 Introduction and background to the study

The aim of this study is to examine kanji learning practices of university students who are studying Japanese language in universities in Japan on exchange programs. The study investigates learning in terms of the strategies learners use to memorize kanji and the strategies they use to regulate learning and control motivation.

This chapter introduces the context of the study. A background to Japanese language education in terms of its development and growth as an area of study will be given, followed by an explanation of the aim of the study and the potential significance of its findings.

1.1 Background to Japanese language education around the world

The teaching of Japanese language at universities around the world is a relatively new area of study compared to traditional European languages. Despite its recent entry among language study options, Japanese language education around the world has boomed (Bramley & Hanamura, 1998; Komiya-Samimy & Tabuse, 1992). Evidence of the continued boom in Japanese language learning can be found by examination of the number of students taking the Japanese language proficiency test each year, which is an international, standard test of Japanese ability. The number of examinees in 1993 was 80,000, compared to 270,000 in 2003 and 560,000 in 2008 (Japan Foundation, 2009). In conjunction with this
increase in the number of students studying Japanese language, there has been an increase in the number of students travelling to Japan to study. The Japanese Ministry of Education reported the number of foreign students studying within Japan in 2003 numbered 109,000, compared with just 10,000 in 1983, and 50,000 in 1993 (MEXT, 2004). Of these 109,000 foreign students in 2003, 7000 were students at Japanese universities on short-term language programs of less than a year for the purpose of intensive language study (MEXT, 2004). In 2005, this number increased again to 121,812 (Guruz, 2008). Furthermore, a recent initiative by Japan’s Ministry of Education plans to increase the number of foreign students in Japanese universities to 300,000 by the year 2020 (Shimauchi, 2009). Thus, it is clear that Japanese language education is an area of continued growth both in and outside of Japan. This growth in the teaching of Japanese language has also brought about a growth in educational research concerning the learning of Japanese as a foreign language, especially in the field of second language acquisition, which has allowed us to better understand how students learn Japanese (Bramley & Hanamura, 1998). Most of the research conducted in English, however, has centered on students studying outside Japan, therefore ignoring the growing number of students travelling to Japan on language programs.

Despite this surge in Japanese language education, there have been a number of studies that have highlighted students’ difficulties in learning Japanese, which are linked to a higher attrition rate in Japanese language programs, especially if the students come from an English-speaking background (Kato, 2000, 2002). Hatasa (1989) and Dwyer (1997), for example, have found university students of
Japanese are progressing more slowly in language development than students of other languages in terms of overall proficiency. A study by Walton (1993) reported that it took students of Japanese three times as long to acquire the same level of proficiency as more commonly taught languages such as French, German or Spanish. Dwyer (1997) also found students of Japanese were not reading as much as students of European languages, and suggested the problem appeared to be insufficient knowledge of **kanji**.

**Kanji** are a component of the Japanese writing system that originated from Chinese characters. Kanji are a logographic script that connect a character to a meaning. Each kanji often has multiple *readings*, or ways to pronounce a single character depending on its context and use. There are more than 10,000 kanji in use in modern day Japanese literature, but knowledge of only the top 2,000 most frequently occurring of these is considered necessary to be functionally literate in the Japanese language (Cook & Bassetti, 2005).

It is widely documented that Japanese foreign language learners struggle with the mastery of kanji, particularly if their first language’s script is alphabetic (Bourke, 1996; Douglas, 1992; Dwyer, 1997; Fujiyoshi, 1996; Hatasa, 1989; Sayeg, 1996; Shimizu, 1999; Takahashi, 2001; Toyoda, 1998 & 2000; Toyoda & Kubota, 2001). It has been suggested that students of Japanese need assistance to overcome the barrier to literacy that not knowing kanji creates for learners (Bourke, 1996; Douglas, 1992; Usuki, 2000). One aspect of language learning that has interested researchers in this field is the examination of learning strategies that successful learners of kanji use to memorize this difficult script.
Language learning strategies are defined as specific actions, behaviors, steps or techniques that students use to improve their skills in a second language (Oxford, 2001). Research has also suggested that we examine learners’ capacity to regulate the study of language and control their motivation to learn (see, for example, Dornyei, 2001; 2005; Tseng, Dornyei & Schmitt, 2006). Self-regulation refers to the degree to which learners are active participants in their own learning and are proactive in their pursuit of language learning (Dornyei, 2005). Thus, in terms of language learning, self-regulation can be viewed through the strategies students use to control motivation to learn, which Dornyei (2005) terms as motivation control strategies.

An examination of the background to Japanese learning highlights the importance and difficulty of studying kanji, thus calling for the need to conduct research into strategic learning, which includes the notions of learning strategies, self-regulation and motivation control (see conceptual framework in 2.6.2 for further discussion).

1.2 Aim of the study

The aim of this study is three-fold: (1) to examine kanji learning strategies of university students who are studying Japanese language in universities in Japan on exchange programs; (2) to investigate how these students regulate learning and control their motivation to learn kanji in this context; and (3) to investigate how students’ kanji learning develops over a year of intensive kanji instruction,
which includes a growing awareness of how to better learn kanji.

The research aims to answer the two main research questions.

1. In terms of learning strategies, how do learners of Japanese from alphabetic language backgrounds learn kanji in a year-long study program at universities in Japan?

2. In terms of self-regulation, how do learners of Japanese from alphabetic language backgrounds regulate their learning of kanji in a year-long study program at universities in Japan?

The primary purpose of the study, therefore, will be to examine kanji learning through the paradigms of both language learning strategies, and self-regulation. A secondary focus will be an examination of changes in kanji learning throughout the duration of the study.

### 1.3 Significance of the study

In 1989, Hatasa observed there had been little research undertaken to investigate how non-native learners of Japanese, in particular English-speaking learners, learn kanji. Since then, there have been a number of studies that examined kanji recall (Dwyer, 1997; Okita, 1996), strategies students use to memorize kanji, (Bourke, 1996; Lu, Webb, Krus & Fox, 1999; Toyoda, 1998; Toyoda & Kubota, 2001; Fujiyoshi, 1996) and kanji instruction (Flaherty & Noguchi, 1998; Kato, 2000; Shimizu & Green, 2002).

These previous studies have focused on behavioral and cognitive strategies students apply to the kanji learning task, with little to no attention to motivating
factors behind the learners’ kanji learning, particularly in terms of learners’ self-regulatory capacity, which is framed in motivation control strategies—a new theory that has been suggested as a replacement to theories of learning strategies (see Dornyei, 2005). This new theory has since been applied to learning tasks such as vocabulary learning (Tseng et al., 2006), however the task of kanji learning has not yet been explored using this new paradigm. Thus, the current study will also make a significant contribution to theory building of self-regulation and motivation control through the application of these new concepts to the so far unexplored area of kanji learning.

1.4 Summary

The proposed study will, therefore, address two gaps in research in the field of kanji learning. First, it will investigate kanji learning experiences of Japanese language students studying within Japan—a setting that includes a growing number of students choosing to study in this environment. Second, it will be one of the first studies to apply a new conceptualization of strategic learning to the kanji-learning task, to better understand how students control their motivation when learning kanji.
Chapter 2 Literature Review

The literature for the present study will be reviewed in three major areas: (1) research into the Japanese writing system, which will highlight kanji use in Japanese writing (2) research into language learning strategies and motivation control in the field of second language acquisition, which provides the theoretical framework for the study; and (3) research into kanji learning and instruction, in order to examine the strengths and limitations of previous studies in this field.

2.1 An overview of kanji use in Japanese writing

This section will review literature on the Japanese written language, in order to gain a general understanding of the topic of the current research. First, kanji will be defined in terms of its use in the Japanese writing system. Next, ways to classify kanji will be presented. Finally, the difficulty of kanji learning by alphabetic language students will be examined.

2.1.1 Role of kanji in Japanese writing system

Before the research into kanji learning is examined, it is first important to explain the role of kanji in modern day written Japanese.

The Japanese language is written and read using a variety of different scripts: Chinese characters [kanji], two forms of syllabary, Roman letters,
and Arabic numerals. All these various types of script originated elsewhere and have been adopted and adapted by the Japanese over hundreds of years (Taylor & Taylor, 1995, p. 295).

Kanji are logographic characters that originated in China and were introduced to Japan with Buddhism between the 4th and 7th centuries. Kanji can be defined as: “graphic symbol[s] representing a lexical morpheme with no systematic relationship to the corresponding spoken sounds, each morpheme being represented by a specifically shaped character” (Paradis, Hagiwara & Hildebrandt, 1985). These symbols were the sole script in Japan until two forms of syllabary (kana) were created out of kanji during the 9th century when it was realised that kanji alone were inadequate to represent the Japanese language. Although kanji were supplemented by kana, they still remain the backbone of the Japanese writing system with approximately 10,000 kanji in use in the Japanese written language today (Taylor & Taylor, 1995). Of these 10,000 kanji, however, only 2000 of the most frequently occurring kanji are needed to function as literate members of Japanese society (Chikamatsu, 2005; Taylor & Taylor, 1995). These 2000 kanji account for 99 percent of the kanji occurring in printed matter, thus “it is conventionally thought that Japanese adults need to know 2000 kanji to read Japanese newspapers or published materials in Japan” (Chikamatsu, 2005, p. 73). Foreign students of the Japanese language, therefore, also need to master these 2000 kanji to be able to read the Japanese language at a fully literate level.
2.1.2 Types of kanji

Although kanji are described as being pictorial representations of meaning, the majority of these 2000 essential kanji are not pictorial representations. In fact, there are three major categories of kanji:

1. Pictorial characters—“stylised representations of the object they represent”;
2. Abstract characters—“arbitrary symbols for words”; and
3. Combination characters—“the synthesis of two characters (or components) into one”.

(Paradis, Hagiwara & Hildebrandt, 1985, p.26)

For further illustration, table 1 contains basic examples of each kanji type with explanations of each character’s features.

Table 1: Examples of kanji types

<table>
<thead>
<tr>
<th>Kanji</th>
<th>Meaning</th>
<th>Kanji Type</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>木</td>
<td>tree</td>
<td>Pictorial</td>
<td>Stylized representation of a tree.</td>
</tr>
<tr>
<td>田</td>
<td>rice field</td>
<td>Pictorial</td>
<td>Stylized representation of a rice field.</td>
</tr>
<tr>
<td>赤</td>
<td>red</td>
<td>Abstract</td>
<td>Abstract symbol for the color red.</td>
</tr>
<tr>
<td>万</td>
<td>10,000</td>
<td>Abstract</td>
<td>Abstract symbol for the number 10,000.</td>
</tr>
<tr>
<td>飲</td>
<td>drink</td>
<td>Combination</td>
<td>A synthesis of characters, including the kanji 食 and 決.</td>
</tr>
<tr>
<td>言</td>
<td>language</td>
<td>Combination</td>
<td>A synthesis of characters, including the kanji 言, mouth 口 and the number 五.</td>
</tr>
</tbody>
</table>

Other researchers, such as Kato (2000) have used a traditional categorization
system that includes six types of kanji based on etymology. These types are:

2. Shijimoji (logograms): Symbolic representation of abstract ideas
3. Kaiimoji (ideographs): A combination of pictographic components
4. Keiseimoji (semasio-phonetic ideographs): A combination of components, of which one gives a clue to the original Chinese pronunciation or meaning.
5. Tenchuumoji (derivative characters): Kanji that have been derived from an original concept that has been disassociated.
6. Kashamoji (phonetic loan characters): Kanji that have been adopted into current usage for phonetic reasons.

However, for the purposes of this study, the classification system depicted in table 1 is sufficient to differentiate between kanji type in kanji learning.

2.1.3 Difficulties of learning kanji

Previous studies into kanji learning strategies have concluded that learners from alphabetic language backgrounds memorize scripts phonetically, which hinders them effectively processing and storing kanji in their memories (Horodeck, 1987; Kinoshita, 1998; Okita, 1996; Nakayama, 2001; Paradis, Hagiwara & Hildebrandt, 1985; Toyoda, 1998; Usuki, 2000). Horodeck (1987), highlights the differences between kanji and alphabetic scripts in the following statement:

It is widely acknowledged that kanji is ‘ideographic’, meaning that the
symbols used to write [kanji] stand for meanings, not sounds, and therefore are designed and employed in ways fundamentally different from the symbols used in most other writing systems. (p. i)

According to Paradis, Hagiwara and Hildebrandt (1985), kanji processing, unlike most other scripts, is visual—that is, when memorized successfully, it is processed from grapheme (kanji) to meaning and then to sound. According to Toyoda (1998), it is likely that learners with alphabetic language backgrounds first try to use phonological processing skills, before realising it cannot be applied to kanji. This opinion is supported in a number of studies into phonological processing of kanji (see, for example, Kinoshita, 2001 and Okita, 1996). Such research has suggested, in the beginning stages of learning students often successfully change their processing skills by employing a “pictorial strategy” to help them relate the character to a picture representative of its meaning. However as kanji increase in complexity or as their meanings become more abstract such processing skills become more difficult to employ and more analytical skills are required. A result of these learning difficulties is students feeling frustrated in their lack of progress in the language (Nakayama, 2002), resulting in high attrition rates in Japanese language courses at universities compared with other languages (Komiya-Samimy & Tabuse, 1992). Furthermore, other studies (see for example, Chikamastu, 2007; Hatta, Kawakami & Tamaoka, 1998; Yamada & Takashima, 2001) have shown that even if learners are able to master the reading of kanji, the writing of kanji is often a separate process. Both Chikamatsu (2007) and Yamada and Takashima (2001), in particular, have identified the phenomenon that is described as the “tip of the pen” phenomenon,
where a learner is unable to write a known kanji, due to inadequate practice of the writing process. The difficulty of kanji learning both in the writing and reading processes, therefore, poses a problem for students and language courses in universities. It is a problem that needs to be further addressed through research into what students can do to ease the learning of this difficult script, such as the application of strategies to better learn kanji or to better regulate motivation to continue kanji study.

2.1.4 Summary

The background of kanji writing in the Japanese language is relevant to this study in two ways. First, it identifies the importance of understanding kanji to be able to achieve proficiency in the Japanese language. Second, it highlights the difficulty of kanji learning for learners of Japanese—particularly for learners from alphabetic language backgrounds. The challenges that kanji impose on the Japanese language learner have direct implications on strategies used to learn kanji and also have a direct effect on students’ motivation to continue their study of Japanese (Nakayama, 2002).

2.2 Language learning strategies

In this section, literature on language learning strategies will be examined. First, the development of the O’Malley and Chamot language learning strategy
classification will be explained. This will be followed by a review of research that has applied this model to fields of relevance to the current study. Factors affecting strategy choice will then be examined. Finally, the relevance of language learning strategies in the field of kanji learning will be addressed.

2.2.1 History and development

It has long been observed that processes for acquiring a second language vary according to the individual learner. The use of effective learning strategies may account for some of this variation. The effect that learning strategies can have on language learning has been closely examined over the last 35 years. In seminal research in this field, Rubin (1975) observed:

The differential success of second/foreign language learners suggests a need to examine in detail what strategies successful language learners employ. In addition to the need of research on this topic, it is suggested that teachers can already begin to help their less successful students to improve their performance by paying more attention to learner strategies already seen as productive. (p. 41)

More recently, Gass and Selinker (2008, p. 439) make the following claim in their introduction to learning strategies:

A common observation is that not only are some language learners more successful than others, but also that good language learners sometimes do
different things than poorer language learners. The term commonly used in second language acquisition literature to refer to what learners do that underlies these differences is learning strategies.

Researchers have argued that learning strategies promote learning by aiding the acquisition, storage and retrieval of information (Govea de Arce, 2001; Oxford, 2001). In addition to this, Oxford (2001) states that learning strategies make learning “easier, faster, more enjoyable, more self-directed, more effective and more transferable to new situations” (p. 166). Learning strategies, therefore, are seen as tools that language learners can use to accelerate or aid their second language learning.

The definition of language learning strategies has developed over the years since Rubin’s original investigation in the field. Rubin (1981) defines language-learning strategies as “the techniques or devices that a learner may use to acquire language” (p. 42). A further definition is “the special thoughts or behaviors that individuals use to help them comprehend, learn, or retain new information” (O’Malley & Chamot, 1985, p. 1). A more recent definition of language learning strategies posited by Cohen (2007) involves the following attributes:

Strategies can be classified as a conscious mental activity. They must contain not only an action but a goal (or an intention) and a learning situation. Whereas a mental action might be subconscious, and action with a goal/intention and related to a learning situation can only be
When Cohen (2007) proposed this definition to experts in the field as part of research into the “views of respected strategy experts about terms and issues in the LLS [language learning strategy] field” (p. 29), the following qualifications were made:

1. Some strategies that have developed into routine are no longer carried out consciously, but should still be considered strategies.
2. Some strategies are not only mental, but are physically observable such as giving oneself a physical reward (such as eating a dessert) for the completion of a task.
3. Not all strategies contain an action, but could just be mental.

(Cohen, 2007)

Thus the current study accepts historical definitions of language learning strategies that examine both cognition and behavior (see, for example, O’Malley & Chamot, 1985). It also views strategies as having the attributes outlined by Cohen (2007), but also takes into account the qualifications of these attributes as expressed by experts in the field, which were also highlighted in Cohen’s research. In summary, despite minor differences in definitions of language learning strategies, researchers in this field generally agree on the benefits that learning strategy research provides for foreign language learning. Methods to classify and record these strategies are, however, more varied.

After Rubin’s (1975) examination of learning strategies, research began to investigate a wide range of different strategies for different aspects of language
learning, such as overall strategies, vocabulary learning strategies, cognitive strategies and social strategies (see, for example, Bialystok, 1979; Hosenfeld, 1976; Naiman, Frohlich & Stern, 1975; Selinger, 1977). The need for a classification system of newly identified strategies emerging from this research soon became apparent leading to the development of the first taxonomy of language learning strategies by Rubin (1981). Although Grenfell & Macaro (2007) have since observed Rubin's taxonomy was a list of “what might be termed academic or study skills” (p. 11), it was nevertheless the first movement toward the grouping of strategies. Research continued into the 1980s, with particular emphasis on cognitive strategies for ESL learning (see for example Chamot & Kupper, 1985; Chamot & O’Malley, 1987; O’Malley, Chamot, Stewner-Menzanares, Kupper & Russo, 1985a; 1985b), leading to the O’Malley and Chamot classification of language learning strategies (O’Malley & Chamot, 1985; 1990), to be discussed in the following section.

2.2.2 O’Malley and Chamot classification scheme

O’Malley and Chamot set language learning strategies within a cognitive framework based on cognitive theories and “provided a theoretical background to much language learning strategy research at the time” (Grenfell & Macaro, 2007, p. 16). The O’Malley and Chamot classification included three broad categories, which are described below:

1. Metacognitive strategies, which involved thinking about (or
knowledge of) the learning process, planning for learning, monitoring learning while it is taking place, or self-evaluation of learning after the task had been completed.

2. Cognitive strategies, which invoked mental manipulation or transformation of materials or tasks, intended to enhance comprehension, acquisition, or retention.

3. Social/affective strategies, which consisted of using social interactions to assist in the comprehension, learning or retention of information. As well as the mental control over personal affect that interfered with learning.

(from O’Malley & Chamot, 1990, pp. 229-232)

O’Malley and Chamot’s classification system, borrowed heavily from Anderson’s (1985) cognitive theory, and as such, research conducted within this framework, was less concerned with social/affective strategies, as evidenced by the following claim by its creators:

Affective strategies are of less interest in an analysis such as ours which attempts to portray strategies in a cognitive theory. For the purposes of discussion, however, we present a classification scheme that includes the full range of strategies identified in the literature. (O’Malley & Chamot, 1990, p. 44)

This ad hoc nature of the third category of this classification system has since been criticized as “a miscellaneous category that appears to have been
introduced simply to accommodate all the strategies that did not fit into the first two types” (Dornyei, 2005, p. 168). Setting aside this issue for now (criticisms will be discussed further in 2.3.1) some interesting concepts can still be found in the notion of cognitive theory in learning strategy conceptualizations, which may be of relevance to the current study.

O’Malley and Chamot’s (1985; 1990) model highlighted some important cognitive strategies used by language learners when learning vocabulary that may also be applicable to kanji memorization. They were the use of imagery, which is the use of “visual images to understand and remember new information”, grouping, which involves the classification of words or concepts according to their attributes or meanings, and repetition of new words, and elaboration, which involves “relating new information to prior knowledge, relating different parts of new information to each other, or making meaningful personal associations with new information” (O’Malley & Chamot, 1985, p. 36). Drawing on Anderson’s (1985) cognitive theory, O’Malley and Chamot’s research also examined the memorization process through activation and memory traces. In Nyikos and Fan’s (2007) review of research into vocabulary strategies, we can find many of these concepts in research in the 1990s to the present day under categories such as “repetition strategies” and “associative strategies” (p. 260). However, for the purposes of this study, cognitive processes relating to kanji memorization will mainly use terminology established by researchers in the field of kanji learning, which will be examined in a later section.

Despite these moves to integrate cognitive theory with language learning
strategies, by 1990 O’Malley and Chamot’s classification system had been overshadowed by Oxford’s taxonomy (Oxford, 1986; 1990), which expanded on previous classifications, and added the Strategy Inventory of Language Learning (SILL)—a questionnaire that could be used by learners to measure their own strategy use and to increase their awareness of language learning strategies utilized by other language learners.

2.2.3 The Oxford model (1986, 1990)

According to the Oxford model of strategy classification, language-learning strategies can be classified into six strategy types. These strategies are:

(1) Cognitive—making associations between new and already known information;

(2) Mnemonic—making associations between new and already known information through use of formula, phrase, verse or the like;

(3) Metacognitive—controlling own cognition through the co-ordination of the planning, organization and evaluation of the learning process;

(4) Compensatory—using context to make up for missing information in reading and writing;

(5) Affective—regulation of emotions, motivation and attitude toward learning;

(6) Social—the interaction with other learners to improve language learning and cultural understanding. (Oxford, 2001)
Distinctions can be made between these six categories, “however, the boundaries are fuzzy, particularly since learners sometimes employ more than one strategy at a time” (Oxford, 2001, p. 167). Since the emergence of this taxonomy (Oxford, 1986), it had been frequently updated to include ongoing research findings (see for example Oxford 1990; 1994; 1999; 2001; Oxford & Cohen, 1992; 2004; Oxford & Ehrman, 1989; 1990; 1995; Nyikos & Oxford, 1993; Oxford & Nyikos 1989), which made it a more researched and applied classification system than previous models. The current study applies learning strategy research to kanji learning, in terms of language achievement, memorization, and the raising of strategy awareness, thus elements of this model are of interest to the conceptual framework of this study. Although the Oxford model and the SILL have been subject to criticism since its first development (see section 2.3.1 for discussion), an explosion of research was conducted under its theoretical framework throughout the 1990s. In fact, in a recent review of research methods in strategy research, it was stated that the SILL is “without doubt the most widely used instrument in language learner strategy research” (White, Schramm & Chamot, 2007, p. 95). Grenfell and Macaro (2007) also estimated that the SILL has been used to assess the strategy use of more than 10,000 learners around the world. Therefore, much of what researchers know about learning strategies is within Oxford’s paradigm. Thus, some of this research will help inform the current study, and thus a review of it will prove useful.
2.2.4 Language learning strategy research

Since the establishment of models of language learning strategies, there have been numerous studies that have examined a relationship between learning strategies and learner achievement in studying language in general. A study by Clark (1999) found the use of cognitive strategies by university-aged language learners was associated with high achievement on proficiency exams, while the infrequent use of cognitive strategies was associated with low achievement. Doering (2000), in her study of eighth grade French immersion students, found successful language learners “used a greater number and wider range of strategies than less effective learners” (p. 1). A comprehensive analysis of a number of studies into language learning strategies by O’Malley and Chamot (1990), also found “more effective students used learning strategies more often and had a wider repertoire of learning strategies than did less effective students” (p.128). These findings are supported by Oxford (2001) who states: “Research shows that greater strategy use is often related to higher levels of language proficiency” (p. 167). In a recent evaluation of strategy research over the previous 30 years, Grenfell & Macaro (2007) offered the following assessment:

Successful and highly motivated learners adopted more strategies, especially those involving planning, evaluation and monitoring. Poorly motivated pupils, on the other hand, employed a limited set of strategies and were less ready to act strategically. (p. 15)
Thus, research suggests a link between strategy use and achievement—an indication that more effective kanji learners may also employ a greater number and wider range of kanji learning strategies.

Learning strategy research has also suggested that there are numerous other factors besides language proficiency that can affect strategy choice. In a 1989 study, Oxford and Nyikos (1989) found factors such as a student’s motivation to have a powerful influence on the choice of learning strategy—far more so than language proficiency in speaking, reading, writing or listening. Other factors that affected learning strategy choice were: the student’s major; the length of time he or she had been studying the language; and whether the student was learning the language as an elective or was required to do so (Oxford & Nyikos, 1989). The findings of Oxford and Nyikos’s study are very significant because, in terms of its sample size, “it is the largest completed study of language learning strategies” at the time (Oxford & Nyikos, 1989, p. 291). Subsequent studies examined differences between strategy use and personality and gender (Ehrman & Oxford, 1989), task-type and cognitive aptitude (Ehrman & Oxford, 1995), and learner anxiety and cultural background (Oxford, 1994). Collectively, these past studies suggested learning strategies are not exclusively chosen according to the efficiency of the language learner. A more recent review of strategy has suggested that out of all variables, motivation has the strongest relationship to strategy use (Oxford & Schramm, 2007). This assessment is also supported by other researchers who argue there is a consensus in the field that motivated learners not only use a wider range of strategies, but use these strategies more frequently (Takeuchi, Griffiths & Coyle, 2007). The current study, therefore,
must consider these factors—especially motivation—in the examination of kanji learning strategies.

2.2.5 Summary

In summary, language learning strategy theory suggests that more efficient learners use a greater number and wider range of strategies. Research also suggests a connection between strategy use and language achievement. Over time, theory has been qualified by findings that strategy choice is affected by a number of variables with indications that students use a variety of different strategies to achieve language aims. In addition to this, previous research indicates that these kanji learning strategies differ according to variables such as motivation, and that these factors must be accounted for. Previous language learning strategy research has provided a useful base on which to build the proposed study but does not consider the task of kanji learning in enough depth to apply directly to this research. Furthermore, the model itself has been subject to criticism since its original conception, and thus these criticisms will be explored next, in order to create a fuller framework for the current study.

2.3 Moving away from learning strategy theories

In this section a movement away from the language learning strategy paradigm will be described. Firstly, challenges to the validity of previous classification systems will be presented which highlight the shortcomings of language learning
strategy classification schemes. Next, a movement toward conceptualizations in other fields, namely cognitive theory, educational psychology and motivation control will be explored. Motivation control will be examined in more detail, as it is of particular interest to kanji learning, in that previous research has shown the challenge of kanji learning causes a decrease in motivation to continue study, leading to high attrition rates (Kato 2000, 2002). Shortcomings to this new movement away from learning strategies will then be evaluated.

2.3.1 Challenges to the validity of language learning strategy taxonomies

Challenges to the categorizations of strategic learning have spanned the past 20 years, although support for criticism has grown in strength in more recent years. Back in 1989, almost immediately after the O’Malley and Chamot and Oxford theorizations were gaining steam, Skehan (1989) noted there were few hard findings in the field of language learning strategies due to conflicting methodologies and results, calling for re-theorization within the field. Grenfell and Macaro (2007) state that even before the boom of research in the 1990s, there was considerable unease at the theoretical underpinnings of language learning strategy research. However, despite this unease and calls for re-theorization the explosion of language learning strategies studies in the 1990s helped perpetuate the current theories of the time. By 1996, Hadwin and Winne conducted an investigation of the body of published work on learning strategies at the time, and found of 556 articles only 9 per cent reported any empirical evidence and 16 percent met rigorous research criteria. In terms of research findings achieving the original aim of language learning strategy research, which
was to provide teachers and students with a means to become better language learners, the report argued the following:

There was a very scant research base upon which to ground recommendations for study tactics that populate the many handbooks available or to justify mounting costly programs that promise to improve students’ study skills. (Hadwin and Winne, 1996, p. 711)

Thus, this finding also criticizes the notion that learning strategies can be taught, which has been at the core of rationalizing learning strategies research since Rubin’s seminal 1975 study.

In more recent years, Dornyei (2005) has challenged the definitional “fuzziness” of the classification of language learning strategies and the instruments researchers use. In regard to the O’Malley and Chamot classification system, Dornyei (2005) claims:

The odd one out in O’Malley and Chamot’s taxonomy is clearly the last group, ‘social/affective strategies’, which includes such diverse behaviours as ‘cooperation’, ‘questioning and clarification’, and self-talk. These strategies are not related to the cognitive theoretical basis outlined by the authors, and they admittedly represent a broad grouping, a miscellaneous category. (p. 168)
In a further example, Oxford’s inclusion of a category for compensatory strategies in her taxonomy has prompted criticism from Dornyei (2005) that these strategies are related to language use rather than learning. Thus, “the two processes are so different both in terms of their function and their psycholinguistic representation that they are best kept separate” (Dornyei, 2005, p. 168). A further criticism of definitional fuzziness is in the separation of cognitive strategies with mnemonic strategies, when it has been argued mnemonic strategies “constitute a subclass of cognitive strategies” (Dornyei, 2005, p. 168). Although some of these criticisms have been challenged (see Hsiao & Oxford, 2002, for example) definitional fuzziness of the major learning strategy classification systems is a point of ongoing contention. In regard to the current study, this issue is of less concern, as a classification system directly related to the kanji-learning task will be employed, rather than the more general O’Malley and Chamot or Oxford schemes. Nevertheless, it is clear that taxonomies of language learning strategies are prone to definitional complications, which will have to be explored in the creation of a research framework.

In addition to definitional complications, much more major criticism of the Oxford taxonomy of language learning strategies stems from problems with its associated Strategy Inventory of Language Learning (SILL)—a questionnaire designed to measure strategy use. Critics of the SILL argue that it is not an appropriate measure of strategy use (Dornyei, 2005; Tseng et al., 2006; Woodrow, 2005). First it can be argued that the SILL measures quantity of strategy use, rather than quality, which causes inaccuracies. As Tseng, Dornyei
and Schmitt point out (2006), this causes students who use a number of strategies in a meaningless way to appear to be more strategic learners than students who applied a single strategy to a task in a purposeful and effective manner. Oxford herself addressed this problem in her evaluation that:

Low reported strategy use is not always a sign of ineffective learning. Also reportedly high-frequency use of strategies does not guarantee that the learning is successful. (Yamamori, Isoda, Hinomori & Oxford, 2003, p. 384)

Much of the issue with the SILL’s emphasis derives from a practice of computing mean scores, which Dornyei (2005) argues is not psychometrically justifiable due to the SILL’s measure of frequency instead of degree (always, sometimes, never), and its scale items not being in a linear relationship, meaning responses cannot be converted into a numerical form. In a comparison of the SILL with another strategy based questionnaire called the Motivated Strategies for Learning Questionnaire (MSLQ), Woodrow (2005) found the Likert scale of the SILL to be inappropriate because of contextual influences, such as cultural and educational background. Woodrow’s study concludes there is a general lack of reliability in using questionnaires to measure learning strategies, as they are not sample specific, and she calls for more qualitative methods. In a recent research project into the application of strategies in context, it was concluded that the “individual and situational context in which a learner operates is complex” (Takeuchi et al., 2007, p.92), thus supporting Woodrow’s claims. Accordingly, criticisms of SILL, and similar questionnaires are based on inappropriateness of
scales based on frequencies, computation of mean scores, and questions that are not context or culturally specific. Therefore, these issues will need to be addressed in the current study’s creation of a kanji strategy taxonomy—an issue that will be revisited in the methodology chapter.

In summary, language learning strategy classification systems have been subject to growing criticism on definitional fuzziness and unreliable research instruments. Based on these criticisms, Dornyei (2005), like Skehan in 1989, has called for re-theorisation of language learning strategies, and Woodrow (2005) has called for moves to more qualitative methods. Dornyei (2005) argues that research has ignored theorizing language learning strategies and focused on individual differences, but there is a need to return to the step of theorizing language learning strategies before making this step. Unlike Skehan’s call for re-theorisation in 1989, recent calls for re-theorisation have been met with some notable attempts to move away from the Oxford taxonomy of language learning strategies.

2.3.2 Re-theorization of language learning strategies

Since the decline of use of the Oxford taxonomy of learning strategies since the late 1990s, there has been some notable re-theorizing of language learning strategies that are of interest to the current study. However, even when the upsurge of language learning strategy research was occurring in the 1990s under the Oxford conceptualization, other taxonomies were still being explored. Pintrich, Smith, Garcia & McKachie (1991) and Vanderstoep and Pintrich (2003,
2008) emphasized a taxonomy that categorized strategies in two groups: (a) Cognitive and Metacognitive and (b) Resource management. Each of these groups consisted of a number of subgroups of strategy use. Weinstein, Husman and Dierking (2000) argued for a categorization that embraced a segregation of affective, behavioral and cognitive factors. This distinction is of particular interest to the current study as it would allow a differentiation between cognitive processes students apply to memorize the kanji and behavioral practices students use to review and recall kanji. Schmitt and Watanabe (2001) conceptualized learner strategies into four groups, based on a previous six-group model proposed five years earlier by Schmidt, Boraie and Kassabgy (1996). The four categories included: cognitive, social, study skills and coping. Cohen and Chi (2002) created a strategy inventory that was divided in terms of four language skills plus vocabulary and translation strategies, in order to create a more practically based system. However, all of these taxonomies were more a re-organization of strategy use rather than an answer to the calls to “step back” and re-theorize made by Skehan in 1989 and Dornyei in 2005. In addition, each of the above systems lack the research conducted within their framework that the Oxford or O’Malley and Chamot taxonomies offer, so their adequacy as suitable replacements is uncertain. There is one re-theorization, however, that has been receiving much attention in second language acquisition literature, and that is the re-conceptualization of strategic learning in the paradigm of self-regulation (see, for example, Dornyei, 2005; Tseng et al., 2006; Weinstein et al., 2000). This re-theorization has culminated in one proposed model that incorporates self-regulation within the motivation control strategy taxonomy (Dornyei, 2005).
2.3.3 Re-theorization towards motivation control strategies

Dornyei has created a model of motivational strategies based on the psycholinguistic concept of self-regulation which is intended to re-theorize language learning strategies by examining strategic learning in the paradigm of self-regulation (see Dornyei, 2005; Tseng et al., 2006). This taxonomy of strategic learning is based in the framework of motivation control strategies (Dornyei, 2001) and consists of five categories. Dornyei (2006) notes that his system was based on Kuhl's (1987) and Corno and Kanfer's (1993) taxonomy of action control strategies (see Dornyei, 2006). The categories are defined below:

1. **Commitment control strategies** for helping preserve or increase the learner’s goal commitment.

2. **Metacognitive control strategies** for monitoring and controlling concentration and for curtailing unnecessary procrastination.

3. **Satiation control strategies** for eliminating boredom and adding extra attraction or interest to the task.

4. **Emotion control strategies** for managing disruptive emotional states or moods and for generating emotions that are conducive to implementing one’s intentions.

5. **Environmental control strategies** for the eliminating of negative environmental influences by making an environment an ally in the pursuit of a difficult goal. (from Dornyei, 2005, p. 113)

In a later publication, Tseng, Dornyei and Schmitt (2006) apply the
conceptualization to the task of vocabulary learning in the form of a questionnaire designed to measure the self-regulatory capacity of vocabulary learning (SRCVoc). In that study, items on the questionnaire were developed from focus groups with students, and fit into the above framework, "because of the theoretical problems surrounding the existing learning strategy taxonomies" (Dornyei, 2005, p. 186). The study concluded that the questionnaire was a psychometrically accurate measure of a learner’s underlying self-regulatory capacity, rather than a measure of actual strategy use (Tseng, Dornyei, and Schmit, 2006). The authors also make the following claim:

For the sake of conceptual clarity, we have decided to model the self-regulatory system proposed in this paper on one particular language learning domain, vocabulary learning, but at the same time we offer a detailed description of the procedures used to develop our instrument so that this can serve as a template for other content areas as well. Thus, we believe that our suggested approach is transferable to researching other facets of second language learning. (Tseng, et al., 2006, pp. 79-80)

Therefore, the same template may be used for kanji learning, which is an area yet to be explored in this new paradigm. However, use of this instrument alone would only provide an understanding of the underlying self-regulatory capacity of a learner’s kanji learning, rather than strategy use itself. Dornyei (2005) explains: “the SRCVoc does not measure strategy use but rather the learner’s underlying self-regulatory capacity that will result in strategy use” (p. 84). Such observations suggest that models of strategy use and Dornyei’s model of self-
regulation are not incompatible as they are measuring the beginning and end product of the same event. In fact Gao (2006), in a response to Tseng et al. (2006), argues the emergence of self-regulation does not mean language learning strategy research is being marginalized. Self-regulation is looking at the initial driving forces, while learning strategies examine the outcome of these forces. This suggests that the two models are complimentary, and Gao (2006) suggests the emergence of models such as those proposed by Tseng et al. (2006) and Dornyei (2005) does not mean the end to language learning strategy research, but instead broadens the perspective of future research into the field.

Thus, in order to understand the bigger picture, a research framework that incorporated both self-regulation and strategy use was developed for the current study (see section 2.6.2). Since data were collected in the current study within this framework in 2006, a number of prominent researchers in the field have also examined the possibility of merging the two frameworks indicating the research was carried out in a favorable direction. Lin and Oxford (2009) are currently applying a model of strategic learning that incorporates self-regulation into a framework that examines strategic learning from psychological and socio-cultural theories from micro and macro perspectives. This model is of interest because it appears to draw upon theories from both educational psychology and traditional theories of strategic learning from second language learning research. Another model, developed by Weinstein (2009) examines strategic learning from perspectives of learner skills, learner will or motivation, and self-regulation. The use of the term self-regulation in both of these developing models makes its impact in the shift of research into strategic learning clear. What is also clear is
that in the current study, self-regulation is a concept that cannot be ignored in the development of its research framework, and accordingly, must be incorporated into the research design.

### 2.3.4 Toward memory strategy paradigms

In addition to the incorporation of self-regulation theories into the research framework of strategic learning, the study also acknowledges other movements outside the realm of second language acquisition that are relevant to the task of kanji learning. In the field of cognition, there has been notable research into the concept of memory strategies. Memory strategies can be defined as "deliberate, goal-oriented behaviours used to improve memory" (Matlin, 2005, p. 503). A further definition is the mental activities that are designed to improve one's coding and retrieval (Herrman, Raybeck & Gruneburg, 2002), sometimes referred to as retrieval practice. Definitions of these concepts are outlined below:

*Encoding* refers to the initial acquisition of information. That is, when the information enters the memory. (Buckner, 2000)

*Retrieval* refers to “locating information in storage and accessing that information.” (Matlin, 2005, p. 129)

*Retrieval Practice* refers the practice of locating and accessing this information, by spending time actively learning and reviewing materials over multiple study sessions. (Matlin, 2005)
These concepts will prove useful when discussing the memory strategies used by students when encoding and retrieving kanji, and thus warrant further exploration.

In regard to encoding information, research into memory strategies has provided a basis on which to examine kanji memorization and recall. First, “research of levels of processing show that you recall information more accurately if you encode it at a deep level, rather than a shallow level” (Matlin, 2005, p. 506). By relating new information with other associations, images or experiences, the encoding becomes more meaningful and it is more likely to be remembered (Roediger, Gallo & Geraci, 2002). On the other hand, repetition or rote learning “is an extremely poor technique for memorization” (Payne & Wagner, 1999, p. 91), as it encodes at a much shallower level. Regarding retrieval and retrieval practice, cognitive theory suggests the amount learned is affected by the total time devoted to learning (Baddley, 1997). Although Matlin (2005), qualifies this by saying “keep in mind, however, that 1 hour spent actively learning the material—using deep levels of processing—will usually be more helpful than 2 hours in which your eyes simply drift across the pages” (p, 175).

A further suggestion by research into cognitive theory is that it is more effective for learning to be broken up into several sessions over time, rather than learning the material at one time (Matlin, 2005). Cognitive theory also suggests other memory strategies that are compatible with learning strategy models, namely the use of mnemonics and mnemonic organization. For the purposes of clarity, these concepts will be explored in the learning strategy paradigm, so as to avoid
definitional complexities. For the purposes of the current study, the terms memory strategies, encoding, retrieval, and retrieval practice will be borrowed from cognitive science, because of their relevance to the task of kanji memorization and recall. In the discussion of the results, other concepts from cognitive science may be borrowed if the opportunity presents itself in the data to apply them.

2.3.5 Summary: Implications for current study

In summary, there has been a wane in confidence for numerous taxonomies of strategic learning. In the construction of the conceptual framework of the current study, there are clearly benefits of examining strategies from an educational psychology perspective, but also the need to incorporate theories that look at strategy use—as this has been the base of much research in the past 30 years. In particular, it is clear the concept of self-regulation is a current area of exploration, and must be incorporated in the framework.

As self-regulation measures the underlying regulatory capacity of the learner, rather than actual strategy use, we also see further importance of developing a model that incorporates the strengths of both. In addition to borrowing the concept of self-regulation, we can also see merit in including further concepts from the field of psychology into the research framework, namely those concerned with memory strategies. Furthermore, it is clear that any model of strategic learning must be task specific, as there is general agreement that strategies are task dependent (Cohen & Macaro, 2007). Just as Tseng et al.
(2006) developed a framework to examine vocabulary learning, a framework must also be developed to examine the specific task of kanji learning. Before this can occur, previous research into the area of kanji learning must be reviewed, and thus will be examined in the next section.

2.4 Kanji learning research

In this section literature on kanji learning will be reviewed in order to show the strengths and weaknesses of previous research. It will examine the research in three major sub-fields: background studies, kanji learning strategies, and learning strategy instruction.

2.4.1 Background to kanji learning research

The teaching of Japanese language in universities is a relatively new phenomenon, with most programs established within the last forty years (Bramley & Hanamura, 1998). Notably in England, the US, and Australia, the number of students enrolled in Japanese courses “sky-rocketed” in the 1980s and 1990s, leading to the growth of Japanese language programs at the university level (Komiya-Samimy & Tabuse, 1992). Similarly, the number of students travelling to Japan to study on short-term language programs has also rapidly increased from 50,000 in 1983 to more than 100,000 in 2003 (MEXT, 2004). Moreover, the Japanese Ministry of Education has introduced initiatives that will double the number of foreign students studying in Japan over the next 10 years (Shimauchi, 2009). The expansion of Japanese at the tertiary level both
inside and outside of Japan facilitated an increase in Japanese applied linguistic research and studies in language learning from the 1990s (Bramley & Hanamura, 1998). One area that has caught the attention of many researchers since then is kanji learning. This is because kanji is widely acknowledged as the biggest obstacle Japanese language learners must face in their learning (Sayeg, 1996; Takahashi, 2001; Usuki, 2000). It has been suggested that kanji is the main reason Japanese language learners progress more slowly in their language development than learners of European languages (Dwyer, 1997; Walton, 1989). The difficulty of kanji learning has also been attributed to the cause of learner frustration with the language and the high level of attrition in Japanese courses at universities (Komiya-Samimy & Tabuse, 1992; Kato, 2000, 2002; Nakayama, 2002). To combat these difficulties, more researchers have investigated students’ kanji learning practices.

As stated earlier, in the late 1980s, Hatasa (1989) observed that although there had been numerous studies into the learning strategies of Japanese children studying kanji, there had been little research undertaken to investigate how non-native learners of Japanese, especially English-speaking learners, learned these characters. Even though some researchers have noted there still is a lack of research in this area (Takahashi, 2001), there have been a number of notable studies since Hatasa’s observation.

Early studies’ suggested techniques used by Japanese students to learn kanji proved of little use to foreign learners of Japanese, due to a differences in learning styles and processing skills (Kinoshita, 1998; Okita, 1996; Sayeg, 1996).
An example of this is the widely used Japanese technique of writing kanji repeatedly to remember its shape and how it is written. A study by Toyoda and Kubota (2001, p. 9), however, found writing to be “the most ineffective way of memorizing the meaning of words” out of four learning strategies observed. This concurs with research into memory strategies that simple repetition of information is a poor method of memorization due to the shallow level of processing (Matlin, 2005). These results have also been supported in vocabulary learning strategy research, which has found repetition strategies to be largely ineffective when used in isolation (Nyikos & Fan, 2007). Hatasa (1989) argues that better ways to teach kanji need to be developed for non-native speakers of Japanese, because those used by Japanese students are likely to be incompatible, due to students first applying phonological processing skills to a logographic script. Because of this, Hatasa (1989, p. ii) argues: “Kanji still present a serious obstacle to learners of Japanese as a foreign language. Finding an effective and efficient way of teaching them is essential”. Much research in this area, therefore, has focused on the strategies used to remember kanji by successful learners of Japanese.

2.4.2 Kanji learning strategies

Through think-aloud interviews with Australian university students of Japanese, Bourke (1996) compiled the Strategy Inventory for Learning Kanji (SILK). Her study identified 15 categories of learning strategies. The current study draws upon the Bourke (1996) study in its evaluation of students’ strategy use. In kanji recollection, Bourke found the most commonly used cognitive strategy was
relating the shape of the kanji to its meaning, and the second most common strategy was to examine the radical. The radical is a component of the kanji by which it is grouped with other kanji according to its shape, meaning or sound. Her study also found:

The most successful students in the kanji recall tasks were the ones who used the highest number and widest variety of strategies [which] concurs with the claim by Oxford (1989: 199) that more effective students use strategies more ‘consciously, purposefully, appropriately and frequently than do less able students’. (Bourke, 1996, p. 131)

Her study concluded that the type and complexity of the kanji and the proficiency of the learner greatly influenced strategy choice. That is, she found pictorial strategies to be helpful to beginner students, but more complicated kanji needed to be broken down into meaningful components for these students as they progressed through their language development. She emphasises that students need guidance from teachers in their initial exposure to kanji:

Students need help in the initial stages to change from a holistic approach to kanji to a more analytical approach and build up their knowledge of the meaning of component elements (Bourke, 1996, p. 226).

Fujiyoshi (1996) used Bourke’s (1996) study as a basis to test whether Bourke’s results could be reproduced in observations of advanced learners of Japanese at the university level. Fujiyoshi (1996) examined the learning strategies of six
university students and concluded that, while kanji recollection strategies concurred with Bourke’s findings, strategy use varied according to individual subjects, which is in accordance with Oxford and Nyikos’s (1989) findings that individual differences affect strategy choice.

In addition to these cognitive strategies, Bourke (1996) found when kanji, or kanji elements, were not meaningful to students a mnemonic approach was helpful. A mnemonic strategy is defined as making associations between new and already known information through use of stories, phrase, verse or the like (Oxford, 2001). In another study, Lu, Fox, Krus and Webb (1999) also found learners “learned more of the kanji characters and their meanings when the kanji were presented using descriptive mnemonics” (p. 304). This study, however, is limited in that it only compared the effects of learning kanji with mnemonics to learning kanji without them, which does not indicate their effectiveness compared to other strategies. Other reports into the use of mnemonics, however, found the use of mnemonics to have no significant difference to a student’s ability to memorize kanji (Sakai, 2002; Wang & Thomas, 1992). Thus, these studies indicate that the use of mnemonics when learning kanji is limited, and problematic if relied on too heavily. Both of these studies, however, compare mnemonic learning with non-cognitive strategy use (such as compensatory and metacognitive strategies), which is problematic as these strategies are not mutually exclusive and can both be employed at the same time. Therefore, even though mnemonics have been explored in previous literature, mixed results indicate mnemonics to be one grey area worth further investigation.
One cognitive strategy which is gaining much attention in recent research is that of component analysis or graphemic awareness, which can be described as “awareness that kanji can be segmented into graphemes and that graphemes can be the subject of analysis” (Toyoda, 1998, p. 156). Graphemes are the smallest unit a kanji can be broken down into. In many cases a radical is one of the graphemes in a kanji. A radical is a component of the kanji that is used to organize kanji through the grouping of kanji that contain the same components. Many Japanese dictionaries, for example, are organized according to radicals. Bourke (1996) observed a higher degree of graphemic awareness as students encountered more complex kanji:

As kanji becomes more complicated, it is helpful to break them into their component elements and relate these elements to their traditional meaning. (p. 226)

In a further study by Toyoda and Kubota (2001), eleven university students were tested for the learning strategies utilized to recall kanji and kana. Their study found that students who displayed graphemic awareness and analyzed the components of kanji, remembered more kanji than those who applied a pictorial, mnemonic or repetitive writing strategy (Toyoda & Kubota, 2001). Unfortunately, while this study examined strategy use and kanji memorization, the examination of just four strategies simplified the process of kanji learning, especially when compared to Bourke's identification of 15 kanji learning strategies, thus the results are limited by this simplification.
Regarding the teaching of kanji and kanji learning strategies, Flaherty and Noguchi (1998) examined the effectiveness of teaching kanji through component analysis compared to a holistic approach. *Component analysis* is the act of breaking kanji down into its components (or graphemes) to assist in memorization, comparison and association of meaning. Their study found that students in both second language and foreign language learning environments learned kanji more effectively through component analysis. This result however is not surprising considering only a small percentage of kanji are pictographic, and the majority are compounds of two or more characters, as explained earlier (Paradis, Hagiwara & Hildebrandt, 1985). The study did, however, highlight the ineffectiveness of repeatedly writing whole kanji as a memorization strategy. This concern is echoed in Toyoda and Kubota's (2001) study, which found repetitive writing to be the least efficient method of kanji memorization of four strategies tested. This is a significant finding, considering a survey of 251 Japanese teachers in the United States found that most nominated repetitive writing as their preferred method for the teaching of kanji (Shimizu & Green, 2002). Shimizu and Green's study highlights the notion that strategy research can inform pedagogical practices—a concept that will be revisited in the discussion of results of this study.

### 2.4.3 Learning strategy awareness raising

The teaching of learning strategies for learner success is not a new concept. Indeed seminal researchers in the field such as Rubin (1981) purported a
rationale of learning strategy research was the potential benefits such findings would have for less successful learners. Toyoda (1998), for example, stresses the need for teachers to make students more aware of the differences between alphabets and kanji in the beginning stages of kanji learning. Bourke (1996) also concludes in her study, that teachers need to give more guidance to beginning learners of Japanese on how to learn kanji—an opinion echoed by Usuki (2000), whose report criticizes teachers for not providing adequate guidance and class time to the learning of these characters.

Despite these calls for provision of guidance to students on kanji learning, research into the raising of kanji learning strategy awareness remains sparse. Outside the realm of kanji learning, a number of researchers have investigated effects of teaching learning strategies through awareness raising workshops on language performance and achievement. Teachers who employ strategy-based instruction in language classrooms have reported:

Students become more efficient in completing classroom language tasks, take more responsibility for directing their own learning outside of class, and gain more confidence in their ability to learn and use language.

(Cohen, 2000, p. 1)

This finding concurs with Oxford's claim of the benefits of language learning strategies. In regard to teaching strategies for language improvement, a study of high school and college-level Spanish and French students found a 50-minute awareness-raising session had significant effects on students’ final course grades
when compared to a control group in three replicated experiments (Feyton, Flaitz & LaRocca, 1999). In a similar experiment, a group of researchers found training of reading comprehension strategies for Greek students of English improved student performance in English comprehension (Pappa, Zafiropoulou & Metallidou, 2003). Thus, awareness raising research has highlighted potential benefits of a raised awareness of strategy use such as increased confidence, performance, efficiency and responsibility—all of which may be of relevance to the current study.

In the field of kanji learning, it has been suggested that teaching component analysis strategies compared to whole-kanji strategies resulted in higher retention rates in both short term and long term kanji recall (Flaherty & Noguchi 1998). De Courcy and Birch (1993) have also found that the teaching of reading and writing strategies in a Japanese language class resulted in students making use of a wider range of strategies and feeling more in control of their learning. Therefore, even though research in this field is still relatively sparse, preliminary findings suggest that the teaching of kanji learning strategies may have a positive effect on students’ kanji learning, in terms of autonomy, language ability and control over one’s learning. The current study does not aim to measure the direct effects of raising awareness of strategies for kanji study in any quantitative way. To answer such a question would require a strict experimental design, which is not the desire of this research. However, an understanding of the effect of a raised awareness of strategies on language learning is important in the study’s research framework, because participant awareness of learning strategies is expected to grow the more they participate in a longitudinal study.
such as the current one, where they will be frequently exposed to kanji learning strategies in interview and questionnaire materials (See section 3.4.6 on the Hawthorne effect for further discussion). This is especially relevant as strategy researchers have shown that the act of reading a questionnaire that lists known learning strategies is an effective way to raise awareness for older language learners (Rubin, Chamot, Harris & Anderson, 2007). Awareness raising therefore, becomes an important methodological consideration in the analysis of the results.

2.4.4 Summary

In summary, recent research that examines the link between strategy use and language learning has highlighted the importance of strategy use in kanji learning and recollection. It also highlights the potential affects of raising awareness of these strategies in regard to individual student's kanji learning, particularly in the beginning stages of language study. Previous studies have been very useful in providing a solid foundation on which to base the present study. These studies have helped greatly in the approach to the present study and the formulation of the research questions, but they do have some noteworthy limitations, which will be addressed next.

2.5 Strengths and limitations of previous studies

This section will outline strengths and limitations of previous studies in three areas: (1) the settings and participants of previous studies; (2) the
methodologies of previous studies; and (3) previous research findings, which suggest areas of theory building in the areas of kanji learning and strategic learning. This section will also suggest how the current study addresses these limitations.

2.5.1 Setting: A neglected demographic

In regard to the participants and settings of previous kanji learning research, most studies have examined kanji learning of native English speakers learning Japanese language outside of Japan. The current study explores the kanji learning of students studying within Japan, which has been a setting ignored by previous research, but one of increasing importance as more and more students are choosing to study languages abroad (MEXT, 2004; Guruz, 2008). In the future, this demographic will grow further due to initiatives to double the number of foreign students studying in Japan by the year 2020 (Shimauchi, 2009).

2.5.2 Methodology: A call for case study research

In regard to methodology, like Flaherty and Noguchi’s (1998) study, most research has examined kanji learning outside of the language classroom, usually examining kanji recall in experimental, quasi-experimental or other controlled settings. Studies using these methodologies have provided us with useful findings in environments where researchers have more control over external variables that exist in real classrooms, which may affect results. However, one
must question the external validity of such experiments, and how transferable results obtained from kanji learning experiments conducted in isolation are to real classroom contexts. Burns (2000) argues:

An experiment can be said to be internally valid to the extent that within its own confines its results are credible, but for those results to be useful they must be generalisable beyond the confines of the particular experiment, i.e. they must be externally valid also. (p. 143)

Previous studies have been conducted outside real classroom settings. They have provided invaluable results regarding strategy use and instruction in isolated environments. However, there is a need to investigate strategy use in real classroom settings in order to examine whether such results are generalizable outside the experimental setting. This needs to be conducted through qualitative research that takes a deeper look into the act of kanji learning over long periods of time. Such calls are echoed in strategic learning literature, which has increasingly emphasized the importance of more qualitative and context-specific research in recent times (Grenfell & Macaro, 2007; Tseng et al., 2006; Takeuchi et al., 2007; Woodrow, 2005).

2.5.3 Theory: Self-regulation and kanji learning

The third limitation of previous studies is that there has been a significant amount of theoretical development occurring around the notion of self-regulation in strategic learning, especially since 2005. Evidence of this can be
seen in the incorporation of self-regulation into strategic learning taxonomies in recent years (see for example Dornyei, 2005; Lin & Oxford, 2009; Weinstein, 2009). While the notion of self-regulation in the area of vocabulary has already been explored (Tseng et al., 2006), self-regulation in the area of kanji learning is, still now, an unexplored area. As strategy use is “environment-dependent” and “task-dependent” (Cohen & Macaro, 2007), there is a need to explore these new concepts in the context of the kanji-learning task. This research project also answers recent calls by Grenfell and Macaro (2007) to investigate specific strategies in the context of specific tasks in a more qualitative fashion than previous studies.

2.5.4 Theory: Effect of raising awareness of kanji strategies on learning

The third limitation of previous studies is that there has been a significant amount of research conducted into kanji learning strategies under the rationale that these strategies will help students become more efficient learners. Nevertheless, it has been noted, "few studies have addressed the question of metacognitive strategy training in contexts in which foreign languages are learned" (Pappa, Zafiropoulou & Metallidou, 2003, p. 773). In regard to kanji instruction, none of these studies, with the exception of Kato (2000) and Flaherty and Noguchi (2002), examines the teaching of kanji learning strategies in real learning settings. Kato’s (2000) work centered on Japanese learning as a whole and lacked the focus on kanji instruction to be of significant relevance to the present study. Flaherty and Noguchi’s (2002) study, while useful in demonstrating a difference between whole-kanji and component analysis
instructions, lacks the depth to draw concrete conclusions needed to understand the details of strategies used by successful learners. The classification of learning strategies and teaching approaches into just two groups in that study is too simplistic, considering Bourke's (1996) study identified 15 commonly used strategies. Previous research, therefore, has not investigated the effect of a raised awareness of strategy use on kanji learning over time.

Bourke (1996) concludes in her study that more evidence is needed to support claims of a link between strategy instruction and kanji learning. She suggests “this could be done in a study where strategy awareness is incorporated into the normal classroom” (Bourke, 1996, p. 249). While it is not a primary objective of the current research to investigate the teaching of learning strategies, it is expected that students will gain a raised awareness of the uses and importance of learning strategies as a direct result of their involvement in the study. Rather than view this as a limitation to the study, the study will be designed to embrace the concept of awareness raising. It is the secondary aim of this project, therefore, to address this suggestion of Bourke’s and investigate the effect of a raised awareness throughout the timeframe of the study.

2.5.6 Summary

In conclusion, kanji research has identified fundamental differences between kanji learning and the learning of other script, highlighting the difficulties encountered by English-speaking background students who are learning kanji. Learning strategy research has provided a model for the current study, while
highlighting key concerns in the realm of strategy use and instruction. Kanji learning research has provided the study with a strong foundation on which to ground the research questions. The significance of the study lies in its investigation of students’ strategy use studying in a Japanese university setting—a demographic that has been neglected by past research. It will also investigate self-regulation in the area of kanji learning, which will be the first known study at this time. Additionally, effects of a raised awareness of strategies throughout the study will be explored. Therefore, this study will make a significant contribution to research in the realm of both kanji learning and theory building of strategic learning. Next, the specific research questions are outlined.

2.6 Research questions & conceptual framework

This section outlines the research questions of the current study and then discusses the conceptual framework in which these questions will be explored.

2.6.1 Research questions

This study aims to investigate kanji learning in terms of cognitive strategies, behavioral strategies, and self-regulation. The specific research questions of this study are:

1. In terms of learning strategies, how do learners of Japanese from alphabetic language backgrounds learn kanji in a year-long study program at universities in Japan? This question will be addressed in two parts:
1.1 How do learners of Japanese learn kanji within this setting?
1.2 How do these learning patterns develop over a year of kanji instruction, which includes a raised awareness of strategies due to participation in the project?

2. In terms of self-regulation, how do learners of Japanese from alphabetic language backgrounds regulate their learning of kanji in a year-long study program at universities in Japan? This question will be addressed in two parts:

2.1 How do learners of Japanese regulate their learning of kanji within this setting?
2.2 How do these learning patterns develop over a year of kanji instruction, which includes a raised awareness of strategies due to participation in the project?

2.6.2 Conceptual framework for the study

Miles and Huberman (1994) define the role of a conceptual framework as the following:

A conceptual framework explains, either graphically or in narrative form, the main things to be studied—the key factors, constructs or variables—and the presumed relationships among them. Frameworks can be rudimentary or elaborate, theory driven or commonsensical, descriptive or causal. (p. 18)
Miles and Huberman state (1994) that conceptual frameworks can also evolve from the fieldwork itself, especially in the case of flexible research designs, such as case studies, where context specific peculiarities may arise. Thus, this conceptual framework is flexible in that factors or variables may be removed, added or given more or less focus after the commencement of the study.

The conceptual framework for the study is outlined in figure 1, and is explained below.
The central focus to the research framework is kanji learning, as it is central to all the research questions. The study will analyze kanji learning in terms of the inter-connected concepts of (1) learning strategies, (2) motivation control strategies, (3) self-regulatory mechanisms and (4) memory strategies. The latter two, will be explored in the framework of the previous two (as indicated by the arrows)—as they are essentially exploring the same concepts but from different theoretical bases. In doing so, the current research project will keep with practice of previous research that has explored self-regulation in language learning within the framework of motivation control (Tseng et al., 2006) and memorization and recollection of kanji in the framework of learning strategies.
(Bourke, 1996). The study is situated in the boundaries of educational psychology and second language acquisition theory, and examines strategic learning from a cognitive and behavioral perspective.

Language learning has been shown to be affected by other variables such as language proficiency, motivation, gender, learning background, and so on, thus these factors are also considered in the study's investigation of kanji learning, if they arise throughout the course of the investigation. This framework has been constructed alongside the research questions because a well-developed conceptual framework is invaluable in the pursuit of research questions as the two affect each other greatly (Miles & Huberman, 1994).

### 2.7 Chapter summary

In summary, this chapter has examined the literature on the Japanese writing system, theories on strategic learning and research into kanji learning. Through this investigation, strengths and limitations in the literature have been highlighted, culminating in the research questions of the current study and a conceptual framework in which to conduct this research. The following chapter will report on the methodology employed in the study.
Chapter 3 Methodological framework of the study

The previous section reviewed previous research into language learning strategies and kanji learning. It was observed that there had been significant research into kanji learning in isolated settings, but little to no research that examined kanji learning in classroom settings, in Japanese university learning environments, over long periods of time, or from the perspective of self-regulation. It was also noted that few studies had investigated the effects of a raised awareness of kanji learning strategies on learning.

This chapter examines the methodological considerations for the study and outlines the study’s approach to the research questions. First, a brief discussion of methodological considerations is given, followed by a summary of the research procedure including participants and setting. Next, a discussion of the methodological framework used in the study is presented. Then, limitations and delimitations of the chosen research instruments are discussed. Finally, ethical considerations associated with the study are presented to exhibit an understanding of, and compliance to, ethical research procedure.

3.1 Methodological considerations:

3.1.1 Why a qualitative approach?

The current study primarily investigates kanji learning in a natural learning
environment using a qualitative, or flexible, design. However, as a secondary focus it explores changes in learning over time, including the effect of a raised awareness due to participation in the project. Although many researchers argue that experimental designs are strongest in testing effect and causality, Miles and Huberman (1994), offer this perspective:

We consider qualitative analysis to be a very powerful method for assessing causality... ...Qualitative analysis, with its close-up look, can identify mechanisms, going beyond sheer association. It is unrelentingly local, and deals well with the complex network of events and processes in a situation. It can sort out temporal dimension, showing clearly what preceded what, either through direct observation or retrospection. It is well-equipped to cycle back and forth between variables and processes—showing that "stories" are not capricious, but include underlying variables, and that variables are not disembodied, but have connections over time. (p. 174)

Other research methodologists argue that flexible designs are able to powerfully identify causality within the boundaries of the case study setting in their close-up examination of participants (Cohen, Manion & Morrison, 2007). Previous studies into kanji learning have been conducted using fixed designs, which have provided a strong argument for findings in the areas of kanji recall and cognition. Few studies however, have examined these processes in real learning settings. It is in this capacity, therefore, where a qualitative approach can provide in-depth information into kanji learning. The decision to pursue a qualitative approach is
also supported by both critics and defendants of language learning strategy research who emphasize the importance of more qualitative research rather than previous reliance on questionnaires in strategy research (Dornyei, 2005; Macaro & Grenfell, 2007; Tseng et al., 2006; Woodrow, 2004). According to Tseng et al. (2006, p. 98), “researchers need to apply other, more qualitative methodologies (such as stimulated recall and structured observation) to achieve a fuller understanding of the whole picture”. Thus, these recommendations are followed in the current research.

3.1.2 Why a case study approach?

In the study’s qualitative approach, a small number of participants or cases will be examined. The reason for this focused approach is in answer to recent calls in the field of strategic learning, that strategy use is not only a highly individualized action (Rubin et al., 2007), but is also environmentally and context specific (Grenfell & Macaro, 2007; Woodrow, 2005). It is the examination of large populations through quantitative means and the generalization of these findings that has subjected language-learning strategies to much of its criticism (Grenfell & Macaro, 2007). For this reason, research into strategic learning would benefit from being bounded in not only an environment and context-specific setting, but also using a highly individualized approach (Dornyei, 2005; Grenfell & Macaro, 2007; Tseng et al., 2006; Woodrow, 2005). Thus, a case study approach to the research was employed.

According to Casanave (2010), a case study is not a research method, but an
approach to research:

A case study more accurately refers to a research tradition (Cresswell 2007) or approach in which the object of inquiry is unique (in the sense singular) and bounded in which the researcher’s interest is in the particular rather than the general... ...A multiple case study investigates several particular groups, institutions, or case studies of individuals. The purpose of most case studies is to enhance our understanding of a person, process or group, not to compare, experiment or generalize to other populations. (pp. 66-67)

In this sense, in the study's investigation of kanji learning, the focus of the research will be on the individual learner—or individual cases—meaning the approach to the research is in the case study tradition. This approach allows the research to examine individual characteristics that have been shown to affect strategy choice (Nyikos & Oxford, 1993; Oxford & Nyikos 1989; Oxford, 2001; Rubin et al., 2007). Moreover, Casanave (2010) argues case studies are highly context specific, and require a thorough understanding of the environment and context of the object being studied. Thus, the approach would also allow the research to fully understand the environmental and context-specific qualities that are necessary to understand strategic learning, which previous and more generalized data collection methods may have overlooked (Grenfell & Macaro, 2007; Woodrow, 2005).
3.2 Participants and setting

This section will examine the participants and setting of the study, and explain the rationale behind the participant selection process.

3.2.1 Setting

This study was conducted in two universities in the greater Tokyo area of Japan. The universities were chosen because both received a large number of foreign students on year-long exchanges, and both offered kanji courses that were separate from the other Japanese language curriculum, thus isolating the kanji learning task from other language skills. The study was limited to students from a non-character language background and who were native (or have a native-like proficiency) in English in order to take part in interviews conducted only in English.

In regard to the Japanese language curriculum, these language students at both universities had one 90-minute lesson per week of kanji instruction. In this class, students were taught weekly lists of kanji, engaged in learning activities (namely the learning of kanji compounds, kanji writing practice, and kanji review), and they sat regular bi-weekly kanji tests. The students were divided into six levels at both universities ranging from complete beginner to advanced.

3.2.2 Participants
As previous studies have suggested a relationship between language proficiency and strategy use (Bourke, 1996; Oxford, 2001), it was assumed kanji learning might differ in each of these levels. In addition, research into kanji learning has suggested it is in the beginning stages of kanji learning where students from alphabetic language backgrounds encounter most difficulty, and it is at the advanced stages that more strategies are observable (Bourke, 1996; Sayeg, 1996; Usuki, 2000). For this reason the current study also aimed to include complete beginners in the study, despite minimal experience with kanji learning alongside advanced learners of the language. After initial interviews with 19 potential participants, the study settled on twelve participants, which offered the most diverse range of gender, learning experiences, proficiency, motivation and strategy use (see following section for details of selection criteria). Moreover, it was decided that twelve participants would both allow the strengthening of precision, validity and stability of findings through the examination of similar cases (Yin, 2002), and would also provide a rich look into each case by not using too “unwieldy a number of participants for a single researcher to be able to treat the study with high complexity” (Miles & Huberman, 1994, p. 30). The participants were English-speaking university students learning Japanese language during a year-long exchange program at a university in the greater Tokyo area. All students were studying full time at American, Australian, or UK universities; seven were American, one was Australian, one British and the remaining three were nationals of Thailand, The Philippines and Burma, who were enrolled in American universities.
3.2.3 Participant selection

According to Miles and Huberman (1994), qualitative research usually involves the in-depth study of small samples of people. Furthermore, “qualitative samples tend to be purposive, rather than random” (Miles and Huberman, 1994, p. 27). Purposive sampling allows qualitative researchers to “handpick the cases to be included in the sample on the basis of their judgment of their typicality or possession of the particular characteristics being sought” (Cohen et al., 2007, p. 114). In the current study, it was the aim to include participants from a wide range of learning backgrounds and language proficiencies, as previous studies had shown these to affect strategy use (Nyikos & Oxford, 1993; Oxford & Nyikos 1989). Furthermore, much previous research had focused on researching good language learning practices, while neglecting the poor language learner, whose practices can help understand the fuller picture and build theory. Grenfell and Macaro (2007) argue, “it is theoretically possible to be a ‘good’ beginner language learner and a ‘poor’ advanced learner” (p. 15), thus this phenomenon must also be taken into consideration when choosing participants. In regard to sampling, the practice of sampling extreme or deviant cases or a maximum variation of cases, not only enables comparisons to be made between cases, but also facilitates the evaluation of previously established rules in the field (Burns, 2000; Cohen et al., 2007).

For this purpose, the current study purposively sampled twelve participants that would offer the broadest picture of strategic learning in terms of proficiency, strategy use and motivation control. The teachers of the kanji classes assisted in
the recruitment of participants through distribution of participant information statements, as it was requested by both institutions that recruitment be done in this way rather than through direct, personal contact of the researcher. After initial interviews with potential participants (see 3.3 for research procedure), the research selected twelve cases that would provide maximum variation of proficiency, strategy use and motivation, based on initial analysis of these interviews. The figure below is a summary of these twelve cases, with pseudonyms replacing actual participant names.

Table 2: Purposive sampling of participants

<table>
<thead>
<tr>
<th>Proficiency</th>
<th>Strategic</th>
<th>Not strategic</th>
<th>Motivated</th>
<th>Not motivated</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Joshua++</td>
<td>Alex*</td>
<td>Sue (Alex, Joshua)</td>
<td>Holden*</td>
</tr>
<tr>
<td></td>
<td>(Sue, Holden)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>Colton++</td>
<td>Tim*</td>
<td>Paul (Tim, Colton)</td>
<td>Jeremy*</td>
</tr>
<tr>
<td></td>
<td>(Paul, Jeremy)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>Sam++</td>
<td>Zara*</td>
<td>Kate (Sam, Zara)</td>
<td>Maya*</td>
</tr>
<tr>
<td></td>
<td>(Kate)</td>
<td>(Maya)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Indicates a participant chosen as a deviant case
++Indicates a participant chosen as an extreme case

Participants were categorized as strategic or non-strategic according to initial analysis of results of an interview and stimulated recall task (see section 3.4.3 for procedure). Participants were categorized as motivated or not motivated according to initial analysis of results of interview questions regarding motivation and motivation control (see section 3.4.2 for procedure). In the table it is clear each of the twelve cases represents a combination of the characteristics being sought. The sample also includes at least one deviant case for each proficiency level (marked*) that did not appear to apply strategies to the kanji-learning task or did not appear to be highly motivated in the kanji-learning task.
when compared to other learners. Cases that appeared to be extreme cases in terms of strategy use were also identified (marked ++). Proficiency was based on number of known kanji according to a placement test administered by the university where the participants studied. This proficiency test was used to place students in appropriate level classes. Low indicates knowledge of less than 200. Intermediate indicates knowledge of 200-800 kanji. Advanced indicates knowledge of more than 800 kanji.

3.2.4 Summary

In summary, the current study examines the kanji learning of twelve participants studying on a year-long exchange program at Japanese universities. The universities were chosen because of the inclusion of kanji learning classes in the Japanese language curriculum where the task of kanji learning was easily separated from other facets of Japanese language learning. The participants were chosen after initial interviews in order to investigate a wide range of learners in terms of proficiency, strategy use and motivation.

3.3 Research Procedure

The current study was conducted over a period of one academic year, consisting of two 15-week semesters including a total of thirty 90-minute weekly kanji classes. The study was conducted in two stages—in the first semester the study aimed at examining kanji learning strategies used over a semester-long course. In the second stage, this examination of kanji learning continued throughout the
second semester in order to investigate changes in kanji learning over the year, including the effects of a raised awareness of strategy use due to participation in the study. In both stages of the study, the study habits and learning strategies of these students were investigated throughout the semester through semi-structured interviews, an introspective task, and two questionnaires. During the first stage, it was expected that data yielded would provide insight into the kanji learning strategies employed by this type of learner throughout a semester, thus addressing research questions 1.1 and 2.1 (see research questions for clarification). The first and second stage of the study addressed the second set of research questions (see research questions 1.2 and 2.2), which focused on changes in learning over the year including the effect of a raised awareness of kanji learning strategies. An awareness-raising activity took the form of a 50-minute intensive training episode conducted mid-year using methods based on similar training episodes in previous research in the field of language learning strategy awareness raising (see section 3.4.6 for discussion). It was expected that throughout the course of the study, students would have their awareness raised of varieties of strategy use due to participation in the project. The inclusion of an awareness raising activity was to ensure all students had been exposed to a comparable level of conscious awareness raising, by doing it in a deliberate manner. Table 3 is a summary of this research procedure. Each component of the procedure will be outlined in greater depth in later sections of this chapter.
Table 3: Research procedure

<table>
<thead>
<tr>
<th>Research Procedure</th>
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</thead>
<tbody>
<tr>
<td><strong>Stage One:</strong> Investigating kanji learning of learners of Japanese 6th October, 2006 – 16th January, 2007</td>
</tr>
<tr>
<td>Step</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td><strong>Stage Two:</strong> Investigating effects of a raised awareness of strategies on kanji learning 16th April, 2007-9th 15th July, 2007</td>
</tr>
<tr>
<td>4</td>
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<tr>
<td>5</td>
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<tr>
<td>6</td>
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</table>

In summary, the research procedure took place over the period of one academic year. The procedure involved the frequent use of interviewing and introspective study tasks with all participants, which coincided with bi-weekly kanji tests in the participants' Japanese language classes. Although the procedure was broken into two stages by the awareness-raising task, the flexible design took into account any awareness raising that may have occurred prior to the episode, due to participation in the project. Also, data collection on kanji learning continued through to the completion of the study, thus the boundary between the two stages was more flexible than the outline suggests. Two questionnaires were given to all participants at the beginning and end of the study for comparison of self-reported kanji strategy use and motivation control.
3.4 Instrumentation

The following section looks at the instrumentation of the current study. This section will first discuss the need for prior instrumentation in research design, before outlining the instruments used in the study: Interviews, two questionnaires, stimulated recall sessions, and documentation. During the discussion of these instruments, the section will also discuss issues of validity and reliability in using each one.

3.4.1 Considerations of instrumentation

In case study approaches, there are arguments for and against flexible and rigid instrumentation, however it is suggested that careful instrumentation increases a study's internal validity, generalizability and manageability of data and results. Miles and Huberman (1994) state: “[multiple-case studies] look forward to cross-case comparison, which requires some standardisation of instruments so that findings can be laid side-by-side in the course of analysis” (p. 34). In regard to comparability of the study, they argue:

Using the same instruments as in prior studies is the only way we can converse across studies. Otherwise the work will be non-comparable, except in a very global way. We need common instruments to build theory, to improve explanations or predictions, and to make recommendations about practice. (Miles & Huberman, 1994, p. 35)
The current study had relatively focused research questions and a well-bounded sample of participants, for which Miles and Huberman suggest a well-structured instrument design. The instrumentation for the current study, therefore, was relatively well structured prior to investigation and was based on the conceptual framework. The structure, however, remained relatively flexible to adaptation if, after the commencement of the study, this framework changed due to context-specific particularities that arose.

The current study employed semi-structured interviews and a stimulated recall task as the primary methods of data collection in its research method. These interviews and tasks were conducted for each of the twelve participants on a bi-weekly basis throughout both semesters. Two questionnaires were also used as a third and fourth instrument in which to triangulate data from the interviews and tasks. Considerations for each of these instruments are discussed in further detail in the next section.

3.4.2 Semi-structured interviews

Semi-structured interviews were one of the primary instruments used to collect data from students regarding their kanji learning within this study. According to Burns (2000), semi-structured interviews “permit greater flexibility than the close-ended type and permit a more valid response from the informants’ perception of reality” (p. 424). Robson (2002), outlines the characteristics of semi-structured interviews as having:
...predetermined questions, but the order can be modified based upon the interviewer’s perception of what seems most appropriate. Question wording can be changed and explanations given; particular questions which seem inappropriate with a particular interviewee can be omitted. (p. 270)

In Powney and Watts’s (1987) terminology, semi-structured interviews, like fully structured interviews, are still respondent interviews, meaning control in the interview is still in the hands of the researcher (see, Robson, 2002; Cohen et al., 2007, for detailed discussion). Semi-structured interviews, therefore, not only give the researcher enough flexibility to obtain valid responses from the respondent without answers being led by researcher perception, but also allow researchers to maintain control of the type of information they are obtaining from each respondent to make analysis across cases possible.

The purpose of the first stage of the proposed study was to follow the kanji learning of twelve learners over a year of Japanese language instruction. Interviews were conducted bi-weekly with each participant to correspond with each of the bi-weekly kanji quizzes in the kanji lessons in which they were enrolled. The full list of questions and prompts asked in the interviews and is based on the example interview schedule for semi-structured interviews prescribed by Robson (2002), and are included in appendix C. Areas in which the researcher may prompt the interviewee to comment further follow each of the main questions.
The initial questions were only asked in the first interview to ascertain the learning background of the learner and to gain a richer understanding of factors prior to the study, which may have had an influence on the learner’s learning strategies. All other questions were asked in the bi-weekly interviews, and involved the introspection of students into their language learning.
Table 4: Interview questions and probes

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<th>Part Three: Motivation control Strategies</th>
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<th>Part Four: Cognitive Strategies</th>
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<th>Part Five: General Conclusions</th>
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3.4.3 Validity of introspective and retrospective instruments

The semi-structured interview requires introspection of the students into their own learning. It has been argued that introspection is problematic due to incorrect reporting by participants. Larsen-Freeman and Long (1991), however, make the following observation in regard to introspection, which holds particular relevance to the proposed study:

Introspection is perhaps the "ultimate qualitative study" in second language acquisition research, in which with guidance from the researcher, learners examine their own behaviour for insights into SLA [second language acquisition]. Some SLA researchers question the validity of these insights due to learners not being able to accurately report the true processes taking place within the learner's development. Others, however, argue that other methods such as observation cannot provide access to learners' conscious thought processes. In the field of language learning strategies, O'Malley and Chamot (1985a) discovered learner introspection was a successful means in identifying learning strategies, as opposed to other methods such as teacher interviews and observations, which were met with little success. (p. 15)

Larsen-Freeman and Long (1991) use O'Malley and Chamot’s (1985) study as a model of how introspection can be a successful tool in second language
acquisition research. Such a tool, therefore, is of great significance to the proposed study which, like the O’Malley and Chamot studies, is concerned with the identification of learning strategies used by the individual learner when learning language, particularly in regard to memorization.

In a recent evaluation of research methods in the field of strategy research, Takeuchi et al. (2007) make the following observation:

As the field moves towards a deeper understanding of strategy use influenced by particular cultural, contextual, and individual factors, retrospective interviews re-emerge as an important tool providing opportunities for exploration and elaboration of aspects of strategy use.

(p. 94)

Furthermore, in a recent evaluation of writing research, Hyland (2010) claims introspection methods have been extremely productive in the investigation of strategies students use. Thus, the current study aims to take advantage of this tool in its investigation of the context specific task of kanji learning and strategy use.

3.4.4 Stimulated recall task

On the topic of strategy research Tseng et al. (2006), offer the following recommendations:
Learning strategy use and, more generally, strategic learning, have typically been measured by self-report questionnaires in the past, since strategic learning is driven by mental processes that do not often lend themselves to direct observation and, therefore, for an accurate assessment of the extent of their functioning we need to draw on the learners’ own accounts. We must note at this point that increased utilization of stimulated recall methodology (cf. Gass and Mackey 2000) offers a promising future research direction in this area, but so far little research has been done in this vein... (p. 82) ...researchers need to apply other, more qualitative methodologies (such as stimulated recall and structured observation) to achieve a fuller understanding of the whole picture. (p.96)

In response to this call, a stimulated recall task has been embedded within the semi-structured interview (see item 8), to draw on the participants’ mental processes when learning kanji. Mackay and Gass (2005) define stimulated recall as:

An introspective technique for gathering data that can yield insights into a learner’s thought processes during language learning experiences. Learners are asked to introspect while viewing or hearing stimulus to prompt their recollections. (p. 266)
The stimulated recall session involved students reviewing a kanji list and retaking their bi-weekly kanji tests in front of the researcher, while voicing their thoughts on how they recalled each of the kanji. During the stimulated recall, the participant was required to describe to the researcher the process by which they could recall each kanji that appeared on the test. Therefore, the process involved during the stimulated recall was that of retrieval, which Matlin (2005) describes as locating and accessing information in the memory. During retrieval, students accessed each kanji via the associations used to encode the kanji when studying, thus giving clues as to how the kanji was memorized. The stimulated recall, therefore, only examined the reading of kanji and not the written production, which requires a different process. The writing process was not explored in the research questions or design.

The stimulated recall was the major source of information pertaining to each student’s kanji learning processes. This item, therefore, required particular attention in its instrumentation in regard to its validity. According to Mackay and Gass (2005), stimulated recall has potential problems related to issues of mistaken memory and retrieval, ill-timing and poor instructions. To combat these issues, Mackay and Gass (2005) make four suggestions to carefully structure stimulated recalls:

1. Data should be collected as soon as possible after the event that is the focus of the recall.

2. The stimulus should be as strong as possible to activate memory structures.
3. The participants should be minimally trained; that is, they should be able to carry out the procedure, but should not be cued into any aspects that are extra or unnecessary knowledge.

4. The researcher should take care to not lead or interfere with the recall process.

Thus, these suggestions were considered when constructing the format of the stimulated recall session for the current study.

In the stimulated recall sessions, students were also asked how they memorized each of the kanji, which encouraged them to comment on learning processes that happened in the past, making parts of the activity a retrospective task. Nunan (1992) argues, retrospection is a useful instrument in educational research in situations where it is "neither feasible nor desirable to collect data during a performance task such as test taking" (p. 126). According to Vandergrift (2010), the reliability of stimulated recall protocols is clearly connected to the amount of time between the stimulated recall session and the event being discussed. Nunan (1992) outlines appropriate steps to increase reliability of retrospection, which the current study considers in the implementation of this instrument:

Ensuring the data are collected as soon as possible after the task or event has taken place can enhance reliability of the data. If subjects are provided with sufficient contextual information, the reliability will also be enhanced. Steps should be taken to ensure that subjects do not make inferences that go beyond the task, and that researcher bias is eliminated.
In accordance with these steps, which are echoed in the suggestions made by Mackay and Gass (2005) on stimulated recall, the interviews with each student were always conducted on the same day as the bi-weekly kanji tests for which they had studied. In addition to this, the format of the stimulated recall was such that there was as little input from the researcher as possible to minimize researcher bias. The students were also placed in a similar context as the kanji test, and essentially replicated the test environment, while voicing the strategies used to recall each of the kanji—thus strengthening the stimulus and context.

Kanji for the stimulated recall were obtained from the bi-weekly kanji lists, after the participants sat the associated bi-weekly quizzes. The exact procedure of the stimulated recall session is outlined below.

On the day of completion of each kanji test, each participant was interviewed in a private room on the university campus, meaning data were collected “as soon as possible after the event that [was] the focus of the recall”, as suggested by Mackay and Gass (2005, p. 78). Each participant was asked to examine the test while telling the researcher the answer to each of the test items while verbally explaining how they came to this answer. Participants, essentially, relived the test condition in verbal format and performed a "talk-aloud" about their cognitive processes, fulfilling the requirement that “the stimulus should be as strong as possible to activate memory structures” (Mackay & Gass, 2005, p. 79).
The role of the researcher during the stimulated recall was minimised to the action of pointing to kanji for the participant to respond to, thus eliminating research interference and bias. At times, however, the researcher had to ask one of the following three questions to elicit further information from the learner: (1) What is the answer to this one? (2) How do you know? How did you remember it? (3) How do you know it means (that)? Verbal interaction from the interviewer was kept to a minimum to lessen the risk of 'leading the witness' and to strengthen the reliability of data received (Nunan, 1992, Mackay & Gass, 2005; Vandergrift, 2010).

The stimulated recall procedure is a useful instrument to examine the cognitive strategies used by a student in the recollection of kanji. Other strategies of a non-cognitive nature however, are applied outside of the test-taking context and are often part of a regular study regime (Items 2-9 in the semi-structured interview allowed students to comment on these strategies). However, because as much as a week may have passed between these study acts and the interview, this may cause a threat to the reliability of the data obtained in the interview (Nunan, 1992). For this reason, a 10-minute study session was given to the students immediately before the recall sessions in order for students to refresh their memory on study techniques used to bring the process of actual kanji memorization and the time of recall closer.

In summary, the stimulated recall was carefully structured in response to Nunan's (1992) and Mackay and Gass's (2005) suggestions for instrumentation, which stated that retrospection is an appropriate tool in educational research
and can be a reliable tool if conditions such as those outlined in this design are met. Support for the proposed design is further achieved through the successful implementation of it in a previous study on kanji learning (Rose, 2003).

3.4.5 Questionnaire

Data on kanji learning was also collected in the form of two questionnaires on kanji learning administered at the beginning and end of the project. Questionnaires in strategy research have been criticized in recent research (see, for example, Dornyei, 2005; Tseng et al., 2006; Woodrow, 2005). Even though the questionnaires were used in the current study as a secondary data collection instrument in which to triangulate data, the instrumentation of these questionnaires in light of these criticisms was nevertheless very important.

As the questionnaires were a secondary data source, results from these instruments were not used to make claims of strategy use in the kanji-learning task. They instead were used to compare data from the primary instruments by adding a further dimension of self-reported strategy use by the participants. According to Nunan (1992, p. 143), "the construction of valid and reliable questionnaires is a highly specialized business" due to type, order and wording of questions. For this reason, the study adapted questionnaires from other studies in the field of kanji learning to strengthen the reliability of data collected and comparability of results.
The first questionnaire, called the Questionnaire for the Strategic Learning of Kanji (QSLK) was used to measure strategies when learning kanji. This questionnaire is an adaptation of the Strategy Inventory for Learning Kanji (SILK), compiled and used by Bourke in her 1996 study. The SILK is a Likert scale questionnaire created with the intention of gathering information about students' kanji learning strategies. The SILK questionnaire concept was originally born from the Oxford SILL model, which as described in previous sections, was brought under much criticism. Criticism of SILL included the psychometrically unjustifiable computation of mean scores (Dornyei, 2005), unspecific contextual and cultural boundaries (Woodrow, 2005), and invalidity of using a Likert scale (Dornyei, 2005; Woodrow, 2005). While the SILK does not fall into the same pitfalls as the SILL in that it is context specific to the task of kanji learning and does not compute mean scores, it does however use a Likert scale similar to that of the SILL. For this reason, the SILK was adapted and reworded for the current study. Statements that were not directly related to kanji learning were omitted, and others related to component analysis—an area that has had more emphasis in recent research were added (see, for example, Flaherty and Noguchi, 1998; Shimizu and Green, 2003; Toyoda and Kubota, 2001). Other categories such as the category of associating kanji with sound were absorbed into the association category to reduce the number of overlapping categories. In addition, the Likert scale of the SILK, which measured frequency and thus could not be said was in a linear relationship, was replaced with a scale in which answers were in the linear relationship of “not true at all of me” to “very true of me”, which critics of the SILL have argued is more justifiable (Dornyei, 2005). The resulting questionnaire created for the current study was
termed the Questionnaire for the Strategic Learning of Kanji or QSLK (see appendix A).

The second questionnaire was a measure of self-regulatory capacity of kanji learning (SRCKan), which was based on the template of the questionnaire developed by Tseng et al. (2006) to measure the self-regulatory capacity of vocabulary learning (SRCVoc). The SRCVoc was developed as a more psychometrically accurate alternative to traditional questionnaires on strategic learning, which rather than measuring strategy use, measures the “learner’s underlying self-regulatory capacity that will result in strategy use” (Dornyei, 2005, p. 184). The creators of SRCVoc argue the questionnaire not only has good psychometric properties based on empirical evidence, but can serve as a template for other language skills. Thus, based on these claims, the SRCKan was created on this template to obtain a more accurate measure of the underlying self-regulatory capacity of the participants in the study. The taxonomy of the questionnaire also served as a framework for the semi-structured interview questions as witnessed earlier.

In summary, instrumentation of the questionnaires used in the study addressed issues raised by and criticisms against previous models, by adapting the questionnaires so they were no longer subject to the same problems. The questionnaire framework, however, remained relatively unchanged in order to meet Miles and Huberman’s (1994) calls for use of the same instruments in prior studies in order to make results comparable, and for theory building to remain possible.
3.4.6 Awareness raising & the Hawthorne effect

In addition to the investigation of students’ kanji learning over the course of a year, the proposed study examines the effectiveness of a raised awareness of kanji learning strategies in its second stage of research. The rationale behind this approach is two-fold: (1) to explore awareness raising of kanji strategies on kanji learning over the timeframe of the study, which is an area of needed investigation; and (2) to embrace the limitation of the Hawthorne effect on the study, by incorporating it into the research framework.

The Hawthorne effect is defined as a research effect whereby “the excitement and increased attention caused by the fact that there is a research project going on may affect the participants’ output benefit” (Dornyei, 2001, p. 235). The effect is named after a research site in Chicago where it was first documented that work production increased when the researchers were present. In regard to the impact on educational research, Burns (2000), argues:

The implication of this Hawthorne effect can have a serious impact on educational experiments where, for example, the enthusiasm and interest of teachers and pupils engaged in an experiment on new teaching methods or new curricula content will produce results that show tremendous gains in performance. (p. 149)

In the realm of qualitative research, Mackay and Gass (2005) say that learners “may perform better due to positive feelings at being included in the study” (p. 176). In terms of the current study, while it is not the purpose of the project to
discover cause and effect through experimental design, it was possible that the presence of the researcher and the ongoing interviews would both change student behavior and raise student awareness of strategies used to study kanji throughout the time frame of the project. In fact, studies of vocabulary strategy use, which are not dissimilar in design to studies of kanji strategy use, are particularly susceptible to the Hawthorne affect, due to participants reorienting themselves to the aims of the study (Hirsh, 2010). In fact, according to some researchers into strategy based instruction, alert learners can have their awareness of strategy use raised through means of reading a questionnaire that lists strategies such as the one used in this study (Rubin, Chamot, Harris & Anderson, 2007). The effects on student behaviors are minimized in the study due to the longitudinal nature of the study, over which the Hawthorne effect is expected to wear off over time (Burns, 2000). However, the impact of this raised awareness on kanji learning behavior is significant. To combat this problem, the research framework will embrace the effect of raised awareness throughout the study, by incorporating an awareness-raising element into the study, in order to examine its effect on kanji learning. The study will not make claims that awareness raising changed kanji learning behavior, as the rigid experimental design is not provided. The research can, however, make claims of changes in behaviors over a time of increased awareness, which includes participation in the study and involvement in an awareness-raising episode. That is, claims can be made of changes in kanji learning over time in an environment where awareness of kanji learning strategies was raised. It was thought that the inclusion of an awareness-raising episode would help balance an inequality that might be created where participants’ awareness had already been raised to
differing degrees of severity due to the impact of the Hawthorn effect.

Now that the rationale for the inclusion of an awareness-raising episode has been explained, this section will show how, based on previous studies, the format for the awareness-raising episode was constructed. While many researchers have focused on learning strategies used by language learners, far fewer have investigated the teaching of these strategies. A number of studies have already suggested the teaching of learning strategies significantly affects the range of strategy use (de Courcy & Birch 1993), motivation (Birch, 1995) and proficiency test results (Feyton, Flaitz, & LaRocca, 1999; Flaitz, Feyten, Fox & Mukherjee, 1995; Pappa, Zafiropoulou & Metallidou, 2003). While the de Courcy and Birch (1993) study incorporated strategy instruction throughout the curriculum, the other studies (Feyton et al., 1999; Flaitz et al., 1995; Pappa et al., 2003) incorporated learning strategy instruction into a 50-minute awareness-raising episode, with significant results. A previous study (Rose, 2003), also found a 20-minute awareness-raising episode to have significant short-term effects on students' kanji learning. While there is a good argument that raising strategy awareness is best undertaken over a series of episodes through its incorporation into the curriculum, unlike the de Courcy and Birch (1993) studies, in the current study the researcher was not the teacher. This approach, therefore, was impossible due to the disruption it would cause to the curriculum. Such a disruption would threaten validity of the study due to excessive amounts of input from the researcher into the environment being researched. The study, therefore, took the approach of previous studies that have highlighted the benefits of intensive strategy awareness-raising episodes with measures of
success (Feyton et al., 1999; Flaitz et al., 1995; Pappa, et al., 2003; Rose, 2004).

The awareness-raising episode combined information on kanji learning from previous studies and kanji learning strategies observed from this group of learners in the first stage of the study. The workshop consisted of two parts. In the first part, the researcher explained all of the observed learning strategies listed on the QSLK, which were compiled from previous research in the field of kanji learning and from preliminary results obtained in the first stage of the study of kanji learning strategies of students learning Japanese in this particular setting. The rationale behind this was that these were strategies to which the students would have already become exposed, and thus may have already had an impact on their awareness. This approach follows advice from Rubin et al. (2007), that such questionnaires are an effective way to raise awareness for older learners. The second part involved a teacher-mediated discussion where students discussed ways in which they already study kanji and ways in which to incorporate new learning strategies into their kanji learning. The purpose of the workshop was for students to evaluate their kanji learning and to expose them with a wider repertoire of strategies they could use in the future. This is a necessary part of awareness raising, considering theory indicates that a wider knowledge of learning strategies predicts achievement as the usefulness of certain strategies is different for each individual (Oxford, 2001; Rubin et al., 2007). Theory suggests, therefore, that such a workshop may assist in evening out inequalities of levels of awareness raised throughout the study because of the Hawthorn effect.
3.4.7 Documents

The collection of documents in case study research is often necessary to provide another dimension to the data collected (Robson, 2002). In the field of educational research, Robson (2002) suggests the collection of documents such as curricula, course outlines and other course documents that can be acquired in conjunction with interviews and observations. Miles and Huberman (1994, p. 54), stress such documents are lengthy and need clarifying and summarizing. This study, therefore, used document summary forms as modelled by Miles and Huberman (1994) to record, code and file these documents. While such documents were not a primary data collection source that led to answering the research questions, such documents provided insight into the curriculum and classroom activities surrounding each list of kanji around which the interviews and kanji learning took place. These insights in turn led to a greater understanding of the learning context when analyzing data and discussing the results.

3.4.8 Summary

In summary, decisions regarding instrumentation in the current study were carried out carefully according to recommendations from authorities both in the field and on research methodology. In answer to calls for more qualitative strategy research (Dornyei, 2005; Tseng, et al., 2006; Woodrow, 2005), the current study decided on the use of semi-structured interviews, which were modeled on samples by Burns (2004). A stimulated recall task was also decided
on as a primary instrument following recommendations from Tseng et al. (2006) that they offer “a promising future research direction in this area, but so far little research has been done in this vein” (p. 82). To eliminate potential issues associated with introspective research designs, the stimulated recall task was constructed following guidance in research methodology literature (Mackay and Gass, 2005; Nunan, 1992). Third, two questionnaires were constructed to offer a secondary data source in which to triangulate findings from the interviews and stimulated recall tasks. To improve comparability of results, these questionnaires were modeled on two previous questionnaires (Bourke, 1996; Tseng et al., 2005), and adapted for the kanji-learning context in light of recent criticisms regarding questionnaire use in strategy research (Dornyei, 2005; Woodrow, 2005). Fourth, the rationale behind the inclusion of a strategy awareness-raising episode into the research design was explained in order to embrace the potential impact of the Hawthorn effect. In conclusion, the instrumentation of the current study was carried out to not only ensure flexibility in design and comparability of results, but to also ensure the maximum validity and reliability of data collected.

3.5 Data analysis

In this section, data analysis in the study is discussed. First, coding is described in terms of its usage in qualitative research, followed by an explanation of the coding scheme used in the current study. Finally, methods of data analysis in qualitative research are discussed, followed by a discussion of validity and reliability of this analysis.
3.5.1 Data coding

*Codes* are “tags or labels for assigning units of meaning to the descriptive or inferential information compiled during a study” (Miles & Huberman, 1994, p. 56). The action of *coding* refers to the conversion of qualitative data to these labels, or key words and phrases (Holliday, 2010). Richards (2005) provides a useful explanation of the coding process in qualitative research:

In common use, ‘coding’ refers to data reduction either by a system of symbols (as in Morse code which reduces everything to dots and dashes) or by numbers (as in the coded boxes to tick on a questionnaire)... ...But qualitative coding is about data retention. The goal is to learn from data, to keep revisiting it until you understand the patterns and explanations. (pp. 85-86)

Richards (2005) identifies three types of coding used in qualitative research: (1) descriptive coding—like quantitative coding, where attributes of cases are coded such as age, gender and background; (2) topic coding—labelling text according to its subject to categorize data; and (3) analytical coding—central to qualitative research, which “leads to theory emergence and theory affirmation” (p. 88). Other slightly different terminology and definitions are sometimes used, such as: Open coding, Axial coding and Selective coding (Robson, 2002; Strauss & Corbin 1998); or descriptive, interpretive, and pattern coding (Miles & Huberman 1994). Whatever the terminology used, it is important to outline that different
types of coding exist for different purposes in qualitative research, and that these codes facilitate the process of data analysis.

In order to code data effectively, researchers need to develop a coding scheme. Coding schemes “contain predetermined categories for recording what is observed (Robson, 2002, p. 325). In regard to the creation of codes for use in coding schemes, Miles and Huberman (1994) suggest:

One method of creating codes—the one that we prefer—is that of creating a provisional “start list” of codes prior to fieldwork. The list comes from the conceptual framework, list of research questions, hypotheses, problem areas, and/or key variables that the researcher brings to the study. (p. 58)

Thus, the current study’s start list of codes (see Table 5) was created based upon research questions and conceptual framework, including key variables.

Kanji learning strategy codes were adapted from previous research in this field (see for example Bourke, 1996; Toyoda and Kubota, 2001), a preliminary study (Rose, 2003), and the taxonomy of the QSLK. Motivation control strategy codes were modeled on Dornyei’s (2005) taxonomy of self-regulatory capacity, and items on the SRCKan. Other codes were modeled on key variables in the conceptual framework, known to affect strategy choice and kanji learning, such as: instruction (see for example Shimizu & Green, 2002; Flaherty & Noguchi, 1998); language proficiency (see for example Bourke, 1996; Toyoda, 1998), and
other factors such as gender, background, course enrolled in, motivation, attitude and so on (see for example Nyikos & Oxford, 1993; Oxford & Nyikos 1989). In the third column of the start list of codes is the instrument in which data is likely to appear for this code. The fourth column displays a secondary source for which this data may also be found, thus facilitating triangulation in data analysis.
### Table 5: Start list of codes

<table>
<thead>
<tr>
<th>Start list of codes for analyzing data</th>
<th>Code</th>
<th>Main data Source</th>
<th>Secondary data source</th>
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<td>BG-CHA</td>
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<tr>
<td>BG: PREVIOUS STUDY—TYPE</td>
<td>BG-TYP</td>
<td></td>
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<tr>
<td>BG: PREVIOUS STUDY—LENGTH</td>
<td>BG-LEN</td>
<td></td>
<td></td>
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<tr>
<td>BG: PREVIOUS STUDY—KNOWN KANJI</td>
<td>BG-KAN</td>
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<td>BG: PREVIOUS STUDY—DIFFICULTY</td>
<td>BG-DIF</td>
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<tr>
<td>BG: PREVIOUS STUDY—ACTIVITIES</td>
<td>BG-INS</td>
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<tr>
<td>LEARNING STRATEGIES</td>
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<td>INT</td>
<td>QSLK</td>
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<td>LS-COG</td>
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<td>LS-MCO</td>
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<td>LS-SOC</td>
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<td>SELF EVALUATION</td>
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<td>SE: STRATEGY USE</td>
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<td>SE: STUDY HABITS</td>
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<td>SE: DIFFICULTY</td>
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<td>KANJI LEARNING STRATEGIES</td>
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<td>STIM</td>
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<td>KL-PIC</td>
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<td>KL: COMPONENT ANALYSIS</td>
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<td>KL: REPETITIVE WRITING</td>
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<td>KL: MNEMONIC</td>
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<td>KL: OPPOSITE PAIRING</td>
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<td>KL: SIMILAR PAIRING</td>
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<td>KL: WHOLE KANJI</td>
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<td>MC: METACOGNITIVE CONTROL</td>
<td>MC-MET</td>
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<td>MC: SATIATION CONTROL</td>
<td>MC-SAT</td>
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<td>MC: EMOTION CONTROL</td>
<td>MC-EMO</td>
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<td>MC: ENVIRONMENTAL CONTROL</td>
<td>MC-ENV</td>
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</table>

INT: Interview  
STIM: Stimulated Recall Task  
QSLK: Questionnaire of Strategic Learning of KANJI.  
SRCKan: Self-Regulatory Capacity of KANJI Learning (Questionnaire)  
DOC: Documents. OBS: Observations
At this point it is important to clarify that this start list of codes changed and developed as data were collected and analyzed—a normal and necessary process of qualitative research, as Miles and Huberman (1994) explain:

For all approaches to coding—predefined, accounting-scheme guided, or post-defined—codes will change and develop as field research continues. Researchers with start lists know that codes will change; there is more going on there than our initial frames have dreamed of, and few field researchers are foolish enough to avoid looking for these. (p. 61)

Thus, as data were coded and analyzed, codes were changed. Furthermore, even the medium of coding changed when the researcher turned to coding software called Nvivo8.

Nvivo8 made it possible to code without the abbreviated code system, and the taxonomy changed slightly to fit into NVivo8’s node coding system. “In information systems, the term ‘node’ is used to indicate either a terminal point or a connection in a branching network” (Bazeley, 2007, p. 83). In regard to coding qualitative data in NVivo8, Bazeley (2007), goes on to explain:

At first you will probably use free nodes to store your coding. Free nodes do not presume any relationship or connections – they serve simply as ‘dropping-off’ points for data about ideas you want to hang on to. Later these are likely to be organized and moved into trees – hierarchical,
branching structures in which parent nodes serve as connecting points for subcategories or types or concepts. (p. 83)

For the current project, trees of nodes were created based on the start list of codes and known relationships based on taxonomies from previous research. However, as the coding took place, free nodes were created for information that did not fit into existing schema, which were added into the trees as relationships were discovered. As an example of some of these relationships, figures 1 and 2 are illustrations of the tree nodes used to code data connected to strategy use and motivational control.

3.5.2 Data Analysis

The current study draws from the Miles and Huberman approach to qualitative data analysis, which Robson (2002, p. 473) claims provides "an invaluable framework for conceptualising qualitative data analysis", especially in case study research. Miles and Huberman (1994) discuss within-case and cross-case data analysis—both of which will be employed in the data analysis of the current study. Table 6 contains the data sources and analysis in relation to each of the research questions.
**Table 6: Original outline of data analysis**

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Main Instrument</th>
<th>Example of data analysis (Miles and Huberman 1994)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong> In terms of learning strategies, how do learners of Japanese from alphabetic language backgrounds learn kanji in a year-long study programs in universities in Japan?</td>
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<td></td>
</tr>
<tr>
<td>1.1 How do learners of Japanese learn kanji within this setting?</td>
<td>A. Stimulated Recall</td>
<td>Coded according to strategy use. Results then compared across cases.</td>
</tr>
<tr>
<td>1.2 How do these learning patterns develop over a semester of kanji instruction including a raised awareness of strategies due to participation in the project?</td>
<td>A. Stimulated Recall</td>
<td>Time-ordered displays of strategy use within cases. Results of analysis compared across cases.</td>
</tr>
<tr>
<td><strong>2.</strong> In terms of self-regulation, how do learners of Japanese from alphabetic language backgrounds regulate their learning of kanji in a year-long study program in universities in Japan?</td>
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<tr>
<td>2.1 How do learners of Japanese regulate their learning of kanji within this setting?</td>
<td>A. Interviews</td>
<td>Coded according to motivation control strategies. Results then compared across cases.</td>
</tr>
<tr>
<td>2.2 How do learning patterns develop over a year of kanji instruction including a raised awareness of strategies due to participation in the project?</td>
<td>A. Interviews</td>
<td>Time-ordered displays of motivation control within cases. Results of analysis compared across cases.</td>
</tr>
</tbody>
</table>

First, in regard to within-case analysis, time-ordered matrices may be useful in the analysis of data on individual cases in terms of their development as a learner in the key areas of kanji learning over the year period. Of particular interest to the research questions is the students’ use of particular learning
strategies over this period of time, although other factors that affect kanji learning cannot be ignored in this analysis. It is hoped that through time-ordered matrices, shifts in kanji learning in individual cases will become apparent.

Second, the study involves the use of multiple cases, thus cross-case displays are imperative in the analysis of data. In cross-case analysis, matrices will be used in the examination of variables on students’ kanji learning, such as proficiency level. Cross-case displays will highlight patterns in kanji learning across all cases and over time.

Third, the existence of a raised awareness in the research design means the concept of 'causality' may be examined in the data analysis. Miles and Huberman (1994) state the following argument about assessing causality in qualitative research:

The conventional view is that qualitative studies are only good for exploratory forays, for developing hypotheses—and that strong explanations, including causal attributions, can be derived only through quantitative studies, particularly with the classical experimental-control design. With Maxwell (1984), we consider this view mistaken. Seeing that an experimental group had effect X that controls did not, tells us nothing about what went on in the "black box”. We don't understand how or why it happened, and can only guess at the mechanisms involved. We
consider qualitative analysis to be a very powerful method for assessing causality. (p.147)

Strategy research has shown there to be an increasingly large number of variables that can affect strategy use within the individual learner. These variables must be considered in the assessment of a causal relationship between awareness raising and kanji learning. Information from time-ordered and case-ordered matrices can be used to build a causal network for each case of the most important dependent and independent variables (Miles & Huberman, 1994). Thus, in doing so, although it cannot be stated that A caused B, the researcher can thoroughly examine the mechanisms involved in awareness raising and kanji learning in a far more analytical sense than quantitative design could offer.

3.5.3 Summary

The study analyzes data from a number of cases, thus both within-case and across-case data analysis frameworks are used. The study uses frameworks established by Miles and Huberman (1994) in its analysis, although this analysis remains flexible enough to adapt to different kinds of case-specific data that may arise. The study incorporated analytical functions in NVivo8 coding software to make these comparisons possible. The study analyzes causality in cases, but results drawn from this analysis will help build theory on kanji learning and strategy instruction as opposed to generalized to cases outside the study's boundaries.
3.6 Ethical considerations

Development in the area of educational research in recent years has been accompanied by a growing awareness of ethical issues that must be addressed by researchers. This is necessary to protect and respect those involved in, and affected by, their investigations (Cohen, Manion & Morrison, 2007). As a reflection of this concern, an increasing emphasis is placed on ethical concerns in literature on research methodology (see, for example, Cohen et al., 2007; Neuman, 2003; and Nunan, 1992). This section will explore the ethical considerations of the current study based upon this literature. This current study addresses the following ethical concerns: (1) informed consent; (2) anonymity of participants; (3) permission to conduct the study; and (4) the creation of new equalities.

3.6.1 Informed consent

One of the main ethical issues of the current study is that it involves human participants and, therefore, requires informed consent (Neuman, 2003). According to Cohen, Manion and Morrison (2007, p. 350):

The principle of informed consent arises from the subject’s right to freedom and self-determination… ...and when restrictions and limitations are placed on that freedom they must be justified and consented to, even in research proceedings.
Furthermore, a requirement of informed consent is that participants understand that participation in the study is voluntary, that information will be kept confidential (Casanave, 2010). In addition to this, it is University policy that all participants must understand that they have the right to withdraw from the research at any time (Human Ethics Committee, 2010). Thus, in accordance with ethical procedure, consent was obtained from all participants in the study. All participants were given a participant information statement, which described the nature of the study and participants’ voluntary role, thus, complying with ethical research. See appendix D1 for participant information statement, and appendix D2 for consent form.

3.6.2 Anonymity

A further ethical concern of the current study is that of anonymity, which is defined as “the ethical protection that the people who are studied remain nameless” and are unidentifiable (Neuman, 2003, p. 504). According to Cohen et al. (2007), the guarantee of anonymity must be fulfilled by all research unless otherwise arranged with participants in advance. In regard to case study research, Robson (2002, p. 501) argues, due to the importance of context in this type of research, anonymity is more problematic:

Obviously, it is possible to use pseudonyms for persons and settings, but this may not guarantee anonymity (particularly internally), while further changes that you make to seek disguise may distance your report from the reality it is trying to describe or understand. The basic stance usually
adopted is to take reasonable precautions to ensure anonymity, and then publish.

Casanave (2010), echoes this opinion in a recent publication on case study research, arguing that researchers must strive to ensure anonymity through the separation of private information from specific information that can be written about without risk. The current study, therefore, used anonymity through the use of pseudonyms and took extra precautions to ensure anonymity of the university in which the study was conducted. It also aimed to exclude non-essential private information in the data analysis, thus taking reasonable precautions to ensure anonymity.

3.6.3 Permission

A third ethical consideration of this study is that of permission to conduct the study, which Cohen et al. (2007, p. 254) define as “access to the organisation or institution where the research is to be conducted, and acceptance by those whose permission one needs before embarking on this task”. In accordance with University of Sydney policy, ethical approval was obtained from the Human Ethics Committee to conduct the research, which ensures this permission is granted through legal documentation. As part of fulfilling the requirements of the Ethics Committee, head figures of the universities in which data were collected and the head figure from an associated foreign exchange program from which many of the students were based were approached and approval to conduct the study was granted, thus complying with this ethical requirement.
Forms pertaining to permission to conduct research are provided in appendices D3 and D4.

### 3.6.4 Creation of inequality

A fourth consideration for the study that concerns the methodological procedure is what Neuman (2003, p. 98) refers to as the “creation on new inequalities”. In regard to the current study, the ethical dilemma was that participants of the study would receive information regarding kanji learning strategies due to their involvement in the project, whereas non-participant classmates would not. This dilemma was addressed in two ways. First, those students who did not take part in the study were invited to take part in an awareness-raising episode at the end of the first stage of the study. This ensured they received the same raised awareness of kanji learning strategies as their participant counterparts. Second, all participants took part in a debriefing after completion of the study and preliminary analysis of the data to explain to them the results of the study and any kanji learning strategies that were shown to be most effective. Thus, at the completion of the study, and the students’ foreign exchange program, all students had access to complete and equal exposure to the awareness-raising activity.

### 3.6.5 Summary

In summary, the issue of ethics in social research is increasingly important, especially in educational research involving students. Ethical issues such as
informed consent, permission to conduct the study, assurance of anonymity and the dilemma of creating inequality have been addressed along with many others in the study’s methodological design. In accordance with ethical procedure, approval to conduct the study was obtained from the University of Sydney’s Human Ethics Committee before data were collected (Appendix D5).

### 3.7 Chapter summary

In summary, this chapter has examined the methodological considerations in construction of the research framework of the study. Literature in this field has called for qualitative approaches in longitudinal studies, thus the framework includes semi-structured interviews and stimulated recall sessions for a small number of participants over the time frame of one year. To improve comparability with past studies and to ensure triangulation of data, two questionnaires based on previous research will also be administered—one based on a previous study into kanji learning strategies (Bourke, 1996), and the other on recent research into self-regulation and motivation control (Tseng et al., 2006). Limitations into the research design and instruments were discussed with particular attention to issues of retrospective and introspective research, and to the Hawthorn effect. An outline for coding data was also provided, which included a start list of codes as suggested by Miles and Hubermann (1994), and a revised list of NVivo nodes which was adapted from this start list once the coding process had begun. Finally ethical considerations such as consent and
anonymity were discussed to show the current study was conducted within ethical guidelines.

The following two chapters will present the results of the research conducted in this framework.
Chapter 4 Results and Discussion: Strategic Learning of Kanji

The previous chapter examined the methodology of the study, with attention to procedure, design, instrumentation, data analysis, and ethics. This chapter will look at the results of the aspect of the study concerning strategic learning of kanji. This chapter also discusses these results in relation to the literature discussed in chapter two.

Research into the strategic learning of kanji was examined through analysis of data obtained in interviews, stimulated recall sessions, and two questionnaires. The results will be presented and discussed drawing on a taxonomy developed by previous learning strategy research (Bourke, 1996; Rose, 2003). First, direct strategies applied to the kanji learning task will be discussed followed by indirect strategies, which mainly examine metacognitive strategies. Indirect strategies will receive less emphasis in this chapter because of an overlap with motivation control strategies, which also includes the category of metacognitive control.

4.1 Direct strategies and kanji learning

Direct strategies are defined as “processes which may contribute directly to learning” (Grenfell & Macaro, 2007, p. 11). Data from the stimulated recall sessions were coded according to the strategy used to memorize or recall the
kanji. Data from the Questionnaire for the Strategic Learning of Kanji (QSLK) were also used to add another dimension to the data and to highlight any inconsistencies between those strategies observed in the stimulated recall sessions and those strategies self-reported in interviews and questionnaires. Questionnaire responses from the first questionnaire have been illustrated in graph form for ease of representation, although statistical comparison of answers between participants is not intended. They are presented as a secondary data set where interview and stimulated recall session data are compared by means of triangulation of research methods. Data for the second questionnaire is only used in a later section to examine changes in strategy use throughout the course of the study. The data for direct kanji strategies will be examined in five sections: association, mnemonics, component analysis, visual/emotional response and stroke order.

4.1.1 Association

For ease of discussion of results, the broad strategy of association was divided into a number of sub-strategies during data analysis, which were:

1. Pictorial association – associating kanji with pictures

2. Symbolic association – associating kanji with symbols including Japanese hiragana and katakana scripts, English alphabet and other commonly used symbols, such as for numbers, currency, mathematics and so forth.

3. Kanji association – associating kanji with other kanji, either by:
   a. Radical (kanji with the same stem component)
   b. Meaning (kanji with similar meaning)
c. Appearance (kanji that look similar)

d. Sounds (kanji with the same sound)

Association was also examined in terms of whether participants associated the kanji with the English meaning or Japanese reading.

All of the participants used association strategies to some degree in the stimulated recall sessions. Details of strategy use of various participants are examined in further detail under each of the above-mentioned sub-categories.

*Pictorial Association*

All participants reported a high use of a pictorial association, although this reported use was not reflected in stimulated recall data. In the questionnaire, most participants rated the pictorial association strategies the highest rating of a 7 (indicating they felt the statement “I associate kanji with pictures related to their meaning” to be “very true about them”), with only two participants giving a slightly lower rating. Despite claims of high usage, reliance on this strategy was not reflected in the stimulated recall sessions. Although all participants did record at least one use of this strategy throughout the timeframe of the study, it was only the preferred association strategy of one participant, Jeremy who recorded 23 counts of use of the 100 kanji presented in the stimulated recall sessions, with most other participants in the range of 3-8 counts – and often in conjunction with another strategy. The high self-reported use of this strategy may be attributed to pictorial association being the most commonly used strategy when participants first begin learning kanji. Thus, even though this
strategy becomes more ineffective as students encounter more difficult kanji, the participants remain highly aware of its use.

*Symbolic Association*

In regard to symbolic association, each of the participants recorded some usage in the stimulated recall session, although associations were more often made with katakana than alphabet or other known symbols. Examples of how participants used these kinds of association are show below.

1. Kate: The first half of the first kanji is in hanashi (speak). The second one (¥) looks like glorified yen symbol (¥).
2. Maya: Ah, clues, this radical (_mu_). This radical [helps me remember the kanji] because it’s like the Katakana mu (μ).

In these examples, Kate associates the component _tri_ for the currency symbol for Japanese Yen (¥), and the participant Maya associates the top right component in _hitori_ for the katakana symbol μ. In both of these examples, we can see both Maya and Kate use symbolic association to remember just one component of the kanji, indicating a concurrent application of a simple component analysis strategy, which will be examined in a later section of this chapter.

It was common for many participants to use symbolic association concurrently with the application of other strategies as can be seen in the examples below:

1. Maya: Why, hiroi? Oh, my God, that would be – there’s something there like a roof and a Mu (μ).
2. Sue: It's like – it has Kokoro (心) and this. And Ta (تا).

In these examples, Maya uses a combination of pictorial association with symbolic association. She associates the top component of the kanji for 広
(wide) as a pictorial representation of a roof, with the symbolic representation for the katakana ɺ pronounced mu. The participant Sue uses a combination of associations, including an association with a known kanji 心 and the katakana symbol for ta (ง).

Instances of associations with symbols of the English alphabet were rarer, with only three participants (Jeremy, Sue and Kate) making use of this strategy in stimulated recall sessions, and exclusively with the association of the component (阝) for the English letter B, as seen in the examples below:

1. Kate: I remember that because the part (阝) that looks like a “B”
2. Sue: Ah. I will separate the kanji – the part of kanji. So I remember ah, this is a house. This (阝) is a – something like a B in English.
3. Jeremy: Isn’t that for hospital or -byouin. That (阝) helped me to remember it too because that was like a B and it starts with a B - byouin

In these examples Kate makes a simple association for the component (阝) for the letter B. Sue uses the same component, but explains how she uses it in component analysis through separation of the kanji parts. Jeremy, takes the association further by also using the symbol as a mnemonic device to remember the Japanese pronunciation of the kanji, in that he associates a component of the kanji (阝) for the letter B, then uses a mnemonic to associate the “B” sound for the reading of the kanji, “byoin”.

Of these participants, Jeremy and Sue responded highly on the questionnaire regarding association with alphabet, rating the strategy use as a “7” as opposed to Kate who gave it a “2” – “not true of me”, which is an indication of incorrect self-evaluation on the questionnaire. However, on the second questionnaire
given ten months later, Kate recorded a “6” for the same question, indicating later heightened awareness of her use of this strategy throughout the stimulated recall sessions.

Interestingly, the use of association with letters of the alphabet was the least used strategy according to both the questionnaire and stimulated recall sessions, with 5 participants giving it a value of 1 on the questionnaire and 9 participants showing no use of the strategy in stimulated recall sessions. It also received strong opposition from a number of participants when asked to elaborate on their questionnaire answers, such as in the statements below:

_Sam:_ I've never done that [associated kanji with the alphabet], and it's something that I'd try to avoid in principle, too, just because – I don't know. It's usually a little troublesome to have associations that are based on some other language.

_Joshua:_ That feels wrong to me. That feels like it's a very wrong thing to do associating through the alphabet. I don't know.

Paul on the other hand, did not consciously look for associations with letters of the alphabet, but acknowledged an openness to making such associations if the situation arose:

_Paul:_ Yeah. I mean, if I see something, and the symbol correlates with the meaning, then of course I would use it. But I don’t look for the alphabet inside of it.

In this sense, perhaps Kate, like Paul, did not consciously look for associations between kanji and the alphabet, but in the case of the one reoccurring radical of (阝), she saw an opportunity to make this association, as an isolated case.

_Kanji Association_
In regard to association of kanji to other kanji, all participants acknowledged their use of this strategy. All participants gave this a rating of 7 except Joshua and Sam who gave a value of 6 and 5 respectively. All participants recorded frequent use of this strategy in the stimulated recall sessions as can be seen in the following examples.

1. Alex: Well this one is with the gold radical. So you know that it has to do with money.
2. Colton: The one – the one kanji I kept thinking of throughout the whole test was like nomu (飲) and taberu (食), because they have the same kanji, only one’s – one’s the bigger. And then the other kanji is the same kanji as nomu, only it’s smaller, with another symbol with it. So I kept thinking of those two. So even though they’re similar, like eating and drinking, similar actions, they’re also similar looking.
3. Maya: Because I often confuse like those that look the same, like tori. This was – no, I forgot. One of these are like – means bird. That one (鳥). Yeah. And the other means horse (馬).
4. Sue: If it has this kanji (半) in it, it’s always pronounced han or ban. So I can remember it.

In these examples, Alex explains how he uses radicals (stem component of kanji) to group kanji together and also uses them to recall meaning. Colton explains how he associates similar looking kanji that also have a similar meaning. Maya explains how she associates kanji that are similar looking so as not to confuse the different meanings with each other, and Sue uses a component to sometimes predict that the kanji will have a similar sound. Thus, even though participants used association with other kanji in their learning, they employed strategies in varied ways, from associations of radicals, sounds, shape, and meaning. Questionnaire items have been simplified and presented in figure 4 regarding the types of self-reported associations participants made.
Figure 2: Association of kanji

This figure shows questionnaire responses related to strategies where students associate kanji through its appearance, meaning and sound.

Participants in general valued the importance of associating kanji using radicals, which are an important way kanji are categorized in Japanese. This importance is illustrated in the following statements:

Joshua: All the radicals that use the – the – all the kanji that use this (青) this sort of kanji, means blue, or calm. And they've all
got that similar meaning of, you know, calm and blueness and clear skies, or whatever.

Jeremy: And it helps me remember the kanji. Yeah. I mean, like to start off, yeah. Like I usually remember that part. Yeah. Then I can flow through the rest of them, sometimes. Sometimes I’ll just remember the radical in itself, and then freeze on the rest, like what came after it. Especially since it’s in so many kanji. Like that’s probably the easier – easiest part to remember, for me.

Here Joshua and Jeremy express how the radical can help trigger both meaning and remembering the whole kanji, although Jeremy highlights a problem encountered when the radical appears in so many different kanji, that it becomes difficult to remember the non-radical components.

Contrary to Joshua and Jeremy, associating the kanji by radical alone was the cause of frustration for other participants as they encountered more and more kanji of the same radical:

Alex: Yeah. I used to do a lot more of that [comparing radicals] kind of earlier and even ones I had learned before—like when I learned a new one, I kind of tried to make a list of all the same radicals I knew and kind of group them like that but I don’t know if I got lazy or what. I stopped doing that after a while.

Holden: I bought book 2 [kanji learning textbook] and to be honest, book 2 doesn’t use any amazing astounding new system that no one’s ever thought of before. What he’s done is he’s grouped all the kanji together that have the same reading or that have the same radical and I started going through that. But to be honest, I found that not useful—because I wasn’t able to use my imagination or anything like that. It was pretty much just sort of learning it.

Both Alex and Holden in these examples express that grouping kanji according to radical was cumbersome and time-consuming, and both participants made a conscious decision to abandon this strategy.
Participants also, in general, grouped kanji according to those that looked the same or were part of a similar meaning, although in most instances this was done through comparison of similar components—a strategy that will be examined later in this chapter—with one exception when Maya compared kanji according to shape alone:

Maya: So, as I’ve mentioned like the other time, like – where is it? Sha [車], like for the vehicle, I always associate it with Noru [乗], to ride.

Here Maya compares two kanji that do not have a common radical, but instead look very similar. Being a beginner learner of Kanji, Maya is somewhat unfamiliar with radicals, so perhaps still looks for similarities in pictorial associations in the absence of radicals.

Instances of associations of kanji on sound alone were rare in the stimulated recall sessions. Outside the example of Sue, above, who observed kanji that had the common radical of 半 were pronounced han or ban, not a single other count was recorded where a participant did this. This low usage was also evident in the questionnaire data, which indicted low usage with 9 participants giving this strategy a value under 4, with Sue, Maya and Zara indicating some use of this strategy. Interviews with participants elaborated on the opinion of ineffectualness of this strategy, as is illustrated in the following statement in an interview with Colton, during explanation of a questionnaire item:

Interviewer: And some people will link kanji that sound the same.
Colton: Hmm, okay.
Interviewer: And so they’ll do that so they don’t confuse them.
Colton: Yeah, I think that would be more confusing for me.
Two other participants failed to even understand what this strategy was, confusing it with mnemonics (Sam) and rhyme (Tim).

*Summary of Association*

In summary, the interviews, stimulated recall sessions and questionnaire revealed insight into how this group of learners made associations with new kanji. Firstly, pictorial association seemed to be a strategy all participants were aware of, to the point of over-reporting use of it in the questionnaire when compared to actual use in the stimulated recall. Secondly, symbolic association was most common with Japanese kana, which is not surprising considering kana were originally derived from kanji, and thus associations between the two are more obvious than with the symbols of the roman alphabet, which participants made far fewer associations with. Finally, the interviews revealed a wide range of associations with other kanji based on appearance, meaning and sound, indicating the participants in the study approached association strategies in vastly different ways.

**4.1.2 Mnemonics**

Usage of mnemonic strategies among participants varied from extreme frequency to conscious refusal to use them. Interestingly, when a mnemonic was used, it was often used with other strategies such as pictographic association or, more commonly, component analysis. That is, the stories that participants made connected with the components of the kanji. Some examples of this are below:
1. Maya: The verb *taberu*. Yeah. It looks like a house. So, for me, I eat in a house, or I eat in a restaurant which is like a building. So I would always think of it as the building.

2. Colton: Like I always remember this one as *Yasumu* because there's a person resting under a tree. And it's not really a story, but kind of – I know this is person, and I know this is tree. And I just try to picture the person under the tree, and know that that's relaxing. ...Or like *Suki*. I know that that's a mother and a child, and I say, what can be more pleasing than a mother with her child? Like things like that. I don't – I don't make up stories so much as I try to read the pictograph.

3. Sam: That’s profit, so cutting down the stalk of rice for profit.

In these examples, Maya associates the kanji for *taberu* (食) as looking like a building using pictographic association. She then relates the meaning to eat through a mnemonic of eating in a restaurant, which is a type of building. Colton connects the kanji for rest (休) to its meaning by making a story of its components of tree (木) and person (人) by thinking of a person resting under a tree (人＋木＝休). He gives another example of the kanji for like, having the components of a mother (女) and child (子), meaning like (好). Having studied the etymology (origin of the written form) of the kanji compounds, Sam uses a mnemonic to associate meaningful compounds to recall the meaning of profit, in the act of harvesting rice for profit.

In the interview data, some participants made the distinction between meaningful mnemonics (relating the meaning to actual components that have meaning), and “stories” which are less meaningful. In fact, in stimulated recall data there were very few instances where participants employed a mnemonic device that was not also based on an association of meaningful kanji compounds. There seemed to be a consensus among the group of participants that mnemonics were useful only when meaningful, otherwise they had limitations to
language learning.

In fact, many of the participants in the interviews were very cognitively aware of the use of mnemonics as a strategy in kanji learning, and many participants expressed opinions of limitations to studying kanji in this way, or relying too heavily on them, as can be seen in the following interview excerpts. Maya for example, understood the worth of mnemonics but recognized the difficulty of making meaningful connections and their limitations to reading:

Maya: Yeah. That's [using mnemonics is] the only way to make it more interesting, and for it to make sense. Although what I find difficult in making up stories, it's useful for reading kanji, but when you're trying to write it down, it's a bit hard to recall the story. So – hmm.

In the case of Sam, who uses mnemonics with his study of etymology, he did not want to label his learning as using “stories” because of the stigma attached that using stories is “confabulated”:

Interviewer: Okay. Ah, so this is what you've said with the stories.
Sam: Stories I don't do. It's – that's just not a tactic I have tried or thought of trying. It's not one I think would be very helpful for me, either.
Interviewer: Right. Right. There is – in a way, the etymology stories are kinds of stories. Right?
Sam: Yes. But I'd classify that differently. You know, I was thinking more along the lines of confabulation or something like that.
Interviewer: Okay.
Sam: Stories is like here's a kanji, and here's the picture that it's showing, and here's what's going on in that picture, even though that may or may not have anything to do with the etymology of the kanji.
Interviewer: Mm-hmm. Okay.
Sam: Whereas, you know, I'm – I'm trying to remember facts about the kanji as opposed to invent a story and then remember that.

On the other hand, Paul recognized that mnemonics are often ridiculous, but
they serve a purpose for him if they result in memorization of kanji, which he illustrates with the following example:

Paul: At first it sounds ridiculous, if someone explains it to you. “The bunny comes out of the hole, goes around. The cat chases it through the grass to the rice field”. But it still makes sense. I can remember neko [猫—cat] because of that [story].

However, in another case, Alex expressed a dislike for mnemonics entirely. Alex was very aware of the use of mnemonic devices in learning kanji but consciously made a decision not to use them, as can be seen in this excerpt from his interviews:

Alex: I don’t really try to use mnemonic devices or anything. Yeah. I’ve just never really tried. It just seems like you’re sort of going out of your way. I don’t know. It just for me it’s not really natural. It just seems kind of time consuming. Because a lot of times the meaning doesn’t really fit in with -- I don’t know. It just kind of depends. I’ve just kind of gone to just trying to remember it. I don’t think I’m creative enough to make stories for all of these.

This view was supported by stimulated recall data, in which not one count of a mnemonic strategy was found in any of the stimulated recall sessions with Alex. This separated Alex from other participants in the use of this strategy as all other participants recorded multiple uses.

At this point it will be useful to deviate from analysis across cases of mnemonic use, and examine the case of Joshua more deeply. Joshua could also be separated from all other participants in his complete embrace of mnemonics. In stimulated recall sessions, Joshua relied on mnemonic devices for almost all kanji recalled. This was due to his conscious employment of mnemonic strategies that he learned in a book about kanji learning, called Remembering the Kanji (Heisig,
This book teaches students hundreds of mnemonics for kanji components, relating them to their meaning in English, and then uses more mnemonic devices to relate these compounds with each other when they occur in more advanced or complex kanji. The result of which are the “confabulated” stories that the other participants such as Sam and Alex seemed to be wary of using, but which Joshua had fully embraced. Joshua, explains how the author approaches some complex kanji in the excerpt below:

Joshua: So, sometimes he’ll [the author] stick very closely to what you might find in the dictionary and sometimes he’ll give it a meaning which it just -- its not connected but its memorable. So we’ve got the kanji here. And as it says, “the picture in this kanji is not a pleasant one. It shows a large and fluffy Saint Bernard dog stretched out on the table all stuffed and stewed and garnished with vegetables—its paws in the air and an apple in its mouth. At each corner of the table sits an eager but empty mouth waiting for the utensils to arrive so the feast can begin.” Now, because that’s such a ridiculous story, it’s incredibly easy to remember. You’ve got these four mouths around the table, dog in the middle, with their utensils. So that’s the kind of thing it’s based on. So the more ridiculous, the better in remembering it. Some of them are a lot more obvious like exquisite is the women who are few. Extinguish of course you’ve got the spark and the water extinguishing the spark, so some of them are pretty simple.

In the stimulated recall sessions, Joshua employed this strategy to memorize and recall all of the kanji, using stories from the same book to memorize kanji or components and link these components together. Outside the stimulated recall sessions, Joshua’s use of this mnemonic strategy extended into his indirect strategy use. For example, he would often record the stories on flashcards to remind himself of the stories. He would also record the stories onto a digital audio player and listen to them in bed or on the train, leading him to be able to memorize complicated and detailed stories such as the one in the excerpt above.
According to Joshua, the reason for his high reliance on mnemonic strategies was that a year previously he had become depressed and disheartened with the kanji learning task, and had viewed the task of learning 2,000 kanji before graduation to be an unachievable goal. When a friend introduced him to the Heisig learning method, he found mnemonics gave him a systematic way to study the kanji, which motivated him to study, and made his goals seem achievable.

One year on, and toward the end of the study, Joshua was very positive about his progress, but was once again feeling his goals were unobtainable, as he began to notice serious limitations in studying kanji in this way. The biggest limitation remained that the stories focused on English meanings of singular kanji. In many cases, especially at the advanced level, these kanji rarely appeared by themselves as a reflection of their singular meaning, but in common combinations with other kanji. Thus, often when known kanji appeared in text, Joshua was able to recognize the kanji, its story and singular (and at times abstract) meaning, but this did not help understand the meaning of it in the context of a sentence. Moreover, these stories, which were always entirely in English, made no associations with how the character was read in Japanese, meaning Joshua could not read known kanji out loud, or look them up in a phonetic dictionary, because although he had memorized the meaning of the kanji, he had not studied the readings of them at all.

Furthermore, due to the confabulated nature of the stories it was observed that at times Joshua could recall the story but not the meaning—a phenomenon that
will be referred to in this study as “losing the meaning in the mnemonic”. An example of Joshua losing the meaning in the mnemonic can be seen in the following interview excerpt:

Joshua: Some of them are quite ridiculous. “There’s this monster on the ceiling that likes to eat nails and then spit them in people’s heads”. I remember the story, but I can’t remember the kanji right now. I haven’t revised these now for about three months or longer. I find after three months it’s terrible.

Here, Joshua recalls a ridiculous story, but fails to remember the kanji it is connected with. He admits this is often the case after a certain amount of time lapses of not revising his stories. Interestingly, this phenomenon of losing the meaning in the mnemonic was evident in other cases, namely Sam and Kate. In regard to Sam, often he would remember the etymological origins of kanji components and then forget the meaning of the kanji they were presented in—especially if the meaning of the kanji had grown apart from its etymological origin. Kate, on the other hand, would regularly create stories according to pictorial associations of a kanji’s components that were completely removed from the meaning, such as in the excerpt below:

Kate: Yeah. Because I specifically remember that one (囲) as a tree (木) in a box (口).
Interviewer: Okay. But how does that link in with the meaning of trouble? Or you just –
Kate: I don’t know what the meaning is.

Here, Kate remembers the story, but it fails to connect with the meaning of the kanji in her mnemonic—that is, her story of a tree in a box is unassociated with the kanji for komaru (囲る), meaning to be in trouble. In another example Kate recalls the kanji for feeling (感), because it “looks like a bug that’s been squashed”. This was a reoccurring phenomenon in Kate’s application of
mnemonic strategies, and is where she can be differentiated from other participants, who tried to make meaningful associations with mnemonics, even when confabulated.

In summary, this phenomenon of losing the meaning in mnemonic was encountered a number of times in the recall sessions, especially by participants who relied heavily and consciously on mnemonics. It could best be attributed to a sense of making stories that were removed from the meaning of the kanji. That is, saying a kanji looks like a monster on the ceiling spitting nails into people’s heads does not necessarily evoke the meaning due to its nonsensical nature. This is very different to more meaningful mnemonics such as Sam’s use of etymology, or using mnemonics with meaningful compounds. Perhaps this sentiment is best described by a comment by Paul in one of the initial interviews:

Interviewer: Mm-hmm. But if there's no clear connection between the compounds, you wouldn't use this technique?
Paul: No.
Interviewer: At all?
Paul: No. Because like maybe that helps in memorizing them, but if I'm trying to read something, you know, you don't have time to sit there and go, okay, the bunny came out of the hole, so that kanji must mean this. You know?

Here Paul, like Sam, emphasizes the use of mnemonics when it makes sense—that is, there is a direct connection to the meaning of the kanji, and avoids applying mnemonics in nonsensical or “confabulated” ways.

In summary, mnemonic devices, whether nonsensical or not, were seen as important strategies for all participants, except Alex, who viewed the limitations of mnemonics as so great that he made a conscious decision not to use them.
Alex’s case is important, however, as it illustrated a feeling among participants that mnemonic devices were useful to a point, and sole reliance on them led to limitations such as a de-emphasis on pronunciation, and difficulty in creating memorable mnemonics which often led to confabulation that caused participants to remember stories but not the kanji, as can be seen in the cases of Joshua, Kate, and Sam.

4.1.3 Component analysis

Component analysis is the strategy of breaking a kanji down into its smaller components in order to better understand and remember it. According to many kanji learning researchers it is the most efficient method of learning kanji, and one that becomes increasingly important as the learner progresses in efficiency. The awareness of this strategy is sometimes referred to as graphemic awareness, which Toyota (1998) argues a student must possess in order to succeed in the kanji-learning task.

In the stimulated recall sessions all participants displayed some level of graphemic awareness. All participants except Alex made use of the component analysis strategy numerous times in each of the stimulated recall sessions—Joseph and Sam making use of the strategy in conjunction with their systematic mnemonic strategy. An excerpt from a stimulated recall session with Colton, illustrates how a learner approaches a kanji with a component analysis strategy:

Colton: But like I remember I was talking to you about the kanji “go” (話) and how the first part of it looked kind of like a different kanji (言). I don’t remember what it was, but –
and then the second part of it was the top half looked like go (五) as in the number, and then the bottom was kind of like a box (口) – yeah. It was like a box for each of them, so – you know, so – yeah. Breaking them up and remembering them that way.

Here, Colton explains how he dissects the kanji into segments, and each of the segments fits into a “box” that forms part of the kanji. That is, he breaks 言 into the components 言 and 五 which he associates with other kanji, and 口, for which he applies a pictorial association of a box.

Previous research has established that as learners encounter more and more kanji, graphemic awareness grows and students rely more on component analysis. The reasons for this are two-fold. At the more advanced level, kanji are rarely of the pictographic or abstract types and mostly of the compound type, facilitating the breaking of them into their components. Secondly, as students memorize more and more kanji, they encounter kanji that share similar components, so the pool of components in which to compare and contrast kanji grows. This phenomenon resonates in a comment by Maya, one of the lowest proficiency learners in the study:

Maya: This [studying the components] is interesting for me, but, since my kanji learning is pretty minimal, what I know is pretty minimal. I know very little radicals and components.

To sum up, with such a small pool of kanji in which to examine components, Maya has difficulty in drawing meaningful associations between them. This is in contrast to more advanced learners who are able to group a number of kanji with similar components as they encounter more and more kanji that share similar components. The following interview statement from Paul, who is an
intermediate-level proficiency participant, illustrates this.

Paul: Right. Well, it’s – I think it’s easier to group them and to memorize the group than to memorize each – like one kanji, you know. I kind of like see it as like seeing the root of a word. You can – you know, if you know the root of the word, if you know the root of the kanji, it’s easier to use it than it is – because I feel like you get a more natural understanding of the meaning, than – opposed if you just – just take, you know, two random kanji and memorize them.

Here, Paul views component analysis as not just a convenient way to group kanji, but as a way of understanding the root meaning of the kanji, because those kanji that share similar root kanji or “radicals” also often share the same root meaning. That is, kanji with the radical form 氵, often incorporate the root concept of water, such as in the kanji for sweat (汗), swim (泳), lake (湖), and stream (河).

In almost all cases, when component analysis was used in stimulated recall sessions, it was almost always used as a tool to break a kanji into smaller parts so another associative strategy could be used for memorization. That is the components were then used to associate the kanji to pictures, symbols, radicals, and other kanji through visual association or mnemonic devices to then connect the meaning. A few examples from the stimulated recall sessions are listed below, to illustrate how this was carried out by some of the participants.

1. Colton: Govern (治) was just a couple of marks (氵) around what looks like mu (口) and you know mouth, Kuchi (口).
2. Jeremy: Autumn (秋) was one of them that I could (remember) because that’s the kanji for fire (火), and leaves turn red in autumn, so I associate red with fire.
3. Joshua: That’s Uwasa (噂). You’ve got a mouth, a mouth with these four horns kind of sticking out everywhere and it’s glued together because it keeps on trying to spread rumors. That’s Rumour.

Colton uses component analysis, with pictorial association (a couple of marks),
symbolic association (with the katakana mu), and association with other kanji in
the example of kuchi, meaning mouth. Jeremy uses component analysis with a
mnemonic to recall the meaning of autumn, explaining the kanji for autumn (秋)
contains the kanji similar to tree (木) and the kanji for fire (火). Joshua uses
component analysis in identifying the component mouth (口) but then uses
pictorial association of horns (兎) and a mnemonic to connect it to the meaning,
rumour (噂). Thus, as can be seen, participants in the study used component
analysis to break kanji into parts so that then they could apply other strategies to
these parts to facilitate their memorization, whether this was through
association or mnemonic devices, or both.

At this point it may be useful to examine the case of Alex once again. Alex was a
participant who, like in his use of mnemonics, was aware of the strategy of
component analysis, but chose not to use it. This is in contrast to other
participants who use strategies, but are not conscious they are using them, or
who do not use strategies because they are unaware of them. In both instances
Alex cited that he had tried to use the strategies at some point in his learning
experience, but had stopped using them because he found that they complicated
the learning process or it became too much work, as illustrated in the following
interview excerpts:

Alex: Yeah. Not too often. I mainly – like I’ll look at the radical. But if it’s, you know, more than like three or four
(components) – I don’t – I tend to try to remember it as a whole unit, with the exception of the radical, because that holds meaning

Alex admits that component analysis of the radical has worth as a learning
strategy, as the radical holds meaning. However, if the kanji has too many components, he gives up and remembers the kanji as a whole.

Alex: When I first started, I guess in my zealosity to begin learning -- I mean -- like I tried to group them by radical and stuff and by meaning and all that, but I kind of stopped doing that after a while. At this point, I just kind of read them and just kind of learn them.

Alex attributes strategy use as an “over zealous” task – implying an opinion that learning kanji in this way is not fruitful. He implies the way to learn kanji is simply by “learning them”, that is there is no simple way to do it.

Alex: Yeah. I used to do a lot more of that [comparing radicals] kind of earlier and even ones I had learned before—like when I learned a new one, I kind of tried to make a list of all the same radicals I knew and kind of group them like that but I don’t know if I got lazy or what. I stopped doing that after a while.

Finally, Alex cites “laziness” as a reason for not using component analysis including radicals when studying. His comments imply that using this strategy takes effort or time, which he is not willing to commit to. Thus, in terms of component analysis, Alex is an illustration of a case where an advanced learner of kanji is not necessarily a strategic learner—deviating from previous studies that have argued the necessity of component analysis in the more advanced stages of kanji learning (Bourke, 1996; Toyota, 1998; 2000; Toyoda & Kubota, 2001).

In summary, component analysis was a strategy that many of the participants embraced consciously. There were participants at the lower and higher levels that showed great control over this strategy. Also participants used component analysis with a range of other strategies – not only with the association of
components with other kanji, which had been the focus of previous research findings. Finally the data showed that component analysis was not embraced by all participants, as seen in the examination of the case of Alex.

4.1.4 Visual / emotional response

Visual or emotional response strategies to kanji include the following:

1. Visualizing the kanji as a whole.
2. Visualizing the kanji on the page where they learned it.
3. Visualizing the sequence they first learned the kanji in.
4. Remembering the kanji in a particular context.
5. Remembering the way it feels to write it.

Illustrations of each of these strategies were found in the stimulated recall session and interview data, of which selected examples are shown below.

1. Alex: I put my hand over it and try to kind of visualize it, remember it, just did things like that......This one, I don’t know. I don’t really have a special – it’s just kind of a weird looking one that I kind of remember and I don’t really have a special way to – but it is sort of a stranger looking one.
2. Jeremy: Right now, if you were to tell me to write down summer, I wouldn’t be able to, but I just remember it’s going to be – like I can’t even remember right now what summer looks like, but when I look at it, I’ll recognize it as being the second one on the page, I think. I think I will.
3. Kate: Yeah. *Chuui* [meaning take care]. I see that. It’s on the corner right by my dorm for watch out for cars. It’s on the bus.
4. Sam: By the way it feels to write it, that’s somewhat helpful. I mean, I know that practicing writing it definitely helps. Muscle memory helps.

Alex explains how he studies kanji by visualizing them. Later in many sessions, Alex discusses “just remembering” the kanji with no other clear strategies. Alex recalls kanji as a whole or by a feeling he gets from how they look. Jeremy remembers kanji according to where they appeared on the page where he first learned it, and the order they appeared in. Kate has a visual response of seeing the kanji in a particular context. Sam describes training himself to learn how it
feels to write it, in what he terms “muscle memory”. In a further example, Sam remembers how it feels to write the kanji to the point he does not realize how he is explaining it as he writes:

Sam: The second one is trade or profession. Two, three, and tree. I remember that by just memorizing it. There's really – it's – there's really no visible derivation for that one.

Interviewer: Right. Interestingly for me, when you were writing it, you were kind of like, ah, and then tree down at the bottom.

Sam: Well, I mean – So it's not really – I mean, it isn't really a tree here. But, I do remember that there's three – I mean, there are patterns, but I'm just remembering it as a shape, which is a little different from memorizing it as, you know, a pictograph.

He argues that he did not use a pictographic strategy or component analysis—just that he remembers the shape. This may be an example of a visual response to the kanji.

In the questionnaire, strategy use of visualization rated higher than stimulated recall data suggested.
As can be seen in figure 5, with the exception of Jeremy and Sam, most participants reported that they learned kanji by the way it felt to write them, but to varying degrees. In the matter of visualization, the data were split with six participants giving it a rating 3 to 7, and the remaining six giving the lowest rating possible. The accuracy of this self-reported strategy use was difficult to confirm in the stimulated recall sessions, as visualization of kanji is not easily observable or as deliberately applied to the kanji learning task as association or mnemonic strategies. In many instances, this visualization may have been verbalized in comments such as “I just remembered it, I don’t know how”, which
were prevalent throughout the interview sessions. On the other hand, seeing as visualization is more passive in nature than other strategies that are more consciously applied, participants may be visualizing kanji when learning, but doing it in an unconscious nature, causing lower ratings on the questionnaire and difficulties in observing these strategies in stimulated recall sessions. These discrepancies in data shed light on validity of these items on the questionnaire as a whole, and are something that need further exploration in future research.

In fact, visual response strategies were actively applied in the stimulated recall session by one participant—and used in conjunction with a mnemonic device. Jeremy consciously memorized the sequence that kanji appeared on the page, and when tested, visualized where the kanji had appeared in the sequence. He applied a mnemonic formula to this sequence to connect each of the kanji with its Japanese meaning. Jeremy explains this strategy in the stimulated recall excerpt below.

Jeremy: So I take the Japanese reading and turn it into an English word. So SEI (政), I'll turn that into S-A-Y, say.
Interviewer: Say.
Jeremy: So can I write on something?
Interviewer: Yeah, yeah, yeah.
Jeremy: Okay, so this is SEI (政) so here's my sentence. SEI. Then the next one is JI (治). So my cousin’s name is Gregory but we just call him G. So JI. KEI (経) is the next one. Turn that into a girl's name, Kay. And this is SAI (濟). I put sided. Sided and then with wasn't in there. It's just like a filler word. REI (令), I turn that into Reggie, another name. Kay sided with Reggie and then the next one is SHI (師). So didn’t she? So “Say G, Kay sided with Reggie, didn’t she?” I memorize that sentence and then the only hard part is remembering what order the words come in. So when I go through I try to imagine them on the page and I think, “That’s No. 1. That’s 2, that’s 3, that’s 4, that’s 5, that’s 6,” and then you just assign the number. 2, 3, 4, 5, 6 and then
you just match them up.

Interviewer: So you just remember that this one was No. 3?

Jeremy: Yeah, that one was the third one. Like I can visualize it on the page. Like that one’s No. 3 and then the third word in the story is, “Say G, Kay” – and you know that 3 is KEI.

When prompted to discuss this strategy in subsequent interview sessions, Jeremy later admits that the strategy has been very useful for him when learning lists of kanji for university quizzes, but that retention of these kanji is only short-term, having forgotten most of the kanji after the test. Jeremy makes a distinction in the goal of this strategy as a test-taking preparation strategy as opposed to other strategies he uses to facilitate more long-term retention of the kanji.

### 4.1.5 Stroke order

In interviews, stimulated recall sessions, and on the questionnaire (figure 6), the use of stroke order as a learning strategy garnered the lowest response of any strategy group. On the questionnaire Tim, Zara and Alex reported a high response that writing kanji comes naturally—Zara and Tim because of a background in Chinese language learning, and Alex possibly because of his conscious decision to learn kanji as a whole unit.
Figure 4: Stroke order strategies

In general, in interview data the more advanced participants (Alex, Sue, Joshua) were more positive toward the learning of stroke order than those at the lower-proficiency level. All three of these participants attributed their learning of stroke order at first as an involuntary task that they undertook under recommendation of teachers, but had since become a more voluntary task, as illustrated in the following comment by Alex:

Alex: When I first learned it, my teachers really stressed stroke order, so I kind of have been doing that for a while, and that sort of helps with – I mean, it even, sometimes if I remember the shape, and I'll write it a few times, and the wrong stroke – or like it doesn't look right, it just doesn't
feel right, but then like when I get the stroke order, I’m like, “Oh, that’s it.” So I don’t know. They just – my teachers really stressed stroke order, so I guess that kind of stuck with me, so.

Sue, Joshua and Alex saw moderate value in stroke order due to being tested on stroke order in their Japanese studies at their home universities, so stroke order had become an ingrained part of their learning that they no longer thought about, nor used it as a strategy for study, typified in the following interview excerpt:

   Joshua: I’ve committed the stroke – I mean, I have committed the stroke order to memory, but that – I don’t think that necessarily helps me remember the whole kanji.

Interestingly, Holden, the third advanced level learner did not share this characteristic with Sue and Joshua. Holden reported abandoning learning stroke order in the initial stages of his kanji learning 5 years ago, and did not view it as an important part of kanji learning, despite his teachers stressing the importance of stroke order as Alex, Sue and Joshua’s teachers had done. In one interview, Holden makes the following rationale for his disregard of stroke order when studying kanji:

   Holden: I mean, I fill out forms all the time for the bank and joining clubs and things like that... sometimes people are surprised to find out I filled out the forms... they think it was my wife or something. If I can write kanji in the wrong stroke order and people think it looks like a Japanese writes kanji, then I reckon stroke order can’t be as important as my teachers made out, right?

Just as Alex has proven one can advance in kanji studies without high use of component analysis, Holden proves that one can advance in kanji studies without attention to stroke order. Holden’s views on stroke order also resonated in many of the lower-proficiency participants, as illustrated by the following comments from Jeremy, Sam and Kate.
Jeremy: For me personally, as long as, I mean, it looks the way it’s supposed to look, I don’t really – I’m not a stickler for stroke order. Like our teachers would, and they would always like – they would give you half off, something like that, if they could tell that your stroke order was wrong. So that’s the only reason that I would try to get it right, but personally, I don’t care.

Sam: Committing the stroke order to memory alone, or knowing the first stroke alone, isn’t going to help me remember it.

Kate: But when we’re always learning kanji, all of my Sensei emphasize stroke order, where it has to be this way. But in the back of my mind, I’m going, people don’t write their As the same way, in the same order. And I don’t feel so obligated to remember that exact order. Sometimes it helps, but it’s just – people don’t always write things the same way.

Sam, like many participants in the study refused to memorize stroke order and viewed memorizing stroke order as an auxiliary activity that would take time away from more useful ways to study of kanji. In his interviews Sam justifies his abandonment of stroke order with the example of the kanji for right ( numberWithSpace=True left) and left ( numberWithSpace=True left). He outlines his belief that the first two strokes in both kanji are identical ( numberWithSpace=True right), however for right, the horizontal line is written first and for left the vertical line is written first. Sam uses this case to point out that rules governing stroke order are nonsensical, and uses this rationale to justify his non-attention to learning it. Although other participants are less adamant in their lack of attention to stroke order, this opinion was evident in many of their interview responses when asked about stroke order, that echoed the concept that stroke order often did not make sense and was too much of an arduous task to undertake in addition to kanji study.

At the lower range of proficiency, Colton was the only participant who expressed
interest in stroke order, however interview data suggests this interest tended to come from a more aesthetic standpoint. Much of his motivation in learning kanji was in its artistic beauty. In fact throughout the interviews Colton often used the verb to “draw” kanji rather than the verb to “write”—further illustrating this distinction. Culturally, stroke order was an integral part in shaping the kanji correctly, so in order to “draw” aesthetically pleasing kanji, Colton paid moderate attention to stroke order. Use of this strategy, therefore, was not necessarily for the goal of kanji memorization, and was viewed as an auxiliary or optional task he decided to undertake for personal reasons.

In the stimulated recall sessions, there was only one instance where stroke order was mentioned as a strategy for kanji memorization and recall. When Colton was asked how he had prepared for the stimulated recall sessions, he had this to say:

Colton: More difficult ones like “career” or “administration” had a lot of things or numbers, several had a lot of things so I knew – you know I just kinda kept, like noted those. And then afterwards, I went through and I wrote the stroke order. I went through and I – for “administration,” and as I wrote the stroke order, I would say ad-mini-stration, as if I was actually writing the word “administration.” So as I would go through the stroke order, I would actually write – or I would actually say, either in my mind or out loud, “administration.” And then as I finished the kanji, that would be the end of the word that I would say. And then after that, just as practice until you came, I would just – I just kept going over the stroke order in my head and just memorizing the word as I was doing the stroke order. So, I would just pretend that I was writing the stroke order saying “administration.” And then I would go through and do “govern.” And then I’d go through and do “control.” And do the stroke and just like air write it over and over, the kanji.

In this session, Colton uses the term stroke order to describe a strategy of
writing out the kanji in order to get accustomed to the feeling of writing it while associating it to the meaning. Colton used this strategy once in his first stimulated recall session, and then never again in subsequent sessions, perhaps as he discovered the emphasis of the sessions was on recall and not on production of the kanji themselves. Perhaps also, he may have abandoned this strategy in favor of more useful strategies when he found it unsuccessful. In any case, there is no evidence that Colton actually used stroke order to memorize kanji, but instead used the term to describe a strategy whereby he trained himself to feel how the kanji was written. This is an *emotional* response to the kanji, and one that better supports his self-reported strategy use that he learns kanji by how it feels to write them, which he rated 7 in the questionnaire, as opposed to using stroke order, which he rated 4.

### 4.2 Indirect strategies and kanji learning

The term *indirect strategies* was used in the Bourke (1996) study to describe metacognitive strategies, which are defined as “controlling cognition through the co-ordination of the planning, organization and evaluation of the learning process” (Oxford, 2001, p. 166). The concept of indirect strategy use has been largely replaced by motivation control strategies in the self-regulation component of the conceptual framework of this study. That being said, the motivation control model examines overall self-regulatory capacity of a learner, rather than the strategies themselves. Thus, a brief examination of strategy use under the umbrella of indirect strategies may prove of use in later discussions of metacognitive control.
The current study has retained the Bourke terminology of indirect strategies so as not to confuse them with metacognitive control strategies, which will be examined in the following chapter. Indirect strategies, therefore, will be briefly examined under the sub-categories of the Bourke (1996) taxonomy of planning learning, evaluating learning and collaborative learning, which are defined below:

1. Planning learning strategies involved the management of the kanji learning in terms of time and process.
2. Evaluation learning strategies involved the evaluation of progress through self-testing and review.
3. Collaborative learning strategies involved the study of kanji through use of peers and teachers.

4.2.1 Planning learning

This section will look at strategies used by participants in the planning of their kanji learning as evidenced in the interview data and questionnaire. It is important to note that the planning of learning from a motivational perspective in the form of commitment control strategies will be examined in the following chapter, and the data pertaining to the topic of goal setting will be discussed in that chapter as well.

Data revealed the cases of Joshua, Sue, Sam, Alex and Zara to exhibit a high use of indirect strategies, which involved the planning of learning. All of these
participants were able to demonstrate a highly strategic plan that they implemented for the kanji learning task, as can be seen in the following examples of Sam and Joshua:

Sam: If I had a list of kanji to learn with associated vocab words, first I’ll probably take the list and write down the meanings and the readings I know. Then I’ll make flashcards. Checking and writing down other readings that I need to know as I’m doing that. I also look them up in here [referring to an electronic dictionary]. I’m not sure if I’ll do that while I’m making flashcards or before or after. Any of those would be fine. I’ll also add them to my notes. I have a set of notes on a computer in a text file so I can keep that well organized, so I have a list of all the kanji I’ve learned, which is handy at least some of the time. At least it lets me keep count of all the kanji I’ve learned. I’m not sure how useful it will be in the future but I do have all my notes in one place where I can search it easily and it’s not going to get all messed up like my notebooks tend to get.

Joseph: What I do is I made an Excel spreadsheet – I’ve still got all my Excel spreadsheets containing two years worth of kanji. Basically as a gimmick I put the – we were given the kanji. We were told, “Okay, go and find the most common words from the kanji learner’s dictionary.” So I would select, say, 10 words for each kanji, 10 compounds, put it all in an Excel spreadsheet with definitions, readings and all that blah, blah, blah. I would then print that out and I would carry it around with me for a week. Specifically what I did is I would sit – I used to do some voluntary work which involved sitting in the car for about two hours on a Saturday waiting for some children. I had flashcards just like this and I would simply have those and I’d just go through them again and again. Three at a time actually. Again and again and again until I knew all the readings and I could do that. With 10 kanji I could do that in about two hours. Then I had a big sheet on the wall and I’d add 10 new kanji each week and then I would just go through that list, just look at the wall, go through the list doing the readings. I had the kanji and next to it I had written a number that represented a number of readings. So I just had to list that number of readings.

As in these two detailed accounts of kanji learning practices, the other cases of
Zara, Sue and Alex had a strategic plan in which they approached the kanji-learning task.

Some other participants exhibited a degree of strategy use in their approach to learning, but at a less organized level, often planning to incorporate kanji study into everyday routine. The cases of Patrick, Colton, Tim, Kate, and Holden can be placed in this group. Patrick, for example, tried to use kanji as much as possible in his written assignments rather than relying on the hiragana as he had done in the past:

Patrick: Well, I’ve had a lot more writing homework recently, and you get tired of writing out hiragana for words that you know there are kanji for, and so I just, like, a couple of words I’ve just learned the kanji, ‘cause I’m tired of writing out the Hiragana for particularly long words. So, every time now that I write I try to use all the kanji I can – all the ones.... And text messages I always when I send them, I use the kanji for the ones I know, and for the ones I don’t, I kind of look up the kanji, and save it for later and see if I can – which is a consequence, I can recognize a lot more kanji than I can write

Holden experimented with a number of popular media in his planning of kanji learning.

Holden: Last year I tried to start reading manga [Japanese comic books] with the idea that any new kanji I came across I would look up and write in a notebook. I thought it would be a good idea to relearn kanji I had forgotten too. But in the end, I got so wrapped up in the story I just read the furigana [hiragana written above kanji in children’s books], so this wasn’t a good method. Then I tried to read a novel – Harry Potter in Japanese, but it took me so long to get through one page because I was constantly in the dictionary, so lost interest after about ten pages. Now I am trying a few programs on the Nintendo DS which is a lot of fun, but the programs are written for Japanese people so I have problems with that too. I am still looking for the best way to learn, though.
As in these two accounts of planning learning, other cases of Tim, Kate and Colton, applied some strategies to their approach to the kanji-learning task, but in a less-regimented way than the group outlined in the previous paragraph. The remaining cases of Jeremy and Maya exhibited little use of indirect strategies in the planning of their kanji learning.

Thus in conclusion, the cases of Joshua, Sue, Alex, Zara and Sam could be identified as using a high level of indirect strategies in the planning of their kanji learning. Kate, Patrick, Holden, Colton and Tim used indirect strategies in a less organized approach. Finally, the cases of Jeremy and Maya displayed little use of indirect strategies in the planning of their kanji learning, resulting in little study of kanji throughout the timeframe of the study.

4.2.2 Evaluating learning

Evaluating learning of kanji in this study can be organized into three main categories of strategic learning:

1. Strategies that assist in the evaluation or testing of kanji
2. Strategies that assist in the review of previously learned kanji
3. Strategies that assist in keeping a record of known kanji

Figure 7 shows participant responses in the questionnaire to these items.
A pattern can be seen in most participant responses, that responses on evaluating knowledge (test myself) of new kanji were similar to responses of reviewing kanji that were previously studied (relearn kanji). In half of the cases (Maya, Zara, Sue, Colton, Paul and Holden) participants gave the same rating. In a further 5 cases (Tim, Sam, Joshua, Jeremy and Kate) the difference between the two items was one or two points. While in the questionnaire it was possible to distinguish between strategies, interview data indicated that these strategies became inexplicably intertwined when put into practice by the participants. Interview and stimulated recall data indicated that in terms of kanji study, study
strategies and self-testing strategies happened simultaneously. That is, for most participants, the study of new kanji involved the immediate self-testing and review of these kanji. That is, testing was seen by some students as the only way to review. In terminology of memory strategies, learners were engaged in retrieval practice, before devoting time to encoding. This finding warrants further exploration in the discussion section of this chapter.

Furthermore, the interview data indicated there was far less emphasis on the strategies that assist in the review of previously studied kanji (such as making use of lists of previously learned kanji for future reference), than the immediate study and review of more recently learned kanji. Interview data with participants over the year revealed the reason behind this observation was related to the manner in which kanji was constantly tested in the Japanese curriculum. Frequent kanji tests rewarded knowledge of recently learned kanji lists, without requiring extensive review of previously studied lists. This relationship is outlined in the following statements from Joshua.

Joshua: It’s part of the education system really whereby in a way the Japanese language course is a bit like the Japanese education system as a whole whereby it’s all geared towards exams. So I know what I need to know for exams which essentially at the end of the day it’s going to be kanji.

Furthermore, Joshua outlines how the exam-oriented nature of Japanese kanji courses has a detrimental effect on his long-term retention of kanji.

Joshua: ...and on those kanji tests towards the end of the semester where it was a last minute cram and spit it back out type affair then those kanji never stuck with me.

In fact, most participants reported clearly devised strategies for learning new
lists of kanji for tests. Examples have already been seen in Joshua's step-by-step account of how he prepared for a kanji quiz, as illustrated in the previous section through the use of flashcards—a tool used by all participants in this study to test themselves at some point in their kanji learning histories. A further example we saw was Jeremy's mnemonic and visualization method to study for kanji quizzes, even though he admitted such a method was ineffective for long-term kanji retention. In general, students struggled with the long-term review and retention of kanji as highlighted in the final statement from Joshua:

Joshua: It's the fact that kanji requires constant reinforcement. That's the major thing that has stopped me progressing to the level I would like to progress over the past couple of years. So at the moment, what I'm thinking I am going to do is I'm going to revise this -- just go through and remember all the -- because I've learned them once. They soon come back again. Revise this and then use the kanji book series to learn the readings. It's been remembering the kanji that's been such a struggle. Damn kanji. I love them and hate them.

Students' struggle with kanji retention and review will be revisited in the following chapter under emotional control strategies. However, for this section, it is important to show the close relationship between testing and review strategies, and how the nature of the traditionally, exam-oriented Japanese language curriculum has had an impact on indirect strategy use by kanji learners.

4.2.3 Collaborative learning

Previous studies into kanji learning have highlighted the benefits some students find of working with their peers during kanji study (Bourke, 1996). While this is a method of controlling one's study environment (which will be discussed in the
following chapter under environmental control strategies), a small number of strategies highlighted in the current study will be outlined in this section.

The questionnaire examined participant responses to three categories of collaborative learning: (1) Studying with others, (2) Discussing learning with others, and (3) peer testing and review of kanji. Responses to the questionnaire items are outlined in the figure 8.

![Figure 6: Working with others strategies](image)

Regarding studying with others and peer testing, only Kate responded positively.
on the questionnaire, giving it a rating of a 6 and 5 respectively. All other participants gave these items a rating between 1-3, indicating that the statements of “I study with others, practicing together” and “I ask another person to test me” was not true of them. Interview data concurred with the questionnaire, as Kate explained the benefits of studying with a partner but also touched on some difficulties.

Interviewer: Do you have like a study group, or just with a friend, or –
Kate: It’d be me and two of my friends, who are also in our Japanese class, and we would talk over it, quiz each other. And really bad jokes come out of it.

Interviewer: Did you find that helpful, working with them?
Kate: Yeah.

Interviewer: You sounded a little unsure there.
Kate: Well, we mostly procrastinated, but we managed to learn a lot of kanji that way.

Kate: ...to study with friends at home, it would be kind of fun and would motivate me, but here [in Japan] there’s no one in my dorm in the same class as me. And it's – I can't really study with anyone else. One girl's a – one level below, and another girl's two levels below.

In these two excerpts, Kate explains the benefits of studying with a partner being an increase in enjoyment, productivity and motivation, but touches on issues of procrastination through distraction and finding a partner of the same level. In interview data, all other participants expressed these ideas further when they explained the reason they did not believe studying with a partner was a good strategy for kanji learning.

Maya: I'm not the type who studies well with others. Yeah. Unless – no. No. I always study alone. I always study alone. Although I don't find anything – I don't get anything from it, since I feel like I – I'll be working faster if I'm going at my own pace.
Zara: And also because I guess our class is so small that we really don't get together and do a study group or anything. So for me, it's just faster to work alone, and I get faster results.

Paul: I can't do something visual with something else – with someone else. If it's like practicing, conversation, with someone else is a preferable way to study, but with writing, I really can't study with someone else.

Jeremy: I generally study with others, but for kanji, I never study with others. ...Because I think everybody has their own way of studying kanji, and you just need to find like – especially since I work visually. So if someone tells me it looks like a dog, and I don't see it, then that's useless to me.

Sam: I can't say whether I learn kanji better in groups because I don't really have good opportunities to study kanji in groups here. And just – you know, because I don't live in a dorm. I live in a host family way out in the middle of nowhere.

In these excerpts, we can see that Zara and Maya feel that studying alone allows them to work at a faster pace than learning with a partner. Paul and Jeremy report that kanji learning, unlike some other type of study, is very visual and individualistic and thus it is difficult to work with a partner. Finally, Sam touches on a similar notion to Kate of the difficulty in finding a suitable partner to study with.

In conclusion, working with a partner seemed to hold both benefits and problems in the view of the participants. A solution to managing these benefits and problems emerged in a later interview with Jeremy. During a discussion on study environment, Jeremy explained how he often studied with friends of his, prompting the interviewer to probe further due to Jeremy's earlier insistence
that he studies alone.

Interviewer: So normally you study with a group?
Jeremy: Yeah.
Interviewer: Together or independently?
Jeremy: Not together. Independently, but just in a group. We'll all be in the coffee shop near my dorm. We don't really help each other study but we're just together. So if we have questions we can ask each other.
Interviewer: And does that help motivate you a little bit more to --
Jeremy: Yeah, it's a big motivator. It's the same as like working out. It's good to have a workout buddy or study buddy or anybody to motivate you when you don't feel like going. Its better just being with someone. You don't feel like the only person doing it. I study a lot more. Like if all my friends are going to study, then there's a much higher chance of me going to study.

In this excerpt, Jeremy's strategy leverages the benefits of studying with a partner (of increasing motivation and increasing enjoyment and productivity) without incorporating the reported problems (of finding a partner at the same proficiency level, working at varying paces or solving individual differences in approaches to kanji study). Thus, even though all but one participant reported working with a partner on kanji study was problematic, a strategy was highlighted in the study that worked around these issues in order to leverage the benefits from the difficulties.

4.3 A summary of strategy use of participants

The study consisted of twelve participants from different learning backgrounds and experiences. Each case, therefore, brought a unique and individual set of learning experiences and language abilities to the study. That being said, cases can be grouped and compared on these differences and similarities when
examining strategic learning of kanji. For the purpose of summarizing these differences and similarities, two cases will be highlighted and explained in detail to indicate perhaps the biggest variance in strategy use. Once these boundaries of variance are set by these two cases, other cases will be summarized to examine where they fit in the spectrum.

4.3.1 The case of Joshua

Joshua is a foreign exchange student at a Japanese university, who is majoring in Japanese language at Sheffield University in the United Kingdom. The University of Sheffield in the United Kingdom has an intensive Japanese language program, in terms that the program expects students to reach an advanced knowledge of Japanese by the end of the four-year program, and to have at least spent one year of that study in Japan. When Joshua joined the study, he was in his third year of study at Sheffield and was beginning his first semester at the university in Japan as part of his overseas year. Joshua had spent 6 months in Japan prior to this trip as a high school exchange student, which was one of the original motivating factors to major in the Japanese program at Sheffield University.

In terms of language ability, Joshua was at the advanced level, and the most advanced learner of kanji in the study. He had passed the level 2 Japanese language proficiency exam, indicated as having advanced knowledge of the language. He had been exposed in his studies to all of the essential 2000 kanji needed for literacy, although he claimed to remember less than half of those now. He was a highly motivated learner, with the two largest motivating factors to
learn Japanese being that of career (he hoped to use Japanese language in future employment on a daily basis) and lifestyle (he hoped to live in Japan after graduation).

In the initial interview Joshua showed signs of being highly strategic in his kanji learning, citing many strategies for the study of kanji. Joshua constantly and consciously applied strategies to each and every kanji he encountered, learned and reviewed. He also showed a high metacognitive awareness of strategies he applied to kanji learning to assist in the memorization of kanji, even seeking out books and literature in the area of new approaches to kanji study.

In summary, Joshua was the participant that could be described as being at the most extreme case in the study in terms of his direct and indirect strategy use. 

An extreme case is defined as a case that is representative of extreme behavior; usually in a positive light. In this context it is Joshua’s extreme and deliberate use of kanji learning strategies.

4.3.2 The case of Maya

If Joshua serves as a model of a student of high Japanese proficiency, good self-regulation, clear motivation, and frequent strategy use, Maya serves as a model to represent the other extreme of that continuum.

Maya was a student from The Philippines who completed her high schooling and university studies in the USA. She was in her final year at the University of
California Los Angeles, and was completing this final year of study as an exchange student at a university in Japan. Maya was a business major who was studying Japanese as a means to experience living in another culture.

Maya was a beginner learner of Japanese, studying the language for the first time. Her goal after graduation was to go back to her home of Manila in The Philippines where she would work in international business. Although she did not plan to need Japanese language in her career, she hoped the experience of living in Japan as an exchange student would give her knowledge of Japanese culture and customs which would prove useful when dealing with Japanese clients in her future career. For Maya, her study of the Japanese language was mainly out of self-interest and she did not have a clearly defined language-learning goal. As a result, Maya did not put in a lot of effort into kanji study, and instead focused on needs for daily life and improving her spoken communication.

According to data collected, Maya showed signs of having very low strategy use in her Japanese study. She often cited that she was more interested in enjoying her experience in Japan than learning Japanese, and as a result rarely studied outside of class, and neglected kanji study entirely, apart from practicing reading the signs she encountered in her daily life that were written in kanji (bus and train stop names, signs for exits and entrances to major stations, for bathrooms and so on). In terms of strategies applied to kanji study, Maya also showed signs of little awareness of, or care for, applying strategies to kanji study. Maya mostly relied on one strategy (pictorial association) for remembering all the kanji she knew, although displayed some use of other forms of association in subsequent
interviews.

Also in contrast to Joshua, in terms of attitude to kanji study, Maya remained very positive. Kanji intrigued Maya, and she viewed kanji as an amazing and beautiful script. She enjoyed reading and writing the kanji she knew, although this interest did not stimulate motivation to study them in a formal way.

The differences between Maya and Joshua can perhaps best be described thus: On the one hand, Maya, who was removed from the pressures of having any goal with the Japanese language, was not motivated to learn what she did not view as necessary to learn and thus made little progress with the language. However, on the flipside Maya was free to enjoy the experience of kanji study, and thus her attitude toward learning was more positive. Joshua on the other hand, felt much pressure to succeed in the kanji learning task, which caused him to actively apply strategies to his learning, although this pressure manifested in feelings of stress and frustration with study. The two cases of Maya and Joseph are illustrated in table 7, which only includes variables that differed greatly between cases. The labels ranging from “very high” to “very low” were decided by the researcher after careful review of strategy use in the data. A very high rating was given to a participant that displayed frequent and continued use of a strategy throughout the study. A very low rating was given to a participant that did not make use of the strategy at all. Ratings were given in between these two extremes on a 5-point sliding scale (Very High, high, moderate, low, very low).
Due to the subjective nature of this assessment, an independent research assistant was hired to review the data and evaluate the assessments. Any disagreement in assessments were discussed and agreed upon by both researchers after a second review of data. Such practices, according to Cohen et al. (2007) can lead to more valid and reliable data due to the ability to check divergences between two researchers leading to minimal divergence in analysis.

4.3.3 A summary of strategy use of all participants

After the boundaries of variance are set by these two cases, each case can be summarized within these boundaries as shown in Table 8.

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<th>Case Gender &amp;</th>
<th>Proficiency</th>
<th>Mnemonics</th>
<th>Component analysis</th>
<th>Stroke Order</th>
<th>Indirect</th>
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<tr>
<th>Case Gender &amp;</th>
<th>Proficiency</th>
<th>Mnemonics</th>
<th>Component analysis</th>
<th>Stroke Order</th>
<th>Indirect</th>
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This is an oversimplification but may serve as a useful reference point during the discussion of findings in the following section.

Now that strategy use by participants has been examined in detail and summarized in brief, the next step of the research, which was to examine changes in strategy use over time, can be investigated.

4.4 Changes in strategy use throughout the duration of the study

One of the sub questions in the study was to examine whether the raising of strategy awareness through the interview sessions, coupled with the passing of the time throughout the study, made an impact on participants’ strategic learning. In order to assess this, the strategic learning questionnaire was administered at the beginning and end of the study to evaluate whether participant perceptions of their strategy use had changed. In addition to this, participant perceptions of change were discussed in the final interview to add a more detailed perspective. Finally, the study was able to assess actual strategy use in the stimulated recall sessions in the beginning and end sessions in the study.

Regarding the interview responses and questionnaire, participant perceptions of
strategy use had not changed to any significant degree in nine of the twelve cases. When questionnaire responses were plotted onto a graph, they looked similar to the two examples below of Jeremy and Sam, where responses from the first and second questionnaire are almost identical (see figures 9 & 10).

**Figure 7:** Changes in Jeremy's strategy use over duration of study

**Figure 8:** Changes in Sam's strategy use over duration of study

These graphs compare the responses of strategy use on the questionnaire given at the beginning of the study to those on the questionnaire given at the end of the study, 10 months later. The y-axis shows the response to each of the questionnaire items shown in the x-axis. A complete list of these items can be found in appendix A. These graphs indicate that these participants’ perceptions
of strategy use over the course of the study did not change to a great degree. Interview data also supported this perception, as can be seen in the following excerpt from Jeremy:

Jeremy: I don’t think they’ve changed much. I don’t think that’s really a good thing, but, no, I still – I think I pretty much know already the ways that I study best, like what atmosphere and what methods. So I stick to what works. I have no trouble learning kanji when I’m actually studying it. I learn it. It’s no problem. The problem is just the motivation to pick it up and start studying it.

In this statement Jeremy believes a change in strategy use might have been beneficial for his kanji study, but he also sees the value in “sticking to what works” for each individual. This is a thought that is supported by previous research into strategic learning that strategy use is an individual choice—that because a strategy is beneficial to one learner, does not mean it will be of benefit to another.

Many other participants stated similar beliefs in their final interviews. While there were changes evident in some student’s responses for some items, interviews did not reveal the student had made a change in their study behavior, and these changes were also not evident in stimulated recall data. It is believed changes may have occurred due to a heightened awareness of strategy use due to participation in the project—a notion that will be discussed in the conclusion chapter of this dissertation.

In fact, only one participant, Alex, showed any significant perceptions of change in strategy use in the two questionnaires that were supported in the interviews. Responses from Alex’s first and second questionnaire are shown in figure 11.
As can be seen, unlike the previous illustrations of Jeremy and Sam, this participant’s perception of strategy use has changed significantly—for some items giving entirely opposite responses. Alex, for example, became more likely to compare similar looking kanji or similar sounding kanji when making associations (A7, A8). He also began comparing kanji more often with the Japanese pronunciation (A10), rather than the English pronunciation (A11). Moreover, he felt he was breaking kanji up into smaller parts (C3) than he had done previously—something which in interviews he had previously been ideologically against. Alex also indicated that he felt a stronger visual connection with kanji.

Furthermore, Alex’s questionnaire results suggested that he had changed in not only cognitive terms, but that perceptions of his indirect strategy use had also changed. Alex was more likely to set times for kanji study, use flashcards and resources more often when learning kanji, and tested himself more regularly. Interview data supported this shift in perception, especially for the increased use

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**Figure 9: Changes in Alex’s strategy use over duration of study**
of the component analysis strategy.

Alex: I have tried to break bigger kanji down to smaller parts, like – I'm not sure if that's a change, but anyway, I have been trying to do that lately... Well, just at first I didn't really bother with it because it seemed kind of like adding more complications to it than it needed. But I don't know, but it actually seemed to – in kind of talking, we talked about and everything, it kind of made sense, so I'm just sort of trying doing that... And it makes it sort of easier to remember radicals too and everything 'cause if you break it down and you kind of look at the pieces, it kind of makes it easier.

In this statement Alex has made a conscious shift in his strategy use when processing kanji through the application of component analysis strategies—a strategy that at the beginning of the study made Alex distinct from all other cases in the study in that he consciously did not use it. Alex justifies this shift in that the use of this strategy now seemed more logical due to a raised awareness of its importance throughout the course of the study. It is important to note, however, Alex was still evaluating the effectiveness of this strategy. In addition to these cognitive strategy shifts, Alex attributed metacognitive shifts to “trying to concentrate more” on kanji study toward the end of the research project.

Shifts in perceptions of strategy use by Alex were also supported by stimulated recall sessions of kanji learning. Table 9 is a record of whether the strategy of component analysis was observable in each of the 10 stimulated recall sessions with Alex. Joshua has also been included to compare a participant of similar proficiency whose perception of strategy use had not changed. It is clear that stimulated recall data also supports this shift taking place around the 6th and 7th stimulated recall session, in contrast to Joshua, whose pattern remains constant—using component analysis strategies in every session. The awareness-
raising episode occurred between the 5th and 6th session.

<table>
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<tr>
<th>Session</th>
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<tr>
<td>Alex</td>
<td>N</td>
<td>N</td>
<td>S</td>
<td>N</td>
<td>N</td>
<td>S</td>
<td>Y</td>
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<tr>
<td>Joshua</td>
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Y=Yes, N=No, S=Somewhat/unclear

Thus, it can be stated that according to all three data collection methods, there was a significant change in strategy use by the participant Alex throughout the study, which the participant directly attributes to a raised awareness of strategy use.

To a lesser degree, both Colton and Maya showed some changes in their strategy use as indicated on their questionnaire. Colton felt more likely to compare and contrast kanji than he did at the beginning of the study—a statement supported by stimulated recall sessions. Maya on the other hand, felt that although her strategy use had not changed, she felt her perceptions of strategy use were more “extreme”—in that she was more aware at the end of the study of the strategies she did and did not use, than at the beginning of the study. This statement was also supported by the questionnaire results that showed a larger number of responses at the 7 (always true) and 1 (not true at all) points of the scale.

In conclusion, a cross-time analysis has shown that strategy use among the majority of the twelve participants did not change significantly throughout the
study either as a result of a raised awareness in the study, or by other external factors. In the cases of Alex and Colton, a degree of change was evident both in strategy use as measured in the stimulated recall sessions, and perceptions of strategy use, as measured in the questionnaire and interview. These changes indicate that a raised awareness of strategy use throughout the course of the study may have had an impact. The case of Maya also shows us that these discussions of kanji learning may also cause the learner to be more conscious of the choices they make when learning kanji, allowing them to report their strategy use with more conviction.

4.5 Discussion of findings

It is important now to discuss the findings of the study in reference to previously reviewed literature in the field. The discussion of the results has been organized under the various findings of the study, particularly focusing on those results that concur with and contradict findings of other studies.

4.5.1 Advanced participants did not always analyze kanji compounds—which contradicts some previous studies.

One of the main aims of the study was to examine strategy use of this group of participants in comparison to previous studies that have examined kanji learning strategies. Previous studies have suggested compound analysis is a necessary strategy to progress to a higher level of kanji learning (see for example Bourke, 1996; Toyota, 1998; Toyota, 2000; Toyoda & Kubota, 2001; Flaherty & Noguchi,
2001). The case of Alex in this study contradicts previous findings.

Previous studies have suggested compound analysis is a superior strategy for studying advanced kanji compared to holistic approaches. Bourke, for example, suggested in her 1996 study of kanji learning strategies at the university level, that:

As kanji becomes more complicated, it is helpful to break them into their component elements and relate these elements to their traditional meaning... ...Students need help in the initial stages to change from a holistic approach to kanji to a more analytical approach and build up their knowledge of the meaning of component elements (Bourke, 1996, p. 226). That is, Bourke found holistic strategies to be helpful to beginner students, but more complicated kanji needed to be broken down into meaningful components for these students as they progressed through kanji learning. A further study by Toyoda and Kubota (2001) found that students who analyzed the components of kanji remembered more kanji than those who applied more holistic pictorial, mnemonic or repetitive writing strategies. Furthermore, in Flaherty and Noguchi's (1998) examination of the effectiveness of teaching kanji through component analysis compared to a holistic approach, it was reported that students learned kanji more effectively through component analysis. Therefore, previous studies such as those outlined above indicate that advanced learners of kanji employ a component analysis strategy as they progress in their kanji learning due to a higher degree of effectiveness compared to holistic approaches in understanding complex kanji.
The case of Alex in this study, however, contradicts the assumptions of these previous studies. Alex in the beginning of the study was categorized as a high proficiency learner of kanji in that his kanji knowledge ranged from 500-1000 characters—ranking him as the fourth most advanced participant in kanji knowledge of the twelve cases in the study. Unlike the other upper-intermediate and advanced participants in the study, Alex did not use component analysis strategies in the stimulated recall sessions in the beginning of the study. Moreover, in interviews he reported a perception that component analysis was too complicated when compared to a holistic approach, especially if the kanji contained numerous components, as can be seen in the following interview excerpt: “But if it’s, you know, more than like three or four (components) – I don’t – I tend to try to remember it as a whole unit”. Such comments contradict previous studies such as those by Bourke (1996), and Toyoda (1998) that suggest advanced learners of kanji need component analysis strategies. The case of Alex also contradicts previous studies such as those by Flaherty and Noguchi (1998) and Toyoda and Kubota (2001) that suggest component analysis to be a more effective strategy to holistic approaches in that Alex reached an advanced stage of kanji knowledge without them. Thus, in order to situate the case of Alex into previous findings a wider review of literature into language learning strategies is necessary. In a recent review of the field, Grenfell and Macaro (2007) state, “it is theoretically possible to be a ‘good’ beginner language learner and a ‘poor’ advanced learner” (p. 15). That is, advanced or successful language learners may not always be strategic in their learning. In this context, we may situate Alex as a deviant case from the norm observed in previous research.
In conclusion, the case of Alex in this study contradicts an assumption made by previous research of the importance of component analysis in kanji learning, particularly at the more advanced levels. Although time analysis showed Alex commenced applying component analysis strategies throughout the study due to his growing awareness of the potential benefits they could have on his learning, this does not detract from the fact that at the beginning of the study, Alex had reached this advanced level without extensive use of this strategy. Whether his future kanji learning would have progressed without the use of component analysis to a level similar to the other advanced cases of Sue, Holden and Joshua cannot be assessed in the timeline of this study. Nevertheless, the assumption that component analysis is a necessary strategy for advanced learners of kanji has been challenged by these findings.

4.5.2 Advanced learners do not always use more strategies

Previous research into language learning has made an assumption that better language learners use a wider range of language learning strategies than less advanced learners, which has been supported by studies into kanji learning. An analysis of the advanced learners in this study highlighted Joshua as a case that challenges this assumption. This discussion will revise the past literature on this assumption, before revisiting the case of Joshua, which shows how this assumption is challenged by the findings in this study.

Previous research into language learning strategies establishes that more advanced language learners use a greater number and wider range of strategies.
Doering (2000), in her study of eighth grade French immersion students, found successful language learners “used a greater number and wider range of strategies than less effective learners” (p.1). A comprehensive analysis of a number of studies into language learning strategies by O’Malley and Chamot (1990), also found “more effective students used learning strategies more often and had a wider repertoire of learning strategies than did less effective students” (p.128). Oxford (2001) states: “Research shows that greater strategy use is often related to higher levels of language proficiency” (p.167). Research into kanji learning has also supported such Oxford’s claims, as illustrated by the following finding of Bourke’s (1996) study:

The most successful students in the kanji recall tasks were the ones who used the highest number and widest variety of strategies [which] concurs with the claim by Oxford (1989, p. 199) that more effective students use strategies more ‘consciously, purposefully, appropriately and frequently than do less able students’. (p. 131)

Thus, research suggests a link between strategy use and language achievement, establishing an assumption that more proficient kanji learners employ a greater number and wider range of kanji learning strategies.

The case of Joshua in the current study, however, challenges this assumption. Joshua was the most advanced learner of kanji in the study, and was placed with Sue and Holden in the 1000-2000 known kanji range. Unlike Sue and Holden, who reported use of a wide variety of strategies, Joshua exclusively applied a
single method that combined mnemonic and component analysis strategies to remember and recall all kanji in the stimulated recall sessions. Joshua’s strategy to learn kanji involved the creation of mnemonic devices for kanji compounds, to relate these compounds to the kanji’s meaning.

In interview data, Joshua had reported using a number of strategies to learn kanji in the past, but had perceived these strategies as ineffective in retaining kanji in his long-term memory. Joshua, therefore, abandoned these strategies in favor of a single method that he perceived as more effective, thus challenging some assumptions established by previous research. Over time, however, researchers have qualified this assumption, by noting:

Low reported strategy use is not always a sign of ineffective learning. Also reportedly high-frequency use of strategies does not guarantee that the learning is successful. (Yamamori et al., 2003, p. 384)

Joshua, therefore, is a case such as that described by Yamamori et al. where low frequency use of strategies did not equate to inefficient learning. Dornyei (2005), suggests “more is not always best”, which in the case of Joshua may be true.

In conclusion, the case of Joshua in the current study challenges an assumption that advanced learners use a wider range and greater number of kanji: an assumption that has been established by previous research into not only kanji learning strategies, but also the general field of learning strategies. Even though Joshua used a number of strategies in his progression to an advanced level, his
abandonment of other strategies in favor of a single strategy that he applied in a systematic way, challenges previously recorded practices of “good language learners”. While cases such as Joshua’s have been acknowledged by previous research that show more is not always best, this case serves as a reminder that rules have exceptions.

4.5.3 Participants in this study who applied an exclusively mnemonic strategy in stimulated recall perceived difficulty recalling both the English meaning and Japanese pronunciation of the kanji.

In the current study, many participants applied a mnemonic approach to the kanji-learning task, and perceived such strategies as beneficial, while others did not. Stimulated recall sessions and interview data revealed a limitation to the exclusive use of a mnemonic approach to kanji in that there was a focus on the association to the English meaning or Japanese pronunciation of the kanji, but not both. First, previous studies into mnemonics and kanji learning will be reviewed, before the cases of Joshua, Sam and Jeremy will be revisited to highlight this finding.

Previous studies have provided contradictory findings of the benefits of mnemonic strategies in kanji learning. Bourke (1996), for example, found when kanji, or kanji elements, were not meaningful to students a mnemonic approach was helpful. Another study found that learners “learned more of the kanji characters and their meanings when the kanji were presented using descriptive mnemonics” (Lu et al., 1999, p. 304), than when presented without them. Other reports into the use of mnemonics, however, found the use of mnemonics to have
no significant difference to a student's ability to memorize kanji (Sakai, 2002; Wang & Thomas, 1992). Moreover, Toyoda and Kubota (2001) found a mnemonic approach to be less successful than an approach involving component analysis. Therefore, such contradictory findings suggest that although the use of mnemonics when learning kanji is beneficial in some cases, they may have limitations if used too heavily by a learner.

Similar to the studies above, the current study revealed some benefits of mnemonic strategies for kanji learning, but also indicated that an exclusive application of this strategy by some participants revealed a limitation in kanji knowledge that has not been reported in previous studies, as illustrated by the cases of Joshua, Sam and Jeremy. In the case of Joshua and Sam, both participants used a mnemonic to associate the kanji to its meaning, and not its pronunciation in Japanese. This meant in the stimulated recall sessions, they were often unable to recall the pronunciation of the kanji. Moreover, they reported in interviews that they had difficulties understanding both the meaning and pronunciation of the kanji when it was used in combinations with other kanji, as both meaning and pronunciation were subject to change when combined. Jeremy’s case revealed a similar limitation in his mnemonic approach to kanji as Joshua and Sam, even though he applied his mnemonic in an opposite way. Jeremy used a mnemonic to associate the kanji to its pronunciation, thus he was able to recall the pronunciation of the kanji but not its meaning, and not any other alternative pronunciations.

In addition to this, the study highlighted an issue of “losing the meaning in the
mnemonic", where stories used became separated from the original meaning of the kanji and participants were able to recall the story but not the meaning. In interviews, all cases of Sam, Jeremy and Joshua reported these limitations in their knowledge due to their strategy choice. While Jeremy abandoned the use of his mnemonic strategies in later sessions, Joshua and Sam perceived them as acceptable losses for the benefits their strategies gave them.

In conclusion, previous research has suggested mnemonics provides both benefits and limitations in the kanji-learning task. Such suggestions have been supported by the findings of this case, in that many participants perceived mnemonics as extremely beneficial to kanji learning, while others viewed them as ineffective. A further examination of the cases of Sam, Jeremy and Joshua, revealed that an exclusive use of a mnemonic based strategy caused limitations in their knowledge of the kanji studied due to multiplicity of kanji pronunciations and readings.

4.5.4 Perceptions of a link between pre-taught strategies and current strategy use were unclear.

Previous research into language learning strategies as far back as Rubin's (1975) seminal study have been conducted with the rationale that strategies shown as effective could be taught to language students to assist in second language acquisition. Reports of a link between strategy instruction and changes in strategy use, however, have varied in subsequent research. The current study also adds to the ambiguity of such a link in its analysis of the factor of prior
strategy instruction and current strategy use.

Previous research has provided conflicting findings between strategy instruction and changes in strategy use. Outside of the kanji-learning task, a number of studies have argued that strategy instruction has caused increases in test performance (Feyton et al., 1999), and improvements in language comprehension (Pappa et al., 2003). Moreover, according to Cohen (2000), teachers who employ strategy-based instruction in language classrooms have reported that students become more efficient in completing classroom language tasks.

In regard to kanji learning, it has been suggested that teachers provide more guidance to students in the initial stages of kanji learning on the strategies they should use to memorize kanji (see for example Bourke, 1996; Toyoda 1998)—an opinion echoed by Usuki (2000), whose report criticizes teachers for not providing adequate guidance and class time to the learning of these characters. De Courcy and Birch (1993) have also found that the teaching of reading and writing strategies in a Japanese language class resulted in students making use of a wider range of strategies and feeling more in control of their learning. Thus, research has suggested such guidance and instruction may have an important effect on students’ strategy use. However, more recent research has argued that there is no ‘one size fits all’ approach to strategy instruction, and thus warn against the teaching of specific strategies for suggested learning gain (Rubin et al., 2007).
In the current study’s analysis of reported strategy instruction received by the students prior to the study and their current reported strategy use, a link between the two was unclear. Of participants that had been taught mnemonic strategies prior to the study, some perceived them as useful, while others had not. As an example, Alex and Patrick (of intermediate level proficiency) had conflicting perceptions of mnemonic strategies. While Patrick had found mnemonic strategies taught to him by his teachers as useful in memorizing the kanji, Alex found them childish and ineffective. Stroke order was another example of this juxtaposition. Joshua, Sue and Holden (of advanced level proficiency) had all been taught the importance of stroke order as a learning tool. While Joshua maintained this perception of stroke order’s importance, and Sue only moderately so, Holden disregarded stroke order entirely. Similar juxtaposing cases of pre-taught strategies and current strategy use were found in other categories of radicals in component analysis, pictorial association and so forth. Thus, these cases create an unclear link between pre-taught strategies and strategy use and add to conclusions of previous research that effectiveness of strategy use varies according to the individual.

4.5.5 Some participants perceived that strategies provided them with direction in their kanji learning.

In some cases, participants reported that use of kanji learning strategies helped give some participants a direction in their kanji learning and confidence in their ability to memorize kanji. Such comments support previous research that claims such an effect. First, previous literature on the topic will be reviewed, before the
cases of Sam and Joshua are provided as examples to this phenomenon.

Previous research has suggested learning strategies provide students with direction in their learning and confidence in their language abilities. In regard to the former, Oxford argues (2001) learning strategies make students more self-directed in their studies. Moreover, Cohen (2000) states that the teaching of learning strategies makes students take more responsibility for directing their own learning outside of class. In addition to this, teachers have reported that the teaching of learning strategies makes students more confident in their ability to learn language (Cohen 2000). In regard to kanji learning, de Courcy and Birch (1993) have found learning strategies resulted in the class feeling more in control of their own learning. Therefore, previous research into learning strategies in general and the strategic learning of kanji has reported a link between learning strategies and an increase in self-direction and confidence in ability to learn.

Two cases in the current study support the concept that learning strategies cause an increase in self-direction in study and confidence in ability to learn language: Joshua and Sam. As outlined in a previous section, Joshua utilized a strategy involving a combination strategy of mnemonic-based component analysis, and Sam utilized an etymology-based component analysis strategy. In the case of Joshua, in interviews he perceived this strategy combination as not only necessary in his kanji learning, but vital to giving him a vehicle to move toward his kanji learning goal. Before embracing this style of kanji leaning, Joshua was at a reported low-point in his study, having been taught all 2000 kanji necessary
to graduate from his course, but unable to recall more than half of them. Joshua perceived he was forgetting kanji at a faster rate than he was able to review them. The mnemonic strategy offered to him in a reference book (Heisig, 2008) was seen as a systematic tool to review kanji in a meaningful way and gave Joshua direction in his study again. More than this, Joshua perceived the use of this strategy gave him the confidence that he would be able to master the 2000 kanji before graduation.

Sam perceived other learning strategies in general as a waste of time—to the point that he viewed strategies such as mnemonics as a childish exercise, despite his own use of a mnemonic-based etymological approach. For Sam, this entomologically based strategy gave him a scientific and logical way to approach the kanji learning task that also increased his cultural and historical appreciation for kanji, which was the key motivational force in driving him to learn Japanese.

Therefore, albeit in different ways, both Sam and Joshua’s use of kanji strategies gave them direction in their study and confidence in the kanji task, concurring with previous research claims.

4.5.6 Participants in this study perceived the method of testing kanji in classes influenced their strategy use.

In much of the interview data, participants perceived the examination-based nature of kanji curriculum as a major influencing factor on the strategies they used. In this study, stimulated recall data has shown how participants such as
Jeremy have complex strategies to memorize kanji in the short term. Questionnaire data has also indicated how indirect strategies focus on use of flashcards to prepare for exams and quizzes, as opposed to reviewing previously learned kanji. In interview data, many participants criticized Japanese language curriculum that focused on frequent kanji quizzes that tested newly learned kanji, while previously studied kanji was neglected, and thus forgotten. This type of experience was unanimous among all twelve cases. As a result of this system of testing, participants perceived their strategy use when learning kanji was for short-term retention, which was enough to pass a quiz. However, participants perceived the longer-term retention of kanji due to a lack of review as problematic. Results such as this indicate a change is needed in the curriculum if it is to meet participant perceptions of kanji retention.

In addition to this issue raised by over-testing, analysis of the study process in stimulated recall has also revealed a focus on self-testing and not on memorizing when studying kanji. That is, students almost immediately begin self-testing when encountering a new list of kanji, skipping the process of associating the new kanji with known concepts. Association, therefore, becomes a less conscious decision. In terms of literature on memorization strategies covered earlier (see 2.3.4), students were engaging in retrieval practice before encoding the kanji into memory effectively first. According to Matlin (2005), taking the time to encode information at a deeper level through use of powerful associations leads to more accurate retrieval of this information than if encoded at a shallow level. Moreover, Payne and Wagner (1999) argue repetition or rote learning similar to that carried out using flashcards by the participants “is an
extremely poor technique for memorization” (p. 91). Whether this is having a negative effect on kanji memorization remains to be seen, and can be examined in a future study that perhaps measures two groups learning kanji in the two different ways. For now, it raises questions of whether students realize they are missing this important step or meaningful encoding, and whether the raising of awareness changes this—an area that will be examined in a later chapter.

4.6 Chapter Conclusion

In conclusion, the findings of the study have concurred with a number of studies in the field by highlighting that strategy use is an individual choice and by stressing the importance of component analysis. The findings of the study have also challenged some assumptions concerning the importance of stroke order, the reliance on mnemonics, and the notion that advanced learners use a greater range of strategies. The study has also highlighted concerns with pictorial analysis being over-reported. Finally the study has provided a detailed account of strategies used by some participants in the study that were unique to the individual learner, and may have been unrecorded in previous studies in the detail that the qualitative research design of the current study has allowed.

The second research question relating to self-regulation of the kanji task through motivation control will now be addressed in the following chapter.
Chapter 5 Results and discussion: Self-regulation, motivation control and kanji learning

The previous chapter presented the results of the study concerning kanji strategy use, and discussed these results in relation to the literature on this topic. The following chapter will examine and discuss the results of the study concerning self-regulation of kanji learning through motivation control strategies.

First the results of the study will be presented under the 5 categories of motivation control. Then changes in motivation control throughout the study will be examined. Finally, the findings of the study will be discussed in relation to previous research into self-regulation and motivation, in order to position the findings within the literature.

5.1 Self-regulation and motivation control strategies

Dornyei’s model of motivational strategies, based on the psycholinguistic concept of self-regulation, consists of five categories (see Dornyei, 2005; Tseng et al., 2006). This taxonomy of strategic learning is based in the framework of motivation control strategies (Dornyei, 2001), which was based on Kuhl’s (1987) and Corno and Kanfer’s (1993) taxonomy of action control strategies (see Dornyei, 2005). The categories are defined below:
1. *Commitment control strategies* for helping preserve or increase learner’s goal commitment.

2. *Metacognitive control strategies* for monitoring and controlling concentration and for curtailing unnecessary procrastination.

3. *Satiation control strategies* for eliminating boredom and adding extra attraction or interest to the task.

4. *Emotion control strategies* for managing disruptive emotional states or moods and for generating emotions that are conducive to implementing one’s intentions.

5. *Environmental control strategies* for the eliminating of negative environmental influences by making an environment an ally in the pursuit of a difficult goal. (Dornyei, 2005, p. 113)

The results of the study will be discussed under these five headings.

### 5.1.1 Commitment control strategies

Commitment control strategies examine students’ ability to set and reach goals in their learning. Although the questions regarding commitment control strategies clearly prompted students to respond regarding kanji study, many of the students discussed kanji learning goals in the context of their general Japanese learning goals. Thus, their responses are presented as in such contexts, but later analysis takes into account their kanji learning commitments in isolation of other general language goals. Interviews of the twelve participants revealed four had specific kanji-related goals in mind, two others had non-specific kanji-related goals and six had no goals set for kanji learning. Students
with no goals set for kanji learning tended to focus their language study on improvement of oral communication skills, of which kanji were a minor or unnecessary part. According to the type of goal setting undertaken, each participant was assigned a goal level rating of high to low, which will be used for comparative reasons in later analysis. Participants with clear goals involving improvement in kanji learning were assigned a high level rating by the researcher (and verified by a second researcher). Participants with no goals related to learning kanji were assigned a low rating. To illustrate how these ratings were assigned to each of the participants, sample comments from the participants in interviews will be outlined. These comments reflect the participants setting of short-term and long-term goals in their kanji learning.

Joshua, for example, had very specific and established goals in his kanji learning with specific timeframes and deadlines. Comments such as those below illustrate the reason Joshua was assigned a high goal level rating and placed with Tim, Holden and Sue.

Joshua: I’ve set myself a goal several times now of learning—mastering this book, *Remembering the Kanji*. And I have actually been through the whole thing once creating stories. So my stories are all there. I’ve got them already created on my iPod and all that. But my goal now is by September to at least master the first 1,500 and I think the way I’m going to have to do that is through using this as a basic—remembering the kanji as a foundation and then using the basic kanji books 1, 2 and 3. So that’s 1,500 to learn the readings. I have to do that by September.

Tim, Holden and Sue expressed a similar level of goal setting in the kanji-learning task. In the next grouping of participants, Kate also had a long-term goal related to kanji learning, although this goal was less concrete than Joshua’s, and more
focused on oral skills. She also lacked the specific short-term goals to work toward this long-term goal when compared to the four participants in the first grouping. For these reasons Kate has been assigned a goal level rating of moderate-high. An illustration of Kate discussing her goals is shown below:

Kate: My long-term goal over all is to be able to graduate with a degree in Japanese and work as a translator. Mainly because I started out when I was younger watching anime and going, “Are they really saying that?” and had no clue what they were saying so I’ve been wanting to learn how to be able to know what they’re saying without depending on subtitles. Now I’ve gotten to the point where I do recognize words and different phrases. My short-term goal is basically just to pass the course. Right now.

Alex, like Kate, expressed a similar long-term goal, without steps needed to achieve it, thus placing him in the same group.

In a group lower, Paul wanted to study Japanese as an additional skill for employment. Mastering Japanese, therefore, was not a top priority for his overall university studies, but he was still motivated to learn the language well, which included an element of reading and writing kanji. This earned him a goal level rating of moderate. Paul’s attitude toward goal setting is illustrated in the following comment:

Paul: I would like to be fluent in the language as best I can for a non-native speaker. In the short term, I’d just like to travel. I would like to have a skill that a lot of people don’t. I’m an economics major, and I figure it would be a reasonably good idea to know Japanese in the future. It’d probably be better to know Chinese, but I’m content with knowing Japanese for now.

In interviews, Sam had a similar commitment to kanji learning, in that he had personal goals set, although out of interest in kanji learning rather than for
Future university study or work.

Further along the rating scale, Zara had a long-term goal of getting better at conversational Japanese during her time in Japan, of which kanji did not play an important role. She does, however, see a place for kanji in her studies after her return to the US, as explained in the following excerpt. She is given a rating of moderate to low.

Zara: Hopefully by end of semester I’ll be able to get better at kaiwa [conversational Japanese] and when I go back and have to take Japanese classes more I will focus on writing, because this is really a lifelong process to learn it better so.

Colton, like Zara, also chose to focus on conversational Japanese.

Finally, Maya serves as an example of a participant with low goal setting for kanji learning. Maya had no goals set for kanji learning except an informal desire to be somewhat communicative in the language by the end of her year in Japan, thus earning a low rating. This attitude is illustrated in the following comment:

Zara: Short-term I have [no goals] but from what I plan to get from a year is at least be fluent enough to carry a casual conversation. I know I won’t be able to speak and giggle yet or like a business level Japanese so hopefully I can make my way from survival Japanese to something more – something brag-able. So I can tell people I can just chat with like any Japanese now. But that’s it. More very informal goals.

Thus, students were assigned a goal level rating according to interview data such as that shown above. A summary of participant goal setting and subsequent goal level ratings can be found in table 10. Joshua, Sue, Holden and Tim are assigned a high-level rating; Alex and Kate a moderate-high level; Patrick and Sam a moderate level; Zara and Colton a moderate-low level; and Jeremy and Maya
have been assigned a low level rating.
Table 10: A summary of goal level of participants

<table>
<thead>
<tr>
<th>Participant</th>
<th>Goal</th>
<th>Goal level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sue</td>
<td>To enter graduate school in Japan and study political science in Japanese.</td>
<td>High</td>
</tr>
<tr>
<td>Joshua</td>
<td>To pass the final exam of his master’s program which requires knowledge of 1,500 kanji.</td>
<td>High</td>
</tr>
<tr>
<td>Holden</td>
<td>To complete his master’s in Japanese studies and become a Japanese high-school teacher in his home country.</td>
<td>High</td>
</tr>
<tr>
<td>Tim</td>
<td>To enter a Japanese firm in Japan or Singapore.</td>
<td>High</td>
</tr>
<tr>
<td>Alex</td>
<td>To pass kanji exams as part of autonomous study, plus possible use in future employment.</td>
<td>Moderate-High</td>
</tr>
<tr>
<td>Kate</td>
<td>To work in a manga-related field, perhaps in translation.</td>
<td>Moderate-High</td>
</tr>
<tr>
<td>Paul</td>
<td>To become as fluent as he can, to add to his skills in business.</td>
<td>Moderate</td>
</tr>
<tr>
<td>Sam</td>
<td>To become fluent as a personal goal.</td>
<td>Moderate</td>
</tr>
<tr>
<td>Zara</td>
<td>To build-up conversational ability in Japanese including minor kanji study.</td>
<td>Low-Moderate</td>
</tr>
<tr>
<td>Colton</td>
<td>To build-up conversational ability in Japanese including minor kanji study.</td>
<td>Low-Moderate</td>
</tr>
<tr>
<td>Jeremy</td>
<td>To build-up conversational ability in Japanese, without a focus on kanji.</td>
<td>Low</td>
</tr>
<tr>
<td>Maya</td>
<td>To build-up conversational ability in Japanese, without a focus on kanji.</td>
<td>Low</td>
</tr>
</tbody>
</table>

These ratings will prove useful in across case analysis later in the chapter after other aspects of motivation control are presented.

In addition to interview data, numerical data on participants’ self-regulatory capacity was collected via the SRCKan—a questionnaire based on Dornyei’s questionnaire of self-regulatory capacity of vocabulary learning (SRCVoc). On the questionnaire, participants were asked to rate their capacity to achieve goals quickly, to apply strategies to achieve goals, to persist in a language task and to
overcome difficulties. The SRCKan results for commitment control are summarized in figure 12.

Figure 10: Commitment control questionnaire results

In initial analysis, results of the questionnaire did not show a connection to motivation in goal setting from the interview data. That is, it could not be said that those participants who set clearer goals and worked harder toward them had a higher capacity of commitment control. For example, Joshua was the participant with the clearest goals and who was committing the most time and energy toward achieving them. However, in the SRCKan Joshua gave himself a
low rating in the ability of achieving goals quickly. In contrast, some participants with lower-level goals such as Zara rated themselves much higher than Joshua did. In another example, Alex gave himself the lowest possible rating for having special techniques to help him achieve his goals, despite having achieved many of his short-term goals of passing kanji proficiency examinations throughout the duration of the research project. This was compared to Maya who gave herself the highest rating in this category, despite giving up on kanji learning throughout the timeframe of the study and who set no goals in her kanji learning. Inconsistencies like these were evident across the cases.

In initial analysis, such inconsistencies might indicate a flaw in questionnaire design—in that participants’ answers were not reflecting actual practices. On further examination, however, this is not the case. Joshua, in setting himself formidable, long-term goals such as learning 1,500 kanji by a certain date, perhaps perceives this as a goal that is not quickly achievable. In contrast, Zara, whose kanji learning goals are quite basic, perceives her goals as more quickly achievable.

Regarding the participants of Alex and Maya, even though Alex meets his commitments of kanji study consistently and frequently, his interview data has revealed he relies on hard work and regular study to meet these goals, shying away from “special techniques” or “strategic learning”—thus his answer is also a true reflection of practice. This is further supported by his questionnaire response of his capacity to persist with a task in order to meet his commitments—a statement in which he gave himself the highest possible rating.
Maya on the other hand, may use special techniques to achieve her goals in kanji study, but throughout the course of the research project, displayed no need to use these strategies due to her lack of goals for kanji learning. Therefore, the SRCKan has not revealed inconsistencies in answers from individual participants, but inconsistencies across cases in answers—that is, participants’ answers were affected considerably by the type and magnitude of the goals that each participant set. This means any results from this questionnaire must be used to examine each individual case, in relation to each case’s circumstances and should not be used for comparisons across cases. Due to this limitation of the questionnaire results, any “across case analysis“ is better based on the interview data.

### 5.1.2 Metacognitive strategies

Metacognitive control refers to the ability to control procrastination and concentration in study. In interview data, controlling procrastination and concentration in kanji learning was a reoccurring problem cited by most participants. The SRCKan also yielded low ratings from most participants in regard to participants’ capacity to regulate these problems.

All participants in the study expressed some difficulty in the control of concentration during kanji learning. Some students expressed trouble controlling procrastination to severe degrees, as evident in the following interview excerpts:
Interviewer: So you feel like concentration – controlling concentration is a problem for you?

Holden: I just can’t concentrate when it comes to kanji. It’s really strange, you know. Anything else is ok. Conversation, I love... vocab study... no problem... even grammar is kind of fun, but I just can’t sit down and study kanji. When I try, I’ll always find something else to do or some program on TV to watch, or just surf the Internet.

Interviewer: How have you coped with kanji tests in the past?
Holden: Tests? I always somehow manage to do the minimum to pass... but then forget everything after the test... cause I don’t review... also it’s just sheer time... the amount of Japanese study, I’ve done, I should know 2000 kanji by now... I’ve probably learned them all at one stage but forgotten 75 per cent of them. I could pass ikkyu if it weren’t for the kanji. But I just don’t care anymore. I figure I know enough to do what I want to, so the drive is no longer there.

Even though Maya and Holden are at opposite ends of the language proficiency spectrum, they both have incredible issues with procrastination to the point of almost giving up on kanji study. In fact, an argument could be made in both cases that an inability to deal with procrastination has lead to them both to give up on kanji learning and to re-assess the goals they had set. This is particularly evident in Holden’s case where in previous interviews he once expressed a desire to pass the Level 1 Japanese Proficiency Test (ikkyu), but felt it was unachievable due to the kanji component of the test. As a result, Holden adapted his goal for kanji study from becoming a teacher of Japanese at the university level to teaching it at the high school level. These cases showcase the detrimental effects that procrastination and that a lack of strategies to deal with these factors can have on learning.

The case of Joshua among the twelve cases was distinguishable from the others
in this particular area of metacognitive control, because of his awareness of procrastination. Joshua was not the participant most lacking in concentration, nor did he seem to procrastinate the most, but he seemed most aware of how lack of concentration and procrastination affected his goals in kanji learning and of his need of strategies to cope with this negative force. Joshua frequently and openly discussed his issues with metacognitive control as can be seen in the following excerpts.

Joshua: Well, this is a big battle with procrastination—not just kanji but in all things. Recently, I’m trying to tackle it through positive thinking to reading various books about getting things done and believing that you can actually do it. And listening to various sorts of motivational CDs and things. I’ve actually found it really useful. Having said that, if I think back to this weekend, all day yesterday right from the start I knew that I had to do this homework. I had a Japanese essay to write and I knew I had to do it. And yet, I’d find myself doing anything possible to not do it. And essentially, the only way for me to stop that is just to say, “Right, [Joshua], come on. Let’s sit down and do it.” And actually I find that once I start doing it, I enjoy it. So I still haven’t figured out any proper way of actually making myself do these things. And I’ve been thinking really seriously for the last few days, okay, maybe if I introduce some kind of reward system for myself. So if I study the kanji for an hour or whatever, then I can do this or whatever. Because I know that I have to stop this. I have to stop right here because otherwise I’m stuffed when I get back in September. I’ll be absolutely stuffed.

Joshua understood that procrastination was having a severe effect on his achievement of goals by the set deadline. To deal with this effect, Joshua experimented with a number of strategies to control his concentration from positive reinforcement, self-talk and rewards, but felt he was making little progress in finding a suitable solution.

For Joshua, the deadline of September seemed to cause anxiety rather than
motivation to achieve goals and stop procrastination. This is in stark contrast to other cases that seemed to believe a deadline was enough to motivate them to concentrate on their studies, as can be seen by the following comments by Paul, Sam and Sue:

Paul: I have to (study). I mean, there’s no choice. And there’s no better motivator than something that has to be done.

Sam: And in some ways, my drive to procrastinate is there, but it’s not so strong that I need, you know, incredible coping strategies to deal with it. So I have good enough ways of dealing with it, and I don’t procrastinate too much.

Sue: If I want to learn, I can concentrate.

These three cases, in addition to the cases of Zara and Tim all either found the kanji learning task itself motivation enough to control procrastination, or did not suffer enough that strategies were necessary. In this way, these cases were quite distinct from Maya, Holden and Joshua.

Other participants (Colton, Alex, Kate, and Jeremy) were positioned in between suffering from procrastination and controlling it. Often these participants cited procrastination as a problem, but also cited a number of strategies they used to cope, such as the following:

Alex: Yeah. Well, I have problems procrastinating with all studies but it helps -- like with something like this quiz or exam which is really kind of short term, like it is now, so that kind of helps at least studying for it. Or like with the quizzes, oh, it’s coming up, so I’ll do it because it’s more of like a concrete set. If someone said by the end of the semester, learn these 50 kanji, I’d probably put it off to the day before or something. But having kind of like—instead of one goal far away—you know, having it spread out or maybe closer by me really helps me because it kind of motivates me to study for that part of it. But yeah, I do have procrastination problems.
Interviewer: So you think the best way for you to overcome those problems is having these kind of frequent short term—
Alex: Yeah, frequent short term ones.
Interviewer: To motivate you?
Alex: Yeah, to motivate me. And also, after having those, maybe if like in the class they would make you still use the kanji, that would kind of help keep it in the memory. But in terms of actually studying for it and learning it, it helps me to kind of have it spread out and just have something to study for. It also splits it up, which makes it a lot easier.

In this part of the interview, Alex discusses the importance of breaking long-term goals into smaller short-term goals in order to make them seem more achievable. He discusses the idea that one large long-term goal has been a major source of procrastination for him in the past. Such comments seem to resonate Holden's inability to concentrate to achieve his long-term goal. However, unlike Holden, Alex has applied a coping strategy to deal with his procrastination.

After analysis of interview data, such as that prescribed above, participants were given a concentration level rating by the researcher for later comparison. A summary of the concentration capacity of all participants in outlined in table 11.
Table 11: A summary of concentration capacity of participants

<table>
<thead>
<tr>
<th>Participant</th>
<th>Goal</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sue</td>
<td>Procrastination is not such a big issue that strategies are necessary.</td>
<td>High</td>
</tr>
<tr>
<td>Sam</td>
<td>Time deadlines are enough motivation to stop procrastination.</td>
<td>High</td>
</tr>
<tr>
<td>Paul</td>
<td>Time deadlines are enough motivation to stop procrastination.</td>
<td>High</td>
</tr>
<tr>
<td>Zara</td>
<td>Procrastination is not such a big issue that strategies are necessary.</td>
<td>High</td>
</tr>
<tr>
<td>Tim</td>
<td>Doesn’t have procrastination problems.</td>
<td>High</td>
</tr>
<tr>
<td>Alex</td>
<td>Procrastinates, but not to the point that it is a big problem.</td>
<td>Medium-high</td>
</tr>
<tr>
<td>Colton</td>
<td>Procrastinates, but can concentrate when necessary.</td>
<td>Medium</td>
</tr>
<tr>
<td>Jeremy</td>
<td>Has strategies that allow him to study at the last minute.</td>
<td>Medium-low</td>
</tr>
<tr>
<td>Joshua</td>
<td>Procrastination is a problem but has strategies to cope, although ineffective.</td>
<td>Medium-low</td>
</tr>
<tr>
<td>Kate</td>
<td>Has a lot of trouble devoting time to kanji study when not interested.</td>
<td>Medium-low</td>
</tr>
<tr>
<td>Holden</td>
<td>Kanji always is left to the last minute.</td>
<td>Low</td>
</tr>
<tr>
<td>Maya</td>
<td>Always gets “derailed” when studying kanji</td>
<td>Low</td>
</tr>
</tbody>
</table>

At one end of the spectrum, Sam, Paul, Sue, Zara and Tim seemed to be unaffected by procrastination, and were accordingly given a high concentration capacity rating. Jeremy, Holden, Joshua, Maya, and Kate were severely affected by procrastination and were accordingly given a medium-low or low concentration rating, with the remaining participants placed in between.

The SRCKan yielded similar results as the interview data, and are summarized in figure 13.
The questionnaire supported the notion that Joshua, Holden, Maya and Jeremy suffered most from procrastination, and Sue, Zara, Paul and Sam were relatively unaffected. (Note: In follow-up interviews with Paul it was discovered the low scores from Paul on two of the items were because he did not suffer from procrastination so controlling it was not an issue). Only Tim’s response on the SRCKan contradicted his interview data. In a follow-up interview it was found that similar to Paul, the lack of procrastination as an issue for Tim made the questionnaire items difficult to rate.

Figure 11: Metacognitive control questionnaire results
5.1.3 Satiation control strategies

Satiation control refers to students’ capacity to control boredom and dissatisfaction in a learning task, and the ability to cope with these negative feelings (Dornyei, 2005). Like metacognitive control, satiation control seemed to be a large problem faced by students in the kanji-learning task, in that the majority of students saw kanji learning as a boring and arduous task. Most participants agreed the kanji learning task was never-ending, and thus progress in kanji learning was a long and demanding goal.

This opinion is showcased in comments by Kate, who compares how satiation for kanji learning is different for other language tasks such as writing a paper in Japanese.

Kate: Even writing a paper in Japanese is more enjoyable. But with something like learning kanji, because it's not creative, it's – the – it's rewarding in the long-term, but as it's not creative, it's not rewarding in the short-term. And I find that quite – that lack of reward in the short-term quite difficult to deal with. So yeah. I need to develop some special techniques. So if anyone has any?

Kate feels learning kanji is not rewarding in the short term and expresses a desire for coping strategies to control this satiation.

A frequently cited strategy to control satiation involved the study of kanji in short sessions, as can be seen in the following excerpts from Alex, Colton, Maya and Sam:

Alex: A lot of times, I'll just kind of take small breaks. Like after I do like one read through or something, like I'll just – for 15 or 20 minutes, just kind of relax or something. Just get a –
mean, I try not to kind of study like in bulk. Like I just can't do that. But I take kind of small breaks throughout, and that kind of helps me – I do that just with studies in general, not even just with kanji.

**Colton:** That's sometimes what I do a lot, is like take breaks. And you know, if I – I'll tell myself, okay, [Colton], learn, you know, these two, or learn these three, or learn this page pretty well. Then after that, you can go, you know – you know, for a walk, or you know, go get – make some tea or something, and then come back. You know, at least do something different to kind of refresh yourself.

**Maya:** I break my work up like if I have to write a sakubun I like start at like early evening and I chat with a friend. Then continue afterwards and do something and cut, cut, cut until I finish it. Yeah. More of like spread it out so I won't feel like the labor. Yeah.

**Sam:** The other way I deal with boredom is I break up my study sessions, and study in like random places. So I'll study on the train a little bit. I'll study in the library a little bit. I'll study at home. But I'll break it up. I won't spend, you know, hours on end studying the same thing.

In the interview data, this strategy of breaking study up, whether into smaller tasks [Alex], rewards [Colton], chunks of time [Maya], or environment [Sam] was the only strategy mentioned by the participants to cope with satiation. The concept of regulating study environment in order to control satiation will be explored further in the environmental control strategy section. Nevertheless, it is clear participants' capacity to control satiation and the strategies they employ seem relatively thin compared to other areas of motivation control.

At this point, the case of Holden’s problem of procrastination and concentration need to be revisited. Most other cases showed that satiation control and metacognitive control were distinctively different operating forces—that is, a participant can be bored with a task, but still do it, as can be seen in the following excerpt from Sue:

**Sue:** I do learn it if – I can – I can – I can concentrate if I want. But
if I’m bored, I give up. It’s separate. If I want to learn, I can concentrate.

In the case of Holden, however, the two were inextricably linked. Interview data, such as the excerpt below, suggested that Holden’s procrastination in the kanji-learning task stemmed from his lack of satiation control. Holden’s comments suggested he was simply “fed-up” with studying kanji for such an enormous length of time (eight years), which led to his inability or unwillingness to concentrate on studying them, which in turn led him to erase kanji learning from his long-term goals.

Holden: To be honest, I’m just fed up with kanji. I’ve been studying it so long, and made such little progress, I’m done. I used to think there was an easy way to study them, but you know, you just have to sit down and learn them... and when you’ve learned them you have to review them constantly. I just don’t have the patience for that anymore.

Interviewer: So you don’t want to study kanji anymore?

Holden: It’s just too much work. I’d rather concentrate on improving other things right now, especially my speaking.

Such results indicate that a change in Holden’s satiation control, would not only improve his satisfaction in learning kanji, but also then have a trickle-down effect on his metacognitive control and his commitment control.

Based on interview data, the results of satiation control among participants can be summarized as indicated in table 12.
**Table 12**: A summary of satiation levels of participants

<table>
<thead>
<tr>
<th>Participant</th>
<th>Summary</th>
<th>Satiation level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sue</td>
<td>Is able to regulate boredom in the kanji-learning task.</td>
<td>High</td>
</tr>
<tr>
<td>Sam</td>
<td>Enjoys kanji learning. Satiation control is not necessary.</td>
<td>High</td>
</tr>
<tr>
<td>Zara</td>
<td>Is not bored by kanji learning task.</td>
<td>High</td>
</tr>
<tr>
<td>Paul</td>
<td>Has many strategies to deal with satiation control.</td>
<td>Moderate-high</td>
</tr>
<tr>
<td>Colton</td>
<td>Displays some satiation control, such as setting small goals and rewards.</td>
<td>Moderate</td>
</tr>
<tr>
<td>Tim</td>
<td>Displays some satiation control.</td>
<td>Moderate</td>
</tr>
<tr>
<td>Alex</td>
<td>Displays some satiation control.</td>
<td>Moderate</td>
</tr>
<tr>
<td>Kate</td>
<td>Finds boredom a problem in the kanji-learning task. Has a lack of strategies.</td>
<td>Moderate-Low</td>
</tr>
<tr>
<td>Jeremy</td>
<td>Bored with kanji learning.</td>
<td>Moderate-Low</td>
</tr>
<tr>
<td>Maya</td>
<td>Displays some satiation control, such as breaking the task into shorter sections.</td>
<td>Low</td>
</tr>
<tr>
<td>Joshua</td>
<td>Very bored with kanji learning. Has an impact on learning.</td>
<td>Low</td>
</tr>
<tr>
<td>Holden</td>
<td>Very bored with kanji learning. Has an impact on learning.</td>
<td>Low</td>
</tr>
</tbody>
</table>

The results of the SRVKan, which are shown in figure 14, were less informative than the interview data. They did, however, support findings that Sue seemed most able to control boredom in the kanji-learning task, and that Holden had most difficulty.
Interestingly, Joshua, like Holden was also at the lowest end of SRVKan responses. Both of these high level students seemed bored with the kanji learning task, and both students had difficulty in metacognitive control as a result, thus showing a link between the two for some participants.

5.1.4 Emotion control strategies

Emotional control strategies examine how learners cope with emotionally charged feeling such as stress, depression and disappointment that may hinder

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**Figure 12: Satiation control questionnaire results**
their language development (Dornyei, 2005). In this area, the participants illustrated a range of differences in both levels of emotion and types of emotion control strategies.

Six participants indicated some degree of anxiety and stress over kanji learning, and usually associated this stress with a commitment such as an examination or quiz. Some of these participants offered coping strategies to deal with this stress, illustrated in the following comments:

Zara: I don’t get stressed that much. No. I mean, I get stressed about grammar and all the sakubun, kanji, and everything. But I just kind of have to take a deep breath and stand back and go at it again.

Joshua: When I feel stressed about kanji learning, I know how to reduce it. Basically, the answer is study kanji. I find as soon as I start studying, the stress just disappears.

In these comments the participants find that just studying kanji is sufficient to deal with stress. Paul, went one step further and offered this coping strategy which harnessed the energy of the stress itself:

Paul: As stressed as I might be about studying kanji, it doesn’t matter. You do what you got to do. And you know, a little bit of that stress, a little bit of the adrenaline, a little bit is good– sometimes I like to study kanji when I’m on an exercise bike, because the adrenaline pumping usually helps me memorize them a little more quickly. Like when I’m on an exercise bike, I’m doing it – because I’m stationary, I can usually get done the 30 [kanji] in 35, 40 minutes, and then I can go back over the other ones.

Here, Paul turns emotional energy caused by stress into a tool to study kanji while dealing with the stress through physical exercise. This type of strategy is also a type of environmental control strategy and will be revisited in the following section. In any case, no participants suffered from stress to an extent that they felt like giving up.
Comments indicated feelings of giving up stemmed from emotions of disillusionment, disappointment and self-criticism. Disillusionment and self-criticism over a lack of progress in kanji study was most evident in all three participants at the highest level of language proficiency: Sue, Joshua and Holden. (Although Maya at the bottom end of the spectrum also was quite critical of herself). Sue, Holden and Joshua expressed desires to stop learning Japanese numerous times in the interview sessions as illustrated below:

Joshua: It’s a real struggle. And yesterday, I must admit – it wasn’t just yesterday – recently I’ve been saying, “Stuff this bloody course and learning Japanese!” I mean my plan is to – after I’ve graduated is to come back here and live in Japan anyway. So hey, you know, I can speak basic Japanese and I’ll pick up the rest if I live here for a while. Bugger it. But then – that’s a really bad attitude.

Sue: I want to give up learning Japanese – so I give up studying sometimes, and do other things. And then I – think of all the time I have invested in it, so I have to – go back to study it. It's too late.

Holden: I gave up on the dream of becoming fluent a long time ago. I remember thinking... I’ll be completely fluent after one year in Japan, but now it’s been three, and I haven’t really made that much progress since the first 6 months... I mean, I’m sure I have but it’s been baby steps since then. I mean, at this point, I know it’s not going to happen.

In addition to feelings of giving up, whether acted or not acted upon, Joshua and Holden expressed high degrees of self-criticism at their lack of progress.

Joshua: The main problem of course is always time – so many demands. It’s quite a challenge. And if I don’t do it, then I’ll be really disappointed with myself. I’m a bit of a perfectionist. So that’s why in a way I found the kanji so difficult because I’m not succeeding, as I’d like to.

Holden: Especially the kanji [is most depressing]. It’s just so demoralizing to be still studying kanji I was supposed to have learned three years ago!

Joshua: Sometimes it’s just demoralizing because there’s just so much to learn. And the thing is because there’s no clear
way to study these kanji that I’m finding this to be a major problem at the moment.

Maya also expressed a high degree of self-criticism, although her comments were unrelated to kanji study, but they still serve as an illustration of how self-criticism and stress are sometimes intertwined:

Maya: I have really high expectations of myself, so if I don’t like – like if I set a goal and if I don’t achieve that, like you can be believe I’m like “Maya you didn’t get it”! Oh. You know, stuff like that. So they – I’m the type of person who worries about everything, every little thing. So if I’m studying something and I don’t get it right, like my stress goes skyrocketing.

Interviewer: Okay. And you feel sometimes the stress might get out of control, or too much, or you want to give up, or—

Maya: Yes. Of course.

Dismissing the case of Maya, on the grounds that her comments were about study in general and not related to kanji, for which she had set herself no commitments, the data shows a clear divide in participants in that higher-proficiency participants subjected themselves to harsher self-criticisms and disillusionment due to lack of progress, although these feelings did not necessary coincide with levels of stress. There seemed to be a clear link with level of commitment and lack of emotional control—that is, the goals that higher-level participants set for themselves were more unattainable than those set by lower-level participants, and when these goals were not reached in the desired time, it led to a decline in emotional control.

In terms of questionnaire data, because the questionnaire focused on stress as the main emotion to control, the main issues that rose from the interview data of self-criticism, disillusionment and disappointment were sidelined. Thus cases such as Sue or Joshua, who suffered from emotional control in interview data,
seemed to have a higher capacity of emotional control according to questionnaire data, summarized in figure 15.

![Emotion control strategies diagram](image)

**Figure 13: Emotional control questionnaire results**

These results indicate that emotions in addition to stress need to be added to questionnaire items in future studies to measure emotional control to a fuller extent.

In summary, based on interview and questionnaire data, the twelve participants’ emotion control can be summarized as shown in table 13.
Table 13: A summary of emotion control levels of participants

<table>
<thead>
<tr>
<th>Participant</th>
<th>Summary</th>
<th>Emotional control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sue</td>
<td>Wants to give up.</td>
<td>Low</td>
</tr>
<tr>
<td>Joshua</td>
<td>Frustrated, self-critical of progress.</td>
<td>Low</td>
</tr>
<tr>
<td>Holden</td>
<td>Wants to give up.</td>
<td>Low</td>
</tr>
<tr>
<td>Tim</td>
<td>Emotion control is not a problem.</td>
<td>High</td>
</tr>
<tr>
<td>Alex</td>
<td>Emotion control is not a problem.</td>
<td>High</td>
</tr>
<tr>
<td>Kate</td>
<td>Has strategies to cope with emotions.</td>
<td>Moderate</td>
</tr>
<tr>
<td>Paul</td>
<td>Knows how to deal with stress.</td>
<td>Moderate</td>
</tr>
<tr>
<td>Sam</td>
<td>Emotion control is not a problem.</td>
<td>High</td>
</tr>
<tr>
<td>Zara</td>
<td>Emotion control is not a problem.</td>
<td>High</td>
</tr>
<tr>
<td>Colton</td>
<td>Emotion control is not a problem.</td>
<td>High</td>
</tr>
<tr>
<td>Jeremy</td>
<td>Emotion control is not a problem.</td>
<td>High</td>
</tr>
<tr>
<td>Maya</td>
<td>Self-critical of progress</td>
<td>Low</td>
</tr>
</tbody>
</table>

Thus, the twelve participants in the study represented a wide range of emotions and ability to control these emotions in the kanji-learning task.

5.1.5 Environmental control strategies

Environmental control strategies refer to how a student controls their learning environment in order to facilitate study (Dornyei, 2005). Learners with good environmental control are more aware of how their environment affects their learning and have strategies to curb these negative effects.
Interview data indicated that learners linked environmental control with metacognitive control – particularly in the notion that controlling environment meant choosing an environment with fewer distractions, thus eliminating catalysts of procrastination and thus improving concentration on a learning task. Three participants discussed the need to remove themselves from an environment that contained too many distractions in order for them to be able to study effectively:

Joshua: Yeah. I try to use flash cards. Yeah. On trains and things. Trains are a big part of the learning process recently... ...because it’s – it’s the only time I can make myself sit down and just concentrate on it. Yeah. Concentration. It’s hopeless. Concentration. Yeah. It’s because – I mean, when I was – when I was answering these four – five – four questions here, I was thinking about when I – when I study at home, and there’s so many distractions around the place. So I – I was just laughing, because my concentration is so atrocious. If I’m here in the library, it’s not so bad.

Kate: When I have a list of kanji to study I would completely disconnect my computer from the Internet so I don’t have that distraction. Probably turn off my computer and just listen to my MP3 player as I work. I always like listening to music as I do homework or whatnot.

Colton: On the other hand, the house is too comfortable. There’s too many distractions. I can’t do anything. But a café is that in-between where you can’t really go to sleep. You could, but it’s not really good to. And there’s a certain amount of movement with people coming and going, but too much of a distraction, so I think cafés are a bit of a godsend, especially in Japan where you can buy one drink and stay there for hours and hours and hours as well.

Interestingly, although Kate, like Joshua, removed distractions that would interfere with their study such as a computer, Kate allowed herself to listen to music, which for her was not a distraction. Similarly, in the case of Colton, the movement of people was not viewed as a distraction. In fact, many of the participants revealed in their interviews that an environment free of noise was not conducive to productive kanji study.
Alex: Noises don’t really bother me, so I can study pretty much anywhere but mostly I’d say in my dorm. I sit down and listen to music and study it.

Sam: I need some amount of quiet but I often listen to music. I want some amount of stuff going on around me. Like I don’t think a silent featureless room would be a good place for me to study.

Jeremy: I don’t dig the library too much just because it’s too quiet. It’s oppressively quiet where I’m scared to like unzip my backpack because I feel like I’m disturbing someone.

It is clear that for many participants environmental control also linked with satiation control, in that a noiseless environment would in some cases be a negative force on learning.

Some participants expressed this idea further, by controlling their environment to intentionally control not only satiation, but emotional stress as well. That is, by altering the environment, they were able to reduce levels of boredom and stress in their study. Sue, for example, noted that whenever she studied kanji in her bedroom, she would always lie on the floor instead of the bed, to ensure she did not fall asleep. Colton also expressed the following ideas in his interview:

Colton: I know that if – if I do become bored or stressed, that I can change that, you know, by moving to a different spot or – in my mind, thinking, well, what would be more calm, or what would be more new or interesting. You know, because obviously, I need to liven it up a bit.

Thus, Colton used his environment to alter feelings of stress by choosing calming environments and to alter feelings of boredom by choosing new or interesting locations for study.

At this point it is also interesting to revisit Paul’s strategy of using exercise while learning kanji to eliminate feelings of stress, as this is also a way of controlling an
environment to facilitate study:

Paul: I mean, exercise bikes and treadmills are perhaps the most boring ways of exercising ever invented, ever. You stare at a wall while you’re exercising. I mean, sometimes they put TVs. Sometimes they don’t. So I just – I take kanji. When I’m at school and I go ride an exercise bike, I just take kanji with me. And I do it – last year, I did it twice a week. I’d go on Tuesday and Thursday mornings, because I didn’t have class. And I’d ride the bike and memorize kanji.

Here, Paul combines the boring environment of the exercise room with the task of kanji study. By studying kanji in this environment, the learning task actually increases Paul’s satiation level of kanji learning, as to him the task becomes more interesting than the exercise itself, and thus no longer seems boring, but an interesting distraction from the boredom of the exercise room. Here, the kanji study becomes the distraction.

Interview data revealed environmental control involved not only choosing the location, but also removing distractions from that location. This is an important distinction to make that is illustrated well by Joshua’s struggles with environmental control.

Joshua: I have a really big problem. My main distraction is my Mac. I make a podcast for people studying Japanese and stuff. It’s not exactly professional but I really enjoy doing that. And I have a couple of websites and things like this. So I’m always—I really love that sort of thing and being creative like that. And the thing is I tend to keep my Mac on anyway just at the side with—just in case someone emails or something. So recently I’m really trying to deal with that for doing things. For example, for the past three years I’ve had my emails checked by the mail program once every minute. I was reading somewhere on the website, 43 Folders, how if you have your email being checked once every minute, that’s X thousand interruptions per week. I’m like, “Oh my god, yeah!” So what I did was I switched that off. So now if I want to check my email, I have to physically go check mail. So I’m trying really hard to try
and stop myself from having the opportunity to not concentrate and not study because at the moment I’ll take every opportunity. Like today, I’m going to study in the library but I’ve brought my damn Mac because I—god damn it!

In this interview excerpt we can witness Joshua describing his distraction (his computer), describing his strategies to control his study environment (by disabling the mail feature and studying in the library), then coming to the realization that a change in location alone is not a sufficient enough strategy to deal with the distraction, as he has brought the distraction to his new environment. Thus, environmental control involves the control of not only the environment, but also of the distractions within it.

Interview data with many of the participants also revealed another side of environmental control that was not anticipated by previous studies covered in the literature review to this study—this element being time. For many participants, controlling the time that they studied was an important strategy in increasing their productivity when learning. Many participants commented that they were aware of certain times of the day or week that were ideal for them to learn kanji for reasons of better metacognitive or satiation control, or to limit the amount of distraction as illustrated by the example comments below:

Zara: I study kanji mostly in the morning, anyways. I can’t study at night. I’m too tired and impatient for kanji.
Maya: I’m just so used to it already. Back in college since I had to balance my academics with my extracurriculars, since I was an editor for a publication. So I really learned to work really late at night. Or really early in the morning. I notice that’s probably my best time to work since no one can bother me.
Kate: Yeah. No distractions at all then [late at night]. You’re by yourself and most of my friends who are night owls too are accessible at that time so I find it best to study at that time
because I also have a friend but from the other university to nag. Like what does this mean? How do I say this in Japanese?

Thus, in these examples, Zara, controls the time in her study environment in order to decrease boredom, which connects to her satiation control strategies. Maya and Kate control the time in their study environment to decrease distractions, which connects to their metacognitive control strategies. Thus environmental control, similar to the other previous categorizations of control, is also interconnected with previous strategies covered in this chapter—an issue that will be dealt with in the following discussion section.

5.2 A summary of motivation control of participants

As in the previous chapter, cases can be grouped and compared on differences and similarities in their self-regulatory capacity in order to examine patterns in the data and to draw conclusions. For the purpose of analyzing these cases as succinctly as possible, two cases will be highlighted and explained in detail to indicate perhaps the biggest variance in factors of relevance to self-regulatory capacity. Once the boundaries of variance are set with these two extreme cases, other cases will be introduced to examine how they compare.

5.2.1 The case of Holden

Holden was a foreign exchange student, who was completing a master’s degree at an Australian university. The purpose of Holden’s exchange visit to Japan was to further his Japanese language ability and to collect research on an aspect of
Japanese culture for his higher degree. When Holden joined the study he was beginning his year-long exchange. Holden had spent 2 years in Japan prior to this trip as an English teacher, which was one of the original motivating factors to do his research Master’s in Japanese studies.

In terms of language ability, Holden was at the advanced level, and had the highest Japanese communicative ability of all twelve participants, although both Sue and Joshua were more learned in kanji. Like Joshua and Sue, Holden had passed the level 2 Japanese language proficiency exam, which indicates an advanced knowledge of the language. Unlike Joshua and Sue, Holden had also taken level 1 of the same test, and had passed the reading, grammar and listening sections, but had failed the kanji section. Holden had a clear goal with kanji learning—in that he needed it for a future career in academia in Asian studies—but lacked self-regulation of the study of kanji.

Firstly, Holden lacked commitment control in the kanji-learning task. He set himself a distant and general commitment of passing level 1 of the Japanese proficiency test, but had no short-term or specific goals that moved him toward this goal. Moreover, he lacked a clear deadline for this goal, stating it was something he would like to achieve in the future. Holden also lacked metacognitive control, procrastinating severely throughout the duration of the study. He also reported problems with emotion and satiation control. Due to his long history of learning kanji he was not only bored with kanji study, but also extremely frustrated and self-critical at his lack of progress with his kanji study.
Holden’s attitude to kanji study could best be described as frustration. Having learned approximately 2000 kanji during his study, Holden was frustrated with his inability to remember them all. He also seemed to be at a loss as to how to maintain this knowledge as the review of so many kanji seemed like a time-consuming and laborious task. His frustration with kanji study and inability to remember all of them also caused Holden to question his ability to master the Japanese language and to question his future goals of having a career in the Japanese language. Indeed, Holden’s motivation to take part in the study was in the hope to rekindle his desire to study kanji once more, before returning to Australia. In conclusion, Holden was a student whose Japanese was at the peak of its proficiency, but whose self-regulation of kanji learning was at a low point in terms of motivation control because of frustrations with kanji.

5.2.2 The case of Sam

Sam was a participant from United States who was a non-language major—that is, unlike most other students in the study, Sam was studying Japanese as an elective course in his science-based undergraduate degree, rather than majoring in it. Accordingly, Sam’s commitment to studying kanji was out of self-interest, and held no bearing on the outcomes of his graduation or future career—although he did express it would be nice (but not necessary) to use Japanese upon his return to the US. In his study of kanji, Sam showed that he was able to regulate his learning in all aspects of motivation control. In setting low commitments, Sam was able to meet these goals easily and eagerly.
Sam did not suffer from an inability to control procrastination in kanji learning, nor did he have feelings of anxiety or stress. He was fascinated by kanji both in origin and stylistically, meaning satiation control strategies were unnecessary in his study of kanji. Furthermore, he could easily control his environment to facilitate this study. In conclusion, Sam was a beginner level learner of Japanese who was driven by self-interest and was void of high-level commitments, who also displayed a high capacity to regulate his learning when studying kanji.

Comparatively, the two cases of Sam and Holden are illustrated in table 14, based on the researcher’s assessment.

**Table 14: A summary of self-regulation of Holden and Sam**

<table>
<thead>
<tr>
<th>Case &amp; Gender</th>
<th>What is their proficiency?</th>
<th>What is their commitment to kanji learning?</th>
<th>Is meta-cognitive control a challenge?</th>
<th>Is satiation control a challenge?</th>
<th>Is emotional control a challenge?</th>
<th>Is environmental control a challenge?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holden (M)</td>
<td>Very High</td>
<td>High</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Sam (M)</td>
<td>Low</td>
<td>Mid</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

205
5.2.3 Other participants

Now that the boundaries of the cases have been explained using the cases of Holden and Sam, we are now able to see how the other cases fit in relation to these boundaries (see table 15).

Table 15: A summary of self-regulation of participants

<table>
<thead>
<tr>
<th>Case &amp; Gender</th>
<th>What is their proficiency?</th>
<th>What is their commitment to kanji learning?</th>
<th>Is meta-cognitive control a challenge?</th>
<th>Is satiation control a challenge?</th>
<th>Is emotional control a challenge?</th>
<th>Is environmental control a challenge?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holden (M)</td>
<td>Very High</td>
<td>High</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Joshua (M)</td>
<td>Very High</td>
<td>High</td>
<td>Somewhat</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Sue (F)</td>
<td>Very High</td>
<td>High</td>
<td>Somewhat</td>
<td>Yes</td>
<td>Yes</td>
<td>Somewhat</td>
</tr>
<tr>
<td>Kate (F)</td>
<td>Low</td>
<td>Mid-high</td>
<td>Yes</td>
<td>No</td>
<td>Somewhat</td>
<td>Somewhat</td>
</tr>
<tr>
<td>Paul (M)</td>
<td>Mid</td>
<td>Mid</td>
<td>No</td>
<td>Somewhat</td>
<td>Somewhat</td>
<td>Somewhat</td>
</tr>
<tr>
<td>Maya (F)</td>
<td>Very Low</td>
<td>Low</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Colton (M)</td>
<td>Mid</td>
<td>Mid-low</td>
<td>Somewhat</td>
<td>No</td>
<td>No</td>
<td>Somewhat</td>
</tr>
<tr>
<td>Jeremy (M)</td>
<td>Mid</td>
<td>Low</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Alex (M)</td>
<td>High</td>
<td>Mid-High</td>
<td>Somewhat</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Zara (F)</td>
<td>Low</td>
<td>Mid-low</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Tim (M)</td>
<td>Mid</td>
<td>Mid-high</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Sam (M)</td>
<td>Low</td>
<td>Mid</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

In addition to Holden, there were two other participants that were almost identical in self-regulatory capacity: Joshua and Sue, although some aspects of motivation control were higher than Holden’s. At the other end of the spectrum, were Zara, Tim and Alex, who joined Sam as learners who reported high self-regulatory capacity. In the middle of the spectrum were the cases of Kate, Paul, Colton, Jeremy, and Maya who were students of mixed or less definitive control.
when compared with Holden and Sam. Although this table is an oversimplification of interview data results, it is a useful reference for the discussion of the findings of the study.

Now that motivation control of participants has been outlined, the second part of research question two regarding changes in self-regulation can be investigated.

5.3 Changes in self-regulation throughout the duration of the study

Results indicated there was little change in participants’ responses in regard to motivation control during the duration of the study. Such findings support Dornyei’s (2006) assumption that self-regulation is an underlying capacity that can be measured more reliably than strategy use in each individual learner.

Although motivation control in kanji learning did not reportedly change throughout the course of study, interview data indicated that participation in the study did have some positive effects on some of the participants’ learning from the outset of the study. These effects support observations of a previous study of awareness raising of self-regulation that caused improvements in self-determination and self-efficacy of the participants (Ching, 2002). Joshua, for example, stated he felt his motivation to learn had been sparked through participation in the study—in particular in his ability to control procrastination and curb negative emotional feelings toward his reported lack of progress. According to Joshua, the knowledge of an upcoming interview session helped control this procrastination. Joshua also stated that the sessions helped him talk
about his negative feelings regarding kanji, and thus reduced negative emotional factors that impacted on his learning. According to self-regulation literature, talking with others and seeking advice can have a positive effect on a learner’s emotion (Larson & Prizmic, 2004), which may account for some of this influence.

That being said, the interviews did not change the way that any of the participants reported to control their motivation. Instead, the sessions reportedly lessened the negative forces that they had to control, and this was evident from the outset of the study. That is, participation in the study made kanji learning appear more interesting, less stressful, and it gave them weekly commitments and reduced their procrastination.

Thus, in answer to the research question, it can be said that the participation in the study did have a minor impact on commitment control, metacognitive control, emotional control and satiation control from the outset, but did not have an impact on how students dealt with these forces throughout the duration of the study. Certainly a raised awareness of motivation control did not have any reported impact on participant responses, but the presence of the interview sessions themselves and motivations to participate in the study may have.

It is now important to examine findings in relation to research literature.
5.4 **Discussion of Findings**

This next section discusses the findings of the motivation control component of the study in reference to previously reviewed literature in the field. The discussion of the results has been organized under a number of findings observed in the results. A discussion of the network of relationships between each of these categories will also be explored, in addition to an assessment of data analysis methods.

### 5.4.1 Commitment control and goal setting challenges

Regarding kanji study, participants of higher language proficiency found greater difficulty in meeting their commitments with kanji learning than lower-proficiency learners. Results indicated that a key cause of this occurrence was that higher-proficiency participants tended to set longer-term goals than participants of lower proficiency who had a number of short-term goals. Previous research into motivation control supports this finding.

The results of the study reported that higher-proficiency participants tended to set long-term, overwhelming goals that involved the study and review of approximately 2000 kanji. Holden and Sue, for example, wanted to pass the Japanese Language Proficiency Test of level one, for which they needed 2000 kanji. Joshua also needed knowledge of a similar number of kanji to pass his master’s program. In all three cases, the students had great difficulty in reaching their commitments because of the magnitude of the task in the limited time
context. For the lower-proficiency participants, commitment to kanji learning remained minimal and shorter-term with more manageable goals such as the passing of kanji tests. Even though many of these lower-proficiency participants also had longer-term goals, repercussions for not reaching these commitments were not as immediate as for the higher-proficiency learners, whose education and future employment hung on their success. Thus, a significant finding of the study was that students of higher-proficiency lacked commitment control, which was a direct cause of the high level of reportedly unmanageable commitments they had set for themselves.

In addition to the finding that lower-proficiency students displayed good commitment control due to shorter-term goals, the two cases of Alex and Sue showed us how higher-level students could handle commitment control by breaking kanji learning and review into regular self-study tasks. Both of these participants took part in a self-study kanji program, which involved the study of sets of 100 kanji tested by monthly examinations. Although for the higher-proficiency students, these examinations were a form of reviewing previously learned kanji, participants reported these short-term goals helped them to gain control and confidence over the kanji-learning task. Therefore, there was some evidence that a regular review system aided students in setting shorter-term, manageable goals even for higher-proficiency learners.

Such findings concur with literature in the field of motivation and goal setting. An important study by Bandura and Schunk (1981), for example, found that learners who set short-term and specific goals made 50% more progress than
learners with general goals or distant goals. This study is of particular significance, as the setting was a self-directed program that involved sets of materials not dissimilar in organization to the self-study kanji program undertaken with reported success by participants in the study. Literature emphasizes that breaking a goal into small achievable steps with clear deadlines is an essential part of goal setting (see Dornyei, 2001). When framed in this idea, the current study suggests that this is a failure of some kanji learners in the study, and may be the cause of a breakdown in commitment control for higher-proficiency kanji learners, who focus on distant goals.

In conclusion, commitment control was a reported problem for many learners, particularly higher-proficiency learners in the study. Both data and a review of the literature revealed this might be the result of these learners setting more general and distant goals. These findings support notions of previous research into motivation of the importance of short-term and specific goal setting for the language learner (Dornyei, 2001; Bandura & Schunk, 1981).

5.3.2 Emotional control challenges faced by the kanji learner

In the results section, a relationship between emotional control and language proficiency was suggested. Such results also show the task of kanji learning to be more emotionally charged than the task of vocabulary learning as previously researched (Tseng et al., 2006). When compared to previous literature on self-regulation, parallels can be made with the findings of the current study and general observations of emotion regulation (see for example Larsen & Prizmic,
Focus groups with ESL learners in previous research projects have highlighted the issue of stress in the self-regulation of the vocabulary-learning task (Tseng et al., 2006). These focus groups did not highlight other emotional problems encountered by students. In its investigation of self-regulation of emotion in the kanji-learning task, the current study has revealed a more complex network of emotions, including self-criticism, frustration and defeatism. Thus, in order to place these findings in the context of self-regulation, a broader review of literature into regulation of emotion is required.

As defined by Larsen and Prizmic (2004), emotion or affect regulation is the process of monitoring and evaluating feelings experienced by the learner at any given time. When regulation of emotion breaks down, rumination occurs, which can lead to episodes of depression and anxiety (Nolen-Hoeksema & Corte, 2004). Thus, similar to these observations, the three most advanced learners (Holden, Joshua and Sue) all reported rumination over a self-perceived lack of progress in kanji learning, which manifested in a range of emotions. For example, these participants reported emotions of stress, frustration and self-criticism over this lack of progress to the point of defeatism. Holden openly discussed his decision to give up on kanji learning—having felt like the constant review of kanji and a deterioration of knowledge had defeated him. Joshua also reported self-criticism at his inability to push through procrastination issues in the kanji-learning task, and frustration over the constant review of kanji he had once learned, but had forgotten. Joshua also doubted his ability to master the number of kanji
necessary to graduate. Sue, although still actively engaged in kanji study, also expressed defeatism in the kanji learning task, feeling that it was impossible to learn and remember all essential kanji—to the point that she reassessed the role of kanji in her future career.

An explanation for this lack of emotional control in higher-proficiency students is that it might be connected to the magnitude of the kanji-learning task. For beginner level students, when students are studying a set number of kanji each week with regular structured assessment, learners are able to clearly see their progression in kanji learning. At the higher-proficiency level, however, when students no longer have formal training of kanji and the onus is on themselves to review thousands of kanji, the magnitude of the task seems daunting, progress is not as obviously measurable, and emotional control breaks down leading to rumination.

In conclusion, this discussion might suggest better structure and support be given to higher-level students to ensure these negative emotional effects do not lead to students being defeated by the kanji learning task. Some solutions have been highlighted in the study that are also connected with satiation control and will be discussed in the following section.

5.3.3 Satiation control challenges faced by the kanji learner

Analysis of results does not only suggest a breakdown in emotional control for higher-proficiency students, but also satiation control. While it is no surprise
that students who have been engaged in kanji learning for longer suffer from satiation control issues, the connection between the two is particularly strong in this study. Interview data not only indicated a connection between proficiency level and a loss of satiation control, but also offered strategies students used to deal with boredom when studying kanji. These suggestions will also be discussed in relation to previous research on self-regulation.

Of the twelve participants, the three highest proficiency students reported the biggest problems with satiation control. The three participants Holden, Joshua and Sue, had tried to control this lack of interest in kanji learning by studying in new ways, but in the absence of self-testing through flashcards and kanji lists, the students felt their kanji proficiency was declining. Continual self-testing was seen as a necessary activity in order to maintain or increase kanji knowledge, but it was this task that made kanji study boring for them.

Participants of lower proficiency reported satiation as a problem far less frequently. Sam, for example, was also one of the least proficient students. Satiation control was not a challenge for Sam, instead kanji learning was seen as a task of immense satisfaction due to self-driven historical and cultural interest in kanji. However, higher-proficiency participants reported that satisfaction of the kanji-learning task diminished as their kanji knowledge advanced and more review became necessary. Whether Sam's satisfaction would also diminish as his study of kanji advanced is a matter of future investigation, but it was observed that Sam maintained satisfaction in the kanji-learning task throughout the duration of the study.
A number of students suggested moderating the time spent on studying or breaking a study session into smaller parts, with rewards for completion of each part. According to Larsen and Prizmic (2004), the use of self-reward is a common feature of behavioral approaches to self-management. Self-rewards include the notions of self-gifting (such as buying oneself a present), or a self-rewarding experience (such as taking a break and going for a walk). Research has shown that use of self-gifting, for example, can reduce negative affect and increase positive affect associated with completion of a task or goal (Faber & Vohs, 2004). Participants in the current study reported multiple examples of use of self-rewards as a motivation control strategy, such as eating chocolate (self-gifting), watching an animated show or taking a tea break (self-rewarding experience). Thus, these suggestions by participants concur with general literature on the positive influence of self-rewarding as a means of self-management (Faber & Vohs, 2004; Larsen & Prizmic, 2004).

Others offered strategies that involved a change of the study environment, of either choosing a good environment for study or changing the place of study regularly to maintain interest in the kanji-learning task. Patrick in particular seemed good at regulating satiation, in that he reported satiation control was a challenge for him, but he was able to control it. He reported a strategy of studying kanji while exercising on an exercise bike or treadmill to be highly effective. In doing so, Patrick argued the interest in kanji study increases in comparison with the boring nature of exercising. He also reported the benefits of adrenaline in not only increasing the enjoyment of the kanji-learning task but
also decreasing stress. Therefore this strategy was also offered as a means to regulate emotion control. While these ideas might at first appear unorthodox, the use of exercise as means of self-regulation has been reported in research in the field. Larsen and Prizmic (2004, p. 48) write: “It may seem ironic that the use of energy (to exercise) actually elevates energy, but the impact of exercise on affect and felt energy has been reliably demonstrated in a number of studies”. A study by Stevens and Lane (2001), for example, found exercise to be an effective strategy for regulating depression, tension and fatigue. Thus, the finding of the current study that exercise is also an effective way to regulate boredom and control satiation is not dissimilar to these previously noted discoveries.

In conclusion, the study indicates a strong connection between proficiency and a breakdown in satiation control, but also offers some strategies that have helped students in regulating their interest in the kanji learning task, including the use of self-reward and exercise. Such findings, while being new to the field of regulation of language learning, concur with general literature on self-regulation. A further investigation of the strategies could be an area of future research.

5.4.4 Re-thinking environmental control in the kanji learning task

Results of the current study indicated that environmental control was only used to regulate other motivational factors such as emotional, satiation and metacognitive control. Such results question the necessity of having a separate category of environmental control in future studies of kanji learning.
In the original conception of studying self-regulation in a taxonomy of motivation control, Tseng et al. (2006), applied the new model to the task of vocabulary learning. In the conclusion of their study the researchers argued:

Our model indicates that self-regulation can be broken into five facets, as metacognitive control, satiation control, emotion control, and environmental control. Although in our study the construct has been specifically applied in vocabulary research, we believe that the underlying theory and the questionnaire development approach presented above in detail can also be viewed as a heuristic point of departure in the realm of how to devise instruments for use in other learning domains. (p. 95).

One of the outcomes of the current research, therefore, is an evaluation of whether the same taxonomy could be applied to the learning domain of kanji learning. While the taxonomy has been a useful point of departure to examine students’ commitment, satiation, emotion and metacognitive control, the inclusion of the remaining category of environment control did not yield results in the same way.

Not one instance of environmental control was reported in the study where it was not being used to regulate another form of motivation control. Such results indicate environmental control is not a separate category of control in itself, but a self-regulatory mechanism or strategy to control other forms of motivation. Participants, for example, reported regulating their study environment in order to alleviate boredom (by changing the study environment regularly) or stress.
(by working out while studying), or factors that may lead to procrastination (by creating an environment free of distractions). Dornyei (2005) has argued that previous models of strategic learning have suffered from fuzzy borders in categorization of these strategies, which led him to suggest a re-theorization of strategic learning in the motivation control taxonomy. However, results from the current study suggest that the current model of motivation control is subject to the same criticism in its categorization of environmental control.

Thus, in the current study, environmental control was used as a strategy to control other motivational factors. These results suggest that for the task of kanji learning, the separation of environmental control into its own category may expose Dornyei's proposed taxonomy to similar criticisms of categorization of previous taxonomies of learning strategies. This indication could be explored in further research specifically aimed at investigating this issue.

5.3.5 Relationships between categories of motivation control

The current study has shown an intricate relationship between the facets of motivation control in the kanji-learning task. This relationship is particularly observable in the higher-proficiency participants in the study. Not only do all students have a high level of commitment to kanji study, but they all suffer from a lack of satiation and emotional control. This section, therefore, will explore these relationships in the frame of previous research into motivation in order to understand why they exist.
In section 5.1 it became apparent that Holden, Joshua and Sue maintained long-term commitments to kanji study in needing it for graduation and future career paths. In this way, their commitment levels were very high, which meant their abilities to apply strategies to meet these commitments in terms of commitment control was more challenging than lower-proficiency students. Furthermore, these students were no longer engaged in formal kanji classes, having learned all essential kanji in prior study—but this knowledge was in constant need of review, because without review knowledge of kanji was shown to fall quickly. This was particularly evident in the cases of Joshua and Holden, who admitted they felt they knew less kanji since formal testing of kanji had stopped. As in the previous discussions of satiation and emotional control, this inability to control commitment and this need for constant review directly caused a breakdown in emotional and satiation control in these cases. That is, these students felt defeated by the kanji-learning task in terms of motivation to study because the forces of self-criticism, depression, stress, and boredom with the kanji-learning task were too great, despite efforts by some to use strategies to overcome these feelings. These breakdowns in emotional and satiation control in turn caused learners to reassess the goals they had set. Thus, we observe a complex causal network in the breakdown of motivation control as illustrated in figure 16.
Figure 14: Causal network of motivation control

The boxes represent breakdowns in the four types of motivation control (environment control is omitted for reasons discussed in section 5.4.4). The arrows indicate the effects these breakdowns can have on the other categories of motivation control. This causal network is far more complex than indicated in previous explanations of motivation control taxonomy (Dornyei, 2001; Dornyei, 2005; Tseng, Dorneyi & Schmitt, 2006). Thus, in order to discuss these relationships in the context of previous research, a wider review of the literature is necessary.

Research into goal-setting assists in explanations of the relationship found in the current study with commitment control and other categories of motivation control. McComb and Pope (1994) explain that a goal needs to have four
attributes in order to have success:

1. Achievability (the learner must possess the ability to reach the goal)
2. Believability (the learner must believe they can reach the goal)
3. Conceivability (the goal must be clearly stated and measurable)
4. Desirability (the goal must be desired by the learner)

In this framework, there is a connection between commitments and a learner’s strengths, progress, beliefs and desires. Thus, according to this theory, when students perceive a lack of measurable progress in achieving goals, this will affect the conceivability of the goal.

In the current study, this could help explain the relationship between higher-proficiency students’ lack of short-term goal setting leading to a belief in lack of progress due to problems of measurability, which then leads to re-assessment of commitments. Similarly, a breakdown in emotional control in terms of self-criticism as witnessed in the current study by higher-level participants, can be framed as affecting the believability of a commitment, also leading to re-assessment. Furthermore, a breakdown in metacognitive control manifesting in procrastination, could affect the achievability of a goal as time available to achieve the goal is diminished. In addition, a breakdown in satiation control in terms of boredom can be said to affect the desirability of achieving a goal. Finally, a lack of short-term goals has been found to affect progress (Bandura & Schunk, 1981), linking to previous research which also suggested a link between short-term goal-setting and a reduction in procrastination, indicating a lack of short-term goal setting would affect metacognitive control.
In terms of the remaining relationships between emotion control, satiation control and metacognitive control, the current study found a complex relationship existed. Joshua, for example, expressed self-criticism and frustration with himself for his reported inability to control procrastination. Similarly, Holden's frustration with a lack of progress in the kanji learning task caused him to want to give up on kanji learning, resulting in extreme cases of procrastination. Motivational research has reported a reduced self-confidence in progress is a major demotivating factor in language learning (Dornyei, 2001). Similarly, Chambers (1993) identified a lack of belief of one's own capabilities as a major characteristic of a demotivated student according to language teachers. Thus, literature supports a relationship between demotivation to study in terms of boredom and procrastination and self-criticism, thus helping to position the relationship between these three factors.

In conclusion, in the task of kanji learning the relationship between the categories of motivation control remain far more complex than reported in previous literature (Dornyei, 2001; Dornyei, 2005; Tseng et al., 2006). This relationship is better understood by examination of research into motivation, goal setting, and affect. Such a relationship shows how a breakdown in control of one category of motivation control such as commitment control, can have a devastating affect on other categories, leading to issues of negative emotion, loss of satisfaction and an increase in procrastination.
Finally, the current study will benefit from an assessment of the quantitative and qualitative instruments used to gather data. While the SRCVoc was useful as a departure point for interviews with students on their self-regulation of kanji learning, the interviews allowed a much richer exploration of this relatively unexplored area. This finding concurs with recent calls from researchers into strategic learning and self-regulation for qualitative research.

According to Tseng et al. (2006, p. 98), “researchers need to apply other, more qualitative methodologies (such as stimulated recall and structured observation) to achieve a fuller understanding of the whole picture” of self-regulation. In Woodrow’s (2005) critique of language learning strategy taxonomies and research instruments, she emphasizes the need for sample-specific data collection techniques and claims “a more situated approach utilizing in-depth qualitative methods would be more appropriate” (2005, p. 90). In their assessment of qualitative data analysis, Miles and Huberman (1994) argue:

Qualitative analysis, with its close-up look, can identify mechanisms, going beyond sheer association. It is unrelentingly local, and deals well with the complex network of events and processes in a situation. It can sort out temporal dimension, showing clearly what preceded what, either through direct observation or retrospection. It is well-equipped to cycle back and forth between variables and processes—showing that "stories" are not capricious, but include underlying variables, and that variables are not disembodied, but have connections over time. (p. 179)
The current study supports claims by these four researchers of the benefits of qualitative research and analysis. As Dornyei (2005) suggested, the interviews helped provide a “bigger picture” of self-regulation than the questionnaire allowed. Also the situated approach and qualitative methods allowed the research to address sample-specific issues that the questionnaire did not, thus supporting Woodrow’s (2005) claim. Finally, the interviews revealed a complex network of associations of aspects of motivation control that were unique to the kanji-learning task that would not have been observable through use of questionnaires alone, concurring with Miles and Huberman’s claims.

Benefits provided to the study by qualitative methods are many. For example, statements of commitment control by students on questionnaires alone were meaningless when compared from case to case, as the type and nature of commitments differed for each student. Without an understanding of these commitments through qualitative data collection, the questionnaire data alone was an unreliable measure. Similarly, perceptions of satiation and emotional control in the kanji-learning task were context specific and also not accounted for in a questionnaire. Jeremy, for example, who was not enrolled in formal kanji classes, felt he was able to control stress and boredom in kanji learning, as his context was free of commitments. In the same way, if placed in an environment such as Joshua’s—having to study 2000 kanji in order to graduate—Sam’s ability to control stress may not have been the same. The questionnaire data alone, did not account for these contextual differences in a way that the interview data did.

Thus, through the current study’s use of both questionnaires and in-depth
qualitative methods, the findings support notions in the literature that qualitative methods are vital to the understanding of self-regulation and strategic learning. Future studies are encouraged to continue this mode of investigation.

5.5 Chapter Conclusion

In conclusion, motivation control in this group of learners revealed much about how students regulate their study of kanji, answering the second research question. Interviews showed metacognitive, satiation and emotional control as particular areas that challenge students in the kanji-learning task. Interviews also highlighted a number of strategies that learners use to regulate motivation, including the adaptation of the environment and methods of learning. The study also highlighted how level of commitment has an effect on satiation and emotional control, as does also the level of proficiency of the student. The study indicates that these are areas that may need to be addressed by students in order to continue in the kanji-learning task because, without dealing with these issues, higher-level students may feel defeated by the magnitude of the task. The study also highlighted strengths of a qualitative approach in the methodological design of the study. It is a hope that future studies can build upon these findings of both the study and methodological assessment.

This section outlined the results of the study in terms of motivation control strategies. The next section will provide a conclusion to the study, re-examine limitations to the findings, and indicate recommendations for further research.
Chapter 6 Conclusion

The previous two chapters have examined the results of the study and discussed these results in relation to previous research findings in the field. This final chapter will frame these results in answer to the overall research questions of the study. It will also revisit the limitations of the current study in order to suggest areas for further investigation.

6.1 Research questions

The study aimed to investigate strategic learning of kanji in terms of cognitive and behavioral strategies, and self-regulation. The specific research questions of this study were:

1. In terms of learning strategies, how do learners of Japanese from alphabetic language backgrounds learn kanji in year-long study programs in universities in Japan? This question is explored in two parts:
   
   1.1 How do learners of Japanese learn kanji within this setting?
   
   1.2 How do these learning patterns develop over a year of kanji instruction, which includes a raised awareness of strategies due to participation in the project?

2. In terms of self-regulation, how do learners of Japanese from alphabetic language backgrounds regulate their learning of kanji in year-
long study program in universities in Japan? This question is explored in two parts:

2.1 How do learners of Japanese regulate their learning of kanji within this setting?
2.2 How do these learning patterns develop over a year of kanji instruction, which includes a raised awareness of strategies due to participation in the project?

In summary, the study collected data through use of a series of semi-structured interviews, a series of stimulated recall sessions and two questionnaires with twelve English-speaking participants learning Japanese at two universities in Japan over the duration of a year. Analysis of results revealed that the kanji-learning task was not only a cognitively complex activity, but also a metacognitively challenging one—susceptible to negative facets of motivation control. Such diversity of experiences among participants causes the answers to the research questions to be equally diverse and complex.

6.2 Research Question 1

In terms of learning strategies, how do learners of Japanese from alphabetic language backgrounds learn kanji in a year-long study program in universities in Japan?

This first question was posed in two parts, and thus will be answered accordingly. The following section will first address how students learn kanji within this setting, before summarizing changes in strategic learning throughout the course of the study.
6.2.1 How do learners of Japanese learn kanji within this setting?

The study provides findings that can be summarized into the following six notions.

a. **Strategy use varied according to each individual participant.** Participants viewed the worth of each strategy differently. Joshua, for example, found mnemonics to be so useful he relied solely on them as a strategy to study kanji. On the other hand, other participants such as Alex viewed such strategies as worthless and thus never applied them once in the stimulated recall sessions. This phenomenon where some participants viewed a strategy to be highly beneficial and others viewed the same strategy as worthless could be viewed repeatedly throughout the data. Further examples of this were observed in the learning of stroke order, the study of radicals, various forms of association and so forth. Thus the study concurs with previous studies that claim strategy use varies according to the individual learner (Grenfell & Macaro, 2007; Nyikos & Oxford, 1993; Oxford, 2001; Oxford & Nyikos 1989; Rubin et al., 2007; Takeuchi et al., 2007).

Moreover, the data highlighted strategies that were unique to individuals in the study. Three such examples are Sam, Joseph and Jeremy. Firstly, Sam was the only participant in the study to use etymologically based mnemonics in his study of kanji, where he examined the origin of each kanji’s written form in order to associate its meaning with the kanji’s current form. Secondly, Joseph was
isolated in his use of a systematic mnemonic-based memorization schema, which he relied on as a sole method for his kanji study. He broke all kanji into components and applied a mnemonic to each component to associate the components to the meaning of the kanji. Thirdly, Jeremy illustrated a unique strategy that combined a visualization and mnemonic strategy that had not been recorded in previous research into kanji learning, but was based in the psychological concept of memory strategies, that involves memorizing a story using the first letter of each word in a list that has previously been reported as a vocabulary learning strategy (Nyikos & Fan, 2007). Thus, the diversity of strategies employed by the participants in the current study compliments previous studies, which have shown strategy use to be a highly individual choice (see, for example, Grenfell & Macaro, 2007; Nyikos & Oxford, 1993; Oxford, 2001; Oxford & Nyikos 1989; Rubin et al., 2007; Takeuchi et al., 2007).

b. An overreliance on mnemonic strategies has its advantages and disadvantages. For some participants the overreliance on a mnemonic strategy gave them a tool to approach kanji in a systematic way. However, an overreliance of this strategy also caused inconsistencies in some participants’ learning. Two examples are from the cases of Joshua and Sam. Joshua, for example, relied solely on a mnemonic strategy to aid him in the memorization of kanji. In fact Joshua perceived that much of his progress in kanji was thanks to the application of this strategy. However, this overreliance caused a gap in his knowledge of kanji pronunciation and different readings when the kanji appeared in compound words. A similar situation was found in the case of Sam, who relied solely on etymologically based stories. Furthermore, both participants suffered from a
situation termed in the current study as “losing the meaning in the mnemonic”,
where they could remember the story but not the meaning. This tended to be
the result of convoluted stories that became too abstract from the actual
meaning of the kanji. The current study, therefore, suggests mnemonic
strategies are useful to a certain point for most students, but in order to gain a
more consistent knowledge of kanji, the application of a wider range of
strategies seems to be required.

c. Component analysis is one of the most consistently important strategies for
learners. A consistent finding among data from all participants was the
importance of component analysis in kanji learning. All participants reported a
reliance on this strategy. Although Alex was an exception to this finding at the
beginning of the study (see section 4.5.1 for discussion), by the end of the study
he also perceived component analysis as an important strategy to pursue. Thus,
the current study concurs with previous studies that emphasize the importance
of component analysis (see for example Bourke, 1996; Toyoda 1998; 2000;

d. Pictorial analysis is an over-reported strategy. In regard to pictorial analysis
(the association of a kanji to a picture representative of its meaning), many
students reported it as a strategy they used often, according to interview and
questionnaire data. Stimulated recall sessions, however, revealed that students
did not use this strategy as often as they reported in self-report questionnaires.
Reasoning for this may be that it is a strategy often applied in the beginning
stages of kanji learning (Bourke, 1996; Rose, 2004), and thus remains a strategy
that students are highly aware of even if their actual use of the strategy has diminished. Such findings highlight the importance of stimulated recall sessions in addition to self-report questionnaires in order to understand a more accurate account of the kanji learning process, as research methodology researchers have stressed in the past (see for example Mackay & Gass, 2005; Tseng et al., 2006).

e. Students offer a mixed view on the importance of stroke order in kanji learning. In this study the majority of participants did not perceive that stroke order played an important part in the memorization of kanji. Instead, the study highlighted cases such as Holden, who has advanced knowledge of kanji without attention to stroke order. Holden argued that he was often praised on his handwriting despite writing his kanji strokes in the incorrect order, thus arguing incorrect stroke order did not create illegible kanji. In a further case, Sam argued that the stroke order of kanji was illogical—an opinion echoed by many other participants in the study. Such results indicate there might not be rationale for the large amount of teaching time and materials devoted to teaching stroke order to students who do not view it as useful, as has been reported in previous research (Shimizu & Green, 2002).

f. Advanced learners of kanji do not necessarily employ a greater range of strategies overall in their learning of kanji. The findings of the current study contradict previous studies in strategic learning that claim higher-level proficiency students use a greater range of strategies (see for example Oxford, 2001). The case of Joshua is an illustration of a higher-proficiency learner that relied heavily on a small number of strategies to succeed in the kanji-learning task. In addition to
this, other higher-proficiency learners such as Sue, Holden and Alex could not be said to employ a greater range of strategies than lower level students such as Colton, Jeremy and Paul. Therefore, this finding supports recent research into strategic learning that state “more is not better” (Dornyei, 2005) and that “Low reported strategy use is not always a sign of ineffective learning” (Yamamori et al., 2003, p. 384).

In summary, the findings of the study have concurred with a number of studies in the field by highlighting that strategy use is an individual choice and by stressing the importance of component analysis. The findings of the study have also challenged some assumptions concerning the importance of stroke order, the reliance on mnemonics, and the notion that advanced learners use a greater range of strategies. The study has also highlighted concerns with pictorial analysis being over-reported. Finally the study has provided a detailed account of strategies used by some participants in the study that were unique to the participant, and may have been unrecorded in previous studies to the extent that the qualitative research design of the current study allowed.

6.2.2 How do learning patterns develop over a year of kanji instruction which includes raised awareness of strategies due to participation in the project?

In answering this question, the study examined any patterns of change in strategy use throughout the time frame of data collection, and also compared self-reported strategy use at the beginning and end of the project. In answer to this question, the study provides findings that can be summarized into the
following two notions, which are outlined below.

g. In general, there was a lack of evidence that might suggest a link between a raised awareness of strategy use and actual strategy use. Most participants remained consistent with the strategies they observably and reportedly employed throughout the study despite a raised awareness of other strategies they could employ throughout the time frame of the study. Even though Alex’s strategy use did change significantly, this one case cannot be used to unreservedly promote the benefits of a raised awareness of strategy use. Interview data with Alex showed he had in the past experimented with various strategies such as mnemonics, radicals, and component analysis, but had consciously abandoned these strategies because he did not see their benefit. Throughout the study he decided to employ component analysis again as he was reminded of its benefits. Having already been aware of this strategy prior to the study, we cannot say that his awareness of it had been raised throughout the course of the study. At the same time, we cannot be sure that Alex would have reached the same conclusion had he not participated in the study. Although there is some evidence that discussing strategy use can have an affect on future strategy choice, there is a lack of evidence to support a link between the two, thus concurring with an assessment of strategy based instruction research that this still presents an uncertain realm of understanding (Rubin et al., 2007).

h. Taking part in the study did have a self-reportedly positive influence on kanji learning. Interview data revealed that students perceived that being involved in the study and having the opportunity to discuss and reflect on their kanji
learning did have a positive influence on their kanji study. Joshua, for example, indicated that taking part in the study had motivated him to become more active in his application of mnemonic strategies and Alex indeed indicated that discussing his learning had encouraged him to experiment with component analysis strategies once more. Maya became more aware of the strategies she used, and was able to be more definitive when reporting strategy use toward the end of the study. A number of other participants had commented that the sessions had made them more aware of the strategies they used, even if their actual strategy use had remained the same.

In summary, even though the previous finding reported little evidence to show how a raised awareness of strategy use affected observed and reported strategy use, students nevertheless saw benefit in discussing and reflecting on their kanji learning. Therefore, even if the study does not purport the benefits of strategy training, it does suggest that students perceive that a dialogue between peers and educators on kanji learning benefits both their motivation to study and reflection on their own practices.

6.3 Research question 2

In terms of self-regulation, how do learners of Japanese from alphabetic language backgrounds regulate their learning of kanji in a year-long study program in universities in Japan?

As for the previous research question, this question was also divided into two phases. The first phase investigated how the learners in this setting regulated their kanji learning, while the second phase examined how learning patterns
changed during the time frame of the study. The answers to these research questions will also be disseminated in these two parts.

6.3.1 How do learners of Japanese regulate their learning of kanji within this setting?

This study was one of the first to investigate kanji learning within the framework of self-regulation and motivation control. Previous research into self-regulation in second language learning has mainly focused on vocabulary learning in an ESL setting (Tseng et al., 2006). Thus, the study has highlighted a number of new findings on how students regulate their learning when studying kanji, which are outlined in the following five notions.

a. Commitment control is problematic for higher-proficiency learners. Regarding kanji study, participants of higher language proficiency found greater difficulty in meeting their commitments with kanji learning than lower-proficiency learners. This was largely the result of higher-proficiency participants setting longer-term, overwhelming goals that involved the study and review of hundreds, sometimes thousands, of kanji. Holden, for example, wanted to pass the Japanese Language Proficiency Test of level one, for which he needed 2000 kanji. Joshua also needed knowledge of a similar number of kanji to pass his master's program. In both cases the students had great difficulty in reaching their commitments because of the magnitude of the task in the limited time context. For the lower-proficiency participants, commitment to kanji learning remained smaller and shorter-term with more manageable goals such as the passing of kanji tests.
Even though many of these lower-proficiency participants also had longer-term goals, repercussions for not reaching these commitments were not as immediate as for the higher-proficiency learners, whose education and future employment hung on their success. Thus, a significant finding of the study was that students of higher proficiency lacked commitment control, which was a direct cause of the high level of reportedly unmanageable commitments they had set for themselves. Such findings provide insight into the phenomenon reported by previous research of high attrition rates in Japanese language programs (Kato, 2000; Kato, 2002; Komiya-Samimy & Tabuse, 1992; Nakayama, 2002)

b. *Shorter-term goals aid all students in regulating commitment control.* In addition to the finding that lower-proficiency students displayed good commitment control due to shorter-term goals, the two cases of Alex and Sue illustrated how higher-level students could handle commitment control by breaking kanji learning and review into regular self-study tasks. Both of these participants took part in a self-study kanji program, which involved the study of sets of 100 kanji tested by monthly examinations. Although for these students, these examinations were a form of reviewing previously learned kanji, interview data revealed that they helped students gain confidence and control over reaching their commitments. Therefore, there was some evidence that a regular review system aided students in setting shorter-term, manageable goals even through to the higher-proficiency end. Such results indicate that higher-proficiency students would also benefit from a study system that regularly reviews kanji in a systematically and frequently assessed fashion in order to help students to regulate their commitment, as suggested by self-regulation researchers (Faber &
Vohs, 2004; Larsen & Prizmic, 2004).

c. **Higher-proficiency learners have more difficulty regulating emotional and satiation control.** Firstly, in regard to emotional control, participants of higher language proficiency seemed more prone to stress in their kanji study than participants of lower proficiency. The study also revealed kanji learners reported other emotional factors such as disillusionment, self-criticism and depression through a lack of progress in kanji learning. In all of the very high-proficiency cases of Joshua, Holden and Sue, the participants reported levels of disillusionment with kanji study that justified giving up on kanji entirely. Such disillusionment with kanji learning, combined with self-criticism and depression with a lack of progress may be key factors associated with the high attrition rates in Japanese language courses reported in previous studies (Kato, 2000; Kato, 2002; Komiya-Samimy & Tabuse, 1992; Nakayama, 2002)

In regard to satiation control, many students of higher Japanese proficiency reported becoming bored with the kanji-learning task as opposed to the lower-proficiency students who reported a continued interest in learning kanji. Such results indicate a need for students to introduce measures to curb this boredom, which were suggested by some participants in the study. These methods included the regulation of the study environment, using a variety of study methods, and the use of self-mediated rewards. Nevertheless, the phenomenon of higher-proficiency learners being prone to emotional and satiation control problems is an important area for Japanese instructors to be aware of and accordingly address in the classroom.
d. *Commitment control for kanji learning is inextricably linked to emotional control.* As outlined above (in notions a and c), higher-proficiency participants in the study reported a lack of commitment control, satiation control and emotional control. Interview data revealed however, that commitment control was frequently the cause of the breakdown in emotional control. That is, when students were unable to reach a goal they had set, it caused feelings of depression, anxiety and self-criticism. Interviews revealed that many of the negative emotions regarding kanji learning stemmed from students’ inability to reach long-term kanji learning goals. Such a result, therefore, seems to indicate that Japanese instructors also need to be aware of this issue in order to help students develop shorter-term goals to mark progress at higher levels, or to help students set more realistic goals.

e. *Environmental control in kanji learning is a tool to regulate other types of motivation control.* In contrast to previous studies in vocabulary learning (Tseng et al., 2007), results of the current study indicated that environmental control was only used to regulate other motivational factors such as emotional, satiation and metacognitive control. Students for example reported regulating their study environment in order to alleviate boredom or stress, or factors that may lead to procrastination. Not one instance of environmental control was reported in the study where it was not being used to regulate another form of motivation control. Such results question the necessity of having a separate category of environmental control in future studies of kanji learning (see section 7.5.3 on future implications for further discussion).
In summary, the current study has informed the field on a number of issues faced by students in regulating their kanji learning and controlling motivation. Among its findings the study has reported that learners of Japanese struggle with the regulation of goals, emotions and boredom, especially for higher-proficiency students, which may be the cause of high attrition rates reported in previous studies. The findings have also informed the field of self-regulation of language learning of improvement that can be made in the conceptual framework of this relatively new field of study. Particularly encouraging the inclusion of a wider range of emotional issues faced by students and the integration of environmental control into other categories of emotional control.

6.3.2 How do these learning patterns develop over a year of kanji instruction which include raised awareness of strategies due to participation in the project?

Results indicated there was little change in participants’ responses in regard to motivation control during the duration of the study. Such findings support Dornyei’s (2006) assumption that self-regulation is an underlying capacity that can be measured more reliably than strategy use in each individual learner.

Although motivation control in kanji learning did not reportedly change throughout the course of study, interview data indicated that participation in the study did have some positive effects on some of the participants’ learning from the outset of the study. These effects support observations of a previous study of awareness raising of self-regulation that caused improvements in self-
determination and self-efficacy of the participants (Ching, 2001). Joshua, for example, stated he felt his motivation to learn had been sparked through participation in the study—in particular in his ability to control procrastination and curb negative emotional feelings toward his reported lack of progress. According to Joshua, the knowledge of an upcoming interview session helped control procrastination. Joshua also stated that the sessions helped him talk about his negative feelings regarding kanji, and thus reduced emotional factors that impacted on his study negatively. That being said, the interviews did not change the way any of the participants reported to control their motivation—they merely seemed to lessen the negative forces that they had to control, and this was evident from the outset of the study. That is, participation in the study made kanji learning appear more interesting, less stressful, and it gave them weekly commitments and lessened their amount of procrastination. However this effect considerably lessened throughout the course of the study, as per the Hawthorne effect, which will be discussed in the following section (see section 6.4.3).

Thus, in answer to the research question, it can be said that the participation in the study did have a minor impact on commitment control, metacognitive control, emotional control and satiation control from the outset, but did not have an impact on how students dealt with these forces throughout the duration of the study. Certainly a raised awareness of motivation control did not have any reported impact on participant responses, but the presence of the interview sessions themselves and motivations to participate in the study may have. Such results indicate the necessity of longitudinal studies in this area in the future to
lessen these effects, as will be discussed in section 6.4.3. In summary, taking into account the Hawthorne effect, there is little evidence from the current study that a raised awareness of self-regulation or motivation control has any effect.

6.4 Limitations to the study

Now that the answers to the research questions have been summarized and presented, it may prove useful to revisit the limitations of the current study in order to place these results in the wider research field. Limitations of most relevance to the results of the study, and which will be outlined below, include the small sample size of the study, inaccuracies of introspective and retrospective instruments, and the Hawthorn effect.

6.4.1 The sample size

While it was not the intent to produce a study with results that were transferable to a larger student population, the small sample size of the current study does limit the generalizability of the results of the research project. As outlined in the methodology, the qualitative method of examining a small number of cases was used to provide a richer understanding of the kanji learning process. As Miles and Hubermann (1994, p. 174) have stated “qualitative analysis, with its close-up look, can identify mechanisms going beyond sheer association... ...and [can] deal with the complex network of events and processes in a situation”. Results of the current study have supported this notion, where the qualitative methods of the semi-structured interviews and stimulated recall sessions yielded richer
and more accurate data than the quantitative methods of questionnaires. Nevertheless, even though the use of a small sample size has provided the study with arguably more benefits than limitations, the limitation that the results of study are not easily generalizable to a larger student population is acknowledged.

6.4.2 Retrospective and introspective data collection instruments

This issue of inaccuracies in data collected through retrospective and introspective instruments was discussed in detail in the methodology section (see section 3.4 for discussion), but due to its impact on the results of the study it warrants further review. According to Larsen-Freeman and Long (1991), some researchers question the validity of students’ ability to accurately report their true learning processes within introspective research designs, while other researchers argue such methods provide access to learning processes that are not observable or measurable through other research methods—particularly in research into learning strategies. In addition to this, researchers have criticized retrospective designs “on the grounds that the gap between the event and reporting will lead to unreliable data” (Nunan, 1992, p. 126).

To combat these effects, measures were taken to reduce the gap between the kanji learning event and the stimulated recall session. Nevertheless, some inconsistencies in data yielded from introspective instruments (questionnaire and interviews) and retrospective instruments (stimulated recall sessions) surfaced in the results. Examples of these inconsistencies included over-
reporting of cognitive strategies such as pictorial association, and students that applied strategies subconsciously and thus under-reported them—particularly in the case of mnemonics (such as in the case of Sam) and component analysis (such as in the case of Alex). Also there may be been inaccuracies in self-reported motivation control and actual practices, seeing as both the interview and the questionnaire were introspective in nature, and the researcher was unable to observe them. Thus, despite efforts made to reduce the effect of the threats to validity that introspective and retrospective methods posed, the study must acknowledge the potential impact these research methods had on the current study.

6.4.3 The Hawthorne effect

As outlined in the methodology chapter, the Hawthorne effect in educational research is defined as a research effect whereby “the excitement and increased attention caused by the fact that there is a research project going on may affect the participants’ output benefit” (Dornyei, 2001, p. 235). While it was not the purpose of the study to examine cause and effect, thus reducing the impact this phenomenon had on the findings, the study acknowledges that ongoing interviews with participants might have both changed participant behavior and raised awareness of strategies used to study kanji throughout the timeframe of the study (see section 3.4 for discussion). The results have since revealed this was the case. Three participants reported an increase in motivation to learn kanji due to participation in the study, while others such as Alex showed a heightened awareness or shift in strategy use throughout the study.
The research methodology limited the threat of the Hawthorne effect in two ways. First it was limited by conducting the study over the course of a full academic year, because the effect is expected to wear off over time (Burns, 2000). Second, the research embraced the Hawthorne effect by incorporating the effects of a raised awareness into the research questions of the project, and thus the research design.

As a result, however, the current study is limited to a setting where students are exposed to a wide variety of learning strategies and where students have an outlet to discuss problems of motivation control over kanji learning. Although the results indicate almost all participants did not change learning patterns in this environment of heightened awareness, it is nevertheless a limitation of the study and limits the generalizability of results to a situation where neither of these factors are present.

6.5 Implications and recommendations for future research

The current study was one of the first research projects to examine kanji learning within a new theoretical framework of strategic learning, which incorporated new concepts of self-regulation and motivation control. As a result, the study has highlighted a number of issues that can be addressed in future research. It will look at these under three sub-headings: suggestions for future research; suggestions for future theoretical frameworks; and suggestions for future methodological design.
6.5.1 Suggestions for future areas of research

The concept of language learning strategies has been explored before in previous studies into kanji learning (see for example Bourke, 1996; Kato, 2000). There have also been numerous studies that compared the effectiveness of certain strategies (see for example Flaherty & Noguchi, 2002; Toyoda & Kubota, 2001; Toyoda, 1998). However, there still remains a lack of research that looks at kanji learning in actual learning contexts, rather than in contexts created for research purposes. Many past studies (Flaherty & Noguchi, 2002; Toyoda & Kubota, 2001; Toyoda, 1998; Toyoda, 2000) have looked at kanji learning in isolation of a real language-learning context, examining the memorization and recall of lists of kanji unrelated to actual studies. While the current study aimed at using kanji that students were encountering in their classes, future studies could explore further into the kanji learning practices of students in this setting.

There is a need for longitudinal research to examine how kanji learning changes as students progress in their kanji knowledge and Japanese proficiency, in order to build on the differences in kanji learning according to proficiency highlighted by the current study. To explore this concept further, an examination of students over the duration when their proficiency changes would shed more light on this observation. There is a need to conduct research into actual practices of kanji study in everyday life, both inside and outside of the classroom. Furthermore, this research needs to not only focus on the kanji learning strategies themselves, but also other notions of motivation control such as emotions, metacognitive
control, levels of satiation, and goal setting, which have powerful impact over the kanji-learning process.

Furthermore, in the presentation of the findings in this final chapter, the current study has made suggestions as to how the findings can inform pedagogical practices in Japanese classrooms. Such suggestions include creating a dialogue between students and their peers to discuss problems with kanji learning to minimize negative emotional and satiation caveats. Suggestions have also been made for teachers to encourage students to measure progress with short-term and achievable goals. Therefore, future studies could use these suggestions to conduct research into actual classroom practices in order to measure the effectiveness. For this type of study the researcher-as-practitioner role afforded by action research might be an appropriate methodology in which to conduct this future research.

In summary, the current study has paved the way for future research that incorporates motivation control into strategic learning, so the opportunity presents itself to conduct further research projects similar to this one in various learning contexts where kanji learning may be different. Furthermore, the current study has suggested ways in which future studies can explore the implications of the current study on classroom practices.

6.5.2 Suggestions for future theoretical frameworks

The current study created a new theoretical framework for research into the
strategic learning of kanji. The current study has made a strong case that incorporation of theories on motivation control and self-regulation (Dornyei, 2006; Dornyei & Schmitt, 2006) have yielded valuable insight into the kanji-learning task not included in research to date. Nevertheless, as a result of the theoretical framework being very new, a number of areas of potential improvement to the framework have been highlighted during data collection and analysis. In particular, three suggestions are made for the future development of this theoretical framework for future research projects.

a. *Environmental control need not be a separate category in the taxonomy of motivation control.* During data analysis of the current study, it was discovered that all references to environmental control by participants were in the context of manipulating the study environment in order to control one of the other aspects of motivation control – usually satiation, metacognitive or emotional. That is, students reported using the study environment to decrease boredom, procrastination or stress in the kanji-learning task. Such results indicate that the inclusion of environmental control in the theoretical framework creates problems in the analysis and presentation of data due to categorization overlap. Therefore, it is a suggestion of the current study, that in the future theoretical framework of motivation control in kanji learning, that environmental control need not be a separate category, but considered a mechanism for regulating other aspects of motivation control.

b. *Current definitions of emotional control are inadequate.* The current definitions of emotional control were originally designed for the learning of...
English vocabulary, and wholly centered on the control of stress in learning. The current study shows that in the kanji-learning task negative emotions extended beyond stress, to feelings of depression, self-criticism, and disillusionment. Due to the semi-structured and flexible nature of the interviews in the current study, such issues were easily explored as they arose. However, if future studies use a more rigid data collection instrument, such as structured interviews or questionnaires, such items would need to be included within the framework in order to understand a more accurate description of the complex emotions of the kanji learner. Thus, the operational definition of emotional control in kanji learning needs to be expanded to incorporate such ideas.

c. In the examination of commitment control, the magnitude of commitment set by each participant must be incorporated. Similar to the definitions of emotional control, the definitional parameters of commitment control were inadequate for the kanji-learning context of the current study, which examined students of varying commitments to kanji learning who were studying in varying contexts for differing reasons. In short, the current parameters of commitment control look at students’ ability to set and reach goals, without paying attention to the type or magnitude of these goals. As a result, rigid data collection instruments such as the Self Regulatory Capacity for Kanji Learning gave a skewed view of the actual situation by highlighting students who set larger longer-term goals, which were harder to reach, as lacking in commitment control. Alternatively, participants who set very few goals, and thus were able to achieve them quite easily appeared to be strong in commitment control. Once again, due to the flexibility of the research design, the interviews were able to explore this issue.
without problem. However, for future research, it is suggested that items be added to more rigid instruments that can counter this effect. That is, the research framework should also look at the types of commitments set by learners in addition to the learners’ ability to reach them.

6.5.3 Suggestions for future methodological design

The current study’s findings illustrate a number of methodological considerations in the framing of future research, which are outlined in the following section. The main suggestion for future methodological design centers on the notion that qualitative, not quantitative, research methods are paramount to future research into strategic learning. The current study explored the concept of strategic learning both quantitatively in the form of a questionnaire and qualitatively in the form of semi-structured interviews and stimulated recall sessions. The results indicate that the qualitative data collection instruments provided a richer picture of strategic learning than the quantitative instruments.

On the one hand, while the Questionnaire of Kanji Learning Strategies provided a detailed description of the actual cognitive strategies employed by the participants in the study, these strategies were self-reported and at times inconsistent with the results of the stimulated recall sessions. An example of this is the over-reported use of pictorial strategies. Also there were instances of use of strategies in stimulated recall sessions that were unreported on the questionnaire, such as Sam’s use of mnemonic strategies or Kate’s use of kanji association with the alphabet. Thus, the qualitative data collection instruments
appeared to be more accurate and detailed measures of strategy use.

On the other hand, the questionnaire did provide a useful data source for which to compare qualitative data from the interviews and stimulated recall sessions. Moreover, it could be argued that self-reported strategy use on the questionnaire has the potential to provide a bigger snapshot of strategy use than observable in a limited number of stimulated recall sessions. Thus, the current study recommends the continued use of questionnaires in addition to qualitative measures, such as the current study's methodological design of interview sessions and stimulated recall sessions with questionnaires as a secondary source of data collection.

Furthermore, future projects could expand the realm of qualitative data collection instruments to talk-aloud protocols during real study sessions or learning journals that are designed to record strategy use on a frequent basis. Research instruments such as these, which are designed to collect data in real learning environments, might prove to be a useful measure of learning strategies in future research.

Secondly, in the area of motivation control, the Self Regulatory Capacity for Kanji Learning questionnaire yielded very little useable data compared to the rich data obtained in interviews on students’ self-regulatory capacity. The generic nature of the questionnaire items in the SRCKan make it more appropriate for a study that incorporates a larger number of students, rather than the small sample size of the current study. Suggested amendments to the theoretical framework
behind the questionnaire were outlined in the previous section, but in addition to this, the current study makes a strong case for the necessity of qualitative research methods into self-regulation and motivation control studies in the future. Questionnaires on Self-regulatory capacity alone are not adequate to understand an accurate picture of a student’s self-regulatory capacity.

Thus, the current study builds a strong case for qualitative, not quantitative research into strategic learning in future research in the field, supporting calls from numerous other researchers in the field.

6.6 Conclusion

In conclusion, the current study has yielded results that help better understand the strategic learning processes of students studying kanji—one of the major obstacles for learners of Japanese as a foreign language. In improving understanding of how students learn kanji and the struggles they face with motivation control, the study is helping the field move in new directions to better support students to better learn this problematic script.

Regarding kanji learning strategies, the study has revealed that each participant’s approach to the kanji learning process is unique and worthy of investigation. The study concurs with past studies that strategy use is an individual phenomenon, but on the other hand challenges some previous notions of strategic learning of kanji and highlighted some areas of strategy use that are problematic, such as the overreliance of mnemonics. Thus, in such ways, the
The study was also one of the first to apply newer models of motivation control to the task of kanji learning. In doing so, the study has not only made headway into building an understanding of how learners of Japanese regulate their kanji learning, but also aided in theory building in the field of motivation control and self-regulation in second language learning—a largely under-researched realm. In regard to the former, the study has underscored the problems higher-level students have with commitment control, satiation control and emotional control. In regard to the latter, the study has highlighted the notion that commitment control is inextricably linked to emotional control and satiation control in the kanji learning process. Moreover, it has also helped query the taxonomy of emotional control, by questioning the necessity of a separate environmental control category, and by suggesting the expansion of the parameters of the commitment control and emotional control categories.

Thus, the study has contributed to research in the field both in its results in strategic learning of kanji and in its exploration of motivation and self-regulation in this unexplored realm. This study has also added to a new wave of future research in both fields of kanji learning and self-regulation in second language learning.
Bibliography


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Appendices

A. Questionnaire: Section 1 (Questionnaire of Kanji Strategies)
B. Questionnaire: Section 2 (Self-regulatory Capacity in Kanji Learning)
C. Codes
D. Interview sheet with questions and probes
E. Ethics application materials
F. Sample of transcribed interview session (Joshua, Interview 1)