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Vocabulary Learning Strategies Used by L1 English Speakers Learning Chinese as a Foreign Language

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Vocabulary Learning Strategies Used by L1 English Speakers Learning Chinese as a Foreign Language

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Thesis submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy

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ABSTRACT

This study is an investigation into the vocabulary learning strategies (VLS) and the influencing factors behind the strategy use by L1 English adults in learning Chinese as a foreign language (CFL). A qualitative case study approach was adopted drawing on a wide range of data including interviews, learner diaries, think-aloud activities, observations, and learning products, collected from eight participants, three of whom were investigated in depth. A comprehensive list of VLS was identified, and these were systematically categorised into six vocabulary learning sub-tasks. The descriptive data further showed different ways of implementing VLS, especially strategies involving multiple steps, such as dictionary use, and some active ways of using strategies that might be traditionally perceived as passive, such as repetition. Having discussed specific issues for using strategies in CFL learning, the study extended some of its findings to inform language and vocabulary learning generally.

The study also explored how various factors such as learners' personality traits, learning styles, interests, language environment, immediate study context, proficiency level, the specific nature of learning Chinese, and learners' self-regulation can influence strategy uses. It further examined the self-regulation factor between highly strategic and less strategic learners, and identified two meta-strategy chains that are particularly relevant to effective strategy use. The self-assessing and diagnosing chain involves the use of monitoring, evaluating, reflecting and causal attribution strategies, and the macro-level planning chain involves the use of selecting and orchestrating strategies. The study pinpointed some key steps for better implementation of the two self-regulative chains.

Based on these findings, this study has furthered the understandings of two types of learners, namely, fine brush and free hand learners in Chinese vocabulary learning. Recommendations for CFL pedagogy have been put forward and materials developed that can be used to facilitate learners to become better self-regulated in vocabulary learning.

Keywords: vocabulary learning strategies, CFL vocabulary learning, language learner self-regulation

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LIST OF ABBREVIATIONS

CFL: Chinese as a Foreign Language

CSL: Chinese as a Second Language

LLS: Language Learning Strategies

VLS: Vocabulary Learning Strategies

FL: Foreign language

EFL: English as a Foreign Language

ESL: English as a Second Language

HSK: Abbreviation for Hànyǔ Shuǐpíng Kǎoshì, translated as the "Chinese proficiency test"

SLA: Second Language Acquisition

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Luke

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CHAPTER 1 INTRODUCTION

1.1 Context of the study

Over the past three decades, the number of learners of Chinese as a foreign language ([1] CFL hereafter) has increased dramatically. However, Chinese has always been considered as one of the most difficult languages to acquire, as it is structurally different from many people's L1 and poses some challenging features for non-native speakers to master. David Moser, a learner of Chinese who holds a PhD in Chinese Studies with a major in Chinese Linguistics and Philosophy, asks the question "why is Chinese so damn hard?" and his answers were published in the Sino-Platonic Papers in 1991. The article is still a popular read on the internet 20 years on and yet, the question "how should Chinese be learned?" remains a subject of debate.

One approach to answering this question is to study the language learning strategies, i.e. learners' specific or general strategic learning behaviours, and the underlying self-regulation process by which they select, plan, monitor and evaluate the use of strategies. It has been acknowledged that all adult learners use language learning strategies, appropriately or inappropriately (Chamot, 2004), and effective learning occurs when learners successfully use the appropriate LLS to suit their individual needs in the cognitive, affective and the sociocultural interactive dimensions of language learning (Oxford, 2011b). Strategy-related research focuses on what learners can/need do to contribute to desirable learning outcomes and enjoyable learning experiences, and in the context of adult lifelong learning, to become increasingly independent and autonomous in learning and using the target language.

The question "how should Chinese be learned?", therefore, becomes a series of more specific ones: i.e. what Chinese learning strategies should learners use? How should these strategies be implemented? How do we enable learners to choose and use suitable strategies? In trying to answer these "should" questions, more questions emerge: what Chinese learning strategies do learners use? Which of them seem to be particularly effective (for whom, for what task, in what situation)? How are these strategies implemented by learners? Do learners choose strategies by themselves? And if they do,

[1] In general, CFL is used in this thesis to refer to both Chinese as a foreign language (learning Chinese without a Chinese-spoken environment, e.g. in the UK) and Chinese as a second language (i.e. CSL, learning Chinese within a Chinese-spoken environment, e.g. in China), except for the parts where the language-environment factor is emphasised, in which case, CFL and CSL are used to refer to the two distinctive conditions.

how do they choose strategies for learning Chinese? These are some of the questions currently being investigated in the field of Chinese language learning strategies and this line of research provides the general context for the current study. Most previous studies, however, have focused on tackling these questions using a quantitative approach with the research tools (e.g. strategy inventories) developed from the learning of other languages (e.g. English). The quantitative approach are useful to find out what Chinese learning strategies do the majority of (a certain group of) learners use? What strategies are used most frequently? What strategies are statistically related to desirable learning outcomes? What factors are statistically related to learners' choices of strategy use? The findings have provided a general picture about learners' strategy use, but important details are still missing, especially in consideration of the special linguistic features of Chinese, it is not clear whether CFL-specific strategies are indeed required, how do learners choose strategies, and how do they implement strategies in specific CFL situations. A qualitative case study approach investigating a small sample of learners can provide this missing information. This study, therefore, aims to make a contribution towards filling this gap, by investigating a specific aspect of learning Chinese, i.e. its vocabulary learning. The specific research aims are explained and questions for guiding the research are provided in the next section.

1.2 Research aims and questions

Chinese vocabulary learning remains one of the central interests in CFL teaching and learning research, because of the special features Chinese vocabulary has, such as the character orthographic system, the tonal system and the morphological system. Whilst research has focused on character teaching and learning has produced fruitful findings, there is an obvious lack of studies on the learning of other aspects of word knowledge and learning tasks other than retention. This study aims to explore L1 English adults' Chinese vocabulary learning process by investigating in-depth their use of learning strategies in various vocabulary learning sub-tasks, and the possible personal, task, contextual influencing factors behind the strategy uses. I proposed the following two research questions:

1. What strategies do L1 English speakers use and how do they use them in learning Chinese vocabulary?
2. What factors seem to influence learners' strategy use?

The first research question has the goal of understanding how L1 English learners approach CFL vocabulary learning (including various sub-tasks), by identifying not only

what types of strategies they use, but also how exactly they implement them in specific steps and in consideration of their personal, task and contextual needs. Some strategy types, e.g. using a dictionary, are very general and can be used for various purposes in a variety of ways, therefore, simply knowing that learners have used a certain type of strategy does not necessarily entail that they have employed (or not employed) specific processing strategies, which arguably, affect the learning outcomes more than the labels of the strategy types. The first research question, consequently, is set out to provide a detailed report on strategy use in CFL vocabulary learning. The second research question aims to explore why strategies are used in certain ways. Some previous studies have suggested that an important difference between good and not-so-good learners, among others, is that the good learners seem to be better at selecting strategies and implementing them effectively. Quantitative studies have identified some personal, task, contextual factors (e.g. learning styles, proficiency, language environment) that are related to learners' strategy choices, but very few have probed the question more directly about what factors learners consider when choosing and self-regulating strategy uses, or whether strategies are in fact influenced by these factors in a less conscious way. Addressing the second research question, involves investigating how learners perceive their learning process, what available strategies they refer to and why they believe a strategy seems to be appropriate under certain circumstances.

1.3 Overview of the research

The planning and design of the current study started in 2012 and after familiarising myself with the research literature, I decided that a qualitative case study approach with a small number of participants would be the most suitable to achieve the research aims and to address the research questions. After having an initial idea about what were the main areas I was interested in finding out more about, I selected three CFL learners and conducted a pilot study in the form of semi-structured interviews and observations with them. Based on my initial analysis of the pilot study data, I proposed the more specific research aims and questions I wanted to investigate in my main study and decided on my research design. I outlined the questions I would like to ask learners in the main study interviews, and added a few more data collection methods, namely, learner diaries, think-aloud activities, and learning product analysis to ensure that rich data was obtained and that the findings could be triangulated from different types of data.

In total, eight L1 English adult learners of CFL were recruited for the current study, three for the pilot study, and six for the main study (one participated in both). Of these eight

participants, five were found through a learner-organised Chinese reading study group in London, in which L1 English learners of Chinese and L1 Chinese learners of English met up to help each other. Two of the participants were learners who were receiving one-to-one Chinese lessons from me at the time (see section 4.6 for the discussion on the relevant ethical considerations) and one was recommended by a mutual acquaintance. All the learners were chosen because they seemed to be motivated, active and independent in learning Chinese, based on my impression of them from two or three informal conversations or observations.

During the data collection, as I started to analyse the data I identified three out of the six participants for the main study as being very good, self-regulated language learners and I decided to focus on describing their strategy use and self-regulation processes in more detail. Compared to the other three learners, I spent a longer time interviewing them, conducted the think-aloud activities with them and asked more follow-up questions of them. They were also much better at articulating their own learning and explaining their beliefs and reasoning processes. In sum, these three learners were, therefore, selected as the key participants reported on in this thesis.

I used a thematic analysis approach: an initial inductive coding process was conducted with the three main participants, from which I identified and decided upon the main themes to be analysed further. I then carried out a deductive coding process based on the main themes with all eight participants, aiming to obtain a comprehensive and complete picture of how various types of learners tackle the task of Chinese vocabulary learning.

1.4 My positioning

Languages have always interested me, whether it is my L1, Chinese, or English, the only foreign language that I know. I like spending time studying them, so I decided to become a Chinese teacher for non-native speakers. During my teaching days, especially for the *Princeton in Beijing* program held by the Princeton University, I found, perhaps intuitively then, that some students are just simply "good": they progressed quickly, they always seemed to use the right words and grammar correctly, they memorised the characters well, and some of them even had perfect tones! They seemed to be less stressed and they did not even appear to be spending much more time than the "not-so-good" learners. Of course the "not-so-good" learners in this case were still students from American Ivy League universities, who probably also had perfect GPA and academic records and some of them had mastered quite a few foreign languages, but by comparison,

they somehow struggled more with learning Chinese. They were worried (probably about not being able to get an A) and they tried so hard: they came in every day during my office hour to ask questions, they spent hours and hours during the summer practising tones, but still did not seem to achieve satisfying results. That made me wonder whether it was possible that they were not using the best ways to learn Chinese, a language which is unique in relation to many linguistic aspects. Language learning strategies, therefore, became my research interest.

Shortly before I started the data collection for my PhD study in London, I started to work as a part-time Chinese teacher, giving one-to-one lessons. This experience has allowed me to observe learners closely, and after having met probably thirty students during the past two years whilst completing this thesis, I have come to realise that students differ from each other, not just in terms of being "good" and "not-so-good". Some learners like to take control of their study and actively decide what they should learn and do, whilst others just want to do what the teacher tells them to do, diligently. Some learners prefer to have a clear structure in their learning, whereas others resent following a textbook and would like to just "go with the flow". The experience of working with students individually, listening to their concerns, puzzles, and difficulties in learning Chinese as well as trying different approaches and methods with each of them, based on their personal needs, sparked my initial curiosity regarding the research questions and pointed to various directions for me to attend to during both the data collection and analysis periods. It especially reminded me to keep an open mind and think carefully about all the possible factors when analysing someone's strategy choice as well as always trying to put myself in their shoes when processing what I had found out. Having completed this study, I feel that I have a much more comprehensive understanding of CFL adult learners' strategy uses and their rationales in self-regulation, and consequently I feel able to conduct lesson activities better and to provide effective strategy advice to them. I hope my research will help me to pass on this practical knowledge to others.

1.5 Outline of the thesis

The thesis is organised into nine chapters, including this introductory chapter, **Chapter 1**. In **Chapter 2**, I explain the linguistic features of Chinese vocabulary to provide the information needed for readers to understand the Chinese vocabulary learning strategies reviewed and identified in subsequent chapters as well as the ways in which various factors could influence this learning process. The topics discussed in this chapter include the phonological, orthographical, morphological and grammatical features of Chinese

vocabulary along with the advantages and challenges they bring into CFL vocabulary learning for L1 English speakers.

The following chapter, **Chapter 3,** reviews the three bodies of literature that are drawn on in this thesis. It first explores theoretical perspectives and empirical findings in the general Language Learning Strategy field to conceptualise "language learning strategy" for further discussion. It then reviews theories regarding general foreign language vocabulary learning, vocabulary learning strategies, and vocabulary learning approaches identified for learning languages other than Chinese. I subsequently propose a framework for vocabulary learning sub-tasks based on relevant literature, which is used to classify the strategies identified and to organise my data analysis in Chapters 5 to 7. Finally, there is consideration of the theoretical issues and empirical findings regarding strategies that are specific to CFL vocabulary learning.

Chapter 4 provides the research methodology. It outlines the philosophical background of this study, and the rationale for the research design. On the basis of my epistemological and ontological approach and the research questions being investigated, a qualitative case study approach was chosen as being most appropriate. Next, the data collection instruments used are discussed and my approach to data analysis is described. In order to obtain rich qualitative data, learner diaries, interviews, think-aloud protocols, observations and learning products such as my participants' vocabulary notebooks, homework and exercise sheets were collected. Thematic analysis was chosen to elicit findings from the data. Next, the specific practicalities of the research design, including how the pilot study and main study were carried out, information on the participants, and how the data were managed and analysed, are presented. There is also reflection on the reliability, validity and trustworthiness as well as ethical considerations.

Chapters 5 to 7 present my documentation and analysis of the CFL vocabulary learning process of the three key participants. Each chapter reports a case study on one key participant, so that their strategy use can be understood in relation to their personal, task and contextual needs. The three data analysis chapters are organised using the same structure: each starts by presenting a learner profile, including their background information, motivations for learning Chinese, Chinese learning history and the main learning activities they used during the data collection period. Next, there is detailed description of the specific strategies each participant use in the six vocabulary learning sub-tasks proposed in Chapter 3, i.e. encountering new words, searching for word information, keeping and using records of word information, establishing word

knowledge, consolidating word knowledge and using word knowledge. Finally, there is a summary of the participant's characteristics when learning Chinese in terms of their strengths and weaknesses regarding strategy uses and their level of self-regulation. **Chapter 5** is a case study on Sarah, who is at beginning to intermediate level and is especially good at using strategies to self-regulate cognitively and affectively to stay efficient and motivated in learning Chinese. **Chapter 6** is a case study on Mark, who has had impressive success with character learning, with an approach that is quite specific to Chinese vocabulary learning. **Chapter 7** reports on Emily, who has progressed from beginning to advanced level within only two years after full time study of Chinese in China and hence, her case can be seen as a case study of a successful CFL learner. The chapter also reports her challenges in adjusting her strategy use so as to be able to learn effectively in the UK context as a part-time learner.

Chapter 8 provides further discussion based on findings obtained from the three key participants, whilst also drawing on data from the other five participants in the study so as to provide a more comprehensive and complete understanding of how different individuals approach the task of learning Chinese vocabulary. With a similar structure to the data analysis chapters, I first discuss strategies used in the six vocabulary learning sub-tasks, but focus on comparing similarities and differences between the strategy use of each participant and the possible factors that could cause such commonalities and individualities. I then bring together all the influencing factors identified and discuss in more general terms how each factor could influence strategy use. I especially identify some differences between highly and less self-regulated learners, including their beliefs and use of meta-strategies. Lastly, based on the findings on learners' strategy use patterns and their self-regulation process, I provide more details and features on two types of learners in vocabulary learning, which were identified previously for learning other foreign languages and add possible factors that could lead to or influence the two vocabulary learning approaches.

Finally, **Chapter 9** concludes with the key findings and responses to the research questions. It highlights the original contributions and considers the implications for CFL teaching and learning. It also presents my reflection on the research limitations and directions for future work.

CHAPTER 2 LINGUISTIC FEATURES OF CHINESE VOCABULARY

2.1 Introduction

The Chinese language belongs to the language family of Sino-Tibetan languages, and is very different from English, French, or Spanish, which all belong to the language family of Indo-European languages. Chinese shares very few cognates with English, it is a tonal language, uses Chinese characters as its orthographic units, and belongs to a different morphological typology. Some of its phonological, orthographical, morphological and grammatical features shape the task of teaching and learning Chinese vocabulary and hence, can have further influences on the ways in which vocabulary learning strategies should be implemented. This chapter introduces these linguistic features of Chinese, points out the ones that can create special challenges for L1 English learners and also briefly explains, from a linguistic perspective, how some features can be used to facilitate CFL vocabulary learning.

2.2 Phonological features of Chinese

The first phonological feature of Chinese is that there is a much smaller number of syllable-sounds in the language compared to English. DeFrancis (1984, p. 42) counts that Chinese has about 398 to 418 syllable-sounds, if tones are disregarded and 1,277, if tones are included. This is a much smaller figure than for English, which is counted as having over 8,000 syllables (Jespersen, 1928, p. 15). This feature is considered as beneficial to CFL learners in the aspect of pronunciation, as learning a new word does not necessarily involve learning to pronounce a new syllable-sound.

In addition, Chinese words are generally shorter in terms of the number of syllables they have than English words. Even after disyllabic development from the mostly monosyllabic classic Chinese, 52.7% of Chinese words are still monosyllabic, 43.8% are disyllabic, 2.6% have three syllables and 0.9% have four (F. Wang, 1985). As Chinese has a limited number of syllable-sounds, and most Chinese words are only one or two syllables long, there are a large number of homophones in the language. This creates challenges for CFL learners with regards to listening, as they need to pay close attention to the context in order to know which meaning the sounds represent. Xun Liu (2002), however, contends that shorter words are easier to memorise than long ones, though empirical evidence is needed to support this claim.

Perhaps the most striking phonological feature of Chinese is that it is a tonal language. Tones are the supra-segmental elements attached to individual syllables, and they are the pitch patterns for the entire syllable rather than a single phone. There are four basic types of tones (being referred to as the 1st, 2nd, 3rd and 4th tone) and a weak neutral tone (being referred to as the neutral tone). A frequently used system to describe Chinese tones is the scale of five pitch levels created by Chao (1930). As shown in Figure 2.1, Chao demonstrates the four types of tones on a pitch scale from level 1 to level 5: 1 being the lowest and 5 being the highest pitch. The 1st tone is a high flat tone, for which the pitch remains at 5; the 2nd tone is a rising tone, for which the pitch starts from 3 and rises to 5; the 3rd tone is a low-falling-rising tone, for which the pitch starts at 2, drops to 1 and then rises to 4; and the 4th tone is a falling tone, for which the pitch drops from 5 to 1. The tones create a major challenge for CFL learners (Xun Liu, 2002), as learning a Chinese word entails being able to memorise, recognise and produce a tone for a monosyllabic word, or a tone combination for a disyllabic or polysyllabic word, and this may require specific tone learning strategies. This also adds an extra aspect of learning when compared to learning the spoken forms for words from a non-tonal language, and may make higher demands on learners' cognitive resources in learning.

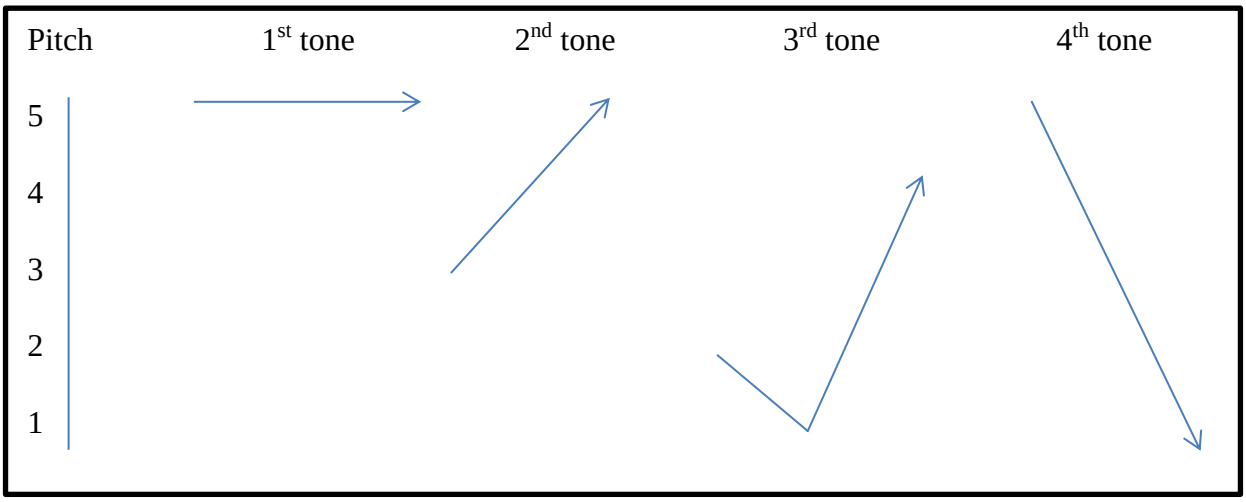


Figure 2.1 Tones demonstrated in Chao's (1930) scale of five pitch levels

Lastly, as the Chinese writing system does not reflect sounds in a systematic way (as explained in 2.3), mainland China uses a phonetic system called Pinyin (meaning *spell-out sound*) for transcribing the Mandarin pronunciations of Chinese characters into the Latin alphabet. In Pinyin, tones are indicated by tone marks, which mimic the pitch movement in the scale as ¯, ´, ˇ, ` , and tone marks are added on top of the vowel letter of

each syllable (e.g. pāo, hú, zǎo, jiù). Pinyin is a useful tool for CFL pronunciation learning. Learners normally start their Chinese learning by studying how to pronounce the individual Pinyin letters, and then practise putting possible letter-combinations together to pronounce syllable-sounds with tones. After mastering Pinyin, CFL learners are able to pronounce words by themselves, if Pinyin is presented (hence using Pinyin as a strategy for learning the spoken form of a word), or use it as a tool to write (the pronunciation of) words down before they know how to write characters (hence as a noting-down strategy). Nowadays, Pinyin is also widely used for typing characters into computerised devices with alphabetic keyboards. Users type the Pinyin and then select the character needed from a list of characters (all represented by the same Pinyin sound) displayed by the Pinyin-input software. This Pinyin-to-character input technology therefore may have added a new dimension for character learning and using strategies. With the help of this technology, CFL learners may adjust their character learning goals to recognition only, since producing a character electronically only requires knowing its Pinyin and being able to recognise its shape. It may also allow learners to produce characters faster, which may facilitate note taking. However, it is not clear how CFL learners actually respond to this technology, i.e. if they indeed use these as strategies towards various goals or consider them helpful for their own learning. This thesis has provided some empirical evidence and discussion about the Pinyin-related strategies in the case study and discussion chapters (5-8).

However, L1 Chinese speakers do not use Pinyin, but rather, use Chinese characters to read and write. Pinyin is used to give the sound representations of characters in both L1 Chinese children's literacy education and CFL character teaching. Compared to learning the spoken forms of words, learning the written forms of words in Chinese is much harder due to its writing system, which is introduced in the next section.

2.3 Orthographical features of Chinese

The Chinese language uses Chinese characters as its orthographic units. A character represents one-syllable sound, whilst it can have one or more meanings. Although there are tens of thousands of characters, most of them only appear in historical texts and are no longer used. The China State Language Commission and Ministry of Education of the People's Republic of China (Cited in Fu, 1988) estimates that modern Chinese uses 3,500 characters to represent about 60,000 to 70,000 words, and further identifies 2,500

characters as the most commonly used. The HSK[2] requires learners to know 2,663 characters to pass its highest level exam. Character learning is a great challenge for CFL learners, not only because the number of orthographic units needed (2,500) is daunting, but also because the writing of an individual character itself can be complex. Furthermore, the writing system represents meanings and sounds in vague and irregular ways, which makes it hard to remember, recognise or produce characters. However, the writing system has some features that can be used to facilitate character learning. In this section, first, the basic orthographic elements for analysing the configuration of a character are introduced and then, how the written structure of a character reflects its meaning and sound is explained.

2.3.1 The configuration of Chinese characters

The writing of modern Chinese characters has been analysed in terms of a three-layer system, namely, strokes, components and the whole characters (W. Zhang, 1990). The smallest units in writing Chinese characters are "strokes", which are the marks a pen draws between the initial touching of the paper until it is raised again (B. Huang & Liao, 2007). There are geometric attributes in writing strokes, such that the direction of the stroke is rule-governed and can be generally summarised as from left to right, and from top to bottom (Jingxian Zhang, 2006). In addition, the order of writing strokes in a character is also important as it is designed to avoid missing any strokes (Fei, 2006; Yexin Wan, 2006). There are eight basic strokes (see Table 2.1 below), which can further constitute up to thirty-six compound strokes.

Basic Stroke	Name	Examples
	Dot	主，下
	Horizontal stroke	王，十
	Vertical stroke	千，木

[2] HSK is the abbreviation for Hànyǔ Shuǐpíng Kǎoshì, translated as the "Chinese proficiency test", a standardised test of Chinese language proficiency for non-native speakers, developed by Hanban, an agency of the Ministry of Education of the People's Republic of China.

	Lifting stroke	习，打
	Right-falling stroke	八，人
	Left-falling stoke	风，川
	Turning stroke	区，五
	Hook stroke	小，七

Table 2.1 Basic Strokes in the Chinese writing system

The next layer up of units in writing Chinese characters are called “components”, which are composed of strokes and can be perceived as individual units of writing. It is estimated that there are about 290 basic components in Chinese character writing, which can be categorised into four kinds, according to their functions: semantic components, phonetic components, semantic and phonetic components, and pure configuration components (Fei, 1996). Semantic components indicate the meaning of the whole characters they belong to, whilst phonetic components express the sound. Some components indicate both meaning and sound, hence the category semantic and phonetic components. Lastly, some components do not provide any information and these are the pure configuration components. Another term that is often mentioned is “radical”, which can be literally translated as *head of the components*. Radicals are the components chosen to categorise characters in a Chinese dictionary (B. Huang & Liao, 2007), and they are used when looking up a character without knowing its sound. Using radical search to locate a character in a dictionary involves identifying the radical of the character and counting the number of additional strokes. Radicals are mostly semantic, but do include a few phonetic and pure configuration components.

The third layer is the whole character. According to the number of components in a Chinese character, they can be further divided into two categories: simple characters, which contain less than two components, and compound characters, containing two or

more (B. Huang & Liao, 2007). Simple characters are often used as the components of compound characters and in fact, 162 of the 290 basic components are simple characters (Fei, 1996). This feature can be used to facilitate character learning, as the simple characters once learned can be used to build compound characters later. For some compound characters, semantic and phonetic components can provide corresponding information on the whole characters, which is further explained in the following two sections.

2.3.2 How does the written structure of a character reflect meaning?

A commonly recognised feature of the Chinese orthographic system is that the Chinese characters represent meanings. Some Chinese language teaching resources, such as *Chineasy: The New Way to Read Chinese* (ShaoLan, 2014), emphasise the pictographic nature of a small number of Chinese characters, and can have given the impression to the public that all or most characters convey meaning through pictorial resemblances to physical objects. This is hardly the case and in this section, it is explained how and to what extent, the Chinese orthographic system reflects meanings.

There are, in fact, six ways of constructing a Chinese character (C. Sun, 2006) and only one kind, namely, the pictographic characters, reflect meaning purely through pictorial resemblance to a material object. For example, the configuration of 木 (mù) mimics a tree and hence, the meaning "tree, wood". However, the character shape no longer immediately signals the concept in the same way that a more realistic drawing of a tree might and this is the case for almost all pictographic characters in modern Chinese. Furthermore, pictographic characters count for less than 10% of modern Chinese characters (Feng, 1998). The second kind are simple ideographic characters, which use symbols to indicate a more specific or abstract idea, for example, adding a stroke on the bottom of 木 (mù) to emphasise the "root of a tree", thereby creating the character 本 (běn) meaning "root, origin". The third kind are compound ideographic characters, which are compounds of two or more pictographic or simple ideographic forms. For example, 林 (lín), the combination of two 木, means "forest". The fourth kind are phonetic-loan characters, which are "borrowed" to write another concept that sounds similar. For example, 来 (lái) originally pictographically represented "wheat", and because it sounded like the old Chinese word for "to come", it started to be used to represent "to come", eventually becoming more commonly used, and so, another character 麦 (mài) was created to represent "wheat". The fifth kind are derivative cognates and is the smallest

category. An example is 考 (kǎo) "to verify", and it was created with a similar shape to 老 (lǎo) "old" as they both have similar pronunciation and a related etymological root.

The sixth kind are semantic-phonetic characters, and about 85% of modern Chinese characters belong to this category (Fei, 1996), the meanings of which are reflected in their semantic components. Semantic components can be simple characters, or highly abstract and symbolised units that evolved from these characters. To obtain the meaning indicator, one needs to first identify the semantic component in a character and then retrieve the meaning from it. However, the meanings of semantic components are generally very vague. For example, "钅" is a commonly used semantic component and radical, named a "jīn-character component", which comes from the character 金 (jīn) meaning "gold" and is used to refer to "metal, gold". It is used in characters relating to metal, such as 钢 (gāng) "steel", 铁 (tiě) "iron" and 针 (zhēn) "needle". Consequently, whilst the semantic components suggest the larger conceptual domains to which the character meanings belong, the specific meanings of individual characters still need to be learned.

To summarise, there are a small number of characters that do not reflect meanings at all or not in any obvious manner (i.e. derivative cognates and phonetic-loan characters). A small number of characters reflect meanings in pictographic-related ways (i.e. pictographic, simple and compound ideographic characters), but the concepts they represent might not be triggered merely from the shapes and hence, need to be learned and memorised to some extent. The majority of characters reflect meanings in a systematic and logical manner through their semantic components, but one needs to know these components and the meaning indicators they provide are very general.

2.3.3 How does the written structure of a character reflect sound?

Compared to the meaning-writing connections, the sound-writing connections of characters are often neglected. The Chinese writing system has been referred to as *ideographic* or *logographic*, thus suggesting that the writing symbols in the system only represent meanings and give no indication regarding sounds (Feldman & Siok, 1999). However, this is not the case, as a character is linked to a one-syllable sound, and the sounds of the semantic-phonetic characters can, to some degree, be reflected in the phonetic components. DeFrancis (1984) proposes a number of terms, including "meaning-plus-sound" syllabic system and "logographic-phonetic" system to capture this feature. The topic of how the written structure of a character reflects sound is widely

discussed in the literature (e.g. H. C. Chen & Tzeng, 1992; DeFrancis, 1984, 1989; Hoosain, 1991). A more accurate statement is perhaps that the writing system does not reflect the sound in a systematic way, which makes it a deep orthographic system (Everson, 1998). The section below briefly explains how and to what extent, the Chinese orthographic system reflects sound.

For semantic-phonetic characters, the sound of the whole character has the same sound or shares part of the sound with its phonetic component. Some phonetic components can be simple characters themselves. For example, 可 (kě) is a simple character and is used as a phonetic component in a series of characters which are pronounced as "e"-ish. The sound indication of 可 (kě) in 柯 (kē) and 苛 (kē) is very strong, as they are pronounced almost the same except for the tones. The sound indication is less strong in 何 (hé) and 河 (hé), as they only share 可 (kě) for the final part of the syllables. Feng (1998) estimates that there are four possible relationships between the sounds of the phonetic components and the sounds of the characters they are in. Moreover, it is estimated that only 37% of the characters have the exact same sounds as their phonetic components and this figure is even lower if tones are counted in. The sound-writing connections are therefore evaluated as being largely irregular and unsystematic (Everson, 1998). However, this only means one cannot rely on using phonetic components to predict the sounds of characters accurately, for the phonetic components can still be used to facilitate learning and pronouncing characters. To use the sound indication, one needs to identify the phonetic component in a character and to retrieve the sound from it. Failing to activate the sound of the component will not give even a partial-sound of the whole character and hence, the process of using the phonetic component is said to be an all-or-nothing process (Everson, 1998).

To sum up, Chinese characters can be analysed in terms of strokes and components. Knowing the stroke order of writing a character is important, as this is designed to prevent missing strokes in writing. The written structures of characters in modern Chinese do not reflect meanings in the same way that more realistic drawings might, or reflect sounds in a straightforward "spelling" manner. Due to the existence of semantic-phonetic characters, which account for 85% of modern Chinese characters, semantic and phonetic components in these characters can provide corresponding information about the whole characters, but learners need to master these components first. Generally speaking, characters and character components need to be learned partly through analysing and reasoning as well

as through memorisation. Compared to the learning of a language whose writing system represents sounds more systematically, learning the written form of a Chinese word is more disconnected with the learning of its spoken form. Character learning therefore adds another extra processing task which demands learners' cognitive resources in learning.

2.4 Morphological features of Chinese

In this section Chinese vocabulary is introduced by describing its "building blocks", i.e. morphemes. As individual characters are linked to one-syllable sounds and have meanings, they are not only the orthographic units, but also the morphological units of Chinese. For non-linguists who are not familiar with the term *morpheme*, a Chinese word is constituted of Chinese characters. Even in the research context, morphemes and characters can basically be used interchangeably. "Character", hence, is a very salient lexical unit and some argue that it is an even more robust concept than "word" in Chinese. Chao (1930, pp. 136-138) states that "the unit that the society and culture takes to be the salient, critical subcomponent of an utterance", i.e. the sociological word in Chinese, is the Chinese character.

A morpheme is defined as "a recurrent (meaningful) form which cannot in turn be analysed into smaller recurrent (meaningful) forms" (Bloomfield, 1926, p. 155). In Chinese linguistics, it is defined as the smallest phonological-semantic unit that can be used independently to form words (Ge, 2006). It is estimated that 93% of morphemes in Chinese are monosyllabic in sound, and one character in writing (Yuan & Huang, 1998), e.g. 女 (nǚ) meaning "female". The other 7% are disyllabic or polysyllabic in sound, and two or more characters in writing, being mostly borrowed from other languages (B. Huang & Liao, 2007). For example, 巧克力 (qiǎokèlì), meaning "chocolate", is phonetically translated by combining the available syllable-sounds in Chinese that sound the most similar to the English word "chocolate", and then picking the characters, which are then pronounced as the required sound. Even though the chosen individual characters can be used to represent other morphemes, 巧 (qiǎo), meaning "being skilful", 克 (kè), meaning "restrain" and 力 (lì), meaning "power", they are not contributing these meanings to form 巧克力 (qiǎokèlì). 巧克力 (qiǎokèlì) cannot be further analysed using smaller meaningful units relevant to the concept and therefore it is a polysyllabic morpheme.

There are four types of morphemes in Chinese: root words, bound roots, word-forming affixes and grammatical affixes (Packard, 2000, p. 73). Root words refer to the

morphemes that are free and can appear independently, including content root words, e.g. 水 (shuǐ), meaning “water” and function root words, e.g. 的 (de), which are used after an attribute to serve a grammatical function. Bound roots also have content meanings, but they cannot stand on their own. For example, 房 (fáng) has the morpheme meanings of “house, room”, but it has to be combined with other morphemes to form actual words, such as 房子 (fángzi) “a house” or 房间 (fángjiān) “a room”. Word-forming affixes are function-bound morphemes that can help change word class, but can only be applied to some words selectively. 者 (zhě), meaning “the one who”, is a noun word-forming affix to help change a verb, e.g. 说话 (shuōhuà) “to speak” to 说话者 (shuōhuà zhě) “the one who speaks”. Grammatical affixes do not have this type of function, but can be attached to roots to serve grammatical functions, e.g. 着 (zhe) can be attached to verbs to indicate a continued action. Chinese has a very limited number of word-forming and grammatical affixes and they are very unproductive in forming words (C. Sun, 2006). The majority of Chinese morphemes are roots: 37.1% of Chinese morphemes are root words and 42.5% are bound roots (Yuan & Huang, 1998). Dong (2005) points out that as most of the Chinese roots were one-morpheme words in classic Chinese, and they are very active in compounding with each other to form words in the same way as words are used to form phrases and sentences. A productive morpheme, such as 改 (gǎi), “to change”, in Figure 2.2, can be used to form a number of words that are semantically related.

Figure 2.2 Morpheme 改 (gǎi) and some of the words it can form

Therefore, the main word formation method in Chinese is compounding a pool of productive roots following syntactic rules (Dong, 2004) rather than creating new morphemes for new concepts. Table 2.2 below shows some of the main structures for compounding roots, including modification-centred, coordinative, subject-predicate, verb-object, and verb-complement. The morpheme meanings are very stable when used to form words, and Yuan and Huang (1998) find that the meanings of 98.1% of the compounding words are related to the meanings of their constituent morphemes. This means morphemes are very salient lexical units in Chinese, and some cognitive studies

on lexical storage and retrieval have also suggested that a multi-level cluster model with separate syllabic, morphemic, and whole word levels of representation exist in native Mandarin speakers' (e.g. Zhou & Marslen-Wilson, 1994) and CFL learners' mental lexicon (e.g. Feng, 2009). From a strategy-research perspective, however, it is not clear whether CFL learners should put direct effort into learning the morphemes or the whole words to develop vocabulary more effectively. In theory, learners could learn individual characters/morphemes directly and then use them to process compound words (i.e. a character-based approach). Alternatively, learners could direct effort into learning whole compound words but also pay some attention to the constituent morphemes to forming morpheme knowledge indirectly (a word-based approach). Empirical studies are needed to see how CFL learners perceive and approach the morpheme-word relationship in CFL learning. However, based on the morphological features of Chinese vocabulary, effective learning with either approach may require learners to consider characters in a compound word, i.e. its "building blocks" and pay attention to them and their meanings individually, rather than treating them as a whole unit rather than treating them as a whole unit like the written form of a word in English.

Structures		Examples
Modification-Centred Structure	adj. + noun	"黑板" n. = "黑" black + "板" board Blackboard
	noun+ noun	"头发" n. = "头" head + "发" hair Hair
	adv. + verb	"再见" v. = "再" again + "见" see Goodbye
Coordinative Structure		"天地" n. = "天"sky + "地" ground The world, the universe
Subject + Predicate		"地震" n. = "地" ground + "震"shake Earthquake
Verb + Object Structure		"管家" n. = "管" take control/care + "家"home Butler
Verb + Complement Structure		"改正" v. = "改" change + "正" right Correct

Table 2.2 Examples of the main structures for compounding words

As the majority of morphemes in Chinese are monosyllabic in sound, and one character in writing, with most being roots with very stable content meaning when compounding words, the basic phonological unit (a syllable) and semantic unit (a morpheme) almost overlap with the orthographic unit, "a character", which is why DeFrancis (1984) calls the Chinese writing system "morphosyllabic" or "morphophonological". A Chinese word can be constituted of one, two or more characters and, hence in most cases contains a corresponding number of morphemes and syllables. Unlike English, which has spaces between words to segment words naturally, Chinese characters (rather than words) are the units that can be naturally perceived as isolated units in writing. Hoosain (1991) points out that the interweaving of components and strokes within a character, together with spatial separation between characters, makes each Chinese character a salient and integrated visual unit. For example, in natural Chinese script 再见到母亲时，她已经满头白发 ("When I saw my mother again, her hair had all turned grey"), it is not obvious which characters should be grouped together as one word. The first three characters 再见到 should be grouped as 再/见到 (zài/jiàndao), meaning "again/see", but one may make the mistake to group them as 再见/到 (zàijiàn/dào), meaning "goodbye/arrive". Consequently, reading in Chinese involves word segmentation and this can be quite a challenge for CFL learners.

As Chinese has a limited number of syllable-sounds available and most Chinese morphemes are monosyllabic, there naturally are a great number of morphemes in the language that are pronounced exactly the same. Therefore, recognising and differentiating morphemes often requires knowing their characters, as there are, in total, only 1,277 syllable-sounds, but tens of thousands of characters to represents all the morphemes. For example, the sound of jī can mean "chicken (鸡)", "machine (机)", "basic (基)", "hungry (饥)", "to hit (击)", and "to accumulate (积)". As a result, character learning in Chinese is not merely for reading or writing, but also has a critical role in contributing to morpheme learning. As morpheme knowledge is generally accepted as important for lexical development (Nation, 2013), this adds more values to putting effort into learning the characters.

Lastly, a character can be used to represent more than one morpheme in Chinese and this is mainly due to the "phonetic loan" process of classic Chinese, whereby a character was borrowed to represent a morpheme that sounded the same or similar (Yexin Wan, 2012). The majority of commonly used characters represent more than one morpheme, and they

are referred as “multi-meaning characters” (Shao, 2004). For example, the character 准 (zhǔn) can mean: 1) allow, grant, permit; 2) in accordance with; 3) standard, norm; 4) accurate, exact; and 5) definitely. This feature can be beneficial to CFL learners, as memorising the configuration of characters is labour-intense work, and if a character can represent a few morphemes, learners do not need to learn as many. Yet, it still presents challenges for learners when using morphemes to process words. They might think they know a character and its meaning, whereas it is in fact being used to represent a different morpheme and hence, has a different meaning to what they might think. Also, the semantic indication the written structure of a character can provide might only be relevant to one of the morphemes it represents and so learners will need to memorise other meanings.

To summarise section 2.4, Chinese vocabulary mainly uses an economical, logical and systematic word formation method to compound productive roots to form words. The orthographic units of Chinese, i.e. the characters, are also its morphological units, and therefore, learning characters is necessary not only for reading and writing Chinese, but also for developing morpheme knowledge, and therefore can be used to expand vocabulary efficiently. Written characters can help pinpoint and differentiate morphemes that are pronounced exactly the same and a character can represent more than one morpheme in writing. Due to these morphological features, modern Chinese only uses 3,500 characters, which are deployed to represent tens of thousands of morphemes and these can be compounded following syntactic rules to form the 60,000 to 70,000 words in use.

2.5 Grammatical features of Chinese

As an analytic language, Chinese conveys grammatical relationships mainly through word order and grammatical words (i.e. function root words) rather than inflectional morphemes and therefore, is very different from a synthetic language, such as German or English. Chinese does not involve using conjugations of words to reflect differences between singular and plural, cases, or active and passive voice of the sentence. C. Sun (2006) points out that due to the lack of inflections, the linear order of words in grammatical sentences is very restricted. In general, Chinese follows the “S (subject) V (verb) O (object)” order similar to English, but the position of some sentence components, such as time, location, attitude, and manner adverbial phrases follow specific syntactic rules. In addition, grammatical words are used for semantic, grammatical and pragmatic

reasons. For example, 了 (le) is used at the end of a sentence to indicate something has taken place, or a change of situation. 被 (bèi) is used before a verb to indicate the passive voice and it changes a normal "SVO" order to "O 被 (bèi)SV". Such grammatical features of Chinese indicate that grammar learning and vocabulary learning have a close relationship, as grammatical functions are implemented by using words grammatically based on relevant collocational patterns and sentence structures, putting words in the correct order and choosing the appropriate grammatical words.

2.6 Conclusion

The Chinese vocabulary system has some linguistic features that are obviously different to most of the Indo-European languages and these can present great challenges for L1 English learners. Learners first need to develop tone perception and production ability in general, and learning the spoken form of a Chinese word involves not only memorising its sounds, but also a tone or tone combination, which adds an extra layer of learning. Learning how to write Chinese seems to be a daunting process due to its large number of orthographic units, the complex configuration of individual characters and the lack of correspondence between the sounds and the writing symbols. Consequently, unlike learning a word written in alphabetic orthography, where learning the spoken form of a word can to, some extent, facilitate the learning of its written form due to some letter-phoneme correspondence, learning to write a Chinese word in characters is almost an entirely separate task from learning to pronounce it. This adds another layer of word knowledge that needs to be attended to in learning. Chinese also has a great number of homophones and this can be difficult for recognising words in conversation.

However, the Chinese vocabulary system also has two linguistic features that can be used to facilitate its learning. When learning individual characters, semantic and phonetic components, some of which are simple characters themselves, can give meaning and sound indications and make the learning of compound characters easier. Consequently, character-component knowledge can be used to make character learning more efficient. Also, Chinese vocabulary uses some of the most commonly deployed characters to represent highly productive root morphemes, which can either be used as one-morpheme words themselves, or be compounded with each other following syntactic rules to form tens of thousands of words. The majority of compound words can be processed by analysing their constituent morphemes. As a result, morpheme knowledge or character knowledge can be used to facilitate word learning. Some CFL vocabulary teaching

approaches and teaching strategies make use of these two linguistic features, and their merits and limitations are compared and reviewed in the next chapter (see 3.3).

One of the research gaps that is investigated in this thesis is how much CFL learners themselves know about these linguistic features of Chinese vocabulary, which are very different from their L1 and probably all other foreign languages they have learned. The current study also focuses on examining the extent to which CFL learners intentionally make use of these linguistic features and pay conscious effort (hence the use of vocabulary learning strategies) to self-regulating and improving their Chinese vocabulary learning. Lastly, foreign language and vocabulary learning is a complex matter, which not only has a linguistic aspect, but also cognitive and affective aspects. In my study I consider the ways in which selection of appropriate vocabulary learning strategies in different cases is influenced not only by the linguistic features of the target language and vocabulary (which are task factors), but also by various person and context factors. These findings are presented and discussed in chapters 5 to 8.

The next chapter reviews literature on language learning strategies and self-regulation, foreign vocabulary learning and learning strategies along with studies specifically investigating Chinese foreign language and vocabulary learning strategies, all of which provide the theoretical foundations for the current study.

CHAPTER 3 LITERATURE REVIEW

3.1 Introduction

This chapter presents a review of the literature which informs and underpins the work presented in this thesis. It is organised into three main sections: first, there is a review of Language Learning Strategies (hereafter LLS), including the theoretical foundation for the concept, its definitions and features, approaches and empirical studies for identifying and classifying LLS as well as the influencing factors regarding their usage. Hence, the aim of this section is to provide the necessary information to conceptualise LLS for further discussion. Next, there is an examination of the literature relating to Vocabulary Learning Strategies (hereafter VLS), which are a group of LLS used for vocabulary learning, a further specified FL[3] learning task. This section starts with a review of some FL vocabulary learning theories to highlight the nature of this task. It is followed by consideration of the approaches and empirical studies for identifying and classifying VLS. Subsequently, there is discussion on some general VLS-use patterns, i.e. vocabulary learning approaches identified from individual learners. Finally, the discussions of two previous sections are drawn together to support the extant work relating to Chinese vocabulary learning strategies, a group of VLS used for CFL learning. As suggested in Chapter 2, there are some specific linguistic features of Chinese vocabulary, such as tones, using characters as both orthographic and morphological units, and conveying grammatical relationships mainly through word order and grammatical words. The learning of CFL vocabulary is likely to involve some specific issues, which may require further special strategies or different ways of implementing certain strategies. This section starts with a review of some CFL vocabulary teaching approaches so as to draw attention to the special features of the task of learning Chinese, which is followed by discussion the extant empirical studies relating to Chinese VLS.

3.2 Language learning strategies

LLS have been intensively studied for the past forty years and have gradually become more theoretically clarified with rich empirical findings from various research approaches. In this section, I review the theoretical foundations, definitions, features, identification, and classification of LLS, so that the strategies discussed in this study can be better

[3] FL is used to refer to foreign language

understood. Last, this section reports the factors that are believed to be influential on learners' choices, quality or effectiveness in relation to using LLS.

3.2.1 Theoretical foundations, definitions and features

The emergence and development of the concept of Learning Strategies (hereafter LS) is the result of several theoretical influences (Griffiths, 2004; Oxford, 2011a). Oxford (2011a) points out three of them: First, scientific findings on human cognition and metacognition (e.g. Miller, 1956; Pressley & Levin, 1977) led researchers to perceive learning as a process that can be better achieved by having a thoughtful plan and a sensible manipulation of the information to be learned (i.e. using LS), rather than a simple stimulus-response habit-forming activity. Second, self-regulation theories (e.g. Vygotsky, 1978) emphasise the higher psychological processes and learners' internalised social mediation, most of which are implemented by using LS, as later recognised. Third, the autonomy concept (e.g. Rogers, 1963) highlights the active role of learners. These theories and movements have inspired studies on good language learners (e.g. Rubin, 1975; Stern, 1975), learners' individual differences (e.g. Skehan, 1991), language learner autonomy (Little, 1991; Oxford, 1999) and research interests regarding a number of individual characteristics as well as affective orientations, such as age, gender, personality, aptitude, learning styles, attitudes, motivation and learner beliefs along with the use of LLS (e.g. Dörnyei, 2005; Dörnyei & Skehan, 2003; Gardner & MacIntyre, 1993; Larsen-Freeman, 2001; Skehan, 1991). Whilst there have been doubts expressed as to whether LLS can account for desirable learning outcomes (e.g. Rees-Miller, 1993), the extant studies generally show that successful or high level language learners use them more and better (e.g. Chamot & Kupper, 1989; Green & Oxford, 1995). There is positive correlation between frequency of LLS use and desirable learning outcomes (e.g. Dreyer & Oxford, 1996),whilst the use of appropriate LLS has been found to result in improved proficiency (e.g. Oxford, Park-Oh, Ito, & Sumrall, 1993). These findings demonstrate that LLS use can be at least considered as a factor in FL learning. Moreover, it is believed that by using LLS, learners are able to bring order into a complex and chaotic language learning process (Griffiths & Oxford, 2014) and LLS instruction can foster learner autonomy (Chamot & O'Malley, 1987).

There have been numerous attempts at defining LLS (e.g. Bialystok, 1978; Chamot, 2005; Chamot, O'Malley, L., & Impink-Hernandez, 1987; A. D. Cohen & Macaro, 2007; Griffiths, 2004, 2008b; O'Malley, Chamot, Stewner‐Manzanares, Kupper, & Russo,

1985; Rubin, 1975; Wenden, 1987). A commonly cited definition is "specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective and more transferable to new situations" (Oxford, 1990b, p. 8). Another well-recognised one is "those processes which are consciously selected by learners and which may result in action taken to enhance the learning or use of a second or foreign language, through the storage, retention, recall, and application of information about that language" (A. D. Cohen, 1998, p. 4). The early definitions involve a range of different terminology, such as *learning approaches* (e.g. Chamot et al., 1987), *actions* (e.g. Oxford, 1990b), *behaviours* (e.g. Wenden, 1987), *techniques* (e.g. Rubin, 1975), *process* (e.g. A. D. Cohen, 1998) and *procedures* (e.g. O'Malley, Chamot, Stewner‐Manzanares, Kupper, et al., 1985), without explicitly explaining whether these terms are used synonymously with the counterparts in other definitions, or if they are in fact used to emphasise different features of the concept. Their proponents also disagree or are ambiguous about the key features of LLS, such as whether strategies can be conceptualised as beliefs, knowledge, or general learner characteristics or traits, whether they are specific or general actions as well as whether consciousness, choice, goal orientation, regulation and/or learning focus are essential for LLS. Some researchers (e.g. Tseng, Dörnyei, & Schmitt, 2006) refute these proposals by asserting that a phenomenon should not be conceptualised as thoughts, observable behaviours, beliefs and emotions at the same time. Indeed, what learners believe or know (i.e. beliefs or knowledge) or feel (i.e. emotions, attitude) are essentially different from what they do (including both observable behaviours and the engagement of mental processes). There have been efforts in directly listing defining characteristics to clarify the concept further (e.g. R. Ellis, 1994; Macaro, 2006; Oxford, 1990b), but an expert survey has shown that researchers completely agree on few issues (A. D. Cohen, 2007).

A recent change in defining LLS is to relate it to the self-regulation paradigm (Rose, 2012). This started as a reaction to the criticism (e.g. Dörnyei, 2005; Tseng et al., 2006) that LLS studies faced serious issues caused by conceptual ambiguity, and that LLS could merely be down to learners' idiosyncratic or ordinary behaviours. Therefore, a better line of research would be investigating learners' self-regulatory capacity which governs such behaviours. However, it is pointed out that replacing LLS completely with self-regulatory capacity might not be the solution as the two are equally difficult to define (Gao, 2007; Rose, 2012). Yet such criticism has raised a valid point, which is that the process of managing LLS use, i.e. the self-regulation before, during and after LLS use is as important

as the actual usage itself, and so should be included as part of LLS research. Both Oxford (2011b) and Griffiths (2013) propose theories to study LLS under the conscious influence of meta-knowledge in a self-regulation framework and to identify learners being self-regulated as one of the functions of using LLS. In the strategic self-regulation model of language learning LLS are therefore defined as "deliberate, goal-directed attempts to manage and control efforts to learn the L2" (Oxford, 2011b, p. 12) or "activities consciously chosen by learners for the purpose of regulating their own language learning" (Griffiths, 2013, p. 15), both of which echo each other and place emphasis the goal orientation and regulating nature of LLS. In addition, Oxford (2011b) explains that LLS can refer to a single action or a sequence of actions (a strategy chain), a general category or an "umbrella" strategy (e.g. using the senses to understand and remember) or as an actual manifestation of the "umbrella" strategy (e.g. visualising the spelling), referred to as "tactics" in her strategic self-regulation model of language learning. These recent clarifications on the definition and features of LLS in a self-regulation framework are used in the current study as the criteria for their identification. Based on these definitional discussions, Griffiths (2013) and Griffiths and Inceçay (2016) summarise six essential features, suggesting that LLS should be:

1) mental or observable activities rather than knowledge or beliefs;
2) chosen rather than being used accidently or randomly;
3) applied in a conscious way, otherwise they are part of learners' skills;
4) used towards a goal;
5) used for self-regulation or as a product of self-regulation;
6) having a learning focus rather than pertaining to simply completing a task.

Although the recent clarification on the definitions and key features of LLS is helpful, there is still inherent fuzziness around the LLS concept, especially in terms of deciding the defining boundaries between strategies with relevant or similar constructs, such as non-strategic learning behaviours, skills and learning styles, theoretically and/or methodologically. Having fully recognised the fuzziness around the concept, Gu (2012) has rightly pointed out that strategy is a fluid rather than static concept, and he has explored LLS through a prototype perspective. He suggests examining strategies in terms of "family resemblance" or "graded degrees of membership" along the dimensions of 1) intentionality, 2) self-initiation, 3) metacognitive regulation, 4) sequence of activities, 5) chunking of activities, and 6) automaticity in strategy execution. It then becomes the researcher's responsibility to explicitly present their operational definitions of LLS and

how they methodologically decide whether an action is intentional, self-initiated, and conscious, etc. In the current study, I distinguished strategy, skill and non-strategic behaviour based on the criteria presented in Table 3.1.

Learning strategy	• Self-initiated • Consciously applied • Purposefully facilitate learning or using the language
Skill	• Self-initiated • Automatically applied • facilitate learning or using the language
Non-strategic learning behaviours	• Not always self-initiated • Not always consciously applied • Not always purposeful or facilitate learning or using the language

Table 3.1 Criteria for distinguishing strategy, skill and non-strategic behaviour

A strategy is learner self-initiated, consciously applied, and should always have a purpose to facilitate either learning or using the language. When an activity is employed so fluently that the learner is no longer aware of self-initiating such an activity (e.g. guessing a word easily), it becomes a skill (e.g. reading/listening skill). However, as A. D. Cohen (1998) helpfully suggested, a skill can be reverted to a strategy when the task becomes more difficult and requires the learner to complete it step by step. For example, when the unknown word is hard to guess, the learner consciously thinks about background information, analysing sentence structure and word parts, etc., and hence displays the use of various inferring strategies.

Not all automatic activities are skills, in that they could be non-strategic learning behaviours. There are methodological issues in differentiating strategies and non-strategic learning behaviours in terms of consciousness, because there are degrees of consciousness and it is difficult to determine whether consciousness is present or not. For the current study, I took the approach that consciousness is demonstrated by either learners' self-report of a learning behaviour (a stronger degree of consciousness), or confirmation of having a learning behaviour when it is described to them by the researcher (a weaker degree of consciousness). This approach can also to some extent solve the problem that some learners, rather than not using strategies, are just not as capable as others at articulating their strategy uses or do not think certain behaviours worth mentioning. Some behaviours were identified as non-strategic based on this criteria. For example, a learner in this study (Betty) reported that she used to learn the pronunciation of a word first and characters later because she was taught this way. After leaving the course, she stopped

this behaviour and started to learn both the spoken and written form of a word at the same time. This study then concluded that the "spoken before written" was not used as a strategy, because it was not self-initiated and was merely a learning behaviour reacting to an external factor (i.e. the teacher). In addition, non-strategic learning behaviours happen without a clear purpose. For example, a learner of this study (Mark), when asked by the researcher, admitted that he often has involuntary guesses when encountering unknown words. He explicitly stated that he was not trying to infer and the mental process of inferring often naturally happens. This action is therefore considered as non-strategic.

Another construct similar to learning strategy is learning style. Learning styles are the stable behaviours or ways in which learners interact with the learning environment (Keefe, 1979), or individuals' preferred, habitual ways of processing and retaining new information (Reid, 1995). The key features of learning styles, in comparison to LLS, is that they are relatively general, stable, and habitual, whereas the use of LLS is often specific and selected based on the situation (A. D. Cohen, 2003). The key differences are presented in Table 3.2. As learning styles are learners' intuitive preferences for learning, they could influence learners' strategy choices. However, as strategies are chosen based on specific contexts, learners can choose to use strategies based on their learning styles, or stretch their styles by going out of their way to use more suitable strategies that they do not find comfortable to use.

Learning strategy	• Adapting • Purposefully chosen • Context-dependant • Specific
Learning style	• Stable • Habitual or intuitively preferred • Context-free • The overall patterns

Table 3.2 Criteria for distinguishing learning strategy and learning style

After clarifying the theoretical and methodological issues around the LLS concept, I further present some LLS identified from existing empirical studies and classifications.

3.2.2 Identifying and classifying language learning strategies

Researchers have tried to identify what LLS are used (e.g. Hosenfeld, 1976), which are used more often (e.g. Oxford & Ehrman, 1995), and which are more relevant to effective learning (e.g. Griffiths, 2008b). Specific LLS were listed through studying learners' actions (e.g. Naiman, Frohlich, Stern, & Todesco, 1978; O'Malley, Chamot, Stewner -

Manzanares, Kupper, et al., 1985; Rubin, 1975; Stern, 1975) and were later developed into questionnaires (e.g. Chamot et al., 1987; O'Malley, Chamot, Stewner‐Manzanares, Kupper, et al., 1985; Oxford, 1990b) to identify and measure the frequency of LLS use on a larger scale. Findings regarding learners' LLS preferences show very different pictures from study to study, and this could be due to the influence of various factors, as discussed in 3.2.3.

Extensive efforts have been made to classify LLS. For the current study, in consideration of its exploratory nature, I have followed Griffiths' (2008b, 2013) advice to avoid a priori strategy classification in identifying strategies at the initial stage, and to group strategies according to *post hoc* thematic analysis. However, previous influential LLS classifications have provided this study with analytical lenses in the later, deductive coding stage of thematic analysis as ways to label LLS, and they have been frequently used in VLS studies or CFL strategy research (reviewed in 3.3 and 3.4), and hence, are still relevant and so are briefly reviewed. In Table 3.3 and 3.4, I present the LLS taxonomies used in my deductive coding process.

Cohen (2011)	Language learning strategies	Strategies for identifying material
		Strategies for grouping for easier learning
		Memory strategies
		Strategies for having repeated contact
	Language use strategies	Retrieval strategies
		Rehearsal strategies
		Coping strategies
		Communication strategies
Bialystok (1978)	Formal practice strategies	
	Functional practice strategies	
	Inferencing strategies	
	Monitoring strategies	

Table 3.3 LLS taxonomies based on language learning sub-tasks

One way to classify LLS, demonstrated in Table 3.3, is based on the language learning sub-tasks or stages in which the strategies are applied. For example, LLS can be categorised as strategies primarily used for language *learning* (including further sub-tasks such as identifying sources, manipulation of information) and language *using* (e.g. reading strategies used primarily for completing a reading task) (e.g. A. D. Cohen, 1998). Bialystok (1978) classifies LLS as strategies for formal and functional practice to increase exposure to the language, inferencing strategies to improve input comprehension and monitoring strategies to examine, modify or correct output. This style of classifying strategies can be seen more in the classification of VLS discussed in 3.3.2. Drawing on the language learning sub-tasks here reviewed, I propose my analytical framework (see Appendix 12) including six vocabulary sub-tasks presented in 3.3.1 to classify VLS in my study.

Another way to classify LLS is based on the psychological and social functions of strategies for learning, and some of the influential frameworks are presented in Table 3.4.

O'Malley and Chamot (1990)	Cognitive strategies	
	Metacognitive strategies	
	socio-affective strategies	
Oxford (1990)	Direct	Memory strategies
		Cognitive strategies
		Compensation strategies
	Indirect	Metacognitive strategies
		Affective strategies
		Social strategies
Oxford (2011b)	Meta-strategies	Meta-cognitive strategies
		Meta-affective strategies
		Meta-social strategies
	Cognitive strategies	
	Affective strategies	
	Sociocultural-interactive strategies	

Table 3.4 LLS taxonomies based on functions

Among these taxonomies, a well-recognised LLS categorisation is Oxford's (1990b) further subdivided six-category classification, which lists the direct memory, cognitive and compensation strategies along with the indirect metacognitive, affective and social

strategies. Memory strategies are mainly mnemonic techniques, whilst cognitive ones refer to the more general cognitive processes (e.g. reasoning) for storing, processing and retrieving information. Compensation strategies are those that compensate for deficiencies in language use, and metacognitive ones are used to plan, monitor and evaluate the learning process. Social strategies help learners to interact in social situations, whereas affective strategies are deployed to deal with issues relating to affect. This classification has been influential, but the overlapping issues between the memory and cognitive categories, and the compensation and social strategies appear to be problematic. The name of compensation strategies also seems to imply focusing on the negative aspects of an action (i.e. covering up a deficiency), rather than the positive (i.e. maintaining the conversation). Later classifications appear to be shaped by data-sets and recombining previous-identified categories with new names (e.g. Purpura, 1999; Schmidt & Watanabe, 2001; N.-D. Yang, 1999). Woodrow (2005, p. 91) points out that the repeated attempts at classifying LLS have been "fraught with contradictions", with there being little consensus. In a recent developed LLS framework with a special emphasis on the self-regulation process, Oxford (2011b) proposes four categories being placed into two layers. The bottom layer includes cognitive, affective and socio-cultural interactive strategies, which directly deal with issues in respective of aspects of language learning. The top layer is referred to as meta-strategies, which pertain to metacognitive, meta-affective and meta-sociocultural interactive strategies for mastering the corresponding bottom-layer strategies. This classification refines the previous categorisations by eliminating overlapping issues and provides greater theoretical cohesion (Griffiths & Oxford, 2014). In my data analysis, after the inductive coding process of identifying strategies from the data and classifying them based on the vocabulary sub-tasks, I mainly used Oxford's (2011b) taxonomy to label strategies to reflect their psychological and social functions and devise my analytical framework (see Appendix 12).

There have been numerous efforts to identify effective LLS by comparing good and not-so-good language learners (Naiman et al., 1978; Porte, 1988; Rubin, 1975; Stern, 1975; Vann & Abraham, 1990; Wesche, 1977), by linking LLS with positive learning outcomes (e.g. Green & Oxford, 1995; X.-H. Huang & Van Naerssen, 1987; Politzer & McGroarty, 1985), or by investigating the positive effects of strategy instruction (Chamot & O' Malley, 1996; O'Malley, Chamot, Stewner‐Manzanares, Russo, & Kupper, 1985). The findings of these studies, in general indicate that high-achievers use more LLS and wider ranges of LLS than not-so-good learners, with occasional exceptions (e.g. Gardner,

Tremblay, & Masgoret, 1997), thus suggesting that the quantity aspect (i.e. types, frequency) is important. They also demonstrate some common traits of good language learners' LLS use, for example, good language learners frequently attend to both the form and meaning aspects of language learning (Rubin, 1975), are more active, have technical know-how, develop language as a system, are willing to practise and use the language, possess a personal learning agenda, and are self-evaluative (Naiman et al., 1978). Moreover, they use more strategies to manage their own learning actively, use resources more effectively, engage in strategies involving all language skills (Griffiths, 2008b), and tend to combine active and naturalistic practice with other strategies (Green & Oxford, 1995). These research findings suggest that the good language learners use LLS in a more controlled manner (Chamot & O'Malley, 1996; Vann & Abraham, 1990), use more metacognitive strategies to self-regulate, and employ more guessing, pay attention (to both forms and functions), make associations, and practise being actively mentally engaged in learning. Further, they can tailor strategy use according to the task and their personal needs, as well as being aware of their own strategy use and the reasons for using them (Abraham & Vann, 1987; O'Malley & Chamot, 1990).

As for more specific types of effective strategies, Ehrman (1996) points out that deeper processing strategies (explained in more detail in subsection 3.3.2) and strategies that increase personal relevance are preferred. Whilst some LLS have been identified as being more effective, some studies have also elicited that under-achieving language learners engage in these (e.g. Porte, 1988; Vann & Abraham, 1990) as do good language learners, but the former use them in a random and inconsistent way. These findings would seem to suggest that LLS are not essentially effective or non-effective, but rather, that whether and how much they can contribute to learning depends on their appropriateness to the situation and how well they are implemented. It is argued that the appropriateness of LLS depends on whether the strategy is used to suit the needs of the learner, context and task (Gu, 2003b, 2012), or whether it is used effectively in a way that links well with other strategies (Ehrman, Leaver, & Oxford, 2003). Also, learners might not always succeed in performing the strategy they intend to use (Gu, 2012). Therefore, LLS studies should not stop at simply identifying what types are used and measuring how often, but rather, should extend to how exactly they are used in terms of their purposes and steps. The present study aims to address questions such as these and the design of a small scale qualitative in depth case-study is more suitable for this line of investigation than a survey.

3.2.3 Factors that influence language learning strategy use

There are a number of factors that could influence learners' choices, the quality and the effectiveness regarding LLS use (Oxford, 1994; Oxford & Ehrman, 1995). These factors, which are discussed in this section, can be broadly categorised into three branches, those: related to the task, the person/learner and those pertaining to the context/situation (A. D. Cohen & Weaver, 2006; Griffiths, 2008a, 2013; Gu, 2003b; Oxford & Nyikos, 1989). Regarding the task factors (or the target or the learning factors), prior research has shown that certain strategies or strategy combinations are more relevant to particular language tasks or skills development areas (A. D. Cohen, 2003; Gu, 2003b; Nation, 2013; Oxford, 1994). Given that the task factors for the current study are fixed as vocabulary learning and CFL, which are reviewed in section 3.3 and 3.4, respectively, this part only focuses on discussing the person and context factors.

The person or learner factors are related to individual differences. The use of an LLS itself is often considered as an individual characteristic (Dörnyei, 2005; R. Ellis, 2004), but it can also be directly or indirectly influenced by other individual factors. Researchers from the area of language learner studies (e.g. Breen, 2001; Graham, 1997; Griffiths, 2008a, 2013) explain the relationships between LLS and other learner factors. Larsen-Freeman (2001) proposes that learners' contribution to language learning can be analysed as three layers: learners' attributes (i.e. age, aptitude, personality, learning disabilities and social identity), learners' conceptualisation of the language learning process (i.e. motivation, attitudes, cognitive styles and beliefs), and learners' actions, a category that LLS fall into. Previous studies have demonstrated that LLS can be related to age (Oxford, 1994; Oxford & Nyikos, 1989; Peacock & Ho, 2003), gender (Green & Oxford, 1995; Griffiths & Parr, 2000; Nyikos, 2008; Oxford, 1994), national and cultural background (Cross & Markus, 1999; Oxford, 1990a, 1994, 1996b), identity (Griffiths, 2013), attitude (Griffiths, 2013; Oxford, 1994) anxiety (MacIntyre & Gardner, 1994), motivation (Gardner et al., 1997; Oxford, 1994, 1996a) or proficiency/course level (O'Malley & Chamot, 1990; Porte, 1988; Vann & Abraham, 1990).

A concept that is closely related to and sometimes misunderstood as LLS is learning style, and the differences between learning strategies and learning styles are discussed in 3.2.1. There are different ways of classifying learning styles, for example, Oxford (2003a) and Cohen (2003) both comprehensively list learning style dimensions, including sensory styles, cognitive styles and social-interactional or personality-related styles. These learning style categories (see Table 3.5) were used as possible lenses for analysing the

data of my study. Some researchers suggest that learners can learn more and quicker, if they use the learning styles that suit them (e.g. Burke & Dunn, 2002). They can also benefit from stretching them to attain the learning goals better (e.g. Oxford & Lavine, 1991; Sims & Sims, 2006) by employing certain strategies. Hence, it is suggested by some scholars that LLS use is closely related to the learning style factor (Nel, 2008; Oxford, 1996b, 1999, 2003a, 2003b; Rossi-Le, 1989; Wildner-Bassett, 1992; Wong & Nunan, 2011). Another factor that is closely related to learning styles is personality (such as being conscientiousness, openness-to-experience, extravert and introvert), which can also influence LLS usage (Dewaele, 2012; Ehrman, 1996, 2008; G. Ellis & Sinclair, 1989; Wakamoto, 2009).

Sensory styles	• Visual • Auditory • hands-on
Cognitive styles	• Abstract/intuitive vs. concrete/sequential • Holistic/global vs. analytic/particular (detail-oriented) • Synthesizing vs. analysing • Impulsive vs. reflective • Open vs. closure-oriented
Personality-related styles	• Extroverted • Introverted

Table 3.5 Learning styles used for analysing the data

LLS use can also be influenced by self-regulative factors, such as learner autonomy (Griffiths, 2013; Oxford, 2008), self-regulation and its capacity (Tseng et al., 2006; Tseng & Schmitt, 2008) as well as learner beliefs and knowledge (Ehrman, 1996; Ehrman & Oxford, 1989; Riley, 2000; Tseng & Schmitt, 2008; Victori, 1999; Jinghui Wang, Spencer, & Xing, 2009). The terms learner knowledge, meta-cognitive knowledge, and learner beliefs are sometimes used interchangeably in the literature, but to some researchers they mean slightly different concepts (e.g. Flavell, 1979; Victori & Lockhart, 1995; Wenden, 1987, 1999). Wenden (1999) points out that whilst meta-cognitive knowledge and learner beliefs greatly overlap, the two can be differentiated, as the latter are value–related, e.g. the best way to… or one should do … to learn, and may be more tenacious. Oxford (2011b) uses the term learner meta-knowledge, which includes knowledge about the self, group and culture, the domain and specific task, the whole-process of learning, strategy and

conditional knowledge (the knowledge of when and where to use what strategy as well as how). For the current study, Oxford's (2011b) learner meta-knowledge perspective is adopted as an umbrella term since it appears to be the most inclusive. I further make a distinction between learner awareness (about self, own strategy uses and learning progress), learner beliefs (value-related "should-do") and learner knowledge (about language or vocabulary learning in general, about the target language system, etc.) so as to report learners' self-regulation processes better than other conceptualisations.

Lastly, contextual factors can also influence LLS use. The context can be conceptualised as the macro-level sociocultural context, the language environment, or the immediate study context, such as the course/programme, the teacher, the self-study mode, or the part/full-time mode. Some studies suggest that the concepts of good LLS or even good language learner are very much culturally based (Griffiths et al., 2014; Kramsch, 1993; Lantolf, 2000; Norton & Toohey, 2001; Oxford, 1996b). The language environment factor is directly related to opportunities for target language input and output, which can influence learners' motivation and therefore, can impact upon LLS use, Consequently, failing to adapt strategy use for different contexts might be a reason for a lack of desired learning outcomes (Kojic-Sabo & Lightbown, 1999; Oxford & Shearin, 1994; Porte, 1988). The pedagogical influence, including teachers' beliefs or perceptions, their approaches or methods as well as the programme and curriculum design can also influence learners' LLS use (Griffiths, 2007; Gu, 2003b; Oxford, 2011b). Having reviewed LLS theories and empirical findings, I turn to focus on VLS, a specific type of LLS used for vocabulary learning in the next section.

3.3 Vocabulary learning strategies

VLS are at the intersection between vocabulary acquisition and LLS (Schmitt, 1997; Tseng et al., 2006). That is, their effective usage pertains to both general vocabulary learning theories and the previously discussed LLS theories. This section starts with a review of the core issues in FL vocabulary acquisition and then focuses on the literatures identifying and classifying VLS. Finally, the main vocabulary learning approaches (i.e. patterns of using VLS) are discussed.

3.3.1 FL vocabulary learning theories

FL vocabulary learning consists of the learning of a wide range of lexical units, including morphemes or word parts, words, and multi-word items (Schmitt & McCarthy, 1997). Its learning goals are also multifaceted, including developing vocabulary size (Meara, 1996),

the depth or aspects of word knowledge (Miller, 1999; Nation, 2001; Richards, 1976), and to achieve accuracy and fluency in its usage (Schmitt, 2008). Knowing a word, in fact, involves knowing multi-aspects of word knowledge, regarding which Nation (2001) points out three main aspects: form, meaning and use knowledge, which can be further divided into nine sub-aspects. Form knowledge includes the spoken form, written form and word-part knowledge. Knowing the meaning aspect entails having the form and meaning connection, understanding the concept or reference the word represents and being able to associate it with other words, such as synonyms and antonyms. Regarding the use aspect of word knowledge, this involves knowing the grammatical functions, collocations, and constraints on use, which are often related to the registers and frequency of a word. There are also receptive and productive aspects for each of the nine pertaining to word knowledge. As learning a word involves the learning of different types of knowledge, and it is unlikely one can digest all aspects at once, vocabulary learning is an incremental process, for learners could need to engage in various types of strategies so as to acquire different types of word knowledge (Schmitt, 2008).

Vocabulary can be learned through an intentional, explicit and direct approach, or an incidental, implicit and indirect approach (e.g. N. Ellis, 2015; Hulstijn, 2001; Nation, 1982). In L2 vocabulary pedagogy, learning intentionally emphasises learning with the aim of gaining vocabulary knowledge, and learning incidentally refers to acquiring vocabulary as a by-product of engaging in a language use activity. Typical intentional vocabulary learning activities are using bilingual vocabulary lists, studying word parts, performing vocabulary exercises or carrying out intensive reading with a glossary. These activities involve direct attention to learning the lexical items themselves and are therefore, believed to be more effective for knowledge acquisition (N. Ellis, 1995; Robinson, 1995; Schmidt, 1992; Schmitt, 2008). Incidental vocabulary learning refers to activities, such as extensive reading and listening, which involve a great amount of language input and hence, provide opportunities to pick up words naturally as well as develop skills (Krashen, 1989). There are, however, the criticisms that readers tend to neglect unknown words (Huckin & Coady, 1999; Laufer, 2005), the meaning of unknown words could be wrongly interpreted (Nation & Coady, 1988) and that the vocabulary learning rate from natural reading is typically very low (e.g. Waring & Takaki, 2003). Hulstijn (2001) comprehensively reviews the two approaches and points out that the terms "intentional" and "incidental" have been used in different ways in the psychological and L2 pedagogy literature and hence, do not reflect a clear theoretical distinction. The

researcher insightfully concludes that "it is the quality and frequency of information processing activities, (i.e. elaboration on aspects of a word's form and meaning, plus rehearsal) which determine retention of new information" (p. 274), rather than whether or not the learners have the intention to commit lexical items to memory. For example, some scholars suggest that with certain steps to increase learners' involvement load, the incidental vocabulary acquisition rate can be significantly improved for EFL[4] (e.g. Hulstijn & Laufer, 2001) and CFL (e.g. Xiaoming Sun, 2005) learning. Hulstijn's statement is very useful, for whilst "intentional" and "incidental" can still be used to label the types of learning activities, it is important to investigate the specific processing strategies being employed in the activity, rather than to assume the type of activity necessarily guarantees certain learning processes.

There are a number of factors that can influence vocabulary learning outcomes, including linguistic (e.g. Laufer, 1997), cognitive (e.g. Craik & Lockhart, 1972; Craik & Tulving, 1975; Nation, 2013) and affective factors (e.g. Gardner et al., 1997; Nation, 2013; Tseng & Schmitt, 2008). The linguistic factors that are most relevant to CFL vocabulary learning have been discussed in Chapter 2 and are also covered in Subsection 3.4.1. Vocabulary learning outcomes are also influenced by how much cognitive effort learners put into the encoding and elaboration of the lexical items. Under the Depth of Processing Hypothesis (Craik & Lockhart, 1972; Craik & Tulving, 1975), it is argued that the chance of new information being stored in the long-term memory is not determined by the length of time that it is held in short-term memory, but by the shallowness or depth of the way it is initially processed. Deeper processing, such as analysing, comparing, and associating the information, leads to better retention than shallow processing, such as repetition. Affective factors, especially motivation, are believed to be very influential in vocabulary acquisition (Gardner et al., 1997; Tseng & Schmitt, 2008). Taking both affective and cognitive factors into consideration, proponents of the Involvement Load Hypothesis argue that increasing learners' need, search and evaluation on the target words can lead to significantly better vocabulary learning results than reading alone (e.g. Hulstijn & Laufer, 2001; Laufer & Hulstijn, 2001). Based on a thorough review of various experimental studies on vocabulary acquisition, Nation (2013) summarises five conditions that can facilitate vocabulary learning, namely, motivation, noticing, retrieval, creative use, and retention. To increase the motivation condition, learners can pay attention to choosing vocabulary that they find relevant or interesting. Noticing is defined

[4] EFL is used to refer to English as a foreign language.

as the subjective correlate of what psychologists call "attention" and is considered as a pre-condition for vocabulary learning to occur. Nation (2013) emphasises that noticing in vocabulary learning involves decontextualising the target word from its original context, and helpfully proposes four types of decontextualisation, which could increase the noticing condition: negotiation on the form and meaning of a word; presenting the definitions of a word; having textual enhancement; and increasing word consciousness (i.e. the awareness of the word parts, word order, and word choice in the use of formal/informal, speech/writing). Retrieval refers to the process by which learners actively retrieve word knowledge and creative use is that through which a previously-learned word is met or used subsequently in ways that differ from the previous meeting and this forces learners to reconceptualise their knowledge of that word. Last, the retention condition involves actively processing words visually and linguistically, for example, through visualising and imaging. These abovementioned factors and conditions can be implemented in various ways to develop vocabulary teaching activities or VLS, and they are also useful in explaining why strategies are effective.

Lastly, vocabulary learning is a relatively discrete task (Schmitt, 1997; Takač, 2008), and it can contain several sub-stages or sub-tasks. There is great value in refining vocabulary learning sub-tasks, as many strategies are task-specific, and discussing strategies in relation to the sub-tasks provides better contexts to understand the nature of these strategies. Researchers often classify vocabulary learning strategies based on sub-tasks. Schmitt (1997), for example, divides vocabulary learning into discovery and consolidation stages. In the discovery stage, learners discover the information needed to prepare for learning, whilst in the consolidation stage, learners establish, consolidate, enhance or improve the fluency of using their word knowledge. However, the consolidation stage appears to be too general, as the process (and the strategies for) of establishing word knowledge for the first time might be different to those engaged with in order to consolidate it. There are also notable stages missing, such as the selection of words to learn. Nation (2001) divides vocabulary learning into three sub-tasks: planning, using sources, and processing. The planning task involves choosing words, choosing the aspects of knowledge to learn, choosing learning strategies and planning for consolidation. Learners also need to use various sources to obtain information and then process the information to learn. However, this framework misses out the sub-task of keeping the information obtained (such as keeping a vocabulary notebook), which has been found to be very important for vocabulary learning (e.g. Gu & Johnson, 1996). Gu (2013) also

proposes three dimensions of vocabulary learning, which are initial handling, reinforcement, and activation. It is important to include activation as the final stage of learning, as the purpose of learning is to retrieve word knowledge and use it, which can contribute to further learning. Based on the abovementioned existing frameworks pertaining to the language learning sub-tasks (reviewed in 3.3.2) and vocabulary learning sub-tasks and the literature on vocabulary learning and learning strategies (e.g. Gu, 2003b; Schmitt, 2008), I propose that a comprehensive framework of vocabulary learning and using should include the following six sub-tasks or stages.

1. Encountering new words, which involves using sources to encounter words and choosing words to learn;
2. Searching for word information, which involves using various sources to obtain information about the word;
3. Keeping and using records of word information, which involves keeping notes and using them for various purposes;
4. Establishing word knowledge, which involves moving various types of word knowledge (i.e. form, meaning, and use) from short-term memory to long-term memory;
5. Consolidating word knowledge, which involves reinforcing the word knowledge that has been established;
6. Using word knowledge, which involves retrieving the word knowledge and using it in communication.

In this current study, I use this framework as a guideline to analyse the learning process of each participant, from the beginning of encountering new words to the end pertaining to use of the words learned. I employ it as a way to classify broadly the strategies identified as well as to organise and report the data in Chapters 5 to 7. As mentioned earlier, classifying strategies based on the specific tasks for which they are used naturally reflects the task factor. In addition, these sub-tasks are also most likely to be needed for learning any FL vocabulary, so using them to classify strategies is unlikely to affect the exploratory nature of this study. Under each sub-task, I also used LLS categories such as meta-strategies, cognitive/affective/sociocultural-interactive (discussed in 3.2.2) to further group and label strategies. In the following section, I review the identified VLS (mostly from learning Indo-European languages), their classification and the effective strategies identified through various research methods.

3.3.2 Identifying and classifying vocabulary learning strategies

There are a substantial number of LLS, such as almost all memory strategies, which are in fact VLS, or strategies that are applicable to vocabulary learning (see e.g. Naiman et al., 1978; O'Malley & Chamot, 1990; Oxford, 1990b; Rubin, 1981). There have also been numerous attempts to identify specific VLS, as well as to develop a comprehensive list or classification (e.g. Ahmed, 1989; A. D. Cohen & Aphek, 1980, 1981; Fan, 2003; Gu & Johnson, 1996; Lawson & Hogben, 1996; Sanaoui, 1995; Schmitt, 1997). In this subsection, I first review the studies pertaining to identifying and classifying VLS, in general, and then focus on the strategies that are considered to be more effective than others.

In his influential work, Schmitt (1997) surveyed 600 Japanese EFL learners, using Oxford's (1990b) LLS classification and terminology to develop an inventory of VLS. It contains two categories: the strategies for the discovery of a new word's meaning and consolidating a word once it has been encountered. The former category includes some social strategies (mostly involving asking others for help) and strategies that are referred to as determination ones. These involve learners determining the meaning of an unknown word themselves by analysing the part of speech, word parts, L1 cognate, or by consulting a dictionary, word lists or flashcards. The consolidation category includes social strategies aimed at learning by interacting with others, memory strategies using general memory tactics and linguistic properties, cognitive strategies, such as note-taking along with metacognitive strategies such as using spaced review or testing oneself. The overlapping issues between memory and cognitive strategies rooted in Oxford's (1990b) classification, as discussed earlier, inevitably also exist in this classification. Gu and Johnson (1996) identify both learners' beliefs and strategies, which they classify as being for metacognitive regulation, guessing, dictionary use, note-taking, encoding, rehearsal, and activation. Their work attends to beliefs, metacognitive self-regulation and strategies for specific vocabulary learning sub-tasks and is considered as being of great value. Other classifications achieved from a qualitative approach (e.g. Fan, 2003; B. Zhang & Li, 2011) also suggest that the main categories include strategies for managing or supporting learning, such as metacognitive and affective, and those for various sub-stages that are engaged with during vocabulary acquisition. Gu (2003b) notices that the majority of strategy research on FL vocabulary learning has been interested in the vocabulary retention task. Moreover, the existing studies mostly focus on strategies for processing, encoding and elaborating information (e.g. Barcroft, 2009; A. D. Cohen & Aphek, 1980).

Efforts on investigating strategies have been made in relation to the initial handling of new words (Barker, 2007; Parry, 1991), use of dictionaries (Baxter, 1980; Bogaards, 1998; Hulstijn, 1993; Knight, 1994; Laufer & Hill, 2000; Prichard, 2008; Scholfield, 1999), inferring (e.g. Fraser, 1999; Parry, 1991), taking notes (Barker, 2007; Fowle, 2002; McCrostie, 2007; Schmitt & Schmitt, 1995; Walters & Bozkurt, 2009), and activating word knowledge (Gu & Johnson, 1996), but these have been somewhat limited.

Regarding effective VLS, a number of experimental studies (e.g. Atkinson & Raugh, 1975; Levin, McCormick, Miller, Berry, & Pressley, 1982; Pressley, Levin, & Miller, 1981) suggest that strategies that involve cognitively deeper processing, such as mnemonics (especially the "keyword method") and semantic elaboration (such as "semantic mapping" or "semantic features analysis"), receive greater word retention results than shallow processing (such as simple repetition and structural elaboration) and this can be explained by the Depth of Processing Hypothesis (Craik & Lockhart, 1972; Craik & Tulving, 1975). The keyword method refers to a technique, whereby a learner picks an L1 word (i.e. the keyword), which sounds similar to the target word and then constructs a mental image to connect the meaning of the L1 word with that of the target word. Arguably its effectiveness also highly depends on learners' ability to choose the appropriate keywords, and overusing this strategy can lead to an atypical lexical connections between L1-FL (Barcroft, 2009). Semantic elaboration involves putting effort into processing the meaning aspect of a word, whereas structural elaboration involves paying attention to its form aspect. Barcroft (2002) argues that the two elaboration strategies can effectively facilitate the learning of corresponding aspects of word knowledge and are both needed in vocabulary learning. From his set of experiments, Barcroft, however, finds that there are actually limited processing resources that a learner can allocate during vocabulary acquisition and that semantic elaboration of new words can sometimes inhibit learning their formal properties. Moreover, forcing output (e.g. coping FL words) or production (e.g. using FL words to write sentences) can decrease the efficiency of establishing basic meaning-form connection (Barcroft, 2002, 2004, 2007). He therefore suggests that it is better to limit forced-output and forced-semantic-elaboration during the initial stages of learning new words. Barcroft's research further reflects the complex and incremental nature of FL vocabulary learning. Consequently, it is important for instructors and learners bear in mind which aspect(s) of vocabulary learning is(are) the target for the present time and choose strategies accordingly.

Some studies identify effective VLS by associating learner-selected strategies in natural settings with desirable vocabulary or language learning outcomes (e.g. Barcroft, 2009; Fan, 2003; Gu & Johnson, 1996; Lawson & Hogben, 1996). The use of selective attention (i.e. paying attention selectively), self-initiation (i.e. initiating learning activities based on own interests), contextual guessing, skilful use of dictionaries, note-taking, attending word formation, contextual encoding and activation (i.e. deliberately using the vocabulary that has been studied), have all been found to be positively correlated with test scores. In contrast, the use of visual repetition (i.e. memorising spelling and writing words repeatedly) is the strongest negative predictor of both vocabulary size and general language proficiency (Gu & Johnson, 1996). Fan (2003) identifies 24 strategies, mostly for using sources, guessing, using dictionaries and employing known words, that are used significantly more often by high-scoring groups than low-scoring one. Generally speaking, metacognitive strategies for self-regulation, strategies for searching and keeping word information to prepare for learning as well as strategies for using and reinforcing the words that have been learned, have been found to be closely related to desirable vocabulary learning outcomes. In line with findings achieved from experimental studies, some encoding strategies appear to be better than others, but again caution needs to be taking in relation to understanding and interpreting these so-called effective encoding strategies. "Shallow" strategies, such as rote repetition with word lists, can be favoured by learners as it requires less time (Nation, 1982) and learners are accustomed to it (O'Malley & Chamot, 1990). Moreover, different strategies can naturally be more suitable for different vocabulary learning stages. For instance, deeper encoding strategies might be effective when establishing the word knowledge, but rote repetition could be needed later for consolidation. The effectiveness of a particular strategy can also depend on how exactly the strategy is implemented. Regarding which, a learner can use visual repetition more actively by thinking about its meaning and analysing its word parts while writing it repeatedly. In some cases, repetition has been found to be more effective than the keyword method (e.g. A. Y. Wang, Thomas, Inzana, & Primicerio, 1993). Lawson and Hogben (1996) also discover that the uses of simple rehearsal and elaborative strategies are both associated with better recall scores, and that good learners (which is further discussed in the next paragraph) employ both strategies.

Some researchers also identify good VLS by exploring what successful language learners do, or compare the differences of strategy usage between good and poor learners. These findings of studies suggest that desirable vocabulary learning outcomes are likely to be

achieved when learners use a wide range of different strategies, rather than heavily relying on a limited number (e.g. Ahmed, 1989; Gu, 2003a; Lawson & Hogben, 1996). Good learners are more aware of their learning and the semantic relationships between the new word and the previously learned lexical items, use guessing, use new words in real situations, and ask others to verify knowledge. In contrast, poor learners almost never use these strategies and they tend to overlook unknown lexical items, which good learners almost never do (Ahmed, 1989). The latter use mnemonics and keyword methods, root words and also occasionally use rote repetition (Fuentes, cited in Nation, 1982, p. 26). They tend to view vocabulary learning as part of language learning, which needs to be integrated with language use, and display a high degree of self-initiation and paying attention selectively (Gu, 2003a). From the literature, it transpires that good learners not only use a wide range of strategies, including both the deep and shallow processing ones, but also seem to be better at selecting those appropriate for specific situations. Whilst there are many common features among successful/good learners in terms of vocabulary learning, some studies have also found that they engage in very different styles or approaches to vocabulary learning, which are discussed in the next subsection.

3.3.3 Vocabulary learning approaches identified based on strategy-patterns

Some studies have explored different vocabulary learning approaches based on learners' overall strategy-use patterns (Gu, 2003a; Gu & Johnson, 1996; Kojic - Sabo & Lightbown, 1999; Sanaoui, 1995). Sanaoui (1995) identifies the structured and unstructured vocabulary learning approaches, which differ in terms of the extent of independent study, the range of self-initiated learning activities, how regular learners record lexical items and use the records and the degree to which they practise using vocabulary items outside their L2 class. Adapting Sanaoui's (1995) questionnaire, Kojic-Sabo and Lightbown (1999) studied and compared students' approach to vocabulary learning in ESL[5] and EFL settings and their relationship to success. In addition to the areas Sanaoui (1995) examined, they also looked at the types of vocabulary learning activities learners carry out regularly, their efforts in reviewing, as well as the frequency and the intensity of their use of dictionaries. They elicited that the two groups were similar in many aspects, but displayed different patterns in relation to the aspect of using sources and reviewing. The ESL group made more self-initiated effort to encounter and practise new lexical items, whilst also preferring to use outside-classroom activities as sources of

[5] ESL is used in this thesis to refer to English as a second language

vocabulary learning, thus acknowledging the advantages of being in the target-language environment. The EFL group used the more "traditional" learning methods, such as reading and re-reading notes and engaged in reviewing strategies more often. The only difference (according to the statistical data) between the high achievers in the ESL and EFL contexts was their use of reviewing strategies. The outcomes of this study emphasise the important role contextual factors play in strategy use and highlight how the target language environment can furnish ESL learners with opportunities to review words incidentally. EFL learners, however, need to use deliberate reviewing strategies to compensate for the lack of opportunities to review words spontaneously.

In Gu and Johnson's (1996) study, the researchers used cluster analysis and identified five types of learners: readers, active strategy users, encoders, non-encoders and passive strategy users. The group of learners with the best learning outcome in terms of vocabulary size and general proficiency are the "readers". They are able to integrate both intentional and incidental learning, believing both "vocabulary should be picked up through natural exposure" and "careful studying". For direct learning, they mainly use word analysis and deliberate use of new words rather than memorisation. Their strong self-initiation is mostly reflected in their use of extensive reading, guessing, and contextual encoding strategies. The second best group of learners are the "active strategy users" and the researchers attributed their high achievement to their being hard-working, highly-motivated, and with a willingness to try new strategies, therefore having a wider range of strategies in stock. They are similar to the "readers" in terms of their beliefs except that they do not disagree with the memorisation of words. The "passive strategy users" behave in almost exactly opposite ways to "the active strategy users". They have lower than average scores for all strategies except visual repetition and their failures are more likely due to the lack of effort, rather than ineffective strategies or inappropriate beliefs. The majority of the participants in this study are the "encoders" and "non-encoders", and they only differ in their use of encoding strategies. Specifically, they tend to use a bit of every strategy, which could save them from total failure in learning, but does not help them to become high-achievers, like the "readers" and the "active strategy users".

Gu (2003a) explores the strategy use of two successful Chinese EFL learners and finds two different vocabulary learning approaches, which he refers as "fine brush" and "free hand" and argues that there is more than one way to become a high achiever. The two identified approaches are, to some extent, in line with the "active strategy users" and the

"readers" as well as with what Parry (1997) discovers and terms as the "analytic" and "holistic" approaches. Gu investigated the strategy uses in three vocabulary learning sub-tasks, namely, initial handling of a new word, committing the word into memory and attempting to use the recently learned word. According to the author, the fine brush learner identifies many new words from an intensive reading task and focuses on the details of word learning, whilst trying to make up sentences for new words on the spot. She/he spends much more time on the intensive reading task as this is her/his main source for vocabulary learning. This approach is detailed and meticulous which is why Gu uses the art metaphor of the fine brush learner. The free hand approach learner, however, is concerned with overall understanding of the reading and focuses only on new words she/he finds important or interesting. Instead of making up a sentence intentionally for learning, she/he reports she/he would try to use them later in real contexts. This learner spends much less time on intensive reading and more on extensive reading to ensure natural recurrence of words for retention. The approach is more whole-picture-focused and unrestrained, which is why Gu names it the free hand. Built on these previously established vocabulary learning approaches, this study has also examined CFL learners' vocabulary learning approaches and the author proposes more nuances and criteria in differentiating each approach.

After having reviewed the key FL vocabulary learning theories, important VLS and classifications and a few overall vocabulary learning approaches identified based on VLS-patterns, I next focus on the VLS used in CFL learning.

3.4 Chinese vocabulary learning strategies

This section reviews the theoretical and empirical findings that are most relevant to Chinese VLS. It first reviews a few important CFL vocabulary teaching approaches to provide a comprehensive introduction to the nature of the task of learning Chinese vocabulary. It then presents strategies identified for CFL vocabulary learning, in general and also for specific CFL vocabulary learning sub-tasks. Strategies that lead to better learning outcomes and influencing factors are also discussed.

3.4.1 CFL vocabulary teaching approaches

CFL vocabulary teaching approaches are developed in line with general FL vocabulary acquisition theories and also in consideration of the specific linguistic features of Chinese vocabulary (see Chapter 2). There are a few special issues in the CFL vocabulary teaching field, such as the need to separate the teaching of spoken and written Chinese, the

effective character teaching approaches, and whether characters or words should be used as the primary lexical units during this teaching. Discussions on various teaching approaches reflect researchers' or teachers' beliefs about how Chinese vocabulary should be learned, or the strategies should be used, which could influence learners' choices of strategies. The subsection below briefly reviews the main issues.

a. Separating the teaching of spoken and written Chinese

Due to the inherent laws of the Chinese language, especially its deep orthography and morphological features, many researchers propose the separation of the teaching of spoken and written Chinese (e.g. Bellassen, 1996; Lu, 2003; P. Zhang, 1992, 2007). P. Zhang (2007) points out that as the characters do not reflect the sounds in a straightforward way and the smallest functional units in spoken (which he believes are sentences, but some will argue these are words) and written Chinese (i.e. characters) are different, the spoken and written Chinese are fundamentally separated. With this perspective, it is proposed that there should be separate courses, using different textbooks to teach spoken and written Chinese. The spoken-Chinese courses use Pinyin to develop listening and speaking skills, and the written-Chinese courses (from day one or delayed) teach characters as well as the necessary orthographic knowledge. As there is direct instruction on characters in the written-Chinese course, R. Li and Ye (2013) find that learners who are taught with the "separated" approach have better character learning outcomes in terms of the ability of connecting the shape, sound and meaning of a character, using semantic and phonetic components as well as using morphemes to analyse words, than those using the "integrated" approach.

Many researchers, including those in the CFL teaching field (e.g. Cui, 1999; Zheng Yang, 1987; J. Zhao, 2011) and a linguist who has experimented with learning Chinese himself (Halliday, 2014), recommend not only a separated, but also, a delayed character-teaching approach, hence the "spoken Chinese before written Chinese" perspective. There are a few reasons why to delay introducing characters could be beneficial. First, some studies show that there are strong links between knowing the meaning of a character/word and knowing its pronunciation (Everson, 1998; Jiang, 2003; J. Yang, 2000; G. Zhao, 2003), suggesting a possibility that in order to learn or assess the meaning of a written word, CFL learners uses strategies that are reliant upon their ability to pronounce it. Everson and Ke (1997) elicit that even advanced learners of Chinese use sound remediation, such as muttering, lip movement and out-right reading aloud in order to access meaning. Hayes (1988) also suggests that acquiring stronger spoken proficiency in Chinese could help

prevent readers becoming distracted by the overload graphic features of Chinese characters in reading. Therefore, having a strong foundation in spoken Chinese first might facilitate learning and recognising characters, thereby assisting in the development of reading skills. Second, considering the affective aspect of language learning, J. Zhao (2008) argues that a delayed character-teaching approach allows learners to start with learning to speak the language, a process which they are relatively familiar with, and to deal with the unfamiliar and difficult task of learning characters until later to, thereby avoiding frustration. Last, Packard (1990) found that a delayed-character-teaching group outperformed the non-delayed group at discriminating phonetically, transcribing unfamiliar Mandarin syllables and spoke Chinese more fluently, with no apparent negative impact on learning character writing. J. Zhao (2011) reviews eight CFL teaching programmes in natural university settings using the "spoken Chinese before written Chinese" approach with different lengths of time-lag (20 weeks to 1 year) and the extent of character exposures (presenting characters or no characters in the textbook) and concludes that they all show desirable outcomes with CFL learning, in particular, in that they maintain learners' motivation and interests.

Even though the "spoken Chinese before written Chinese" approach has demonstrated numerous benefits, there seems to be a gap between better theory developing and teaching in practice. Ye (2013) conducted a large-scale online survey of 914 students and 192 instructors in the US, and found that the majority of CFL programmes do not delay teaching characters. Furthermore, most of the students and instructors believe that the best time to start learning characters was from the very beginning. However, after being presented with reasons for and against delaying this, both the instructors and students demonstrated a significant change and became in favour of delaying character introduction. Last, she elicited that CFL students express very different beliefs regarding the ideal time point to begin learning Chinese characters. These findings would appear to indicate that CFL learners do not know about the linguistic features of the Chinese language and the CFL learning process well enough to make decisions about when to learn characters and that their decisions could be highly influenced by their personal situations.

b. Character teaching approaches

The first issue in character teaching is what characters should be learned first. This is a rather complicated because it is tangled up with the issue of what words should be learned first, as characters are the orthographic units for words and hence the learning of a word

includes the learning of its character(s). However, characters themselves are independent entities and the learning of them can be influenced by character frequency, character density/complexity, or number of strokes (Jiang, 2006; Sergent & Everson, 1992). The dilemma is that characters with the simplest configuration might not be the ones representing the most basic words and yet, the most frequently used words in spoken Chinese could be represented by characters with extremely complex structures (e.g. 谢, xiè, "thank"). Some researchers recommend commencing with the low complexity characters as learners can produce low-density characters more accurately (Ke, 1996; M. Zhao, 1999). Everson (1998), however, recommends introducing characters representing words that have already been learned in the spoken language so to allow learners to focus on forming sound-to-symbol correspondence. Jiang, Zhao, Huang, Liu, and Wang (2006) argue that character-selection and word-selection should be balanced between factors, such as high-frequency characters and words used by native speakers and specifically for CFL learners, characters which can form more words should be engaged with.

Regarding character teaching, some researchers suggest that character recognition and production (i.e. handwriting) should be dealt with separately. This is partly because some learners might not want to learn character handwriting at all, since they can type characters with Pinyin and select the character needed by recognising it from a list of options generated by the input software (Allen, 2008). It is also because studies suggest that the cognitive learning processes for learning to recognise and handwrite characters could be very different. Ke (1996) finds that the task of character recognition is easier than production and the learning of characters with more strokes only seems to be more difficult for handwriting and not for recognition. Wang (2009) finds that character handwriting competence is most relevant to learners' character-component knowledge, whereas character recognition competence is most pertinent to learners' vocabulary size and spoken Chinese proficiency. In addition, character handwriting can be facilitated by learning to recognise more characters (e.g. Jiang & Liu, 2004; Ke, 1996). Ke (1996) finds that at the beginning stage, learners' character production develops significantly slower than recognition, but the discrepancy becomes smaller after the first term, thus suggesting that learners gradually become better with character writing. He contends that the exposure to characters could help learners understand both character structure and the character components better, whereby learning to handwrite at a later stage naturally becomes easier. Some researchers, therefore, suggest learning to recognise characters first and only later learning to copy or handwrite them (Cui, 1999; J. Zhao, 2008).

Lastly, there have also been numerous attempts to find more effective approaches to teach characters (e.g. Everson, 2011), with some studies having emphasised the use of orthographic knowledge, including the strokes, radicals or character components in teaching (e.g. Chang, Xu, Perfetti, Zhang, & Chen, 2014; Taft & Chung, 1999; Y. Xu, Chang, & Perfetti, 2014), whilst have emphasised teaching characters in the context of vocabulary items (Ke, 1998b), and some others recommend increasing the depth of processing and encoding in character instruction (Kuo & Hooper, 2004; Shen, 2004). Jin (2006) finds that the strategy of paying attention to radicals leads to better learning outcomes than focusing on stroke orders and the Pinyin pronunciation. Taft and Chung (1999) compare the effects of presenting radical information before, during, and after teaching new characters and elicit that focusing on radical information while processing new characters, leads to the best character recognition results. This suggests that teaching or learning radicals is best carried on while learning new characters rather than pursuing these two separately. It is also found the self-generating mnemonics, perhaps due to their nature of inviting learners to create connections between new information and prior knowledge, are more effective than verbal encoding, visual encoding, or dual encoding (Kuo & Hooper, 2004). Moreover, it emerges that deep processing strategies, such as student self-generated elaboration and instructor-guided elaboration, are more effective than rote memorisation (Shen, 2004).

c. Vocabulary teaching: Word-based vs. character-based

There has been an intense debate about whether characters or words should be used as the primary lexical units in CFL vocabulary learning (T. Li, 2005; Peng & Pan, 2010). Researchers advocating the word-based approach (e.g. Guo, 2004; Peng & Pan, 2010; Ren, 2002; Yiling Wan, 1997) point out that words are the smallest linguistic units that can be used independently to construct sentences and therefore, should be learned directly. The word-based approach involves selecting high-frequency words to teach first and not identifying or explaining constituent morphemes at all. Its proponents criticise the character-based approach as potentially being misleading, because it could encourage learners to use individual characters mistakenly as words at the sentence level. Researchers advocating the character-based approach (e.g. Bellassen & Zhang, 1997; Shehui Liu, 1994; Xiaomei Liu, 2004; Pan, 2006; Peng & Pan, 2010; T. Xu, 1997), emphasise that characters are the most salient and robust language units with sound, shape and meaning and hence, are the key elements for building Chinese vocabulary. They criticise the word-based approach advocates for neglecting the role of characters as being

an important and fundamental level of lexical units and their having over-simplified them as orthographic symbols. The character-based approach centres on the teaching of individual characters and requires putting much effort into explaining the relationship between character-shape and sound/meanings so as to develop orthographic knowledge and awareness. It involves selecting and teaching high frequency one-character words and productive morphemes first, explaining word formation structures, reviewing and reinforcing previously learned words, based on the sharing of morphemes (Xiaomei Liu, 2004), and introducing new words containing the same morpheme (e.g. Jia, 2001). This approach has obvious benefits in terms of developing morpheme knowledge and morphological awareness, but a potential fall-back could be that the high-frequency or productive morphemes and expanded new vocabulary might not be high-frequency words or might not be so relevant to the learner's communication needs. Each approach has its own merits and limitations in contributing to vocabulary learning, so some mid-way approaches that combine the two have been proposed (Songhao Liu, 2006, 2010; Zhouyan Wang & Qing, 2004; Xiao, 2005). For example, the morpheme-expanding approach considers words as the primary lexical units in teaching, but also to some extent analyses the morphemes within the words and expands new vocabulary containing the same morphemes (Zhouyan Wang & Qing, 2004; Xiao, 2005). It teaches words that the CFL learners will most likely need to use to attend the affective aspect of language learning, whilst at the same time directing their attention to morphemes and word formation structures.

Despite these three special issues being intensively discussed in the CFL vocabulary teaching field, only one, i.e. character learning, has attracted an equal amount of attention in the CFL strategy research field (reviewed below). How learners deal with the relationship between learning spoken and written Chinese, character recognition and handwriting as well as characters and words has been very much neglected. Hence, for the current study the aim is to take a close look at learners' strategies in coping with these aspects of Chinese vocabulary learning.

3.4.2 Strategies for CFL vocabulary learning in general

A number of studies have probed CFL language learning strategies, many of which are related to vocabulary learning (e.g. X. Chen, 2008; Grenfell & Harris, 2015; Jiang, 2000; Wu, 2008; Z. Xu, 1999; Y. Yang, 1998). There have also been those that specifically investigate CFL vocabulary learning strategies (e.g. L. Chen, 2011; P. Li, 2006; Y. Li, 2005; Qiang, 2005; Zebin Wang, 2011; Winke & Abbuhl, 2007; Yan, 2007). Most of

them used or adapted well-established LLS/VLS classifications or questionnaires (e.g. Gu & Johnson, 1996; Oxford, 1990b; Schmitt, 1997). These works' outcomes tend to show very different pictures about which types of strategies are used the most commonly or are effective for CFL vocabulary learning and this could be due to the influence of various factors (as discussed in 3.2.3). In line with general LLS and VLS strategy research, the use of metacognitive strategies (P. Li, 2006; Jinghui Wang et al., 2009) also plays a significant role for desirable CFL learning outcomes. In terms of specific strategies, CFL learners use similar types of strategies those identified when learning Indo-European languages. Moreover, the use of inferring and note-taking (P. Li, 2006) along with deeper processing, such as organising (Y. Li, 2005), are related to higher achievement. However, it would appear that there is an unusual emphasis placed on using a reciting strategy and analysing sentence structures in the CFL context. Z. Xu (1999) finds that Euro-American students actively ask or answer questions in class to increase their attention to learn, but do not use dictionaries to look up characters as often as the Korean or Japanese learners. The learners preview and review for the course, and pay selective attention to review the difficulty parts and more than one third of the participants selectively recite or retell the texts from their textbook. Wu (2008) also finds that some good CFL learners select sentences to recite. Based on Bialystok's (1981) LLS classification, Y. Yang (1998) developed a questionnaire to assess Chinese learning strategies and investigated the relationship between advanced learners' strategy uses and their HSK scores. He elicited that learners in the high-score group used L1-related strategies less frequently than their lower achieving counterparts, whereas they engaged in self-management and functional-practice strategies more frequently than them. Regarding formal-practice strategies, the high-score achievers were found to analyse the grammatical structures of sentences and to recite the texts from their textbooks more frequently. Moreover, it emerged that they used, but only to some extent, sentence-making exercises and memorising sentence structures. The researcher insightfully concluded that advanced learners perhaps benefit more from learning Chinese at the discourse level (e.g. reciting a whole paragraph) than at the sentence level (e.g. generating individual sentences). Winke and Abbuhl (2007) classify strategies as input-based, output-based and cognitive-based strategies for learning CFL vocabulary and noticed that their learners control the amount of input they receive to manage their frustration level, an issue that has not been addressed in the learning of other FL.

Research also suggests that various person, task and context factors as (mentioned in 3.2.3) can influence the use of CFL language or vocabulary learning strategies in general (e.g. X. Chen, 2008; Jiang, 2000; Q. Li, Yao, & Liu, 2011; Y. Li, 2005; Z. Li, 2014; Wu, 2008; Z. Xu, 1999; Yan, 2007; Zhaole Yang, 2012). Jiang (2000) finds that learners' L1 or cultural background and years of studying Chinese are significantly related with their strategy uses. Specifically, Euro-American learners use affective strategies less and social strategies more than Japanese or Korean learners. Moreover, learners who have completed one year of Chinese study use more cognitive strategies than those who have not, which could be because the usage of some cognitive strategies requires certain Chinese knowledge. Q. Li et al. (2011) have elicited that learners' gender, age, L1/nationality and years of study are all related to their use of strategies. For instance, learners who have completed one year of Chinese study or longer use indirect strategies less often than those who have not. The researchers explain that more experienced CFL learners might not be in need of strategies to support, compensate, and manage their learning as frequently as novices. Wu (2008) investigated the language environment factor and discovered that when studying in a non-Chinese-using environment, good learners pay closer attention to pronunciation and have deliberate consolidation frequently (e.g. practising with a tape) than others. In addition, when they move to a Chinese-using environment, they change strategies to engage in talking with L1 Chinese speakers more frequently and use deliberate practice less frequently. Z. Xu (2006) used a qualitative case study approach to compare the strategy uses of two Japanese beginners with distinctive cognitive learning styles. It emerged that the field-dependent learner balanced his overall study across all skills and used more meta-cognitive strategies, such as paying selective attention and goal setting. He also associated words and was able to put them into a larger context to learn. The field-independent and thinking-style learner overemphasised pronunciation, did not use metacognitive strategies and processed words in isolation. The limitation of this study is that, from the data described, the different patterns of using strategies could also have resulted from a high and low achiever, learners' self-regulation capability, anxiety level or personality. However, the merit of this work is that the rich data displayed how individuals applied strategies in different ways, the qualities of their strategy uses and the problems in implementing them.

3.4.3 Strategies for specific CFL vocabulary learning sub-tasks

The areas that have attracted most interest in CFL strategy research are character learning and reading strategies (e.g. for character recognition, inferring, and word segmentation).

There are some studies that have compared the effects of learning actual words in isolation and with contexts (e.g.Xiaoming Sun, 2009a, 2009b, 2010; Jinqiao Zhang, 2008) as well as through different encoding processes for learning words (e.g. Shen, 2010). Some researcher have probed learners' dictionary use, for example, Jing Wang (2012) has discovered that intermediate CFL learners use dictionaries for learning both unknown characters and words, whereas those advanced mainly use them for consolidating prior vocabulary knowledge and unknown words as they rarely encounter completely new characters. Zhu (2004) has found a negative correlation between CFL learners' times in relation to using dictionaries and their extensive reading comprehension score, thus suggesting that many learners may have difficulties using dictionaries.

There are a limited number of studies looking at the strategies used for learning and using tones. McGinnis (1997) has noticed that tone learning for CFL learners is problematic and/or neglected at the initial stage. Huang (2000) identifies three tone learning strategies as, consciously neglecting tone learning at the initial stage, naturally getting used to them after living in a Chinese-speaking environment, and practising telling the differences between tones to grasp their concept from the beginning. The researcher helpfully linked learners' choices of tone learning strategies with personality traits and academic majors, thereby determining that the learner who chose to neglect tones was an engineering major and had a "take-it-easy" personality, whereas the other two learners were Chinese majors, with a more serious disposition. Another informative study comes from Hu (2007) as it identifies four tone learning strategies and investigates the relationship between strategy and tone learning outcomes. The strategies that are positively related to tone competence are practising tone perception, monitoring in speaking and paying attention, whereas using gestures to reinforce the tones are negatively related. The author suspects that using gestures could have distracted learners from pronouncing the tones accurately. Considering the importance of tone learning for CFL learning, more studies on the strategies pertaining to are very much needed.

Two types of reading strategies are very relevant to vocabulary acquisition, namely, strategies for segmenting words and inferring strategies. Everson and Ke (1997) notice that the intermediate-level learners experience more difficulties in segmenting words than advanced ones, because of the unknown characters. Shen (2008) finds that CFL learners make word decisions based on intuition, by matching the lexical units with words they know or words with similar word-formation structures, by combining and deriving the meaning from each constituent character, by identifying the part-of-speech or what

sentence components they are used as and by using contextual cues. With regards to inferring unknown words in reading, previous studies have showed that the quality of inferring is influenced by a number of factors, including the structure of word formation, the constituent character (e.g. whether it has multi-meanings or contributes its core meaning), the contextual clues (e.g. the distance between the target word and the clue in the text), and learners' L1 and proficiency level, whereby CFL learners in general have relatively low success rates (Guo, 2004; Jiang & Fang, 2012; Songhao Liu, 2001; Zhu & Cui, 2002). Moreover, it has been elicited that learners use their knowledge on the constituent character (Songhao Liu, 2001) or words containing the same constituent character (Everson & Ke, 1997), and advanced learners also try to "sound it out" and to analyse the grammatical function of the word in sentences (Everson & Ke, 1997). Qian (2005) found that her participant made errors in the pre-lexical access stage, as he mistakenly recognised a character and the morpheme it represented and this led to a false inference. In addition, it has been found that some CFL learners do not verify their guess with the context (Songhao Liu, 2001; Zhu & Cui, 2002). Regarding which, it is argued that the context, in general, provides more syntax information, and the word formation offers more semantic information, so they are both valuable in guessing (Jiang & Fang, 2012). Fang (2005) comprehensively summarises the reasons for which CFL learners could not guess unknown words successfully, including: the extensive use of L1 strategy in learning, which leads to limited morpheme and word formation knowledge, not using the context to verify the guess, lacking the cognitive effort to comprehend the context sufficiently, and missing the necessary culturally-related background information. The existing literature suggests that word segmentation and inferring relies on relevant linguistic knowledge and reading skills, especially knowledge on word formation and grammar knowledge regarding parts of speech and sentence components. Also, CFL learners are in need of instruction and training on using inferring strategies and should be advised to use them with caution, in particular, not relying on them to learn new words.

Next, in this section, strategies for learning and using characters are reviewed. Everson (2008) comprehensively summarises that studies on character learning strategies have a great tendency to employ quantitative research methodologies, investigate primarily university-level students, most of which are at the beginners' level, and focus on strategies used for character learning and recognition. The main research interests include describing character learning strategies that are frequently used in general (Arrow, 2004; Shen, 2005) or by beginners (Jiang & Zhao, 2001; Ma, 2007; McGinnis, 1999; Sung,

2014; S.-h. C. Wang, 1998), exploring the possible influencing factors on the use of strategies and their effectiveness (Arrow, 2004; Jackson, Everson, & Ke, 2003; Jiang & Zhao, 2001; Ke, 1998a; Shen & Ke, 2007; Z. Xu, 2003), identifying more effective strategies (Jin, 2006; Ke, 1998b; Kuo & Hooper, 2004; Y. Liu & Jiang, 2003; Shen, 2004; Taft & Chung, 1999; Jing Wang & Leland, 2011; G. Zhao & Jiang, 2002), and strategies for character recognition (Hayes, 1988) as well as inferring (Jackson et al., 2003; Ma, 2007). Shen (2005) develops a comprehensive character learning strategy inventory, identifies the most frequently used ones by learners across different proficiency levels, and highlights the importance of using metacognitive strategies and orthographic knowledge-based learning strategies for achieving desirable outcomes. However, as the researcher has not distinguished the concept of "character" and "word", a limitation of this inventory is that some strategies, such as "use the new character orally in a sentence", are not "character" but "word" learning strategies. Arrow (2004) uses a qualitative approach and finds that successful CFL learners use metacognitive strategies rigorously to manage their studying of characters, avoid trying to learn too much at one time, select the most relevant items to learn first, learn with Pinyin, thereby initially avoiding the use of characters as well as regularly reviewing and testing themselves. Learners, in general, have high levels of anxiety with learning characters and hence, use affective strategies. Moreover, learners with an alphabetic-background use more strategies to build up sound-symbol correspondence (e.g. drilling on flashcards) than Japanese or Korean learners.

Some studies look more closely at the strategies used by beginners. Jiang and Zhao (2001) find that the most commonly used character learning strategies are: strategies that involve perceiving a character as a whole (e.g. writing it repeatedly), strategies for learning the sound and meaning of a character, strategies using the strokes and reviewing strategies. The beginners also use character-applying strategies to use characters in reading and writing, but less frequently. Organising strategies are used the least frequently, such as organising characters based on shapes or sounds, or character components, or making use of semantic and phonetic components. Generally speaking, CFL beginners use rote memorisation strategies most frequently, and do not use components very much (McGinnis, 1999; S.-h. C. Wang, 1998) and in particular, they do not use phonetic components (Shi & Wan, 1998). In terms of the effectiveness, whilst G. Zhao and Jiang (2002) have elicited that beginners' use of strategies that involve perceiving a character as a whole is negatively correlated with character competence and the use of character-applying and using semantic components are positively correlated with character

competence, beginners themselves perceive copying characters (Jing Wang & Leland, 2011) and creating personal stories (McGinnis, 1995) more helpful than using character components. Ke (1998b) asked CFL beginners to compare 11 pairs of character learning strategies, and elicited that these learners value the strategies of using orthographic knowledge and character components, but also feel the need to memorise individual characters as a whole and to practise writing them repeatedly. There is evidence suggesting that learners who write characters can learn both character recognition and production better than those who do not, and learners' perception of effectiveness can influence the actual level (Chin, 1973). There are also better ways of writing characters, for example, recalling and handwriting them leads to better results than copying them repeatedly (Y. Liu & Jiang, 2003).

The reasons why beginners do not use character-component strategies frequently or do not perceive them as useful, could be explained by the findings of a set of studies focusing on how component knowledge and skills of applying component knowledge in character learning are developed in CFL learning (e.g. H. Chen & Wang, 2001; Jackson et al., 2003; Jiang, 2001; Shen & Ke, 2007). Shen and Ke (2007) have elicited that whilst beginners have early and rapid development of skills in relation to decomposing compounding characters into components and perceiving different ones, they make slower progress in mastering the components due to the difficulties in memorising the semantic and phonetic aspects. Furthermore, the skills of using component knowledge are not developed synchronously with the increase of component knowledge and there is possibly a plateau stage in developing the component-application skills. Jackson et al. (2003) also discovered that CFL learners' orthographic awareness can develop at a highly variable rate. Ke (1998b) proposes that CFL learners might need to go through accumulation and transitional stages to develop the necessary orthographic knowledge and perception skills so as to reach the component-processing stage in which they can use character components to process and learn them more effectively. This hypothetical model is, to some extent, be supported by Ma's (2007) empirical data. Ma (2007) conducted a 10-month longitudinal single-case study, finding that practising handwriting characters not only facilitates the learner's ability of handwriting characters, but also potentially helps develop the use of other character learning strategies. In fact, the error rates of character-handwriting drop gradually and stay stable when the number of characters written reaches about 4,000 (if the same character is written multiple times and they count as multiple ones). The main error type of character-handwriting has shifted from missing a stroke

randomly to using a character-component mistakenly, which suggests that the learner's uses of character learning strategies have changed from whole-character to character-component strategies. The learner also uses Pinyin-related strategies less often and more frequently uses character-applying strategies (e.g. taking notes) as opposed to merely writing characters for practice. This study has provided valuable data revealing the possible relationships between learners' character handwriting skills, character knowledge, awareness and acquisition of skills pertaining to the use of character components and the employment of character learning strategies.

3.5 Conclusion

In this chapter, I have reviewed the literatures from three areas that support and inform the work presented in this thesis. First, the review on general LLS field, especially the discussion on the recent theoretical developments explaining the definitions and features of LLS and its relationship with rival concepts (such as learning styles and self-regulation), has provided clarification on what kind of learner behaviours can be counted as LLS. The LLS that the study is concerned with are essentially learners' observable or unobservable mental activities, rather than their beliefs or knowledge. They should also be (to some degree) consciously chosen by the learners themselves towards a general or specific learning goal. Learners regulate their own learning by choosing and using LLS based on their meta-knowledge system and in turn the process of self-regulation (i.e. learner meta-knowledge and use of meta-strategies) can influence specific LLS use. I have reviewed several LLS classifications, for the purposes of introducing the related terminologies and attributing the concept as pertaining broadly to cognitive, affective, socio-cultural interactive and meta-strategies, in the present study. I have reviewed the possible influencing factors on LLS use, including those relating to person, context and task. These factors can affect learners' choices and the effectiveness of certain LLS. The current enquiry involves considering these factors when evaluating whether a Chinese VLS is chosen and implemented appropriately.

The second body of literature this review has drawn upon is the vocabulary learning and VLS field. Discussion on the general vocabulary learning theories has helped to specify the task nature, including the multi-aspects of word knowledge needed to be learned as well as the multiple sub-tasks involved in vocabulary learning. I propose to combine some of the existent sub-task frameworks of vocabulary learning that have been reviewed to form a more comprehensive framework, namely, on that covers encountering new words, searching for word information, keeping and using records of word information,

establishing word knowledge, consolidating word knowledge and using it. Regarding the sub-task of establishing word knowledge, this can be further divided as establishing its form (spoken, written, word parts), meaning, and use aspects. Using this framework, I identify strategies employed for each sub-task, and report my data in Chapter 5 to 7, and discuss the main issues relating to each sub-task in Chapter 8. In addition, I have reviewed the factors that are of relevance to the vocabulary learning process, including the depth of processing, motivation, noticing, retrieval, creative use and retention. For this study, consideration of these factors is taken into account when evaluating the effectiveness of certain VLS. I have also reviewed some important VLS and vocabulary learning approaches for learning English or other Indo-European languages.

Lastly, in this chapter Chinese vocabulary teaching approaches and the VLS used in CFL context have been reviewed. As the Chinese language and its vocabulary has some distinctive linguistic features, its pedagogies naturally involve a few distinctive issues, such as separating the teaching of spoken and written Chinese, character teaching and whether characters or words should be used as the primary lexical units for vocabulary teaching. As these issues do not exist in the learning of most other FL, using an LLS, VLS, learner belief inventory or questionnaire developed based on the processes of learning languages in general, will not suffice in delivering rich data pertaining to these concepts of CFL. The findings on strategies used for CFL vocabulary learning, in general and for specific sub-tasks, are similar to those of LLS and VLS studies: the use of meta-cognitive strategies and some deeper processing and encoding strategies lead to better vocabulary or character learning outcomes, but shallow processing strategies also have their place when they are employed under the right conditions.

Whilst valuable insights have been achieved into the focal subject matter, there are noticeable gaps in the existent literature. First, there is a lack of investigation into how strategies are selected, implemented, and how well they are performed in general FL, vocabulary, and CFL learning. This is partly due to the fact that most existing studies involved adopting a quantitative approach and only focused on identifying the types of strategies and their frequency of use, thereby failing to examine the strategy selection-processes or the specific steps for manifesting a strategy. As the evidence has demonstrated that there are no absolutely effective strategies, but rather, only effective usage of them and with focus having extensively been on the quantitative aspects of strategy research (i.e. types, ranges, frequency), it is time to probe the qualitative elements of strategy. This pertains to investigating learners' self-regulation process when selecting

the appropriate LLS, finding effective ways to implement them, and performing these successfully. The current study has provided findings to fill these gaps, in particular, the case study chapters (5 to 7) have offered detailed analysis of learners' strategy selection and implementation in various specific learning scenarios (categorised into the six vocabulary learning sub-tasks) and a further comprehensive discussion can be found in 8.2. Also, there are a few areas in relation to CFL vocabulary learning that have been neglected. In particular, there has not been much research on exploring CFL learners' self-regulation, including learner awareness, knowledge and beliefs and their use of meta-strategies to manage own vocabulary learning. The current study investigated these constructs as influencing factors (i.e. self-regulation factor), and they are described in detail in the case study chapters and are discussed in 8.3. Also, as most of the existing studies have focused on the strategies used for learning, processing, memorising and using characters, learner-selected strategies for other vocabulary learning sub-tasks, such as strategies when encountering an unknown word, or dictionary use, are very much needed and are addressed in this study. Lastly, a better understanding is very much needed of how learners deal with the special issues in CFL vocabulary learning and their overall vocabulary learning approaches in the CFL context. This study identified a number of CFL-specific strategies, special difficulties and ways of implementing certain strategies, and individual's overall strategy-patterns in CFL vocabulary learning. In the next chapter, I present the methodology used for conducting the current study to address the research questions and thus, fill the identified research gaps.

CHAPTER 4 METHODOLOGY

4.1 Introduction and research questions

This study is an investigation into L1 English speakers' Chinese vocabulary learning process, which is concerned with looking at their use of Chinese vocabulary learning strategies. In the previous chapter, I reviewed both theoretical and empirical findings in the general LLS, VLS, and CFL strategy research fields and identified a few research gaps, which have helped me narrow down my research interests. The following two research questions evolved over the course of the research as suitable for an in-depth investigation of three key cases and five additional cases which, it is hoped, can shed light on understanding the learning of Chinese and Chinese vocabulary more generally.

1. What strategies do L1 English speakers use and how do they use them in learning Chinese vocabulary?
2. What factors seems to influence learners' strategy use?

The first research question pertains to understanding how L1 English learners tackle the task of CFL vocabulary learning (including various sub-tasks) by investigating not only what types of strategies they use, but also how exactly they implement them. Previous research has mostly been interested in the quantitative aspect of strategy use, and hence, the majority of studies have identified the types of strategies being chosen, and/or their frequency of usage, with the aim being to establish causal-effect relationships between these variables with learning outcomes. However, there is also a qualitative aspect of strategy use, such as whether one is selected appropriately in consideration of the learner, task and contextual needs as well as whether they are well implemented in suitable steps. Some strategy types, such as using vocabulary lists and repetition, are very general and can be used for various purposes in a variety of ways. Some strategies can potentially be manifested into multiple steps, such as using a dictionary and keeping notes. Therefore, simply knowing that learners have used a certain type of strategy does not necessarily entail that they have employed (or not employed) specific processing strategies and arguably, it is those specific processing strategies that affect the learning outcomes rather than the labels of the strategy types. The first research question is set to investigate these qualitative aspects of strategy use in CFL vocabulary learning.

The second research question is concerned with understanding why strategies are used in certain ways. As the recently developed definition of a LLS (reviewed in 3.2.1) has stated that strategy use should be the product of learners' conscious choices, addressing this

question involves probing the underpinning thinking process regarding how the decisions in relation to strategy have been made. Previous studies have demonstrated that it is important to select and implement strategies appropriately. Moreover, they have elicited that successful learners can better manage or self-regulate their learning, select strategies, and implement these in a coherent and consistent way more effectively than less able learners, few studies have probed learners' decision-making processes. Whilst we can see patterns that have emerged from previous quantitative studies in that strategy use has been found to be statistically significantly related to various person, task and context factors and researchers have given possible explanations on how these factors could have influenced strategy use, no clear causal-effect relationships between them have been identified. Thus, a more direct approach to probing the process is perhaps to explore how learners perceive their learning process, what available strategies they refer to, and why they believe a strategy seems to be sensible under certain circumstances. In addition, whilst strategy use is a conscious choice, learners might not be fully aware or be able to report explicitly all the factors that have influenced their decision-making process. Consequently, it is also important to have the researcher's voice that has drawn on existing theories to interpret the phenomenon when placing individual learners into specific contexts in relation to the types of tasks and targets they try to achieve.

The research design of this study, including the methodological approach, data collection methods and the form of the data analysis were chosen based on the purposes of the study and the research questions under investigation. In this chapter, I first acknowledge my epistemological stance, which inevitably influenced my views about the issues being examined and the research questions being asked. Then, I explain my decisions regarding the research design in relation to my research aims and questions. It is quite clear that a qualitative case study approach is more appropriate for the inquiries of interest, and in order to obtain sufficient qualitative data to shed light on the issues that I was interested in, I selected a number of data collection methods commonly and effectively used to obtain LLS and VLS related data. I also discuss the reasons for selecting my approach to data analysis, especially regarding the guidelines in the literature that I found useful for ensuring that this analysis was subject to a systematic process. Next, I outline how the research design is applied in the current study, including the specific steps undertaken in the data collection and analysis. Last, I address potential issues in relation to reliability, validity, and trustworthiness resulting from my research methods. I also discuss ethical

considerations that I needed to take into account during the conducting my study, and the procedures that were undertaken to minimise their impact.

4.2 My ontological and epistemological approach

Creswell (2009) argues that it is necessary for researchers to present explicitly their assumptions about the world (ontology) and those in relation knowledge (epistemology) as these will underpin the research methods. The most frequently mentioned views of knowledge are positivism, interpretivism, and critical realism. Under the positivist paradigm it is believed that only phenomena confirmed by the senses can be genuinely warranted as knowledge and post-positivists accept knowledge as being tentative until a better explanation is provided with sufficient evidence for a particular phenomenon (Bryman, 2012). Their idea of scientific investigation generally involves quantified measurements, controlling variables to achieve uniform conditions, and large-scale samples to seek the accurate and universal portrait of reality. Those adhering to interpretivism or constructivism, however, believe that there is no absolute reality detached from peoples' interpretation and that knowledge is constructed by individuals (Neuman, 2006). As Erickson (1986, p. 127) explains it, "it is interpretation of meanings of actions, and not the actions themselves which are causal for humans". Different individuals can have different interpretations, and so there are "multiple realities" (Denzin & Lincoln, 2011, p. 13). Therefore, those adopting this paradigm argue that the investigation of a social phenomenon should put emphasis on exploring the perspectives and understandings of the participants in the context being studied. Critical realists seek to explore a middle way between the extremes of post-positivism and constructivism. As Sayer (2000) explains, they recognise that reality exists outside of the human mind, and that researchers can seek to depict and understand it. Critical realists acknowledge the possibility of pursuing truth and truthful living, but also admit the limits of human knowledge. According to them, in order to achieve better explanations of phenomena, researchers need to be attentive and engage with the research object. Moreover, researchers could bring expectations regarding the answers to the questions they are investigating, and hence, need to be cautious, thus letting the truth reveal itself to them.

My research reflects the influence of interpretivism in that it focuses on the learners and the researcher's interpretation regarding what, how and why LLS are used. First of all, I chose to understand the Chinese vocabulary learning process by investigating vocabulary learning strategy use, being informed by literature that I considered of relevance. Furthermore, in addition to the selection of LLS being largely based on learners'

understanding about their experiences of learning in general or Chinese vocabulary specifically, it is acknowledged that the identification of LLS can be either based on learners' perception of own activities (self-reports in e.g. questionnaire, interview, learner diary) or researcher's interpretation (e.g. observation). I chose to collect data in the ways I believed was useful to understand the phenomenon and in the end presented the findings based on my own interpretation. Finally, readers of this thesis will also reinterpret the findings and decide upon the rigour of this study based on their own understanding of the relevant issues.

4.3 Research Design

The research design is the logical link between the research questions and the data that need to be collected and analysed (Denzin & Lincoln, 2005). This section illustrates the reasons why a qualitative case study approach, a number of qualitative data collection methods and a thematic analysis approach were deemed best for serving the purposes of the present study.

4.3.1 A qualitative approach

In order to address my research questions, I could have undertaken a quantitative or a qualitative approach. As numerous researchers point out (Bechhofer & Paterson, 2000; Denzin & Lincoln, 2005), a quantitative approach simplifies context, human beliefs or behaviours, etc. into numbers and shows the relationships between them through statistical means. It can describe, explore or explain rules or patterns of a large-scale sample in broadly similar sets of situations and settings. It pertains to applying a deductive approach (i.e. to test an a priori theory) to uncover generalised and context-free effects when variables are well controlled. However, a quantitative approach is often inappropriate for providing understanding in relation to micro-level, individualised and context-related issues. Qualitative studies, on the other hand, use systematic methods to understand and interpret human behaviours in-depth (Seidman, 2013). They aim to depict real-life situations including various factors with rich detail rather than controlling for such factors. They can capture unique features that might otherwise be lost in larger scale data, in particular, in relation to identifying pertinent real life individual cases regarding a phenomenon that can then be analysed in detail (L. Cohen, Manion, & Morrison, 2011). Qualitative researchers mainly use an inductive approach, e.g. developing a theory based on the data, or establishing interpretive classifications which could be a step towards theory.

It is quite obvious that a qualitative approach is more suitable for the present study for a number of reasons. First, as established from the literature review, learning strategies are learners' reactions to specific tasks in specific situations (Gu, 2003b). Consequently, by their nature, strategies need to be situated in a context. The same action might be considered as an effective strategy in one context, but not effective in another, depending on whether it meets learners' individual, task and situational needs. Quantifying these strategies into numbers would lead to the opposite of my intention of identifying and describing actual instances of strategy use in context. In addition, the focus of this study is less on the quantitative aspect of strategy use and more on the qualitative aspect of this usage, i.e. how strategies are chosen and implemented. It was thus decided that data obtained from a qualitative approach would provide the kind of highly-detailed strategy description needed for this purpose.

Second, many previous quantitative studies on LLS have provided useful evidence about the "big picture" and the generalised patterns of strategy use. However, from the literature review it has become apparent that various factors, such as individual, situational and task type-related factors have been identified as being related to strategy use. What researchers do not know much about is how these factors work at a micro-level, i.e. for an individual learner. How do learners choose strategies? What factors are considered and how are they reconciled in learners' decision-making and conscious self-regulation process? What are the difficulties in implementing a strategy? Are there qualitative differences in strategy implementation between good and not-so-good learners? To understand these issues, researchers need to put individual learners under the spotlight and zoom in closely so as to be able to identify their learning processes within different situations and contexts. Considering the amount of detail involved in this investigation, a small scale, in-depth qualitative study was deemed as being the most suitable approach.

Third, many strategies are mental processes (e.g. inductive reasoning) and the use of strategies is influenced by learners' degrees of awareness, beliefs, and attitude towards using them (Oxford, 2011b). Learners vary in terms of the degree of being aware of these mental processes and the ability to articulate them. Thus, a quantitative data collection approach, e.g. a strategy questionnaire, is likely to prove ineffective in providing sufficient information to assist learners to understand and report their strategy use. On the other hand, in an interview, participants have opportunities to interact with researchers, with the latter being able to clarify and verify responses from the former through this process.

To summarise, a qualitative approach allows the researcher to describe strategy use in great detail (e.g. with factors, context) and to focus on examining the qualitative aspect of strategy use. Both actions are very much needed in the current LLS research field (Griffiths, 2013). In addition, as investigating strategy use from such a perspective on vocabulary learning globally would involve gathering a large amount of data, and considering the scope of this PhD study, it was therefore decided that a pure qualitative approach was more appropriate than mixed methods.

4.3.2 A case study approach

Among various qualitative approaches (Creswell, 2012), a case study approach was considered the most suitable for the present study. Whilst varied data, including qualitative and quantitative, can be used in case study (Yin, 2009), L2 learning case studies are often qualitative (Oxford, 2011b). Yin (2014, p. 16) defines a case study approach as "an empirical inquiry that investigates a contemporary phenomenon (the 'case') in depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident". Researchers identify and investigate "case(s)" (e.g. an event, activity, process, person, etc.), which is bounded by relevant criteria, such as time, context, role or function (Miles & Huberman, 1994). Case studies can be single or multiple in nature (Yin, 2014) and either intrinsic or instrumental (Stake, 1995). Regarding an intrinsic case study, the researcher focuses on the case(s) itself, whereas for an instrumental case study, the focus is on an issue that can be illustrated by the case(s). Yin (2014) presents three advantages of the case study compared to other research methods. First, it allows researchers to cope with situations in which there are many more variables of interest than data points. Yin (2014, p. 212) further elaborates that when researchers are "making an in-depth inquiry, studying conditions over time, and covering contextual conditions" they tend to have many variables. Second, it allows researchers to use multiple sources to triangulate. Yin (2014, p. 106) proposes six types of data that can fulfil this purpose, including documentation, archival records, interviews, direct observations, participant observation and physical artefacts. Third, a case study also allows the researcher to use prior theoretical propositions to guide the data collection and analysis. Whilst a quantitative approach also allows researchers to do so, choosing a particular questionnaire, for instance, would mean completely accepting the theories behind it. That is, it does not allow researchers to test theories along the researching process, whereas case study design does provide such flexibility. Hitchcock and Hughes (1995, p. 317) summarise the key features of the case

study approach as having a special concern with rich and vivid description and having a way of presenting it in writing, a way of chronologically narrating events within the case, an internal debate about the description and analysis of events, a focus upon particular events, individuals or a group within the case and there is the integral involvement of the researcher in the case.

The case studies in the present research are multiple and instrumental: the "cases" are individual adult L1 English CFL learners and pertain to finding out how they use VLS. Moreover, what factors influence their strategy use can shed light on general LLS and self-regulation theories, FL vocabulary learning and VLS as well as Chinese vocabulary learning. There are a number of reasons why a case study approach is suitable for the present study. First, strategy use is supported or influenced by many interrelated factors, including internal factors, such as learners' awareness, knowledge, beliefs, motivation, personality or learning styles as well as external factors, such as teaching approach, task requirement, and social resources. A case study allows for the researcher to observe all these possible factors and how they influence and interact with a case. Also, one aim of the study is to understand how adult learners naturally approach vocabulary learning and why they learn Chinese vocabulary in such a manner by describing their strategy use. Consequently, it is important to situate the study in natural settings. As Yin (2014) points out, a case study is an ideal tool to answer the "how" and "why" types of research questions and can do so without intervening too much or changing the context. Third, the case study approach allows me to bring LLS theories, FL vocabulary learning theories (which are mostly developed by researchers in working with languages other than Chinese) into my study, whilst also providing opportunities to examine them in the CFL context. In addition, it also allows me to bring findings from cognitive experimental studies of CFL learning into the LLS and VLS area and to study their effects in real life situations. Fourth, learners' inter-language is a developing system, which arguably interacts with strategy use. In other words, the development of learners' language could lead to changes in strategy use and these changes could potentially lead to language development. There is some evidence of such interaction (Ma, 2007), but more studies are needed so as to confirm this relationship. In the current study, although the length of data collection for participants varied depending on their availability, the time period between the first and the last data-collection event for all my main-study participants was longer than 6 months, and for the 3 key participants, the data collection went on for almost a year. This semi-longitudinal case-study design has provided findings on strategy

improvement based on individuals' self-regulation, which has not been addressed much previously. Further, a case study allows me to study both learners' learning products (i.e. evidence of their inter-language) and their strategy use, chronologically. Lastly, a case study allows me to describe strategies with rich detail and to analyse these in-depth.

4.3.3 Data collection methods

In order to understand learners' strategy use and how they are affected by different factors, learner diaries, interviews, think-aloud protocols, observation, and learning product analysis are used for data collection, all of which are discussed, respectively, below.

a. Learner Diaries

Learning diaries are an effective tool for collecting learners' data over a considerable period of time and are especially valuable in revealing meta-strategies and affective strategies (Macaro, 2001). However, not everything in the diary will be relevant to strategy use and conversely, there might be strategies learners have forgotten to report. Graham (1997, p. 195) suggests a possible way to overcome this problem by providing broad headings under which to write the diary entries, as follows:

- Activity and situation (in class/outside class);
- Things I found easy/things I found difficult;
- How I dealt with the task;
- What have I learned/what have I achieved;
- How do I feel?;
- What should I do now?.

As can be seen, most of these broad headings concern the use of metacognitive and affective strategies, which are more easily collected from learning diaries than other strategies directly involved in processing language (Macaro, 2001). However, asking learners to write under such headings may pre-judge that they will use certain strategies and hence, will almost certainly interfere with their use of meta-strategies, i.e. learners are prompted to think about strategy use because of the headings. Consequently, for this study, a list was provided to learners only at the beginning as guidelines (see Appendix 1) to suggest the possible things they could write about, if they were unsure about what to write, but did not require them to write in accordance with these guidelines. In addition, McKay (2009) also argues that learning diaries are effective tools for investigating what learners have been doing during their own time and if can write the diary while performing a task, it can be considered as a written record of an introspective report (i.e.

think-aloud). However, given this could interfere with the learners' normal learning routine, this study did not require them to write diary entries while performing a task, but instead, encouraged them to write in the diary soon after they had finish tasks on a daily or weekly basis. The learners were also advised to keep the diary in the most comfortable and convenient way, so some chose to keep a hardcopy and handwrite the diaries in a separated notebook or in their Chinese study notebooks, whilst others kept them electronically in word documents or short entries in their online calendar.

b. Interviews

Interviews are used in many studies to investigate strategy use (Macaro, 2001). During interviews regarding this subject matter, learners are asked to describe what they usually do to learn or what they were thinking or doing during a recently completed learning task (Chamot, 2004). An interview can be highly structured, thereby being very similar to a questionnaire (A. D. Cohen, 2011). Alternatively, it can be semi-structured (e.g. Graham, 1997), whereby the researcher prepares a semi-structured questionnaire schedule that allows the researcher to take diverging routes through unscripted follow up questions, for further clarification or if they are deemed to enrich the data gathering process.

Macaro (2001) summarises some advantages and disadvantages of using such interviews for strategy studies. One of the advantages is that researchers and participants can, to great extent, clarify meanings to avoid misinterpreting each other. Moreover, they are less time-consuming than observation. However, one disadvantage is that learners might not be able to fully articulate the strategies they use, especially the details of strategy use. In addition, learners' answers could be affected by the fact that they have been asked. That is, they might give a particular because they feel it is required or so as to please their teacher or researcher. Chamot (2004) points out another limitation of retrospective interviews in evaluating strategy use, which is that participants can forget details, especially those in relation to their mental processes. Macaro (2001) points out that providing a stimulus during interviewing can help in the recall of strategies. For instance, the interviewer could describe a rather detailed scenario to help the participant to think step by step about what they normally do in such circumstances.

For this study, a semi-structured interview approach was used, with some of the interviews being held immediately after the observation of a lesson, group study event or think-aloud activity. This was so that I could initially focus my questions on what had emerged from the observation, while the student still had a relatively fresh memory about

what she/he had done, why she/he had done, and they could use the materials at hand to explain these matters. All the interviews were audio-recorded. The first round of interviews was conducted using a set schedule (see Appendix 2) with follow up questions to obtain background information and to find out in very general terms about what learners did to learn vocabulary in Chinese, what they undertook for each vocabulary learning sub-task (framework proposed in 3.3.1), how they felt about learning Chinese and anything interesting or different they found with learning Chinese as opposed to other languages. The second round of interviews was used to ask more specific questions about each learning activity, strategy and things the participant had mentioned previously. As the aim was to understand the implementation and the reasons why they learned in a certain way, I used general guidelines for asking interview questions (see Appendix 2), but each participant was asked different specific questions based on their own situation. Some learners responded with information that required further clarification and explanation, so I undertook further interviews with them in order to resolve any unclear issues. If it was not possible to conduct a face-to-face interview for practical reasons, or if it was only one or two follow-up questions that needed to be responded with short answers (although they often did not turn out to be short), I contacted the participants via emails and data collected through these were also included as part of the interview data. However, I was aware that the data that were written down could be of a different nature to those reported orally on site, so when using these in my analysis, I marked them as data obtained from follow-up questions. Thinking reflectively, interacting with participants via email was rather useful, as it gave the learners more time to think about the questions and hence, they often gave more detailed explanations than during interviews.

All the participants were fully informed before the data collection period that there were no absolute right or wrong answers in strategy use so as to minimise any pressure of giving the "right" answer from the participants' perspective. Many times if they did not know or remember what they did whilst learning, or why they used a particular strategy, they responded with straightforward answers like "I do not know" or "I am not sure". When they felt that they should have used a certain strategy (maybe because their teacher kept suggesting it) but they did not actually use it, they reported "I do not bother to … because I am lazy/tired/bored" or "I do not see the point of ..." They also commented on the weakness/limitations of their own learning or their teachers' teaching methods.

c. Think-aloud protocol

The think-aloud protocol is especially popular in studies investigating strategy use and it has been deployed in many previous studies (e.g. Ahmed, 1989; Anderson, 1991; Anderson & Vandergrift, 1996; Block, 1986; Fraser, 1999; Lawson & Hogben, 1996). Participants are usually given a short training course on how to perform the think-aloud protocol and then asked to report verbally what they are doing or thinking while performing a task, e.g. guessing the meaning of an unknown word in extensive reading/listening. Think-aloud reports can be enhanced by videotaping and then asking the learners to review the videotape after the task (i.e. Stimulated recall), because the video stimulus can help them to recall strategy use (Oxford, 2011b).

There are drawbacks as well as advantages in using the think-aloud protocol. A criticism is that it asks the participants to do two things, i.e. verbally report and do the actual task at the same time, which makes the effort awkward and artificial (Oxford, 2011b). Also, this technique is clearly not part of the natural language learning or language-using process and applying it can alter how participants behave, hence leaving the data not reflecting how learners perform in a natural setting (Dörnyei, 2007). In addition, this introspective report could take up part of the participants' cognitive resources and therefore, influence the quality of their performance (A. D. Cohen, 1998). Whilst all of these criticisms are valid, the think-aloud protocol is still one of the best ways to get close to accessing learners' thought processes and can result in the gathering of detailed data from individuals about strategies or processes used during a task (Pressley & Afflerbach, 1995).

The current study involved each participant performing think-aloud protocols with the main vocabulary learning activities they performed during the data collection period, such as using vocabulary lists, writing characters and intensive reading. The think-aloud process was video-recorded with the camera facing the learning materials to see how the learners used them or what they were writing. The participants' faces were not recorded, so that their identities would not be in any way revealed. Think-aloud is found to be very useful in three respects. One is that it is used to elicit more specific steps in learning that the learner did not realise or report using in the learner diary or during interview. It is also used to identify learners' mental activities that would otherwise be unnoticeable in observation and learning product analysis. Last, it is used to triangulate data with other data sources, especially with those that are learner self-reported.

In many cases, the think-aloud data confirmed what was reported with other types of data, but occasionally, there were discrepancies between what the learner reported retrospectively (e.g. at interview) and introspectively during the think-aloud activity. Moreover, sometimes the researcher's interpretation of what specific processing strategies were actually implemented during the think-aloud time differed to that reported by the learner and these types of discrepancies were all documented and are discussed.

d. Observation

Observation is often used for assessing strategy use (Ahmed, 1989; Fillmore, 1976). Whilst many strategies are mental processes and cannot be observed, there are some, such as asking for clarification or verification, overcoming limitations in speaking through gestures, or looking up a word in a dictionary, which can be observed (Oxford, 1990b). Interesting findings obtained from observation can also be further discussed in interviews. Observations can be conducted with predetermined observation categories, which reflects a positivist epistemological stance with uniform variables. An interpretive approach regarding observation, however, is aimed at avoiding predetermined observation categories and instead, is geared to picking up things that reflect the researcher's interests. I did not have a predetermined observation schedule and tried to keep an open mind when observing the participants in various naturalistic settings, such as in class or in study groups, which they regularly attended, or in less naturalistic settings, such as during think-aloud activities. I kept my field notes for each participant and included anything I found interesting and useful at the time, including the kinds of questions they asked when they tried to learn new words, how they explained words to their peers in the study group, how they interacted with language exchange partners as well as the kinds of errors they made, the words they looked up, and information they noted down, etc. The observation data, especially the types of questions the learners asked or the errors they made, turned out to be very useful in reflecting upon the kinds of thinking processes that they had, but did not consider as strategies to report. After analysing the observation data, I went back to ask follow-up questions and in some cases (e.g. Sarah in Chapter 5) identified some important new strategy uses.

One limitation of using the observation data collection method, is that the presence of the researcher can potentially disrupt the normal interaction or alter how learners behave (Dörnyei, 2007). It is hard to eliminate such disruption completely, especially for a class observation or observing one-on-on language exchange activities, as it was clear that I did not belong to part of the usual setting, despite my attempts to be as unobtrusive as

possible. In order to minimise the influence of my presence on the participants' behaviours, I tried to be involved at least twice during the same kind of activity, so that the participants and the people who they were interacting with would become more used to me being around. It was easier to blend into the study group, as five out of the eight participants attended the same reading study group, which recruited both L1 Chinese and English speakers to study each other's languages. I registered as a L1 Chinese speaker member and attended the group regularly myself, so that my participants would not feel that I was only there to observe them. Also, I was the private tutor for two of them and whilst this might raise potential conflict interest issues (which are addressed in 4.5 and 4.6), I gained valuable data from observing them naturally in the lessons, especially regarding the questions they usually asked me, the kinds of lesson activities they suggested we did and the actions they took during the lessons.

e. Learning product analysis

Learning product analysis has not been widely used in LLS studies, but has been deployed in a number of character learning strategy studies in the CFL/CSL context (e.g. Ma, 2007). It is especially helpful in identifying the mental processes, such as encoding strategies, which are sometimes being carried out at a very low degree of consciousness and hence, are difficult to articulate. It can also be used to see learning progress. For example, Ma (2007) examined character writing error rates and error types, finding some relationships between learning progress and changes in learners' strategy use. For the current study, I collected as many learning products as I could from each participant, including all their notes, homework, composition, exercises sheets, etc. Analysing these types of data is very helpful for identifying what learners think has been important, useful and it sometimes reflects their encoding processes as well as their learning progress, indirectly. Vocabulary notes themselves are the products of note-taking strategies and so are very informative in reflecting the use of these strategies.

It is contended that the selection of data collection methods for this study is balanced between learners' self-reported data, such as learner diaries, interviews, think-aloud protocols and the kinds of data that learners have little control over, such as observation and learning product analysis. This has allowed for the triangulation and verifying the findings during the data analysis. This combination of methods has provided very rich data for identifying the types of strategies being chosen, the specific steps of implementation and the possible factors that appear to have influenced the strategy use. In the next subsection, I discuss how I selected my approach to analyse the data.

4.3.4 Approaches to data analysis

Qualitative research tends to produce a great amount of data and the researcher needs to be clear and thorough about how these are processed into research findings in order to be credible (Miles & Huberman, 1994). Various tactics and procedures are suggested in the literature (L. Cohen et al., 2011; Miles, Huberman, & Saldaña, 2014), and of all the available analytic approaches, such as grounded theory, narrative analysis, discourse analysis, thematic analysis seemed to be suitable for the current study. Ryan and Bernard (2000) consider that thematic analysis is a process performed having major analytical traditions, such as grounded theory, while Braun and Clarke (2006) argue that it is an analytical approach in its own right and that it is a foundational method of analysis for qualitative data. Thematic analysis allows the researcher to capture something important or relevant from the data in relation to the research questions and represent a patterned response (i.e. a theme) using their own judgement. It is a flexible tool, because it allows for both inductive and deductive theme generation during the analysis. During inductive theme generation, data are coded without trying to fit into an existing theoretical framework, so both the coding and themes are very much data driven. Thematic analysis also does not involve rejecting deductive theme generation as it is often impossible for researchers to free themselves from the existing theories and hence, these theories should be drawn upon when analysing the data.

A few common steps are suggested for thematic analysis in the literature (e.g. Boyatzis, 1998; Braun & Clarke, 2006; Miles & Huberman, 1994). This starts with the researchers familiarise themselves with the data, which can be carried out during the data collection period or shortly after. Researchers can work with the raw data first and the transcription process provides a second stage of familiarisation. In the coding stage, researchers read and re-read the data, with the aim being to develop a list of "preliminary codes" based on these. The codes at this stage could be short sentences or phrases from the text, for this is an effective way of organising data. In the stage of creating themes, researchers look more closely at the codes that can be merged and those that can be deleted, thereby being able to identify provisional themes. It is also important to have a stage for iterating themes in which the relationships between codes and themes, themes and themes are more closely examined. Moreover, it is helpful to repeat reading the data in a more active way so as to spot any inconsistencies or contradictions. In addition, it is important to have rigorous comparison, triangulation and verification of the data. Subsequently, the researcher needs to name and define the themes, perform the analysis and disseminate the key findings.

When analysing the data from a qualitative case study, Stake (1995) suggests that the analysis should start with a narrative description, present a thematic analysis and close with assertions about what has been learned in personal or theoretical terms. Miles et al. (2014) also recommend that a within-case analysis is usually carried out first to describe, understand and explain what has happened within a single, bounded case. Then, cross-case analysis can be carried out to enhance the generalisability or transferability to other contexts. It also can help to deepen understanding and achieve explanation for each case. There are different strategies for cross-case analysis. For example, Yin (2014) suggests the replication strategy. For which, the researcher uses a theoretical framework to study one case in-depth and then successive cases are examined to see whether any pattern found matches with the previous case. The strength of this approach is that it involves investigating any expected pattern using the research framework for a single case and subsequently, applying what has been learnt to other cases, thereby building comprehensive understanding regarding the phenomenon being researched. Miles et al. (2014) point out that this is a case-orientated strategy and an alternative is a variable-oriented strategy, i.e. looking for themes across cases. They contend that it is often desirable to combine case-orientated and variable-orientated strategies together, which they term "stacking comparable cases" (Miles et al., 2014, p. 103). In relation to which, the researcher first uses more or less standard set of variables to write each case, but with leeway for possible uniqueness to emerge. After each case is well understood, the researcher then stacks the case-level displays in a "meta-matrix" (using columns and sub-columns, rows and sub-rows) to condense the data further and to carry on systematic comparison.

For the present study, different sets of guidelines as discussed above for analysing the data were drawn upon. Data collection and data familiarisation were carried out simultaneously, so that the emerging interpretations of data could help guide further data collection and analysis in relation to other parts of data. I strove to be systematic in the data collection and analysis, by following the steps recommended for thematic analysis and combining the case-orientated and variable-orientated strategies together when analysing the cases. In the next section, I outline how I applied the research design for the present study.

4.4 Outline of the study

The thesis includes the outcomes of a pilot study and the main study. The pilot study not only helped inform the research design of the main study, for its data were also analysed

thoroughly with those obtained from the main study so to acquire a more comprehensive and complete picture of how various types of learners tackle the task of Chinese vocabulary learning. In this section, I first present how the pilot study was conducted, including its participants, data collection and analysis methods as well as the ideas that have been theorised from the pilot to inform the main study. Then, I discuss the processes of selecting participants, the background information as well as the data collection process for each participant and lastly, I explain and justify how I transcribed, coded and analysed the data.

4.4.1 The pilot study

As part of the process of identifying the focus of this research and refining the research design, a pilot study was conducted. The data collection for this took place between October 2013 and April 2014. I had three participants in total: Fiona, Jack and Luke (all names are pseudonyms). Fiona was recommended by an acquaintance who was studying on the same course as her and I met Jack and Luke during a Chinese reading study group organised by Jack. The reading study group is a weekly tandem-learning group in which L1 Chinese and L1 English speakers help each other's English learning and Chinese learning. The group organiser (Jack) selects a Chinese article, creates a learning material from this text, and puts them on the internet before the event, so the study group participants can prepare in advance. The participants were interviewed with the same semi-structured interview questions, which were aimed at finding out their understanding of Chinese vocabulary learning and strategy use, the difficulties they had and how they used their strategies to solve problems. I also carried out in-class observation with Fiona and a study group observation with Jack and Luke. Their background information and the data collected from them are presented in Table 4.1 below.

Case	Age	Occupation	Duration of Learning Chinese	Proficiency Level	Data collected
Fiona	51	Entrepreneur	3 months	Beginner	• interview • in-class observation
Jack	52	Computer science lecturer	6 years	Intermediate	• interview • study group observation • follow up questions

Luke	40	Chinese to English translator	10 years	Advanced	• interview • study group observation • follow up questions

Table 4.1 Participants and data collection for the pilot study

The selection of these participants involved a purposeful sampling process, i.e. the participants are selected because of some of characteristics they have. As the main purpose of this study was to identify strategy use, it was decided that the ideal participants would be those who spend substantial time or effort in learning Chinese, as there would be a greater chance that engage in strategies and hence, would be able to provide rich data for the study. The proficiency level is another factor that was considered during participant-selection, as having participants of different proficiency levels was deemed as possibly helping me to identify a wider range of strategies and also see if the participants used strategies differently, according to their proficiency level. However, the comparison between the participants was primarily to yield better understanding regarding each case, rather than claiming a strategy use pattern of learners associated with their proficiency level. In sum, the intention of the study was not to use the assessment of the proficiency level of the participants as an analysis criterion, for this was only to ensure that the study involved learners at different levels.

Data from the pilot study were analysed immediately after the collection period. I transcribed all the interview data, and read and re-read the transcriptions as well as my field notes from the observations to familiarise myself with the data. Then, I identified the important, interesting or unexpected points, I noticed from the data, which constituted a few aspects deemed worthy of further investigation for my main study. For example, all three participants described learning Chinese felt like learning two separated languages (spoken Chinese in Pinyin and written Chinese in characters), and they felt cognitively overwhelmed by this process. In the main study, I paid special attention to asking how other learners felt about this and how they dealt with learning multi-aspects of word knowledge in Chinese. I also noticed the data gathered regarding this was rather unclear or vague, which led to me modifying my data collection method in relation to this for the main study. Specifically, whilst I found that interviewing was an effective way to acquire information on general strategy use (i.e. the types), the learners had difficulties in articulating the specific steps for implementing a particular strategy. In response, the think-aloud protocol was adopted to collect data for the main study. Also, learners only

reported very general feelings about learning Chinese vocabulary, such as finding it interesting, challenging, frustrating and they commented on general strategy use in general terms. That is, they did not link these feelings or strategies to particular incidents or specific contexts in terms of what made them have these feelings or use these strategies. Consequently, for the main study learning diaries were collected. I also found observation of group learning to be an effective way to identify vocabulary learning and the use of strategies, as they could then subsequently be discussed in the interviews. During the observations, I found looking at learners' notes useful for understanding their thinking process and for this reason, I included learning product analysis in the main study.

4.4.2 The main study

The data collection for the main study took place mainly between April and December 2014. There were follow-up questions raised outside this period during the data analysis stage and previously explained, these questions were asked and answered via email. I had six participants in total for the main study: Fiona, who also participated the pilot study, Sarah, Betty, Mark, Adam, and Emily (all names are pseudonyms). Their background information is presented in Table 4.2 below.

Case	Age	Occupation	Duration of Learning Chinese	Proficiency Level
Fiona	51	Entrepreneur	7 months	Beginner
Sarah	25	Management consultant	2 years	Beginner to Intermediate
Betty	44	Technical author	4 years	Beginner to Intermediate
Mark	58	Retired software engineer	4 years	Intermediate
Adam	35	Product development manager	5 years	Intermediate
Emily	25	Executive assistant	3 years	Advanced

Table 4.2 Participants for the main study

A striking feature shared by my participants (in both the pilot and the main study) is that they were all non-degree, non-university-level, part-time learners during the data collection period. This study therefore contributes specific findings that are particularly relevant to the lifelong-learning context, which has been neglected previously, especially in CFL teaching and learning (Everson, 2008). In addition, the fact that these learners initiated their Chinese learning when they were not required or in any way obligated to do so indicates a high degree of interest, motivation, and, to some extent, learner autonomy. The selection of the main study participants also involved a purposeful sampling process under the same criteria as with the pilot study explained earlier. The decision to only include learners who make substantial effort to learn Chinese has enabled me to identify more strategies, but also introduces certain limitations and so caution needs to be taken when interpreting my findings. Participants in the current study may all be considered as good learners, as they are motivated, independent and hardworking. My findings therefore are likely to reflect a more optimistic view on learners' strategy use and may not be applicable to less motivated learners. However, as my study has also investigated the factors behind strategy uses, especially the role of learners' self-regulation, it has identified a few meta-strategy chains that may be responsible for maintaining high degree of motivation (e.g. setting realistic goals), and these findings can be used to help less-motivated learners. Furthermore, I argue that my participants are "good", if only the quantitative aspect of their strategy use is considered (i.e. number of strategies used, frequency, etc.). When examining how strategies are selected and implemented in consideration of their specific situations, this study identified some qualitative differences between participants. This has led to the identification of highly self-regulated learners who can choose and perform strategies actively in appropriate steps, and less self-regulated learners (but also highly motivated and hardworking) who appear to use a lot of strategies, but not necessarily in the most appropriate or active ways. Therefore, strictly speaking, my study is not exclusively investigating good language learners, but learners with various levels of capacity for using strategies and self-regulation.

Another factor being considered in the purposeful sampling process is learners' proficiency level, and as explained earlier, no objective measure was used. It would have been helpful to have some objective indications of learners' proficiency level (e.g. HSK scores, vocabulary size), as this can help distinguish successful and less successful learners and help link strategies with proficiency levels. The decision to not measure

proficiency levels was made based on the following considerations. First, it was difficult in the practical sense to convince all participants to take a test. I had the impression that some participants did not particularly welcome the idea of taking a test, and may not have wanted to participate in the study if this was a requirement. Also, I worried that learners may feel that they would be judged based on their test results, and became less enthusiastic and confident to share their strategy uses, views about learning, and rationale of strategy uses. Last, in the context of lifelong learning, it is insufficient even with a test score to claim someone is more successful, and someone else is less successful. Unlike degree or university-level students, lifelong learners vary greatly in terms of the length and the intensity of their Chinese learning, and so it is perhaps unfair to determine their level of success based on scores. In examining good, highly self-regulated, strategic lifelong learners in this study, I took the approach to focus on how well learners can select and implement strategies to deal with the learning task in hand, whether they are satisfied with their own learning progress, and more importantly, if they enjoy the learning and are willing to continue the learning.

As aforementioned, all the participants were asked the same semi-structured interview questions during the first round of interviews and were given the same guidelines for keeping a learner diary, being encouraged to make as many entries as they could. They all participated in second round interviews in which they were asked different questions aimed at finding out the specific steps and the reasons why they used certain strategies based on their responses from the first round interviews. I conducted think-aloud activities investigating each learner's main vocabulary learning activities, so that the types of activities performed in the think-aloud protocol varies from case to case, and did the nature of the events being observed and the types of learning products collected. After obtaining these data and having gained initial familiarisation with the data, three out of the six cases (main study), i.e. Sarah, Mark and Emily, were identified as the key participants, as they were clearly more aware/capable of articulating their rationale for strategy use, and were contacted for further interviewing or follow-up questions. Their strategy use and self-regulation processes are reported, in detail, in Chapters 5, 6 and 7. In the later stage of data analysis, the three key participants as well as three other participants Adam, Jack (pilot) and Luke (pilot) were identified as the good, highly strategic language learners, as they are more aware of/better at articulating their own learning process and are able to use strategies more appropriately based on their needs than the other two learners, Betty and Fiona, who were identified as less strategic learners.

The criteria used for identifying key participants, other highly strategic learners, and less strategic learners are presented in Table 4.3 and discussed below.

key participants	• highly aware/capable of articulating their rationale for strategy use • highly aware/capable of articulating their own learning process • strategies are chosen and implemented appropriately
other highly strategic learners	• highly aware/capable of articulating their own learning process • strategies are chosen and implemented appropriately
less strategic learners	• less aware/capable of articulating their own learning process or rational for strategy use • strategies are often chosen and implemented inappropriately

Table 4.3 Criteria for identifying key participants, highly and less strategic learners

The identification of a highly strategic learner in this study partly relied on whether a learner can choose and implement strategies appropriately, and this was evaluated case-by-case based on learners' individual, task and contextual needs. Extensive examples were given with the key participants in Chapter 5, 6, and 7, and examples from both other highly and less strategic learners were given in discussing key findings in Chapter 8. The identification also partly relied on a high degree of learner awareness of their own learning process, strategies used, problems and identification of areas to improve, as this is a common feature of good language learners suggested from the existing literature (discussed in 3.2.2). There are some limitations in using this as criteria though, and this is mainly due to the fuzziness around LLS research theoretically and methodologically and difficulties in studying learner cognition. As a great number of data collection methods (discussed in 4.3.3) rely on learners' self-report, and people vary in their ability to articulate their own thoughts, it is hard to tell if someone is unaware or merely unable to articulate their thoughts in words. In this study, I decided that the ability to rationalise one's behaviours, although it can be an indicator for purposefulness, is not an essential feature for highly self-regulated learners (as this may require knowledge about language

learning theories), but the ability of reporting or confirming one's own learning process, is (as describing own behaviours is less likely to require special knowledge). Also, in the last interview with each participant, I described possible strategic behaviours (proposed based on their own previous self-report data, my observation, or learning product analysis) for participants to allow them to confirm or disconfirm. By doing so, I was hoping to reduce the possibility that a learner is aware of using certain strategies but were not good at articulating or did not think of reporting them. This was indeed very helpful, as there were many "yes, I do that" moments. The less strategic learners were identified because they were often not sure about what they did exactly, step-by-step, in implementing a strategy (e.g. dictionary use). They more often replied "I don't know…", and were more often found contradicting themselves in different data sources.

As different participants in this study had different numbers of interviews, different think-aloud activities, distinct observation events and all submitted different learning products, I explain the data collection case by case, when introducing each participant below.

Sarah

Sarah had been learning Chinese part-time mainly in the UK for two years, and she was identified as a key participant, with her case being reported in Chapter 5. I was her tutor for one-on-one lessons when I was preparing for the data collection of the main study. After working with her for a few months, I found that she was a highly self-regulated strategic learner, as she often gave me thoughtful input about the lesson activities she would like to have, thus suggesting that she had put much thought into reflecting on how to learn Chinese and she also often asked me very probing questions with regards to exploring how to use words. I am aware of the dangers and drawbacks there could be when studying one's own students and hence, took appropriate procedures to minimise such an impact (discussed more in 4.5 and 4.6). I considered it would be a wasted opportunity to not study a potentially very good learner and describe her effective strategy use, self-regulation, and learning process. Having to teach Sarah for a weekly lesson gave me extensive opportunities to observe her study in detail and consequently, I was able ask very specific questions during the interviews, which has meant studying her has led to some very valuable findings. More specific information about the data collection with Sarah is listed below in Table 4.4.

Learner Diary	11 Diaries
Interview	5 Interviews

	5 Emails for follow-up questions
Think-aloud protocol	• Using a vocabulary list to self-study new words • Using a vocabulary list to review • Character recognition • Using a dictionary to look up unknown words without Pinyin
Observation	• Lessons • Think-aloud activities • Interviews
Learning products	• Self-study notes • Lesson notes • Homework • Composition

Table 4.4 Data collection with Sarah

Mark

Mark had been learning Chinese part-time by himself in the UK for 4 years and he was identified as a key participant, with his case being reported in Chapter 6. I met Mark in the Chinese reading study group organised by Jack (see 4.4.1). Specific information about the data collection with Mark is listed below in Table 4.5.

Learner Diary	16 Diaries
Interview	2 Interviews 10 Emails for follow-up questions
Think-aloud protocol	• Using a textbook to learn new characters and words • Character writing: learning new characters • Character writing: consolidating previously learned characters
Observation	• Reading group study • Think-aloud activities
Learning products	Character notes

Table 4.5 Data collection with Mark

Emily

Emily had learned Chinese full-time in China for 2 years and then moved back to live in the UK, where she continued her studies by herself. She was identified as a key participant and her case is reported in Chapter 7. I met Emily in the Chinese reading study group organised by Jack. Specific information about the data collection with Emily is listed below in Table 4.6.

Learner Diary	4 Diaries
Interview	3 Interviews 1 Email for follow-up questions
Think-aloud protocol	• Extensive reading of Harry Potter • Previewing words from vocabulary lists in a textbook • Intensive reading with a textbook
Observation	• Reading group study • Think-aloud activities
Learning products	Self-study notes

Table 4.6 Data collection with Emily

Betty

Betty had studied Chinese part-time for about 4 years in Australia and the UK. She was identified as a beginner to intermediate level learner. I met Betty in the Chinese reading study group organised by Jack. Specific information about the data collection with her is listed below in Table 4.7.

Learner Diary	17 Diaries
Interview	2 Interviews 1 Email for follow-up questions
Think-aloud protocol	• Reviewing coursework
Observation	• Reading group study • Lesson • Language exchange activities • Think-aloud activities
Learning products	• Self-study notes • Lesson notes

	• Language exchange notes

Table 4.7 Data collection with Betty

Adam

Adam had lived in China for four years, during which he took two semesters of Chinese courses at a university, had had some private lessons and after that had mainly acquired the language incidentally from daily conversations. He started to take private lessons with me after moving back to the UK. Specific information about the data collection with him is listed below in Table 4.8.

Learner Diary	9 Diaries
Interview	2 Interviews 1 Email for follow-up questions
Think-aloud protocol	• Previewing coursework
Observation	• Lesson • Think-aloud activities
Learning products	• Self-study notes • Lesson notes

Table 4.8 Data collection with Adam

Fiona

Fiona was one of the pilot study participants and her background can be found in 4.4.1. Specific information about the data collection with her is listed below in table 4.9.

Learner Diary	16 Diaries
Interview	3 Interviews (including the interview for the pilot study) 1 Email for follow-up questions
Think-aloud protocol	• Writing characters in grids • Character learning in apps • Tone learning • Learning words from vocabulary lists
Observation	• Lesson • Think-aloud activities
Learning products	• Self-study notes • Lesson notes

Table 4.9 Data collection with Fiona

As can be seen from the tables, the data initially collected from the six participants were very substantial. After the three key participants were identified, I transcribed all their interviews and think-aloud data. For the other participants, I transcribed only the parts I found important and interesting. For each case, I compiled and organised all the emails for follow-up questions, learner diaries, learning products and my field notes. The complete set of data for all the participants (except my rough notes which are all in Chinese) are attached to this thesis in the form of electronic appendices on a CD ROM. In the Appendices, I have included sample pages of learner diaries, interview transcripts, think-aloud transcripts, and coding on the transcripts for each of the three key participants (see samples from Sarah in Appendix 3-5, Mark in Appendix 6-8, Emily in Appendix 9-11).

I took a number of steps to analyse the data, but the analysis process was iterative in nature which meant that it proceeded at a number of different levels and hence, was much more complex than the main steps described here. I first read and reread the data of all the participants so as to obtain general ideas about each case. I next conducted within-case analysis with the three key participants, one by one, starting with Sarah, then Mark and then Emily. For each case, I performed initial coding using all the data aimed at addressing the questions "what is being talked about here?" or "what is going on here?", using original phrases or sentences in the text to represent the codes. I went through this coding process several times making sure that I had noticed all the things that might be relevant to this study within each case. I next grouped these preliminary codes based on the framework of vocabulary learning sub-tasks (proposed in 3.3.1), and then within each sub-task, I undertook a more detailed coding process, which involved looking at the codes I had and linking, merging or breaking them down to find themes. I also performed triangulation so as to verify the data or discover inconsistences at this stage and noted these down in my writing memo. After I felt I had compiled an organised list of codes and themes, I started to apply existing theories to probe the data, codes and themes again, including using terms from LLS (e.g. cognitive strategies), VLS (e.g. retrieval), self-regulation (e.g. learner beliefs, various factors), CFL (e.g. character learning) (see Appendix 3 for sample pages of colour coding on Sarah's interview data). After I had obtained a list of codes and themes for a key participant, I wrote a report about the strategies and factors I had identified, and how they interacted within this case, subsequently moving on to the next key case. After I had finished the reports for the three

key participants, I conducted cross-case analysis to compare the similarities and differences between these three cases and then finalised a list of codes, code sets and themes, which I could use to analyse the other cases. Then, I used this provisional analytical framework to code the data obtained from the other three participants from the main study and also the two remaining participants from the pilot study. During this process, I refined the framework when necessary and achieved a more comprehensive analytical framework with all the data of this study (see Appendix 12). Following this, I undertook cross-case analysis among all eight cases (from both the pilot and the main study), comparing similarities and differences of strategy use for each sub-task, how strategy use was influenced by different factors, etc. Last, I selected the main themes I wanted to include and discuss in my thesis, which are reported in Chapter 8. The initial reports on the three key participants were developed as Chapters 5, 6, and 7.

4.5 Reliability, validity and trustworthiness

A few procedures were undertaken to increase the reliability, validity and trustworthiness of the study. First, given the researcher is inevitably considered as an instrument (Dörnyei, 2007; Duff, 2008) and her/his beliefs inevitably impact on the decisions in relation the data collection methods, analysis and the interpretation of the findings, it is important to acknowledge and make this background and beliefs explicit. I wrote a brief description of my own background as a researcher and a Chinese teacher and a reflection on my own beliefs about teaching and learning in section 1.5, which could have influenced my research design and my interpretation of the findings. Second, it was useful to have multiple cases in the study so that I could compare similarities and differences between them, thereby providing evidence that supported issues that were felt to be significant. Third, I applied various types of data collection methods so that I could triangulate among them. Specifically, to this end I used learner diary and interview (for which learners have more control in selective reporting), think-aloud (for which they have less control) and observation and learning product analysis (over which they have no control). Fourth, constant comparison and checking was used to confirm and disconfirm evidence within and between the different sets of case study data. That is, when I identified an issue in one case, I searched for evidence in other cases to confirm and disconfirm it before I decided whether I could conclude it in my findings. Fifth, as two of the eight participants (including one key participant) were studying with me during the data collection time, there was an increased danger of bias due to perceived status differences between the researcher/teacher and the participant/learner. However, I was teaching them as their

private tutor who they hired and therefore, I did not have any institutional power or influence over them. Also, I deliberately avoided having any strategy-related discussion with them before the data collection was completed so as to minimise any possible pedagogical influence from me. Sixth, I followed the guidelines and suggestions from the literature for a more systematic analysis approach, as discussed in subsection 4.3.4. Lastly, I tried my best to be critically reflexive and kept careful field notes and writing memos about my thoughts as well as seeking critical feedback from others. I included both of my supervisors in all the important decision-making processes (e.g. research design). Specifically, I discussed my data, lists of codes and themes along with my reports on the cases and discussion about the findings. In response, they provided me with constructive comments for improving the quality of my study. The findings of this study or least different parts of them, have been presented at a number of conferences (see a list of conferences in which parts of this thesis have been presented and peer reviewed in Appendix 13), which have provided opportunities for scrutiny through peer review and this has also helped to improve the quality of the output from this research.

4.6 Ethical considerations

A number of ethical considerations were taken into account for this study to ensure the quality and integrity of my research. I provided sufficient information for all the participants and other relevant respondents (e.g. teachers) to decide whether or not they would like to take part in my study (Appendix 14 Recruitment letter, consent information sheet and consent form). Moreover, I ensured that the decision to participate would not impact on them negatively in any way. In addition, I obtained their informed consent before collecting data. I also respected the confidentiality and anonymity of my participants and relevant respondents (e.g. course, teachers), whereby all the names used in this thesis are pseudonyms. Regarding the two learners who were studying with me, I talked to them about my own need to separate my role as their tutor and the researcher of the study as well as the ethical considerations I needed to take into account. I explained to them that I could not give them any advice regarding their strategy use before the data collection was completed. In the process of analysing data and reporting results, I have tried my very best to remain independent and impartial.

4.7 Conclusion

In this chapter, I have outlined and described the methodological processes involved in my study. I have presented my research aims and questions as well as how I arrived at

these questions, as they had a direct impact on the decisions made in relation the research design of the study. I have discussed how my interpretivist epistemological stance has shaped my research interests. It is not only important to know what types of strategies are used, but also how they are applied in an individual's specific context, how learners make sense of their strategy-selection and what other factors might have influenced the strategy use. I have explained clearly why a qualitative case study approach was most suitable for my inquiries. Moreover, I have described how I used learner diaries, interviewing, the think-aloud protocol, observation sand learning product analysis to collect data on learners' strategy use and their perceptions about the whole learning process. I have also discussed how thematic analysis gave relatively more freedom when analysing the data as well as the options available for analysing case study data when there are multiple cases. I have explained how I implemented this research design during my pilot and main studies, including the specific steps for data collection and data analysis. I have discussed how I had three participants for my pilot study and six for my main, three of whom were identified as key participants and were their contributions are reported in detail in Chapters 5, 6 and 7. I obtained my analytical framework from analysing the data from these three key participants, and then used this to examine the other participants' reported information. This process allowed for me to obtain a more comprehensive picture about how various learners' use strategies when learning CFL vocabulary and what issues would require attention in the discussion in Chapter 8. Lastly, I have reflected on the potential issues in relation to the reliability, validity and trustworthiness as well as ethical considerations that needed to be taken into account and when carrying out research of this nature. I have explained the procedures undertaken to address these issues and thereby, increase the credibility of the study. In the next three chapters, the strategy use (what, how and why) of the three key participants are covered in great detail.

CHAPTER 5 CASE STUDY: SARAH

5.1 Introduction

This chapter presents the first of three case studies that look in detail at learner's use of strategies and self-regulation in learning Chinese vocabulary. The three case-study chapters are organised in the same way: First, the chapter introduces the case's learner profile, including their personal background, motivation for learning Chinese, Chinese learning history and the main Chinese learning activities. It then describes, explains and evaluates the learner's use of specific strategies in the six vocabulary learning sub-tasks proposed in Chapter 3, namely, encountering new words, searching for word information, keeping and using records of word information, establishing word knowledge, consolidating word knowledge and using word knowledge. Last, the chapter summarises the learner's overall vocabulary learning approach, strategy use and self-regulation in learning the Chinese vocabulary.

The case to be reported in this chapter is a beginning to intermediate level learner referred to in my study as Sarah. During the data collection period, she was preparing for HSK (a standardised test of Chinese language proficiency for non-native speakers) level 3, which corresponds to CEF level B1 (Hanban, 2005). Sarah's case was chosen to be reported in detail, because she seems to be very aware of her own learning process, describing strategies and explaining her reasons for using them clearly. She is perhaps a typical "language" person who brings extensive meta-linguistic knowledge to facilitate her foreign language learning. She is especially good at using strategies to self-regulate cognitively and affectively to stay efficient and motivated in learning Chinese.

5.2 Sarah's learner profile

Sarah is 25 years old and a graduate from Oxford University who majored in French. She speaks English as her L1, is fluent in French and studied German to A-level at school. The foreign languages that she is currently learning are Chinese and Spanish. She works as a management consultant. Sarah started learning Chinese because she was offered an internship in China for 6 months in her last year of university and she was keen to learn Chinese to get the most out of her time there. She reports three main reasons for continuing to learn Chinese. Firstly, she is interested in Chinese history and culture. Secondly, she is very keen to work internationally and feels that Chinese is increasingly useful to prepare for future career opportunities. Lastly and most importantly, she says it

is the joy of learning something new and challenging that motivates her to keep learning Chinese.

Sarah's Chinese learning history has 3 stages:

- **Stage 1 – Learning in the UK (Nov/2012-Feb/2013)**
  She started learning Chinese with a small class for 10 weeks.
- **Stage 2 – Learning in China (Feb/2013-Aug/2013)**
  She went to Shanghai and taught English in a bilingual primary school for six months and started to have private lessons during the last three months.
- **Stage 3 – Learning in the UK (Aug/2013-data collection period)**
  She continued to learn Chinese in Manchester and later in London with different tutors and classes.

The data collection of this study occurred at stage 3 after Sarah moved to London. Her main Chinese learning activities during this time were a one-hour weekly private lesson and a weekly Chinese class provided by her company. In general, she spends another two to four hours a week for self-study. She uses vocabulary lists to study and reviews words, practices writing (sentences, paragraphs, diaries) using the words she has learned and later practises reading her own writing. She listens to recordings of Chinese sentences and watches a Chinese instructional TV programme to learn new words and grammar structures.

5.3 Sarah's use of strategies in vocabulary learning sub-tasks

This section discusses Sarah's use of specific strategies for each vocabulary learning sub-task. It identifies what strategies she uses and describes in detail how she uses them. It also evaluates how well the strategies are used in terms of their appropriateness and how well she implements them. In addition, it explores the possible factors that might have influenced such strategy use.

5.3.1 Encountering new words

This subsection discusses what sources Sarah uses to encounter new words and what actions she takes to process them. She uses three main sources to deal with new words: vocabulary lists, her lessons and a Chinese instructional TV programme.

a. Using vocabulary lists

Sarah reported using vocabulary lists as the main source for meeting new words to learn. The set of lists she uses are those provided in preparation for HSK level 1, 2 and 3. The

vocabulary is organised in alphabetical order based on Pinyin, and is written in both this and characters. There is no translation to indicate meaning(s) or any other word information available from the original lists (see Figure 5.1).

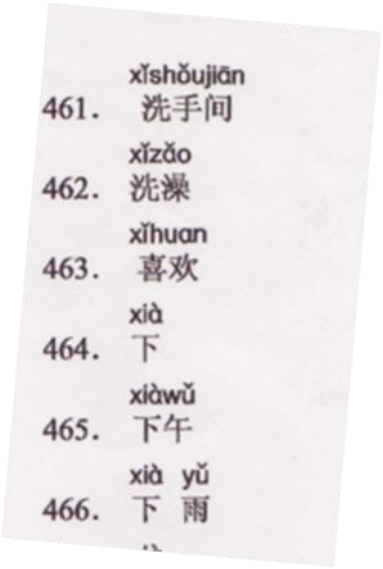


Figure 5.1 The vocabulary list Sarah uses to encounter new words

From the think-aloud activity (SAR_THI_1), it is found that Sarah reads the word in Pinyin and then the character(s), and tries actively to recall "anything this word can connect to, or do I know this word already?" before looking it up in the dictionary. For example, when learning the new word 外 (wài) "outside", Sarah reported recalling 老外 (lǎowài) "foreigner", a phonetically and semantically related word. This is a strategy of activating previous knowledge, which can help associate a new word with existing knowledge, hence increasing the depth of processing. It can also help reinforce previously learned words by retrieving them from memory. Sarah also compares the sounds, tones, and characters of words next to each other in the lists to discover similarities and differences between words, as seen from the following report.

> S: […] so the next one is *wàn*, and the first thing I spot about this is that the next word is also the same character and sound, and then a different character added on. And we have got two, well, on this side, one, two, three, four, four other words afterwards that all have the similar sound, but different tones and different characters, and so that would be my first thing that would flag, like, I need to pay attention to this because this is gonna be confusing. (SAR_THI_1)

After noticing words that are similar, Sarah immediately mentally plans to pay extra attention in differentiating them, which is a good use of the meta-cognitive strategy of

planning and paying attention. The use of metacognitive and cognitive strategies shows that Sarah is actively mentally engaged when self-studying vocabulary.

Sarah reports a number of reasons for choosing vocabulary lists to encounter new words. The most obvious is that due to the obstacle of Chinese characters, she cannot learn new words from reading like she does when learning French. She also stated clearly that "I am trying to learn things well rather than learn lots of things and not really remember anything […]" (SAR_INT_5), reflecting a personality trait as being conscientious and her goal of learning with accuracy and fluency. She finds that learning Chinese words takes longer and requires more effort, involving more consolidation for her, because "it is not like Spanish, for example, where the words sound more familiar" and "I am also trying to recognise the characters and the pronunciation in Pinyin, and then the tones accurately, so it is quite a lot to do at once" (SAR_INT_1). This reflects Sarah's learner knowledge about the special nature of the task of learning Chinese vocabulary, namely, fewer cognates with English, the challenges in learning from knowledge and the deliberate learning effort needed. This learner knowledge was developed from her reflection on a previous learning experience reported below, when she thought about why she was not making good progress in learning Chinese.

> In my first 10 weeks of lessons I don't feel I learnt a lot as we progressed quite quickly through topics […]. (SAR_FOL_1)
>
> S: […] I found it very difficult to memorise the words, because […] it is about constantly learning new words rather than consolidating. (SAR_INT_1)

Based on her evaluation and causal attribution, Sarah adjusted her expectation to that "I think I have accepted that it will take me longer to learn Chinese than to learn other languages" (SAR_INT_1) and ways of learning Chinese vocabulary. She restricts the vocabulary input by using a set of vocabulary lists, and plans her language learning activities around these lists, so that sufficient consolidation can be guaranteed as reported below.

> S: […] It is helpful to have a limit, like, okay, I am gonna learn this to start with, and I am gonna try and reuse this as much as possible until I am familiar with it. […]. (SAR_INT_1)

Sarah also uses the vocabulary lists to help her select words as well as to set structures and checkpoints when learning Chinese. She believes it is important to progress from the basic to the more nuanced words in any foreign language learning and stated that she has more of a sense of what is required when choosing words in learning French and Spanish,

but does not have the same confidence in learning Chinese as “I don't know enough about how Chinese works as a language”, and consequently “I need a lot more structure” and “it is useful to have somebody else to impose it” (SAR_INT_5). This reflects a disorientated feeling Sarah has in self-regulating her Chinese learning, and vocabulary lists are favoured as a solution, as reported below.

> S: So I think it is helpful to have this [i.e. the HSK vocabulary lists], because it is a goal like there are so many words I could potentially learn, but it is quite good to have a structure, and think I am gonna try and learn these words, and practice all the grammar using this vocabulary, because this will help me pass a particular test, and then that's like a check point for me to feel like I will achieve something. (SAR_INT_2)

By using the HSK vocabulary lists and planning various Chinese learning activities around it, Sarah can learn with a structure and evaluate her own learning progress by taking the HSK test. Sarah expressed her belief that it is very important to have checkpoints in language learning, reporting that the process of preparing for the test and the self-satisfactory feeling of passing it both give her motivation to learn. This shows that Sarah knows how to regulate her affective aspect of learning and as she has registered for the HSK exam, she has applied such belief into action.

The last reason Sarah uses vocabulary lists is that they will hopefully prevent her encountering outside-plan new words and so reduce the frustration this causes.

> S: I think it is quite important to have that [i.e. the HSK exam] when you learn a language, because otherwise it's such a massive task that you can get a bit overwhelmed by it, and it gets frustrating if you are trying really hard to recognise characters and you keep coming across new ones you have never seen before, so you are never gonna recognise something you haven't learned it. (SAR_INT_2)

Sarah mentioned a particular task aspect of learning Chinese vocabulary, i.e. the heavy labour in learning characters and high anxiety triggered by reading characters, and so considers using vocabulary lists a more suitable strategy when encountering words.

It can be seen that vocabulary lists are used as a strategy to suit Sarah’s cognitive and affective needs in learning Chinese vocabulary, which she uses very well because she is aware of both its limitations and merits as reported below.

> S: I hate learning vocabulary from vocabulary lists, because I just think it is really difficult to memorise, and you don’t learn the sense of what the words really mean, you just learn the English equivalents which

> doesn't really work in a foreign language, because often words don't translate directly. (SAR_INT_1)
>
> However, it is useful for familiarising myself with the vocab I need to know for the exam, and hopefully, when I encounter the words I don't know in context, I will have more chance of recognising and remembering them. (SAR_DIA_3)

This demonstrates a comprehensive strategy knowledge, for Sarah is clear about her purposes of using this strategy and how to use it to aid her overall vocabulary learning. She compensates for its limitations by orchestrating other strategies in combination, as reported below.

> S: So, I always kind of think this [i.e. using the vocabulary lists] is an initial sense of the word, so that when I see them or hear them, I have some, they are some vaguely familiar, but this is only like the first step of the long process of learning the words about what they mean, and I wouldn't say I am comfortable with them really until I have seen them and used them in different contexts and I can know where the limits of these words are. (SAR_THI_1)

Sarah sees vocabulary learning as an incremental process, where individual strategies serve different purposes at different stages. It suggests that she has clear plans for her overall vocabulary learning and this demonstrates good learner self-regulation. She does use other strategies, such as extensive dictionary usage for meaning and use, generating her own sentences and discussion with the teacher to compensate for limitations in using vocabulary lists when encountering new words.

b. Having lessons

Sarah also reported learning new words from lessons and mentioned having slightly different activities with different tutors. As the main reason she goes for private lessons is to "be more involved in how I learn the language and the pace of study" (SAR_FOL_1), she has a voice in planning the lessons and this demonstrates learner autonomy. During the data collection period, she was meeting new words through listening and speaking exercises, such as sentence dictations in Pinyin, creating sentences to practise a word or grammar point or having conversations with the tutor. These activities, which she specifically requested from the tutor, mostly focus on using vocabulary from the HSK lists, but other words also appear.

When hearing an unknown word, Sarah often first tries to guess the meaning or to make a connection with words she knows. She also encounters new words when she tries to speak and she generally tries to paraphrase and communicate indirectly first. Guessing,

associating and paraphrasing increase her attention to the new word, improve the depth of processing, reinforce previously learned words and potentially build her vocabulary network, which are good for promoting elaborate and longer lasting learning outcomes.

Sarah reported selecting words she encounters in lessons to control the amount of vocabulary input, for some more advanced words do come up in conversation, which she has to decide whether to learn or not. There is an affective aspect to this selectiveness strategy as "I just made it less frustrating by being selective" (SAR_INT_1). She has relatively clear criteria for selecting words, reporting "I would pick […] the ones I thought were useful, and I disregarded things I thought I would never use […] (SAR_INT_1)", especially for nouns. She believes verbs and conjunctions are more important to learn.

> S: […] so I try and remember verbs because they are really useful, and you can use them in lots of contexts. I will learn conjunctions and things, anything that can be used a lot, that's definitely worth writing down. And I will spend time trying to learn how it is used; look for example sentences and things. (SAR_INT_5)

This is related to another of Sarah's beliefs that words that can help her create different sentences are more important, because they make the "structure" of sentences.

> S: […] I would rather be able to string a sentence together […], rather than trying to memorise all the different types of food this particular Chinese book has decided to put into this chapter […] And also because I think once you have got the structures […] I learned so much more in terms of vocabulary being in China, because I learned the words about things I needed to say. (SAR_INT_1)

> S: […] because those kinds of words you pick up quickly in context. It is the structures and grammar […] you need the time and you need somebody to explain it to you. (SAR_INT_1)

Sarah developed this learner belief from reflecting on her experience in China that once she knows the main structure of a sentence, she can learn new words easily by substituting them. She uses this perspective to plan further learning by paying more attention to certain words. This suggests that Sarah makes her own judgement about what she should learn rather than simply relying on a textbook or her teacher, which demonstrates learner autonomy. Paying selective attention could benefit both Sarah's cognitive (i.e. quality of attention) and affective (i.e. less frustration) aspects of learning. She seems to have a comprehensive understanding about vocabulary learning, which serves as a foundation for using meta-strategies.

Sarah favours learning words from lessons, because they provide explicit instructions about how to use them, give opportunities to try and use the word to make sentences, and she has a need to learn the words: "it is quite helpful […] it will just be like when I want to say something, and I hit a block where I realise I don't know the word for that" (SAR_INT_1). This evaluation shows her good learner knowledge about vocabulary learning as the three merits she highlights are generally believed to be beneficial for vocabulary learning.

c. Watching Chinese instructional TV programmes

Sarah also encounters new words from watching an instructional Chinese TV programme called *Growing up with Chinese* designed to teach Chinese to non-native speakers. Each episode is about 20-30 mins long and it first plays a clip of people having a conversation without interruptions. Then it explains new words and grammar structures and replays the sentences slowly. Watching the programme could be categorised as an intensive listening activity, from which Sarah notes down new words and grammar structures for intentional learning later. She favours this source, because "they say the sentence slowly in Chinese which means it is much easier to follow what is being said" (SAR_INT_1), suggesting this suits her low level proficiency. In addition, she considers the explicit explanation useful.

> S: […] so that's quite helpful for having an explanation, coz otherwise it is quite easy to watch something and think "oh, I pick up words like pronouns and things that I can use …" and you can see from the contexts what they mean, so it is quite helpful they actually break down what is being said and explain it […]. (SAR_INT_1)

Sarah's report suggests that she favours the explicit, form-focused feature of this programme. It also indicates that she might have an analytic cognitive learning style, as she reported preferring to breaking down phrases and sentences, and seems to oppose the idea of picking up words without properly analysing them. She is attracted to the program because it provides contexts for learning words.

> I like this series as the situations are useful, the episodes are quite short and they explain the vocab and grammar points and replay the clips. I really enjoy watching the clips. Hearing Chinese spoken naturally and in context and understanding some (if not all) of it is hugely rewarding. I also find it much easier to remember the grammar and vocab as I have something to link it to trigger the memory, and I have a better sense of how the words or structures are used. I much prefer this to learning words in a sterile way from lists. […] The episodes also give an insight

> into Chinese culture which helps me to remember things too. (SAR_DIA_8)

The contexts are evaluated as helpful in contributing not only to understanding and remembering words, but also to retrieving words in use (which is further discussed in subsection 5.3.6). Being able to understand naturally-spoken Chinese is also seen as generating positive emotions and helping to maintain motivation.

Sarah reported that she purposefully endeavours to "try not to use too many new words in my writing at the moment" (SAR_FOL_3) as she wants to avoid errors. Also, she seems to have clear purposes for different learning activities, such as creative writing activities being meant to be used for consolidation. She also plans to delay talking to native speakers because she believes that "I need to practise speaking a bit more" (SAR_INT_1) as she evaluates her current proficiency level as "at the moment I am sort of practising, parsing things back and checking if the tones were alright" (SAR_INT_1). She plans that "when I feel more confident speaking, that is definitely something I would like to do" (SAR_INT_1) and evaluates this strategy as "that is something I have done when I was learning French before, and it gets really, really useful" (SAR_INT_1). This demonstrates clear self-regulation in that she believes a particular strategy is effective, but not suitable for her current stage of Chinese learning.

5.3.2 Searching for word information

This section discusses what resources Sarah uses, specific actions she takes and the aspects of word knowledge she pays attention to during the task of searching for word information. She uses inferring, using a dictionary and asking her teacher during the lessons to this end.

a. Inferring

Inferring, used in the broadest sense, pertains to a learner's guessing at completely new words, unfamiliar words, or new aspects of word knowledge for a previous learned word. In written contexts, Sarah tries to infer the pronunciation of characters. She reported a strategy that if she recognises the sound of one character in a multi-character word, she thinks about what words she knows that have this sound and guesses from them. Hence, Sarah would not be able to guess any words she has not yet learned in spoken form, so this is a strategy to activate her existing knowledge on speaking Chinese into reading Chinese. This gives evidence to support the "spoken Chinese before written Chinese"

teaching approach mentioned in 3.4.1, especially the hypothesis that a strong development in spoken Chinese can contribute to reading written Chinese.

b. Using a dictionary

Sarah mainly uses an e-dictionary called Pleco to search for word information during self-study, and she evaluates it as useful because the examples it provides are good. Pleco is an English-Chinese bilingual dictionary designed for learners of Chinese and can be installed on most electronic devices, such as phones or tablets. It can be used to search for both words and individual characters (i.e. morphemes), and there are several ways to locate a word or a character, namely, English-search, Pinyin-search, radical-search and handwriting-search. Sarah mainly uses Pinyin-search, for which she types in the Pinyin, and Pleco will list all the characters or words that are pronounced as such. For example, below is a screenshot from searching the Pinyin *ming*. Sarah then needs to either match the wanted meaning(s), or the character shape with the written texts to locate the word needed. She can use Pinyin-search to locate a word skilfully.

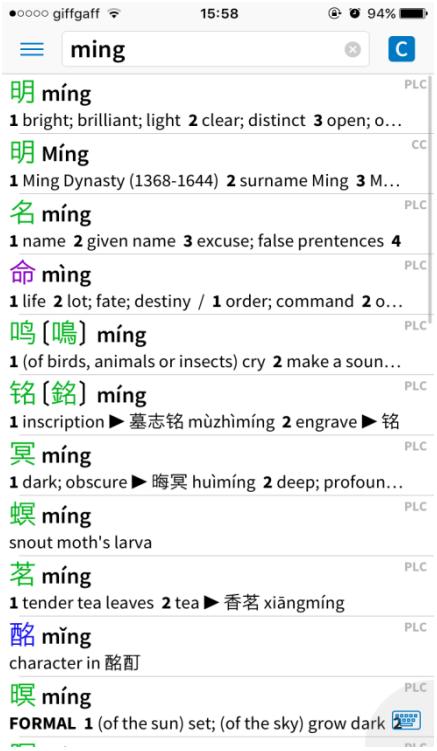


Figure 5.2 Screenshot of searching the Pinyin *ming* in Pleco

Sarah does not use radical-search or handwriting-search at all, because Pinyin is almost always available in her learning materials. In SAR_THI_ 5, Sarah's searching-strategy when Pinyin is not given was investigated and she chose handwriting-search to perform the task. This involves using the handwriting keyboard in the electronic device and

copying to write the character on the screen with the fingertip. Pleco will automatically try to match the handwriting image and lists all the characters that are in similar shape. It does not involve using Pinyin or any orthographic knowledge. As this is not part of Sarah's natural strategy use, this chapter does not describe this process in detail (see the transcription of SAR_THI_5 for more information), but she had problems copying complex characters, such as 准, on the screen accurately enough for Pleco to recognise. This reflects Sarah's difficulties in perceiving and copying complex characters accurately.

After locating a word, Sarah quickly browses all the meaning entries and the English-version of the example sentences: "to see what kind of phrases they are" (SAR_INT_1). She stated that "I don't feel at this stage looking at the characters helps me that much", suggesting she actively manages her attention. For example, she reported the following in searching for the word 外 (wài) in the think-aloud activity.

> S: I see there are a lot of meanings, it could be *outer*, *outward*, *outside*, *other*, *foreign*, *besides*, *in additional*, *beyond*, so there are a lot of different ways that it can be used […] And then I will look at the sentences, […] so it looks like from this it is a word that I will need to pay attention to how it is used to learn it properly, because it is not, it is not just a straightforward translation of *outside*. […] I will sort of mentally think that is the word I will need to pay attention to […]. (SAR_THI_1)

Figure 5.3 Screenshots of searching for 外 (wài) in Pleco

Sarah made an immediate judgement about the complexity of the word 外 (wài) and how much attention is needed. She reported that she often makes a judgement about whether a word is easy or complex before she learns it, because "I'd go about learning these two groups of words in different ways" (SAR_FOL_2), and "I split words into ones to just

memorise, and ones that are more interesting and I need to look at examples of Chinese sentences to see how they are used, before I decide how to memorise them" (SAR_FOL_2). She learns simple words by "drilling vocab lists or inserting into sentences to practise grammar points" and "through memorisation and encountering them a few times in context, but I don't need to learn how they work" (SAR_FOL_2). For complex words, she explained that "I try to learn them by looking at the way they are used and the limits of the meaning, and not worry too much about connecting it to a particular word in English" and "I'd want to write almost a description of what it means rather than a particular word" (SAR_FOL_2). This is an active plan for choosing appropriate strategies based on the task nature; a demonstration of good self-regulation.

Sarah can also articulate her criteria for judging the complexity of a word as "by complex, I mean words that do not have a direct translation in English" and "Either they are complex because of grammar and I need to learn the rules around how they work in Chinese, or they are complex because of the nuances in Chinese" (SAR_FOL_2). She also considers words of some parts of speech to be more complex in that she sees "nouns as being the easiest", "abstract nouns are harder", "verbs vary, some are easy […] because they refer to a specific, well-defined, universally understood activity, but others are more difficult like put/bring/make/take etc. as there is a wide range of uses as they can refer to different actions" (SAR_FOL_2) and "prepositions are difficult" (SAR_INT_1). In talking about her criteria, Sarah shows extensive, conscious meta-linguistic knowledge about the meanings and functions of individual words in both her L1 and in Chinese.

> As an example of a complex nuance word "chuxian" would make me think as "appear" in English could be to suddenly materialise before your eyes, or to seem ("it appears to be silk" would mean "it looks like it's silk"), or "you appear to be saying x" which implies a level of doubt when referring to something someone has stated. (SAR_FOL_2)
>
> For example, "bring" in English can refer to physically carrying something (bring the cup here), asking someone to accompany you (bring him to the party) etc. I'd wonder if they're similar in Chinese or if there are different verbs for different contexts. (SAR_FOL_2)

Sarah pays great attention to understanding what the word means and how it should be used. She uses L1 translation strategy, but with great caution. She uses her meta-linguistic knowledge and in-depth explicit knowledge about L1 words to seek possible differences between Chinese words and translation equivalents, which is a very efficient way of using L1. Sarah's initial judgement about the complexity of a Chinese word is also made mainly based on her understanding about the complexity of the corresponding L1 words. This

can be wrong sometimes and Sarah also realises this limitation: "sometimes I get it wrong and think words are straightforward only to realise later that they are more nuanced (SAR_FOL_2)", indicating that she also uses monitoring strategies to verify her initial judgement. If a word is considered complex, she asks her teacher about it, which is covered in the next part.

c. Asking a teacher

Sarah mainly asks questions to understand how to use words, and below the kind of questions she reported that she is most likely to ask are listed.

> S: […] like *change* for example, there is in English *change* can refer to a lot of different things changing, […] so I would start to think about, […] can it be used to mean to physically change something, so to change clothes, to change the colour of the wall of the house, could it mean something that is not tangible? So, to change jobs or your mood changed from being happy to being sad, can it be something that's not as abstract as sort of mood changing, but to change trains or something like seasons changing, like all those different kind of objects […]. (SAR_INT_1)

Sarah asks questions actively to verify whether the L2 target word can be used in the same way semantically and syntactically as the L1 translation. The strategies of using L1 and asking others are documented in many VLS inventories and seem to be straightforward, but there are perhaps different ways of implementing them. Sarah uses them in a very active way, whereby she uses L1 semantic and syntactic word knowledge consciously, has cautious comparison between L1 and Chinese and asks others to clarify the rules for using the words. The active use of these two strategies arguably relies on good explicit L1 word knowledge and the meta-linguistic knowledge of how an FL word could be used differently from their L1 usage. Sarah has clearly developed these types of knowledge from her French learning experience and performing high-level translation, which marks the benefits of previous language learning experiences. She also actively engages in discussions to seek the information she needs, rather than passively waiting for her teacher to explain the word and this demonstrates learner autonomy. Lastly, this strategy use also suggests Sarah may have an analytic cognitive learning style, as she pays close attention analysing the rules of language.

5.3.3 Keeping and using records of word information

This subsection discusses Sarah's strategy use in keeping records of word information, including their types and formats and the aspects of word information noted down. It also investigates how she makes further use of these records.

a. Types and formats of the learners' records

Sarah has three types of notes: notes on vocabulary lists, lesson notes and notes from watching the Chinese instructional TV programmes. She uses Pinyin and English to keep notes (see part of the notes below).

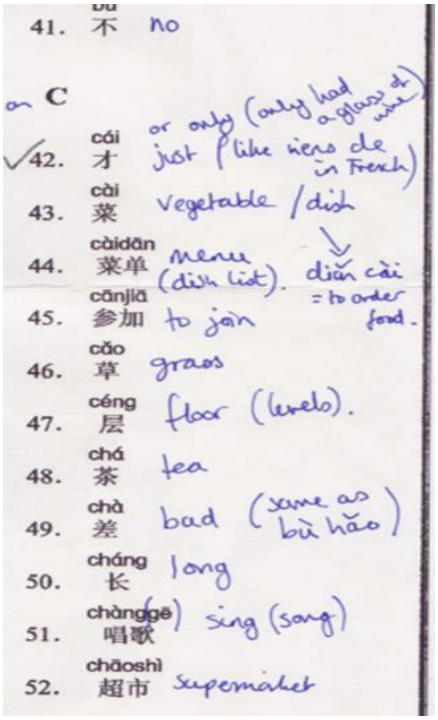


Figure 5.4 Notes from the vocabulary lists

Sarah's lesson notes include new vocabulary, grammar points and corrections on her homework (see part of these below). The hand-written characters are from the teacher correcting her sentence errors.

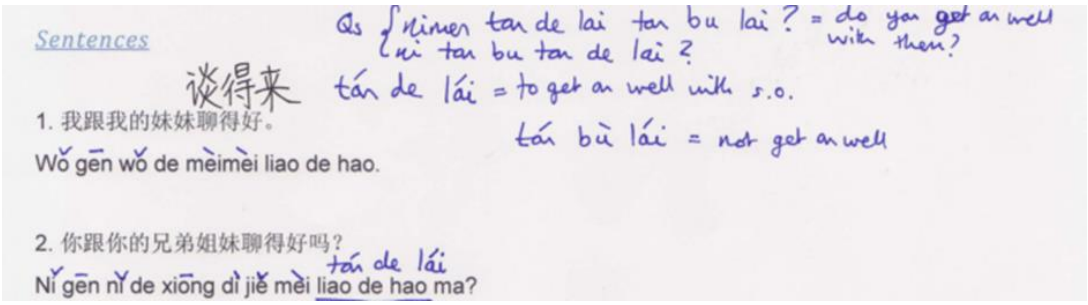


Figure 5.5 Sarah's lesson note

Sarah also takes notes when watching the Chinese instructional TV programmes. She kept these notes on her phone and included a part in her learner diary for this study.

> I learnt the words: *bie*2 *shuo*1… *jiu*4 *lian*2…, *gen*1 *ben*3 = all, ever, simply, often used with negation (*gen ben bu yong lian* = doesn't even need to practise; *wo gen ben bu renshi ta* = I don't know him at all; *jintian gen ben bu re* = today is not hot at all), *wang zhan* = website, *wang ye* = web page; *wo xianzai zai shang wang* = I am online at the moment. (Notes recorded in SAR_DIA_3)

Sarah uses Pinyin rather than characters to make notes, for she explained that it is quicker for her to work out what the notes mean with the former. Using Pinyin for this can be considered a good strategy for Sarah, as it allows her to take notes and later review them easily. It also allows her to focus on learning the meaning and use aspect of word knowledge without being distracted by characters.

b. Aspects of word information in the learners' records

Sarah's notes cover all aspects of word knowledge. For the form aspect, she notes down words in Pinyin but not always the characters due to a conscious self-regulation to delay their learning (discussed in 5.3.4). Tones are noted down either by tone marks or by numbers most of the time, thus indicating attention being paid to learning tones. She occasionally pays attention to word-parts, noting down character-by-character translation and words containing the same character/morpheme. This shows that Sarah has started to analyse word parts and to build connections between words based on shared parts. She has a few mnemonics to help remember the "character-meaning" connections. For example, for the word 冬 (dōng), meaning "winter", she wrote down "two drops think of as snow" to remind her to think about the two dots in the character 冬 as snow (which is related to winter), thereby the character shape is connected to the meaning "winter". For learning the meaning aspect, she sometimes notes down synonyms and ways to differentiate them, which shows that she pays attention to comparing synonyms and hence, can better understand the associations between words. Sarah also only selects one or two meanings to note down.

> S: […] so I will write down that it means *outside* or *foreign* coz those seem to be the closest meanings, and I think if I learn it as that, I will be able to guess the other meanings from that […]. (SAR_THI_1)

> S: I will have a quick look at the sentences and see which ones seem to be the most commonly used […] so I am gonna write that down as the meaning for now […]. (SAR_THI_1)

The criteria Sarah uses for selecting meanings are: the meaning that she believes to be the closest, the most commonly used and that which can be used to guess other meanings. Most of the meanings she notes down are correct in the sense that they are the most basic or commonly used ones. These selecting strategies can be beneficial, because spending time and effort on analysing and summarising meaning(s) can increase attention on the meaning-aspect of learning and increase the depth of processing. For words that are considered as complex, Sarah will "write almost a description of what it means rather than a particular word". For example, for the word 换 (huàn) meaning "change", she wrote down its English equivalence "change" and also "something you actively do, and also clothes, schools, jobs". This is a meaning-generating strategy, in contrast to the strategies of using L1 equivalence and meaning selection. It demonstrates that Sarah is aware of the limitations of relying on L1 and uses different strategies for the learning of easy and complex words.

Regarding the use aspect, Sarah often selects one or two example sentences or phrases to note down for "complex" words. This supports her reporting that she makes a judgement about the complexity of a word and uses different strategies to learn them. Below is from a think-aloud activity in which Sarah was trying to choose a good example sentence to note down.

> S: So here, *be away from home all year*, […] that is kind of a specific turn of phrase, not particularly useful to learn why enough from the text, […] like *look out of the window*, that is maybe a bit more useful, but again quite specific […] then I look at the Pinyin, and think do I know these words, so *kan* ["*to look"*], yes, okay I know that word, that is familiar, *chuang*, I know it is *window*, so that's another thing I am familiar, […] and now *wai* is the new word, so if I was going to pick a sentence to illustrate this word to help me remember it, I would pick something like that where I know the other words already, because then it focuses on the... […] and I hope to try and pick something that I can use a lot, because when you pick something really unusual, it is gonna be hard to practise. (SAR_THI_1)

Sarah reads examples in English to select the ones that are useful or commonly used so that they can be reinforced easily. She also tries to select the ones that are not too specific (e.g. set phrases) so that she can analyse the usage from them. In addition, she reads the Pinyin version to see if she knows all the other words in the sentence and chooses the ones that do not have unfamiliar words except the target word so that she can focus on only learning the target word. These selection processes could benefit Sarah's vocabulary learning, because she actively engages in analysing, comparing and evaluating language

items. That is, these uses of cognitive and meta-cognitive strategies could increases her level of attention and depth of processing for the word. In addition to example sentences, Sarah also notes down the grammatical function and collocational patterns for some words.

c. Strategies for using the learners' records

Sarah uses her notes for reviewing and undertaking creative writing exercises regularly. She mentioned that she tries to find the best time of the week to do such activities and this shows good self-regulation in organising her environment and time to study. It also shows how important she considers reviewing, learning how to use words, and consolidating activities. She reads her notes, and tries to recall lesson discussion or anything relevant to the notes and whether she has understood them. Regarding "complex" words, she uses them to make sentences and has the teacher check her writing to make sure her understanding is correct. Sarah's process of using the notes is very active, including retrieval and creative use, two psychological conditions that can promote vocabulary learning.

5.3.4 Establishing word knowledge

This subsection discusses how Sarah processes new information for developing word knowledge. This task is not a clear-cut stand-alone process, for it can co-occur with other vocabulary learning tasks. There are five parts in this section: there is investigation of how Sarah deals with multi-aspects of word knowledge and morpheme-word relationships in Chinese at a macro level. Next, the focus is on her strategies regarding learning specific aspects of word knowledge: the spoken form, the written form (i.e. the characters) as well as the meaning and use aspect of word knowledge.

a. Dealing with multi-aspects of word knowledge

Sarah intentionally breaks down the task of establishing multi-aspects of Chinese word knowledge into several smaller tasks and tries to undertake them at different times in a certain order. These strategies can be identified from the following feedback.

> S: […] because these words are new to me, I focus on remembering the meaning and how the structure works in a sentence rather than the tones or characters. (SAR_DIA_9)

> S: […] And then the next one […] I am not really comfortable with how it is used, so I will think of that as something I would not want to learn the character yet, because I don't understand the word enough, so

> I will think okay this is a word I will need to look out for, and see how it is used, and then I will learn the character, because I will have something to link it to. (SAR_THI_2)

> S: So, with this [i.e. the vocabulary list], the first few pages I have been through a while ago, […] most of the words on the first page I now recognise, and I don't necessarily know the characters for them, so I now try to pay more attention to the characters when I read through it […]. (SAR_INT_1)

> I read through the HSK3 vocabulary list on the tube. I tried to focus on the characters more this time. (SAR_DIA_7)

Sarah has clear goals for each learning activity in terms of which aspects of word knowledge she is trying to learn: she intentionally directs her attention to focusing on the aspects she plans to learn and neglects others (i.e. the tones and the characters) for the moment. Breaking down the task of establishing word knowledge and directing attention to dealing with only certain aspect(s) at a particular time allows Sarah to give each sufficient attention. This generally contributes to better learning outcomes, especially for tone and character learning in the initial stage, because the learning of the two aspects is believed to be more difficult in theory. She also has a plan for the order of learning different aspects of word knowledge as explained below.

> S: I've decided my first level of learning Chinese would be to be able to understand what somebody is saying, when you say a word in Chinese can I recognise it […] and the second level for me would be if, can I say something accurately, […] firstly can I read it from Pinyin, and then can I say it without prompting, […] again I guess it is kind of running in parallel with that is learning to understand the grammar rules […] And then once I sort of started to progress with that, then the next stage is to start recognising characters, and I think I am just about to starting to do that now, […] and then the last stage would be being able to actually physically write out the characters […]. (SAR_INT_1)

Having a clear plan for the order of learning each aspect (almost like having a check list) means it is less likely for Sarah to neglect any aspect. She uses these meta-cognitive strategies of planning and paying selective attention to deal with multi-aspects of word knowledge intentionally, systematically and consistently in all activities. For example, in that of listening to recordings, she reported that she pays attention to the sound, meaning and use aspect first and then focuses on learning the tones.

> […] the first time I listened I listened for the words and tried to say the sentence in Chinese in my head, thinking about the meaning of each word. Then I'd try to translate it into something that sounded natural in English. I replayed the same sentence concentrating on the word order. Then I listened once more, visualising the tones being drawn

> above the words, and then tried to repeat the sentence in my head with the same 'tune'. (SAR_DIA_10)

For words she has not learned the meaning of, she does not try to learn the tones yet.

> I think at some point I should switch to different colours for different tones, but at the moment I want to fix the words and meanings in my mind so it's helpful to have the same colour for the whole word. (SAR_FOL_6)

Also, during the activity of writing sentences or paragraphs to practise using words, Sarah writes the sentences in Pinyin (excluding tones), first focusing on using the words and grammar correctly and later adds the tones during the lessons, when her teacher checks her writing. This shows that Sarah not only plans but implements her plan well. Sarah mentioned several reasons for using these strategies to break down the learning task. Firstly, she finds that trying to learn all aspects of word knowledge simultaneously is cognitively overwhelming and demanding, which prevents her from learning any aspect well enough for her to feel she is making progress and this leaves her feeling frustrated, thereby demonstrating a problem in her affective aspect. She developed this belief based on her self-reflection and causal attribution of her self-evaluated unsuccessful learning experience, as reported below.

> S: […] initially when I was learning Chinese, the way the class was structured was to learn all of them [i.e. aspects of word knowledge] simultaneously. […] I found it really frustrating, because I just felt overwhelmed by a lot of different things, they were all quite difficult, and I did not feel like I could reinforce them easily, so it just felt a bit pointless. […] I did not feel like I was making progress, and I found that frustrating. (SAR_INT_1)

> Trying to learn new words, new structures and the characters all at once was overwhelming - I never knew what to focus on so I didn't really feel like I had learnt anything by the end of the course. (SAR_FOL_1)

After she attended a course in China, where the teaching of spoken and written Chinese was separated, she applied this idea to her self-regulated learning and evaluated it as a better way of learning.

> Now that I am familiar with more words, learning to read them is surprisingly satisfying and easier than I expected. I think that's something I didn't realise when I started […] Now that I am familiar with certain words and how they are used, it feels like recognising a friendly face when I see them in a sentence, and it helps unlock the rest of the meaning. (SAR_FOL_1)

After her experiment with the new approach, she evaluated that putting a time lag on learning characters has had a positive influence on both her cognitive and affective aspects of learning, as she feels the learning has become easier and more satisfying. Sarah reported that managing to use some words first (although only in Pinyin), enables her to start doing meaningful activities (e.g. creative writing), which could give her further opportunities to learn and use characters in meaningful contexts and hence, provides more natural reinforcement.

There are multiple factors that appear to have influenced these strategy uses in Sarah's learning. As a part-time learner, her available study time is limited and character learning is intensive and time consuming. Also, she has very good meta-linguistic knowledge about the various aspects of word knowledge involved in learning vocabulary (see SAR_INT_1), which enables her to divide the learning task. Sarah seems to have an analytic cognitive style (as discussed above, e.g. 5.3.1.c) and a goal of learning accurately (as identified in 5.3.1.a), which matches strategies that divide tasks into multiple steps. The order of learning different aspects seems to be influenced by Sarah's personal interests in learning a language, whereby as she reports, "Personally, I always want to learn to speak a language as I'm motivated by the idea of being able to chat to people" (SAR_FOL_1), and she wants to be accurate in using words from the beginning. "I find it frustrating to connect a word to a particular idea and then learn that this is wrong and have to change my perception of it. It means I'm more likely to confuse it with a different meaning in the future if I do that" (SAR_FOL_2). Moreover, she also finds character handwriting less useful because she can type them.

b. Dealing with the morpheme-word relationship

Sarah's knowledge and strategies for dealing with the morpheme-word relationship have developed. At first, she reported learning a two-syllable/morpheme word as an inseparable unit, unless "it is a word where I have learned the two parts separately" (SAR_INT_1). This was partly because in Pinyin there are no indications to suggest individual morphemes in a written word (e.g. bǐsài rather than bǐ-sài or bǐ sài), and she felt that in order to learn the tones it was helpful to think of the syllables: "as linked because then you started to have the sounds in your head, you hear the changes more between them" (SAR_INT_1). She was unaware of strategies to deal with morpheme-word relationships in Chinese until she started to pay attention to characters and noticed recurring patterns, which helped her to recognise word parts in Chinese.

> S: […] so I've now tried to pay more attention to the characters when I read through it and notice things like, here like *bi, bijiao, bisai* all have the same first character. So, I haven't noticed that for ages, so I thought oh, that is useful to know coz now when I try to learn the characters, I know that character is linked to that sound. (SAR_INT_1)

> S: […] With Chinese, it took me a while to realise that the characters are linked to a particular syllable sound, coz initially […] I did not realise they have that linked pronunciation. I just thought they were linked to the meaning, so they are like in old […] going way back to the start of Chinese and the characters were meant to look like pictures almost. […] it did not occur to me that […] if words have the same sound, it would be written in the same character form, coz I thought the character would be tied to the meaning and not the pronunciation. (SAR_INT_3)

Sarah developed the learner knowledge that Chinese characters (the written forms of morphemes) are not only linked to meaning(s), but also to syllable sounds (the spoken forms of morphemes) and this contributes to the recognition of morphemes. She reported below that she, hence, started to use strategies accordingly.

> S: I think it is something I will pay more attention to now […] so I will now think about the different sounds. And I guess it is like […] the more like building blocks you have them placed, like the more characters you know or sounds you recognise, then when you see a new word you can connect that to something that's already there, and […] it gets quicker and easier, because you have more things to connect things to, and I think it is much more easier to remember words when you can do that. (SAR_INT_3)

> S: I think it is kind of like looking for clues in the characters, coz it is easier to remember them if you could sort of build on like a tree of connections, so take like *bi* as a first point and brunch off like so okay, how many other words do I know of can link them in some way. (SAR_INT_2)

After realising a character is linked to a sound and a meaning, and a character can be used in a series of semantically related words, Sarah plans to pays more attention to sounds and the possible meanings they could be linked to. She has started to connect words based on these "building blocks" and mentally groups them based on "a tree of connections" both metaphors suggesting a realisation of morphemes. Below are some examples of her paying attention to morphemes and using them to connect and group words.

> I'm starting to spot patterns with sounds, noticing that the same character is used in different words (*hai* for example as '*hai*', '*haishi*' '*hai you*', or '*bi*' as a comparison and in '*bisai*'). (SAR_DIA_7)

> S: Is this the same *hou* as in *yihou* [meaning "hereafter"] and *ranhou* [meaning "afterwards"]?

> T: Yes, *hou* means "after or behind".
> S: So, the same *hou* as in *houmian* [behind]? (SAR_OBV)

> S: Is this *zai* [meaning "again"], as in *zaijian* [meaning "goodbye, see you again")? (SAR_OBV)

Having used these strategies, Sarah reported a positive influence on her character learning as seen in the following comment.

> It feels quite satisfying – a bit like beginning to crack a code. When I first started learning the characters seemed incredibly daunting, but now I feel like it might just be a little bit more possible to be able to learn them. (SAR_DIA_7)

Recognising word parts in different words can contribute to both the cognitive and affective aspect of word learning, for having done so Sarah reported feeling more satisfied and confident about learning the characters. However, she has delayed learning characters, and written characters are the key to pinning down morphemes because of the great number of homophone-morphemes in Chinese (discussed in 2.4). Consequently, she sometimes tries to connect words sharing the same sound but written in different characters without realising it, and hence feels confused as the two words are not semantically related (because they do not share the same morphemes). For example, in SAR_INT_3, she successfully made the connection between 中午 (zhōngwǔ, "mid-day, noon") and 中国 (zhōngguó, "China or the central kingdom") and seemed to have developed a morpheme meaning for 中 (zhōng), which is "being central" and "centrality". However, she also tried to link 终于 (zhōngyú, "finally") with them without realising that it is a different character 终 (zhōng, "being final"). This suggests that without paying attention to the characters, there is high risk of misjudging morphemes and this could affect the quality of using the morpheme-related strategies. In fact, the awareness of morphemes and the use of morpheme-related strategies in Chinese are all arguably closely related to characters. This highlights the value of learning characters, if not for reading or writing, but for recognising morphemes as these can help connect words and build up vocabulary more effectively.

c. Learning the spoken form of a word

This subsection investigates the strategies used to learn the spoken form and the spoken form and meaning connection of a word. Strategies mentioned earlier, such as recalling and activating previous word knowledge on spoken forms, comparing and connecting words based on sounds and planning to pay extra attention, if the spoken form is difficult,

can all aid learning the spoken form of a word. In addition, Sarah uses other strategies to learn the spoken form of a word through her listening activities, reading the vocabulary lists and with her writing activities.

For Sarah, the connection between spoken forms and meanings "partly comes just from repetition of hearing the words" (SAR_INT_1). A closer examination of the data shows she uses more specific strategies than simple repetition.

> S: I listened to the recording of the phrases with conjunctions that Tina had made for me. Like last time, the first time I listened, I listened for the words and tried to say the sentence in Chinese in my head, thinking about the meaning of each word. Then I'd try to translate it into something that sounded natural in English. I replayed the same sentence concentrating on the word order. Then I listened once more, visualising the tones being drawn above the words, and then tried to repeat the sentence in my head with the same 'tune'. If I thought it was close enough, I listened to the next one. If I wasn't sure, I replayed it. Before I reached my stop, I listened to the whole recording once through. (SAR_DIA_2)

Sarah uses the following strategies in her listening activities to establishing the spoken form knowledge and its connection with the meaning: 1) listening to the recording repeatedly with a different focus each time; 2) mentally repeating; 3) recalling the meaning of a word; 4) paying special attention to learning and repeating the tones; 5) visualising the tone marks; and 6) comparing own pronunciation with the recording and self-evaluating. She directs her attention on certain aspect(s) at a particular time and this can improve the quality of attention on learning that particular aspect. In addition, repetition is used to guarantee the coverage of multi-aspects of word knowledge, which indicates good planning and paying attention. The meaning-retrieval strategy can promote the psychological condition leading to vocabulary learning. Visualising the written tone marks makes use of the visual sense in addition to the audio sense, and using more senses to learn is a cognitive strategy for learning FL. The use of comparing and self-evaluating strategies can provide opportunities for Sarah to notice errors and also to increase learner autonomy.

Sarah also used some Pinyin-related strategies. She has put much effort into learning Pinyin and managed to pronounce each Pinyin letter accurately at the initial stage. This has set up a solid foundation for learning the spoken forms in that she is able teach herself to pronounce a word accurately. When reading the vocabulary lists, she would read the Pinyin and try to recall the meaning of a word. In her writing activities, she would use it to write out sentences/paragraphs and reported "hearing" the pronunciation while writing.

These Pinyin-related strategies involved active retrieval of meaning or sound/spelling of Pinyin and can build links between the sound and the meaning.

Sarah reported some strategies especially for tone learning. In her writing activities, she types in Pinyin (without the tones), first, which allows her to focus on thinking about what she wants to say and to write the sentence correctly, whilst later she manually adds the tones. Having a separate process for adding the tones can lead to better learning outcomes as her attention is fully focused on memorising them. She also "can hear certain words in my head as I write them in Pinyin, which helps me to remember the tone" and "This makes it easier to say them accurately as I have an idea in my head of what they should sound like - a bit like learning the tune to a song and being able to hear it in your head before you can sing it in tune" (SAR_DIA_6). Sarah also reported a few strategies specifically for tone-recognition and production.

> S: […] one of the things I struggled with when I started the learning, it was easy, or fairly easy to say the tones correctly and recognise them for one syllable words, but when you had two or three syllables together, it was initially very difficult to change the tones and be accurate with all three. So it is quite helpful to think of them as linked, because then you start to have that, the sounds in your head, you hear the changes more between them. (SAR_INT_2)

A strategy identified is to learn and practise tones in longer lexical units, as Sarah reflected that it was more difficult to pronounce tones correctly in such conditions. This showed good self-reflection about learning difficulties in the target language and planning strategy use accordingly. Sarah listens to sentence recordings repeatedly so as to learning tones accurately.

> S: I think you could probably reach a level in Chinese where the tones and the way it is pronounced are so familiar that you, but initially to get that level of accuracy, I think it is helpful to be able to listen to something over and over again […]. (SAR_INT_4)

> S: […] it is quite helpful having a recording to hear the same sentence several times, because you learn the rhythm of what it should sound like, like learning a song. You listen to it enough times, the rhythm is fixed in your head, so you are not actually thinking individually about this word is [the] first [tone], and this word is [the] second [tone], and this word is [the] third tone, you just say it how you know it should sound and then, hopefully, gradually you can say whatever you want, because you know how those words should sound, and you know how their sentences should work. (SAR_INT_2)

Sarah compares learning tones to learning a song, and feels it is helpful to remember the tones for a sentence holistically through listening repeatedly. She retrieves and isolates words from the sentence, if she needs an individual word for a different sentence.

> S: […] then once you can do that with set phrases, then you can isolate the words, and say the words accurately, and you are much freer to say whatever you want, because once you have learned those words, you can use them in any context. (SAR_INT_4)

Sarah also reported two strategies helping her pronounce the tones accurately, as shown below.

> S: If I saw a new word, I try to say it in the four different tones to distinguish which one it would be. (SAR_INT_1)

Pronouncing a syllable consecutively with all four types of tones and focusing on how different they sound presumably can emphasis the correct tone for the word. Sarah also evaluated having tone dictations in lessons, where having the tutor pronouncing both the tone type she has misjudged and the correct she finds helpful as she is able to hear the difference.

> S: […] having Chinese speakers say […] if they say a word […] and I say "I think that is the third tone", and you say "if it was the third tone, it would sound like this, and I said this". And that's really helpful, because it's constantly reinforcing that, like this is this tone, this is this tone and that is where the difference lies. And so I think for me it was just patience [laughing] and practising that a lot, and trying to say the difference myself and trying, yeah, to pin it down. (SAR_INT_1)

Sarah is very patient in learning tones, and clearly puts much effort into aiming for accuracy. She explained that this is because she did not pay much attention to pronunciation (especially tones) during her first course, so when she went to China she realised that people could not understand her Chinese. She has reflected on this experience and reported that she wanted to work on learning tones seriously. Her strategy uses seem to be largely influenced by her own reflection on learning Chinese in that she seemed to have found a set of strategies that worked for her based on her own learning experience.

d. Learning the written form of a word

Sarah reported that she had decided to learn to recognise the characters before learning to handwrite. She developed this learner belief about the effective ways to learn characters based on a self-reflection on her character learning experience in China, when "I was learning to write characters I had not really learned to recognise. It was a bit like learning

to draw pictures and didn't really have … I could not really use them" and that "so I think in retrospect, it would be more useful to […] maybe learning to recognise characters for it, then once I become more familiar and then learn to write them" (SAR_INT_1). She adjusted her strategy use accordingly, and evaluated it as being easier this way as "you have something to connect it to in your mind" (SAR_INT_4). This report gives support to the "recognition before handwriting" character teaching approach (discussed in 3.4.1) from a learner's perspective.

In addition, Sarah pays selective attention to learn the written forms for some words first.

> S: […] I think it is more useful to learn to recognise the characters for conjunctions, prepositions, pronouns, words that you use frequently and allow you to form a lot of different sentences rather than learning lots of nouns. And that's just because personally I find it much easier to remember them if I am constantly reinforcing them coz I could write like ten different sentences with the structure yinwei ["because"] and suoyi ["so"], whereas I could, well, writing ten sentences about Beijing would not be as interesting. (SAR_INT_1)

Sarah chose first to learn the characters for words that can be used often (i.e. conjunctions, prepositions, and pronouns), because she learns characters by using them in meaningful contexts (e.g. in writing a sentence). She reflected on her previous character learning experience when she was given a list of nouns to remember, and although she could learn these characters by drilling, they could only be remembered temporally, because they could not be used to construct different sentences and so would not be seen frequently afterwards so as to reinforce them in the memory (see SAR_INT_1).

Sarah uses both non-orthographic-knowledge-based and orthographic-knowledge-based strategies. The former are those that do not involve making use of any knowledge on the Chinese orthographic system, and so they are more generic strategies for memorising information, these being: creating or using mnemonics, drilling e-flashcards, systematic reviewing, seeing words in natural exposure and applying characters in meaningful contexts. Sarah evaluated using mnemonics as "it is kind of a tenuous link, but it means that seeing it and recognising it is easier". She used a website called *Memrise*, which she said was useful.

> I chose Memrise for the following reasons: it gave me an imposed list of the most 'useful' characters to learn; it presented an engaging way of creating triggers to remember them; it enabled me to measure my progress, which I found motivating; and it was repetitive, but in an intelligent way - I liked the fact that it recognised which characters I had learnt and asked me to identify them less frequently. (SAR_FOL_1)

The Memrise website Sarah mentioned provides opportunities to use a combination of strategies, such as creating and using mnemonics, drilling on e-flashcards for information retrievals and systematic reviews based on the "Forgetting Curve" and learner's previous test results. Sarah evaluated the website as useful also, because it could measure her progress, which she further identified as an affective strategy to keep her motivated to learn.

Sarah also uses a strategy to increase her natural exposure to characters, which is to hang papers written with characters in her room as shown in the picture and reported about below.

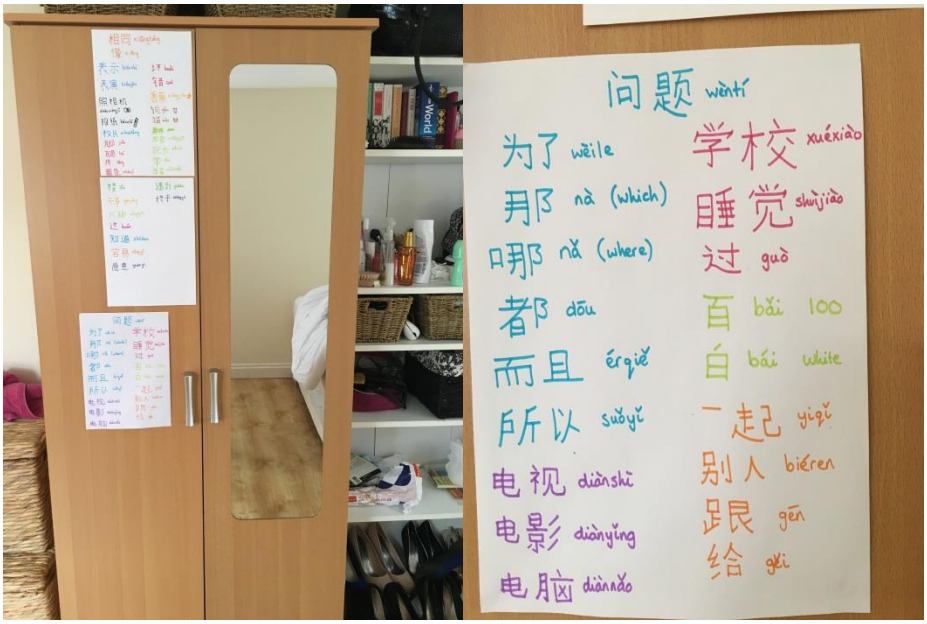


Figure 5.6 Characters in Sarah's room

> S: So, I look at the characters, and how they are written, and I have the Pinyin written next to it, and the meaning, and try and look at all of the things together. I think the more sort of I think with languages the little and often rule works well. So the more you see something, the more it starts to sink in. (SAR_INT_4)
>
> Here's my current list I have up in my room - I have them next to the mirror, so I see them every morning when I'm getting ready for work. (SAR_FOL_6)

Sarah has realised that her learning style being visual, and applies one of her beliefs about general language learning "the little and often rule" into her strategy use, so she has created opportunities to look at the characters in her daily life. The abovementioned strategies are all related to learning characters in isolation. She also uses some strategies to learn characters in meaningful contexts through writing and reading.

> S: I found the exercise where I had written a paragraph in Pinyin, and then I had written it out in characters, and I read my writing in characters without looking at the Pinyin, that was quite interesting, because I knew, I could vaguely remember what I was trying to say and it was all words I knew, so I wasn't getting stuck with vocabulary I didn't recognise. […] it made me focus on the characters, and connect the shapes to a meaning, and a sound, and because if the Pinyin is there, it is too easy to just focus on that, and that is just reinforced in my mind that I can see what the word looks like in Pinyin, I can see the tones rather than linking it to a character. (SAR_INT_4)

> S: It also took a long time as I wrote it out once in Pinyin, and then typed it out in characters and checked the characters against the words. Checking the characters with the words is time consuming and feels frustrating at first, but as I began to recognise characters and realised I could read from the Chinese, it felt much more satisfying. I find it easier to recognise and remember them if I have written them myself because I have had to take the time to think about the words and sentence structures. I need to make myself do this more often so that I actually learn to read Chinese characters. (SAR_INT_1)

The process of adding characters involves typing the Pinyin and identifying the needed character from a list of characters pronounced the same from the Pinyin, which is an active retrieval process for character recognition. She then verifies the characters she types with a dictionary, gives another chance to install the characters into memory. This activity is evaluated as time consuming and frustrating, but she continues to use it as she has noticed that she gradually recognises more characters and hence, it is effective. The strategies of applying characters into writing and practising reading one's own writing can be especially suitable for beginners, as they can control the characters to be used and learned.

Sarah also uses some orthographic-knowledge-based strategies, which involve making use of her orthographic knowledge on strokes, stroke orders, or character components.

> I learnt a few of the strokes each lesson and then characters that incorporated these strokes and continued until I had learnt all the strokes on the list (*heng, shu, pie* etc). It was quite a good structure as I found saying the strokes out loud helped me remember the order to write them in. (SAR_FOL_1)

> S: […] I think as I learn more characters, I will need to spend more time looking at the different components of the characters […] if you recognise the word for *mouth* and you can see it forms parts of the characters which might have something related to question words or languages, you start to spot those patterns, or like the radicals for *hand* that comes up in phone, for example. That really helps because you started to see that there is a system to it rather than just being. Firstly, it just seems really alien, and really random, and you just think I am

> never gonna remember all these things, so that definitely helps. (SAR_INT_ 1)

Seeing recurring components in characters and finding the meaning links between a component and a character are evaluated as being able to help lower Sarah's anxiety with character learning. However, it is observed that Sarah has only managed a few character components at this stage, which are all semantic ones, for she has yet to develop the awareness or skills in using phonetic components.

Lastly, Sarah puts some effort into learning to handwrite certain characters. She mentioned that "I think as you learn to write them, then that helps you recognise them more". She used the following strategies: 1) Watching animations of characters written stroke by stroke; 2) practising handwriting characters in grids; 3) paying attention to strokes when writing characters; 4) saying stroke names when writing characters; 5) paying attention to the stroke order for writing a character; 6) using knowledge on character components; 7) using the characters to handwrite a sentence. Sarah's strategy uses involves using her knowledge on stroke, stroke order, and character components. Writing characters in grids is a strategy also used by native Chinese children in learning characters, as the grids can help in measuring the position of strokes in a character. Sarah reported that "I think for character learning, repetition of drawing them out is the only way you really memorise them", suggesting a positive evaluation towards repetition for learning handwriting characters.

e. Learning the meaning and use aspect of word knowledge

Sarah puts much effort into learning the meaning and use aspect of word knowledge, for which many strategies have been mentioned in the previous tasks. To summarise briefly, when encountering new words, she tries to learn them from sources that present them with contexts, such as in her lesson or watching TV. In the task of searching for word information, Sarah uses the following strategies: 1) browsing all the meaning entries; 2) browsing the example sentences in English and Chinese; 3) making an initial judgement about the complexity of a word (and monitoring and evaluating the initial judgement afterwards); 4) asking questions or discussing with the teacher about how to use a word; 5) using L1 vocabulary knowledge; and 6) comparing L2 words with L1 words and verify whether they are used in the same way semantically and syntactically. In the task of keeping and using records of word information Sarah uses the strategies of: 1) selecting one or two core meaning entries to note down; 2) selecting a good example sentence to note down; 3) noting down what grammatical function the word has; 4) noting down the

collocation for the word; 5) noting down the limitations in using the word; and 6) noting down in what context should the word be used. These strategies could provide sufficient information for Sarah to establish the meaning and use aspect of word knowledge.

Sarah makes sentences for learning complex words from the vocabulary lists, as she "will have this list with me and think of a sentence and then check through this and see if there is a new word I could use" (SAR_INT_5), and evaluated that "I found it was helpful to write stuff myself […] because it was like personal answers to questions, it was easier to remember […]" (SAR_INT_4). She also has creative writing activities and judged them as helpful This is because compared to making a sentence with a target word in mind, these activities force her to choose the appropriate words based on the contexts herself. After writing it, Sarah gets the tutor to check for errors, which is a social strategy of seeking feedback and she is able to enhance word knowledge on how to use a word through this. In her listening activities, she tries to translate a Chinese sentence into English word by word and then as a natural English sentence, paying special attention to the word order to comprehend how the word is used (differently) in Chinese, which is a good translation strategy.

Sarah's strenuous effort in learning the meaning and use aspect of a word might be related to her good meta-linguistic knowledge about the differences in meaning and usage between words in different languages. She especially points out that "learning the word is really knowing when to use that word correctly" and states that compared to being given a word and asked to make a sentence with it, it is much harder to decide which word should be used for a particular context. This is good learner knowledge on "knowing a word", for Miller (1999) contends that a very important aspect of knowing a word is having a cognitive representation of the set of contexts in which a given word form can be used to express a given meaning. She also mentioned that "it takes a really long time to get to the point where you can use it" (SAR_INT_1) suggesting she views the vocabulary learning process as incremental in nature. This all represents good learner knowledge which appear to have influenced her strategy use and self-regulation.

5.3.5 Consolidating word knowledge

Sarah believes that learning Chinese involves more repetition and drilling due to the characters and tones, especially in the beginning stage and such beliefs have influenced her strategy use. She emphasises the task of consolidating word knowledge to a great extent, reporting how she listens to recordings repeatedly, reviews notes regularly, uses

spaced systematic reviewing on the Memrise website, and writes characters repeatedly in grids to consolidate what she has learned (explained in previous sections). The consolidating strategies are not only used for maintaining what she has learned, but also for achieving accuracy and fluency. She often uses set phrases or example sentences until she is proficient, and "then you can isolate the words, and say the words accurately, and you are much freer to say whatever you want, because once you have learned those words, you can use them in any context" (SAR_INT_4). This suggests that consolidation is not only used for form-knowledge, but also for use-knowledge in that Sarah learns a whole sentence first and then, might isolate individual words from the sentence or substitute other components to make a new one. Sarah reported using these strategies from learning French in school "we write like fifty questions and we have to write answers to them in French, Spanish or German, and you drill them with a native speaker endlessly" and evaluated it useful, because "it does kind of reinforce all of the structures and pronunciation". Sarah's use of consolidation strategies could be influenced by the audiolingual teaching method, and she uses similar strategies in learning Chinese, i.e. writing basic introductory questions and answers in Chinese and practising them repeatedly, which demonstrates a strategy transfer from previous French learning experience. She also uses this strategy to prepare for socialising with L1 Chinese speakers, expanding more vocabulary and grammar structures to learn, which demonstrates good planning. Sarah is positive towards repetition in the consolidation phrase and also for longer language units, such as phrases or sentences, rather than drilling on individual words.

5.3.6 Using word knowledge

The last task of Using word knowledge pertains to the process of retrieving word knowledge so that it can be used in communication. Sarah reported two strategies for this task: the first is that when she needs to recall a word, she tries to retrieve the context in which was learned.

> S: […] if I am trying to think of a word then I think "oh I know that because I encountered it when I was doing this …" and then I can visualise the clip of it in my head, and then I can think "okay" that kind of helps me draw the word to the front of my mind. (SAR_INT_1)

This points out the merits of learning words within meaningful contexts, as their memory seems to help in the retrieval of individual words. This phenomenon can be explained by the differences between episodic and semantic memory, whereby the memory of the

entire conversation context is episodic, and the memory of words or rules for using them is semantic. When Sarah needs to use a word, recalling episodic memory can help activate or be used to derive semantic memory.

Another strategy is to recall the set phrases or sentences which the word was in when she learned it, and analyse how it should be used from these.

> S: […] and once you have learned it like a song, like by rote, then if you need to use them again, […] you have learned to say it without really having to think, like singing a lyric of a song. You sort of just know the answer and you can just read that off. And you can focus on getting the tones or the pronunciation right. And then also it means you have the grammatical structure in your head, so if you are sitting down to write an essay, or you are trying to think of a way to express something different, you can think, oh I remember I use this in the answer to this, and it sounded like this, and you can play it back in your head, and then think okay so how does that structure work, it works like this, if I change these words then I can say it in a different context. (SAR_INT_4)

This strategy seems to be related to her consolidating strategies, whereby she practises some commonly used sentences until reaching fluency. When trying to use a word from one of the sentences, she mentally reads off the sentence containing the word and analyses the sentence to activate the knowledge about how the word should be used. The two strategies both involve retrieving a bigger language unit (e.g. phrase, sentence) first and analysing it in relation to active word knowledge on individual words.

5.4 Sarah's Chinese vocabulary learning approach: an overview

Sarah's overall Chinese vocabulary learning is not only active, but also structured and very much under control. She restricts the vocabulary input to avoid feeling overwhelmed and carefully selects words by using graded vocabulary lists or self-developed criteria. She browses all the meaning entries and examples in a dictionary to make an initial judgement about the complexity of words so that she can plan for the appropriate amount of attention and strategies to learn. However, she continues to be selective in noting down and choosing only the core meanings and useful examples. Sarah manages and directs her attention to learning some aspects of word knowledge (i.e. spoken form, meaning, and use) first, whilst others (i.e. tones, character recognition, and character handwriting) she leaves until later. She also divides some learning activities (e.g. listening to recordings, or writing an essay) into several steps and has a different learning focus for each step, or orchestrates a number of strategies to cover the learning of various aspects of word knowledge. She uses a variety of strategies so as to be mentally engaged in learning,

including recalling or activating prior vocabulary knowledge as well as comparing and associating words phonetically and semantically. Her meaning-selection/generating and example-selection processes involve analysing, comparing and evaluating, which all increase her depth of processing. She learns sets of words through intentional learning activities and creates opportunities for using them as well as testing her learning progress.

Another characteristic of Sarah's vocabulary learning is that she aims to learn accurately even, if this means learning at a slower pace with some level of repetition. She pays attention to details about individual words and sees the specific aspects of word knowledge involved in knowing a word. She pays attention to details about individual words and sees the various aspects of word knowledge involved in knowing a word. She puts in extra effort when she finds words with similar forms or the meaning and use aspects appear to be complex. She especially emphasises on learning how to use a word, and prefers explicit vocabulary instruction and searches for rules to use a word in a conscious and analytic approach in by deploying a dictionary as well as asking questions. She has explicit meta-linguistic knowledge about her L1 words (e.g. references, concepts and functions) and the possible ways in which words can be used differently in different languages. She uses this meta-linguistic knowledge to analyse examples or ask questions to find out whether the Chinese words can mean or be used in the same ways. In sum, the L1 or translation strategies are used in a cautious way and are supported by various active cognitive processes.

A number of personal, task and contextual factors were found to influence Sarah's strategy use. Sarah has a high degree of self-regulation and considers various influencing factors comprehensively, so her use of strategies is primarily and strongly influenced by her learner self-regulation (i.e. meta-knowledge as well as her use of meta-strategies). A striking feature is that she reflects upon and evaluates her own learning in-depth, which enables her to be very aware of her learning difficulties, such that she is able to address them. She appears to be able to analyse the learning situation and identify specific potential reasons well. As a result, she is able to tries new strategies or adjusts her ways of using the current ones until she finds a satisfying way to learn. Many times when being asked about why she uses a certain strategy, she referred to her knowledge about the task nature of learning Chinese and her beliefs about effective strategies, which were all developed from self-reflection, evaluation and attribution regarding her own previous learning experience. Sarah also applies her updated learner meta-knowledge into the next stage of planning accordingly, thereby improving and evolving her ways of learning

Chinese. In planning strategy uses, she considers various factors, including her proficiency level as a beginner, her limited study time as a part-time learner and her personal preference of spoken Chinese over written Chinese.

Other factors might also have influenced Sarah's strategy use and her evaluation of different strategies. She seems to have an analytic cognitive learning style and a conscientious personality, which are demonstrated by her: goal of learning accurately, strategy choices of breaking down a complex learning task into steps, explicit rule-seeking, and her deliberate consolidation strategies, such as repetition. Also, restriction on vocabulary input, delaying learning characters, and deliberate consolidation would appear to be necessary considering the language environment factor, whereby Sarah is learning Chinese as an FL without a Chinese-using environment to provide natural reinforcement. The one limitation in Sarah's vocabulary learning is perhaps her lack of a strategy for dealing with the morpheme-word relationship in Chinese, e.g. to associate words based on morphemes. As written characters are the key to pinning down morphemes, because of the large number of homophone-morphemes in Chinese and Sarah has delayed learning characters, there are great difficulties for her to use morpheme-related strategies to aid vocabulary development, e.g. there is a high risk of her connecting words sharing the same sound, but written in different characters, without realising they are not semantically related words. This limitation is related to Sarah's current character knowledge or proficiency level, and could well be overcome when Sarah's learning focus shifts to character learning. Sarah's strategy uses, the influences of various factors, and her overall vocabulary learning approach are further discussed in comparison with other participants in Chapter 8. In the next chapter, Mark, who has made an impressive success with character learning, is discussed.

CHAPTER 6 CASE STUDY: MARK

6.1 Introduction

The case to be reported in this chapter is that of an intermediate-level learner who is referred to as Mark. His level is evaluated as about HSK level 4, which corresponds to CEF level B1 (Hanban, 2005) based on the textbooks he was using (e.g. *Bridge*, intermediate) and his overall communication skills. Mark's case was chosen to be reported in detail, because he has made an impressive success with character learning and managed to recognise and handwrite about 2,600 characters, which is close to reaching HSK level 6 (the highest level, corresponding to CEF level C2) that requires learners to manage 2,663 characters (Hanban, 2005). He could be classed as a typical "science" person who approaches FL learning in a methodical and progressive way. He is a highly motivated, self-disciplined and independent learner who has been mostly studying Chinese in the UK by himself.

6.2 Mark's learner profile

Mark is 58 years old and a retired software engineer. He speaks English as L1, and also learned French and Dutch, both in the UK and the target-language environment; self-describing his current proficiency level for both languages as intermediate. Chinese is the only foreign language he is learning at present and he has spent 4 years studying Chinese in the UK by himself.

Mark's motivation for learning Chinese is a mix of multiple factors. He described how he started learning it, owing to a chance conversation in a pub about doing impossible things, such as learning Chinese, and the day after he put this thought into action and has never stopped. Whilst this seems to be a random choice, in fact, the exact same situation led to him learning the saxophone and piano, which reveals certain personality traits, such as being curious and highly-driven. Mark reported several other reasons for continuing to learn Chinese. Firstly, he likes a challenge and believes that this is as challenging as it gets from a linguistic viewpoint. He also has always "wanted to unlock the secrets behind those mystical runes to see and understand a far-away society" (MAR_FOL_9) and hence, points out an interest in Chinese characters and culture of what he perceives as "distant". Third, he mentioned that he has always known that his time as a software engineer would end (and it has) and so "such an odd skill would add a new arrow to my bow" (MAR_FOL_9), thereby suggesting an instrumental motivation. However, he emphasised that "although the practical side could yield some kind of financial reward; that is a reason

to continue but certainly not the main reason" (MAR_FOL_9). The main reason Mark highlighted is that he has started something that he really enjoys and will not be happy until he succeeds. He stated that personal goals form a big part of his life, and if he did not have something big to aim for, his life would be impoverished as a consequence. Mark is an inquisitive and strong-willed person and these personality traits might have played an important role in his self-regulation.

During the data collection period, Mark spent 2.5 to 3 hours every day learning Chinese, and his learning was very structured. He self-identified three learning activities: reading textbooks, writing characters, and interacting with L1 Chinese speakers. Mark reads a textbook for one hour every day, and notes down any new characters to build up a list, which he learns and reviews regularly. He also learns new words (i.e. new combinations of characters that he knows), phrases and grammar points by reading the textbook. When he finishes reading the whole textbook, he goes back to reread the same textbook again, and this time focuses more on comprehending the text as there should not be any new characters or words he has not seen. The second activity is writing characters every day, using the character list he has accumulated himself, which at the time of the research, as aforementioned, amounted to 2,600 characters. There are two parts to this activity: trying to learn the newly-added characters and consolidating the old ones that he has once memorised. For learning the newly-added characters, he copies and handwrites them once every day until they are memorised and hence, then being categorised as old characters. He also consolidates handwriting 200 old characters as a daily routine, starting from the first 200 characters in his list and moving on to the next 200 the next day until he reaches the end of the list. Then he starts from the beginning again and carries on this rotating system. In consolidating old characters, he reads the Pinyin and the English definition of a character, then recalls and handwrites the characters on an exercise sheet. The third activity is using various ways to interact with L1 Chinese speakers, such as meeting with language partners in London, taking part in a reading group or chatting online with people in China.

6.3 Mark's use of strategies in vocabulary learning sub-tasks

This section discusses Mark's use of strategies for each vocabulary learning sub-task. As Mark pays direct attention to learning both individual characters (i.e. word parts) and words, his strategies for dealing with characters and words are discussed separately in relation to the sub-tasks.

6.3.1 Encountering new words

Mark used the most-commonly-used-character list to learn new characters at the beginning stage, but later changed to reading textbooks to encounter characters and words to learn.

a. Using the-most-commonly-used-character list

Mark learned his first 400 characters from a list which documented characters in the order of most common usage. He learned these characters in a simple theoretical way by writing them every day to memorise the sound, shape and meaning of each, but he was not using them in any practical way.

Mark's decision of memorising the-most-commonly-used characters as his first step in learning Chinese seemed to be influenced by his personal interests as well as his learner knowledge about characters. He reported that he really wanted to learn characters, but the textbooks he could find for beginners were all written in Pinyin, so he searched on the internet and found the character list from a website. He reported that "I see the characters a bit like I would see the English alphabet" and "we have to learn the alphabet as a kind of building block, so I took the same idea and tried to apply it to these characters" (MAR_INT_1), suggesting an understanding of simplifying characters as only the orthographic units, rather than lexical units (i.e. morphemes). In addition, he read somewhere that "once you have learned 1,000 characters, you can read about 90% of the newspaper" (MAR_INT_2), so memorising these 1,000 most commonly used characters before learning anything else seemed to be a reasonable learning goal at that time. He realised later that the statement "is absolute nonsense", after he mastered 1,000 characters and yet, was still far away from reading an authentic Chinese newspaper. Nevertheless, he memorised 400 characters by using this strategy and evaluated it as "gruelling" and "not fun" (MAR_INT_1). He later started to read a textbook written in characters, and evaluated it as a better way because "it would have more meaning to me rather than just memorising some characters I am not even using yet" (MAR_INT_2).

Encountering individual characters from a list has made the learning extremely academic and therefore difficult and boring. Mark tolerated this strategy and learned 400 characters using it, because he was determined to learn them, is self-disciplined, and he can dedicate a considerable amount of study time. However, it is perhaps not the most effective approach to learn characters, because as discussed in subsection 3.4.1, characters are believed to be better learned within words, which Mark later realised. Also, lacking

learner knowledge about the possible ways to learn Chinese characters and the Chinese language (especially the relationship between characters and words) led Mark to believe that characters should be dealt with as the first task in learning Chinese and that reading only requires knowing the characters, so he put too much effort into character learning than was necessary. In fact, evidence presented in subsection 3.4.1 suggests that focusing on learning characters at the very beginning stage might not be necessary or beneficial. It was also mentioned in section 2.4 that 1,000 characters could potentially constitute tens of thousands of words, and that reading requires understanding words in various contexts. Mark's strategy use demonstrates that lacking learner knowledge about the special nature of Chinese vocabulary could send novice CFL learners in the wrong direction and make the learning more difficult or boring than it should be. Mark persisted, and he is very good at self-reflecting to find issues in his learning so as to develop his meta-knowledge and to improve his strategy uses.

b. Reading textbooks

Now, almost without exception, the new characters and words Mark puts effort into learning come from the textbook that he is reading. He decided to use a series named "Bridge" (桥梁) and started from the 2nd in the series. He reads for one hour every day by simply start reading from page one of the textbook and working his way through to the end. Mark reads the textbook twice and has set clear goals for each time of reading and follows his plan diligently. During his first time reading, he focuses on learning new characters and new words (which he perceives as new combinations of characters he has already learned). Then, he reads the whole textbook a second time focusing on comprehending the text after he has learned all the characters and words. Having a clear learning focus for each time of reading shows a high level of planning and learning in a very structured way.

The actions Mark takes to deal with new characters and words are to check for the meanings from a glossary or dictionaries directly, add new characters in his character lists, noting down the meaning of new words on the textbook. When being asked about whether he actively infers, Mark reported the following.

> M: No, I genuinely look at the meaning. I have not yet acquired that ability to infer the meaning unfortunately, so I do have to look at the definition of the word more or less every time. These days sometimes I can kind of have a lucky guess, but you know it can be ballpark, but it is not really specific enough, so I will always have to really get a concrete definition. So at this stage I don't really want to start inferring

> and I do really want to learn the specifics of a word's meaning. (MAR_INT_1)

Mark is aware that he cannot guess the specific meanings of words accurately, and so always looks up words. This reflects his good awareness of his own proficiency level, an emphasis on being accurate in learning and the personality trait of being conscientious. However, Mark appears to believe that premature guessing can hurt his vocabulary learning, because "If I start to inferring, the chances are I will develop an incorrect understanding of a word" and "it can become logged in my head as that meaning", and so that he avoids guessing, "even though I think I can infer, I would rather not" (MAR_INT_2), suggesting an influence of learner belief on the use of the inferring strategy. However, Mark also admitted (and this is verified by think-aloud data) that "to be honest, I automatically infer […] I can't help that", because he recognises the constituent characters in a word, but he does not rely on this, for he always uses a dictionary to confirm his guess. This means that whilst guessing is not actively used as a strategy, Mark's actions with new words are in fact "inferencing-with-verifying" and such processing condition has been found to be more effective than the consulting-alone condition for vocabulary learning (see Fraser, 1999). The involuntary guesses could be related to Mark's very good character/morpheme knowledge, and the guessing process naturally involves activating prior knowledge, which might help reinforce previously learned characters/morphemes and words. Mark could arguably benefit more from intentionally using the inferring strategies, as this could lead to more analysing, comparing and hence, chances to build connections between words, which could increase the depth of processing and lead to better learning outcomes.

Mark prefers reading textbooks to using the character list because of the meaningful contexts (as reported in the previous subsection). He also encounters new characters and words from interacting with L1 Chinese speakers, e.g. talking online using QQ or meeting language exchange partners in London. However, he does not pay intentional effort to learning the words (unless they are extremely useful) for the following reasons.

> My QQ conversations are mostly text and I use these sessions to practise what I've already learned, not to learn new stuff. If I do encounter new words/characters, I invariably don't add them to my list: this is because I read and re-read the course work, giving me an opportunity to revise my new words/characters. But QQ conversations will never be repeated so I don't record unknown words from there (MAR_FOL_1).

Mark affords selective attention and considers lexical items from textbooks more important. He reported that he was not so selective when learning French or Dutch and mainly acquired vocabulary through reading newspapers. This is most likely related to the special nature of learning Chinese vocabulary, i.e. having a different orthographic system which is time consuming to acquire. Mark restricts the vocabulary input and only learns the ones that he can later consolidate. Furthermore, he does not attempt to learn new words from conversation.

> During conversation I like to keep things flowing, so I rarely stop to note any new words. My method is to learn words through reading and then use them in conversation. When my listening skills are sharp enough, I will then start to record unknown words that I encounter during conversation, on the basis that by then new words will be few and it won't take long to make quick notes. This is just a personal preference and it might be a mistake on my behalf. But that's the course that I've taken and it's why you correctly spotted that I omitted this as a source (MAR_FOL_10).

The choice of not trying to learn new words from conversation appears to be influenced by Mark's self-evaluation on his listening skill and vocabulary size (which also seems to be accurate), but he values the strategy of picking up words from conversation and plans to use it later when he is ready. This suggests a self-regulation in choosing strategies in consideration of own proficiency level and also a conscious plan of learning vocabulary in an intentional manner, whereby he learns words from reading and later applies them in real conversation, as explained below.

> I learn grammar/vocabulary/etc. from course books. Everything else I use to revise and make practical what I've already learned in that book. (MAR_FOL_1)

Mark prefers studying textbooks by himself over taking lessons as "there is a teacher there telling something that I can read in a book", "I am cutting off the middleman, and I find it more efficient", and "I can go on my own pace, which is usually quicker than if I take lessons" MAR_INT_2). He is aware of the drawbacks as "I don't get the chance to practise" (MAR_INT_2) and therefore uses other strategies, e.g. meeting with L1 Chinese speakers, to compensate for this limitation. This suggests that Mark is very used to studying by himself and being autonomous in learning.

6.3.2 Searching for word information

Mark does not intentionally infer, but often engages in an automatic guessing process. He uses a dictionary to search word information, and uses a translating website or asks L1

Chinese speakers when he has trouble in comprehending words. These strategies are discussed below.

a. Inferring

Mark often has automatic "pop-ups" when he sees unknown or unfamiliar characters or words when reading. As he clearly stated that he does not have the intention to guess, thus inferring is not used as an information searching strategy. The guessing process is discussed below, as it reflects Mark's good character-component and character knowledge, skills of using the knowledge to guess and includes specific processing strategies that can contribute to learning.

For inferring characters, Mark is very good at identifying the phonetic and semantic component of a character, which indicates he has stored good character-component knowledge, and this could facilitate character guessing. For example, he inferred the sound of 歇 (xiē) as "xiē" or "jiē", and pointed out frequently the meanings of semantic components for inferring the character meaning (see the transcription of MAR_THI_2 for more information). This inferring process naturally involves activating previous character-component knowledge and so could, in turn, reinforce such knowledge and connect new characters with existing knowledge. Mark's good character-component knowledge might also be as a result of his character learning activities, which are discussed in subsection 6.3.4.b.

For guessing the meaning of an unknown word with multiple characters, Mark uses his character knowledge. He formed a guess about 猛烈 (měngliè) "fierce" before checking the glossary.

> M: 猛烈 [měngliè] means something with *fierce*, because I have written the meaning for this character 猛 as *fierce*, and 烈 has some kind of similar *strong* meaning (MAR_THI_2)

Mark's character/morpheme knowledge is quite explicit in that he could articulate the meanings of individual characters clearly. Such knowledge may well come from his direct character learning activities, as discussed in subsection 6.3.4. Sometimes, he could only recall the meaning of one character and would guess the meaning of the word based on it.

> M: I think that means to *ask to leave the job*.
>
> R: Why do you think it means to *leave the job*?

> M: [pronouncing 辞职] I will tell you why. I think I have seen one of these two characters, and I cannot remember which, one in character pair that means either *to be fired* or *to be made redundant* […] [Checking glossary] *To resign*, yeah, I remember correctly but very vaguely. (MAR_THI_2)

The word-inferring process involves activating prior character knowledge and so could help, in turn, to reinforce prior character knowledge. Mark also reported guessing words based on other words sharing the same character and this could help build connections between words. He also uses the context information, especially when he cannot work out the meaning based on the constituent characters (see 6.3.2.c).

b. Using a dictionary

Mark uses an online e-dictionary called *ArchChinese*. The website can be used to search for both individual characters and words through radical-search, Pinyin-search or English-search (see the screenshot below). Mark uses radical-search to locate unknown characters and uses Pinyin-search to locate unknown words. The two processes are introduced, respectively, next.

Figure 6.1 Screenshot for *ArchChinese* searching functions

Searching for characters

Mark uses radical-search to locate characters when the pronunciation of a character is unknown, which involves the steps of: 1) identifying the radical of a character; 2) counting how many strokes are there in the radical; 3) locating the radical in the corresponding stroke-number group; 4) counting the number of strokes left in the character; and 5) locating the character in the corresponding stroke-number group. Using radical-search, hence, requires knowledge about the Chinese orthographic system, i.e. radicals and strokes as well as the skills of identifying radicals and counting stroke numbers. Mark can use radical-search skilfully. This provides opportunities to accumulate and reinforce the abovementioned knowledge and to practise relevant skills, which might have further contributed to Mark's good character-component knowledge.

As for the information Mark obtains, Figure 6.2 shows the screenshot of a character 汁 (zhi) in the dictionary.

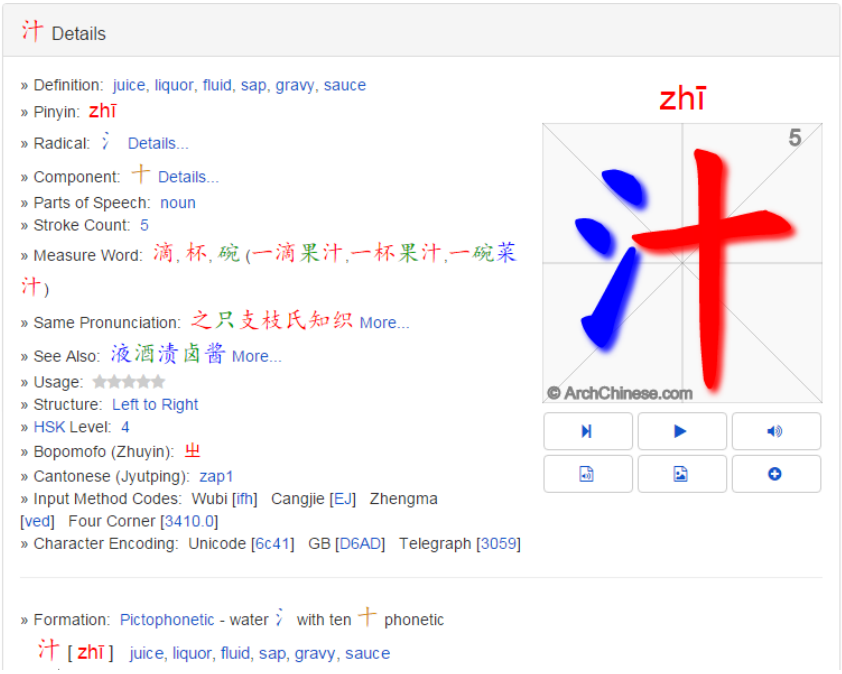


Figure 6.2 Screenshot of information listed for the character 汁 in *ArchChinese*

The dictionary also lists words containing this character (see Figure 6.3).

Figure 6.3 Screenshot of words containing 汁 in *ArchChinese*

The character-information Mark reported obtaining from the dictionary is: 1) character pronunciation; 2) character-meaning in English; 3) what radical it has; 4) the animation of how the character is written stroke by stroke; and 5) its HSK level. He pays special attention to radicals and stroke orders, which could have contributed to his good character-component knowledge and skill in relation to counting strokes. Mark uses the

HSK-level information to help him select characters to note down, which demonstrates paying selective attention to character learning. He does not focus on to words containing the same character, which could have been used as a good strategy to build connections between words semantically.

Searching for words

When searching for words (i.e. new character-combinations), Mark reported that "I will generally just look at its meaning" (MAR_INT_2) and he continues reading the text. He reported that "the dictionary will just give you that meaning", and he does not seem to notice that the dictionary also provides part of speech, example sentences and the HSK level for the words. He perhaps could make better use of the dictionary and use strategies, such as browsing, comparing and summarising meaning entries as well as analysing a few example sentences. Compared to obtaining character information, Mark pays less effort in obtaining word information, which in a way reflects his main learning focus being the individual characters (i.e. word parts) and a limitation in relation to learning words. This could be a reason for the imbalance between his character learning achievement (estimated as being about HSK level 6) and his overall language using skills (estimated as being about HSK level 4). Mark explained that as he only has limited study time, he tries to understand the new words from the contexts in the textbook, rather than using the dictionary. His searching-strategy use seems to be influenced by his self-regulation and he prioritises character learning over word learning, which arguably is influenced by his personal interests and beliefs about the importance of learning characters, as discussed in 6.3.1.a.

c. Using a translating website

Mark uses the *Google translate* website when he has problems understanding the text due to either word segmentation difficulties or unknown grammar structures. When trying to segment words, he reads the phrase a few times, underlines it, tries to segment it in different ways and tries his guess in the dictionary. In MAR_THI_1, he mistakenly segmented 抢先/道 as 抢/先, and searched for 先道 (xiāndào) in the dictionary, but did not find anything as it is not an actual word. He reported the following.

> M: This is my problem. I am not sure which of these characters combine with each other, I will have to actually look, in this situation, I will look it in the Google translate, and type the three in the Google, very often they decide it for you. (MAR_THI_1)

Mark identified the word segmentation issue and stated that *Google translate* is his usual solution. For this particular incident, the translate website failed to provide the appropriate word segmentation, perhaps because the character 道 (dào) can be used to represent two morphemes, "to speak" or "a road", which makes it difficult for translations machine to work effectively. Mark concluded "that does not make sense to me, so I will leave that a question mark and ask someone later".

On another occasion, in MAR_THI_1, the problem was caused by unknown grammar rules. Mark again was seeking help from the translate website, which again failed to provide a reasonable translation. The Chinese sentence "你才怪呢", which means "You are the one who is actually strange" was translated as "you flying pig". While laughing about it, Mark commented that "I think this can give you an idea of the problems you have in self-study, in that the sources that are available to me can be misleading". He then tried to work out the meaning based on the context, and almost succeeded, reporting "I think his wife is saying to him you are crazy" because "怪 means *strange*". He then correctly identified the part that puzzled him, saying "it is 才 that confuses me". Here the grammar structure "才…呢" was used to mean "actually, really" in an assertion or contradiction situation, emphasising what comes before 才 (in this case, "you").

The two examples reflect that recognising the characters is only the first step in reading and comprehending written Chinese requires other aspects of word as well as grammar knowledge. Word segmentation and processing grammatical structures create difficulties in reading for Mark, although he has recognised most commonly used characters. He uses a translation website to solve problems, but it does not always work.

d. Asking L1 Chinese speakers

Mark plans to meet with L1 Chinese speakers, which he does regularly. He mainly asks for help in reading comprehension (such as difficulties with word segmentation and grammar), and this can, to some extent, provide him with more information about the meaning and use aspect of word knowledge, but the quality of the information arguably depends on how well the person can explain vocabulary and grammar. During the data collection period, Mark also asked for my help when he had specific, non-strategy-related questions. He often prepared his questions in advance, but these were different from Sarah's, as they mostly were about requesting explanations for the meanings of words, phrases or sentences or in relation to correcting tones. Mark did not often ask for explicit

explanations about how to use words, and did not make his own sentences immediately or even afterwards. This suggests that he does not make a deliberate effort towards learning the use aspect, which is a limitation in his vocabulary learning.

If Mark hears an unknown word in a conversation, he wants to know what characters are used for that word, and hence will ask the speaker.

> M: If somebody mentions a word that I have never heard of before, if they repeat it, and I repeat it back to them, and then I say ok what does that mean and they tell me, I will forget it by the end of the conversation, unless I find out what the characters are, write the meaning down, and write it on my list. Yeah, I will actually forget it, so writing the character down really helps me to improve my vocabulary in an oral sense and a conversational sense. I cannot disassociate writing characters from speaking and reading, I just find it is an important part. (MAR_INT_2)

Mark's report shows clear awareness about what strategies work and do not work for him to remember words, which seems to come from his self-reflection on past events. He evaluates that compared to simply obtaining the meaning of an unknown word by ear, obtaining the character information and writes down the characters for that word, leads to better learning outcomes. This effect, perhaps, can be explained as knowing that the written characters can help pin down what morpheme(s) are used in the target word (as discussed in 2.4) and hence, contributes to the processing of the new word, especially when the word formation method is compounded by following syntax rules. Knowing the characters or morphemes can also provide opportunities to connect the new word with previously learned ones. This arguably demonstrates a reverse process, in which a strong development in written Chinese could contribute to spoken Chinese. Mark benefits from asking about the characters in a word, because he has solid character knowledge and knowing the characters can allow him to access morpheme knowledge as well as facilitate processing new words more effectively. Beginners or learners who do not have strong character foundation are less likely to find this strategy useful.

6.3.3 Keeping and using records of word information

Mark keeps character notes and makes systematic use of these. In comparison, his word notes are less structured and are not used proactively afterwards.

a. Types, formats, and aspects of word information in the learners' records

Mark selects the characters that are labelled as "most common" by the dictionary and accumulates his own character lists as his notes. He designs the format of the character

lists so that he can use them to review characters systematically. He notes characters on a piece of A4 paper and always keeps to 200 characters on each page. On one side of the paper (see Figure 6.4 below), he writes down the Pinyin and the character, whilst on the other side (see Figure 6.5 below), he writes down the Pinyin and the meaning of the character in English.

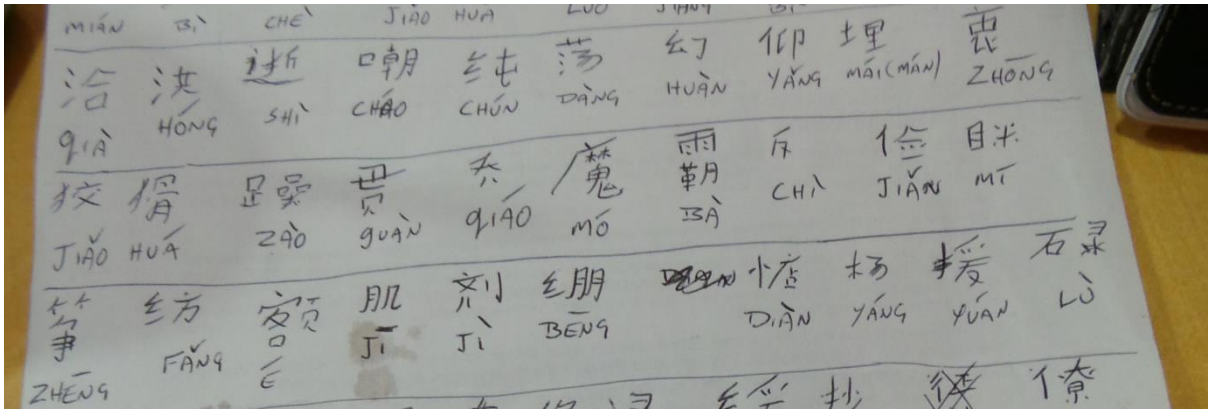


Figure 6.4 One side of the character notes: Pinyin and characters

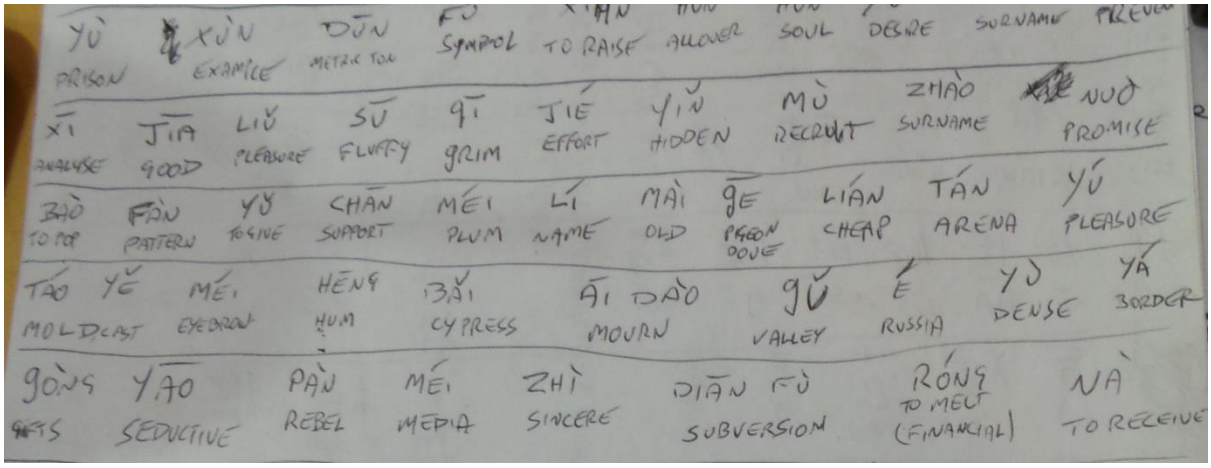


Figure 6.5 The other side of the character notes: Pinyin and meaning

The reason he keeps notes in this format is that he can look at the Pinyin-character side and try to recall its meaning or look at the Pinyin-meaning side and try to recall the character. It is a simple but efficient format for learning and consolidating characters. Having the character information split is a useful arrangement, as he can not only record useful information, for he is also able to use the notes to retrieve them for testing himself later.

Mark's word notes are kept in the textbook margins and are mainly about the meanings of new words (i.e. character combinations). He does not keep them separately, because he has not found a logical way to organise words so that he can use the notes. This, on

the one hand, suggests that Mark chooses strategies in consideration of the whole learning process: if he is not able to find a way to use the notes, he does not keep them. Whilst on the other hand, this again indicates a lack of effort or available strategies for learning words in Chinese.

b. Strategies for using the learners' records

Mark uses his character lists to establish and consolidate character knowledge regularly and systematically in a disciplined manner, which is discussed in detail in subsections 6.3.4.b and 6.3.5. He does not have deliberate or structured use of word notes in the textbook, and stated that he is "hoping that during my reading, I see things often enough to memorise the meanings", thus suggesting an incidental approach to learning words. This again reflects his strong emphasis on learning individual characters and perhaps a lack of direct attention and effort towards learning words.

6.3.4 Establishing word knowledge

This subsection, first, investigates how Mark actively divides his vocabulary learning into character learning and word (character-combination) learning, which involves focusing on establishing different aspects of word knowledge for each part. It then describes his strategies in learning characters and words, respectively.

a. Dealing with morpheme-word relationship & multi-aspects of word knowledge

Mark clearly has two separated processes for character or morpheme learning and word learning. When he encounters a new character, he uses radical-search, obtains various types of character information, keeps organised character notes and reviews these regularly. When he encounters a new word, he uses Pinyin-search, obtains only the meaning, and notes it down in the margin, which he will only see again when he rereads the book. Mark establishes character knowledge through his character-writing activity every day and establishes word knowledge through rereading the textbook after he manages the characters. He articulated his strategy use as the following.

> M: There are two aspects to this, there is the character itself, am I familiar with how to write it, how to pronounce it, what its basic meaning is. But there is also its meaning as a word when combined with another character. […] and I am also looking for new words that consist of characters I already know. So, I am trying to distinguish here between characters and words, if you like. (MAR_INT_1)

Mark's separation of learning the two levels of Chinese lexical units, i.e. morpheme and words, is conducted intentionally, consistently and systematically, which thus can be

considered as a strategy for dealing with the relationship between the two. Mark mainly deals with form knowledge (the spoken form, the written form, the morpheme meaning) when character learning, and other aspects during word learning. Direct morpheme learning can lead to explicit morpheme knowledge, which can also be beneficial for word learning, especially for morphologically transparent words. Mark uses morpheme knowledge in processing words in his rereading the textbook activity.

> M: […] these books I read, I never just read them once, and there is a reason for this. Because, as I explained earlier, it's more about my capturing over the characters, when I read chapter 1 there will be a list of characters that I added to my list. By the time I get to chapter 15, there are a whole lot of other characters, but by then I am fully caught up with the chapter 1 characters. So now when I went back to read chapter 1, this time I know all the characters. And when I read through the characters, because it springs back into my memory […] So, it is usually that kind of iterative process where I first of all learn this Pinyin and then this character, but it only really comes into life when I actually read it again, when it starts to make sense, that is when it really becomes real to me, that is when it becomes concrete, up until then it is just like an academic kind of exercise. (MAR_INT_1)

The reason why Mark chooses to only reread the textbook after he has finished all the lessons (rather than reviewing on a lesson by lesson basis) is that this arrangement gives him the time to master the individual characters by doing his character learning activities. Thus, by the time he reads the same lesson again, he should know all the characters and only then does he start to pay attention to learning the words (i.e. character combinations). This indicates that Mark learns the morphemes first and the words later. He described how the character knowledge "springs back into my memory" and helped him comprehend the words, suggesting that he is using morpheme knowledge involuntarily. He also reported that he does not intentionally think about the individual characters/morphemes in words, thus not using morpheme knowledge to process words. From the examples he gave, Mark only pays attention to the constituent characters, if he recognises them as being used as words before or the meaning connections between the morphemes and the whole words are obvious, such as the 国 (guó) "country" in words like 中国 (zhōngguó) "China", 英国 (yingguo) "England" and 韩国 (hánguó), "Korea". He reported that he does not pay attention to characters in words like 喜欢 (xǐhuān) "to like", 希望 (xīwàng) "to hope" and 知道 (zhīdào) "to know", because "I very rarely see them [i.e. individual characters] sitting on their own" so that "I don't really look at the individual characters." and "I just accept that combination means that, and that is it, end of story". (MAR_INT_2).

Mark also reported using the strategies of analysing the semantic connections between the constituent morphemes and the whole words, as well as associating words containing the same constituent morphemes, but they are again used in a less deliberate manner. He reported subconsciously connecting 失望 (shīwàng) "to disappoint" with 希望 (xīwàng) "to hope" as they contain the same morpheme 望 (wàng).

> M: Subconsciously I do think about other words, and I do subconsciously try and structure them and relate them when I am reading texts. […] But certainly when I am reading, yes, I very often, without even trying, more or less subconsciously, I do kind of relate things, and I do sometimes, think ah, yes, that has a vague meaning about this, that word has a similar meaning, so I can see how it is been used to construct a word, but I don't really analyse it too much; it is more subconscious. (MAR_INT_2)

Therefore, despite Mark learning characters or morphemes directly and having a good explicit character knowledge, he uses the three morpheme-related strategies, i.e. paying attention to the constituent morpheme meanings, analysing the meaning relationship between the constituent morphemes and the whole words, and associating words based on the constituent morphemes, to a limited extent, which all arguably would facilitate vocabulary development more efficiently. Mark's use of morpheme-related strategies seems to be influenced by his learner knowledge about characters, as he does not seem to recognise fully the nature of a character being used to represent morpheme(s).

> M: The meaning on my [character] list is not really an official meaning, if you like. It is just a reminder to me of what particular character I am trying to write. It is not meant to be a hard and fast definition of that character. […] It is just a personal reminder for me. (MAR_INT_2)

Mark believes that the characters that do not stand-alone (i.e. bound-root morphemes) do not have concrete meanings and that the character meaning(s) he notes down are not accurate definitions. Also, he holds the learner belief that there is no practical value in using these strategies.

> M: I think because probably I don't have time, and I am probably more interested in trying to develop practical understanding, rather than trying to develop a real kind of academic kind of understanding of the individual characters. I mean maybe I will do that when I am 90, but right now, my focus is on learning the practical usage. (MAR_INT_2)

Mark's learner knowledge and learner belief seem to have limited his strategy uses when dealing with morpheme-word relationship in Chinese. Due to the morphological features of Chinese vocabulary (as explained in 2.4), there would appear to be great value in using morpheme-related strategies more intentionally and consistently. Paying attention to and

retrieving the meanings of constituent characters as well as recalling and associating words containing the same characters could reinforce prior character or word knowledge. Analysing the semantic relationships between the morphemes and the whole word can help process the form and meaning aspects of word knowledge, as well. Learning characters or word parts separately to words, as mentioned earlier, can be extremely theoretical, boring and labour-intense, but this may have led to Mark's very explicit character knowledge. His personal interest in the characters along with his personality being very goal-orientated, strong-willed, and highly self-disciplined appear to have contributed to this learning approach. Also, Mark seems to have an analytic cognitive learning style, which is consistent with an assembling process of learning the word parts first and later combining them together as words.

b. Establishing morpheme (i.e. Chinese character) knowledge

Mark memorises characters directly from the character list he accumulates. He handwrites/copies each character on the latest page, once every time and keeps revisiting this page every day until it amounts to 200 characters. By then, he can usually recall most of the characters on the page based on their Pinyin and meaning as well as handwrite them correctly. Then, he starts a new page, learns the new latest page every day and puts the previous page into the rotating system for consolidation. Mark sets himself a very high standard for character learning in that he aims to be able to handwrite them from memory, rather than simply recognise them. His learning goal is set partly, because "way back then, I think I thought I will have to memorise the characters in order to recognise them" (MAR_INT_2), suggesting he was unaware of the possibility of separating character recognition and handwriting, hence showing a lack of learner knowledge about available character learning strategies. He also evaluated that "writing the character helps […] so you can recognise it more quickly" (MAR_INT_2).

When learning a new character, Mark looks at the Pinyin-character side of the notes and pronounces the character mentally or out loud, first, so as to learn its spoken form. He admits that tone learning is mostly neglected during this process.

> M: […] the character has a lot going on there, so that means the tone mark is just yet another thing. But I think the tone mark is something that only affects you when you are talking […]. So, I think that is why the tone mark tends to be the last thing that gets memorised with me, because I don't need to know the tone mark to remember how to write the character, to remember how to read it. It is only when it comes to me when I try to speak it, but I tend to do more reading and writing than

> I do to speaking, so the tone mark tends to be the last thing that practically comes into use. (MAR_INT_2)

Mark agrees that memorising a character with Pinyin (excluding the tone), meaning and its shape is already a complex task, such that he is unable to pay enough attention to the tones. He clearly puts more emphasis into learning written Chinese over spoken Chinese, so he has chosen to delay learning tones. However, he plans to pay more attention them when he has consolidated handwriting characters (as discussed in 6.3.5). After pronouncing the character, Mark copies it once to learn its written form. He tries to recall the meaning based on the Pinyin and the character, and if he forgets it, he looks at the back side (with Pinyin/meaning) for the answer. The meaning retrieval helps to build the form and meaning connection of a character, and revisiting the character every day for several days provides spaced repetition, both of which are believed to be more effective for vocabulary learning than rote learning.

With regards to memorising how to handwrite a character, Mark reported that he learns "simply by writing and writing". A closer examination on his think-aloud data, however, suggests that he uses multiple cognitive strategies other than simple copying and spaced repetition during character writing.

> M: I am looking for things that may jog my memory in future for how to […] when I read this one (pointing at the pinyin-character note) I am looking for anything in that character that may remind me of what it should look like. For example, for this one, 纲, which I have written as "main point", it has the components 冈, so that I will, when I see the word 纲 I will try and remember that it has this component. Once I remember that, the only thing else I have to remember is the second component. (MAR_THI_3)

Rather than perceiving a character as a group of strokes, Mark actively tries to divide a character into components and identify the character component(s) he knows. The use of component-strategies helps reduce the number of information chunks that need to be memorised and hence, can improve learning outcomes. Mark almost always divides a new character into components and can recognise at least one component (see transcription for MAR_THI_3 for more examples), the suggesting that he has a fluent skill in relation to dividing characters logically as well as good character-component knowledge. His use of radical-search and paying attention to character components when using a dictionary along with constantly identifying components when processing a new character or consolidating an old (discussed in 6.3.5) could all help him to develop such skills and knowledge.

In addition, Mark always makes an immediate judgement about whether he believes a character is going to be easy or hard to remember, based on whether he can identify semantic or phonetic components. For learning the character 撤, he predicted it as a difficult character to learn, because he could not make sense of the character components.

> M: 撤 (chè) ["withdraw"] to me this is no logic in it. If I analyse this, it has the 手 component ["hand"], 育 as in education, and 文 ["language"]. So, nothing there will remind me that 撤 (chè) should look like that. So, again I can almost predict that I will have problems memorising that one. There is nothing phonetically to remind me that and meaning wise there is nothing there that strikes me as it should be 撤. (MAR_THI_3)

Mark predicts the learning difficulty for almost every character and this process naturally involves analysing each component and associating them with the whole character phonetically and semantically, which can increase the depth of processing. He can recognise either or both semantic and phonetic components almost immediately, using them to process and associate characters intentionally and consistently. For example, he reported the memorisation of 纺 (Fǎng) "to wave" as "the silk sign [i.e. 纟] here for "waving" and 方 (fāng) gives the phonetic, which is nice and easy" (MAR_THI_3 and for more examples). In particular, he has clear knowledge about phonetic components, reporting that "a lot of the characters have similarities of other characters [...] some of them have quite obvious indications, because of the pronunciation" (MAR_INT_1). As the phonetic component can be a simple character itself (as explained in 2.3.3), identifying and using phonetic components can reinforce prior character knowledge. Even when phonetic components are not simple characters and so Mark might not know the sounds of them directly, he still can identify phonetic components by pointing out a group of characters that all have the same component and are pronounced the same or similarly. For example, when learning the character 躁 (zào), he reported that "the next part is fairly easy, because there are many *zao* type of characters, where it is 澡 (zǎo) meaning "bath", 噪 (zào) meaning "noise", so I will remember that as zào" (MAR_THI_3).

During the process of analysing semantic and phonetic components and using them to associate characters, Mark shows a high tolerance of irregularity. He is not bothered by the situation that a character containing the hand-radical has no obvious meaning link to "hand" or "actions". He is also able to use the phonetic components when the phonetic links are less obvious and links the target character 杭 (háng) with 亢 (kàng) as "the -ang

type of sounds" (MAR_THI_3). In relation to memorising the character 惩 (chéng) he reported the following.

> M: Now 惩 [chéng, "to punish"], this is probably stretching it a bit. It has the character 征 (zhēng), obviously that is stretching it, but what I remember is that it ends with *–eng*. Like I said it is not precise, it is not scientific, but it helps you jog your memory when you try to think of what it looks like. (MAR_THI_3)

This personality trait of being highly tolerant with irregularity is perhaps very necessary when using components to learn characters, as the Chinese orthographic system reflects sounds and meanings in a very irregular way (as explained in 2.3.2 and 2.3.3). Mark's ability to use phonetic components, especially when the links are weak, suggests he has solid mastery of previously-learned characters, which probably comes from his diligent consolidation strategy use, whereby he can quickly retrieve relevant characters based on similar sound-parts or shared character components. Very occasionally, Mark missed some phonetic components (see MAR_THI_3 for more examples). For example, in learning 荡 (dàng), he reported "nothing particular to remind me of dang-ish" when there is the phonetic component 汤 (tāng) in the lower part. In many of the cases, Mark could remember relevant characters and made the connections himself, if I asked him to think again or pointed out the component for him. This suggests that even Mark, who has very good character-component knowledge and can, in general, use character-component strategies skilfully, could benefit from some assistance from a teacher or a learning exercise to improve strategy uses.

c. Establishing word (i.e. morpheme combinations) knowledge

Mark spends less deliberate effort and uses a more incidental approach to establish word knowledge in that he learns words simply by reading them in the textbook twice. With the first time reading, he looks new words up, searches and notes down the English translations and then continues reading. He does not have much intentional learning as "I just try and memorise it knowing that I may have to look it up again in subsequent occasions" (MAR_INT_1). During the second time reading, he focuses on comprehending and learning the grammatical features of the word in the context.

> […] When I go back to reread it, not only does everything seem clearer, I actually start to absorb the grammatical structures surrounding the previously-new words. (MAR_FOL_8)

> I've now completed that book I was reading and so I'm starting again from the beginning. Sure enough, it's now becoming much more fluent and I can feel that I'm absorbing a lot of grammar. (MAR_FOL_9)

After establishing the form knowledge, including new characters, new character combinations/words and simple translation from the first time reading, which Mark describes as "kind of straight, very soulless and not particularly descriptive" (MAR_INT_2), he establishes the meaning and use aspects of word knowledge more in the second time reading, because "when you see the context, […] it helps you to understand it a lot better and easier" (MAR_INT_2). However, he pointed out that he could not always be sure that his comprehension is correct, which is one of the "pitfalls" (MAR_INT_2) of his self-study, thus suggesting a good learner awareness about his own limitations in relation to learning. He also reflected that he does not use words actively.

> My biggest problem is my lack of practical experience. I really need to be able to converse casually with Chinese people on a regular basis. Without this, my studies will always have a slightly academic edge to them and progress will always be stunted. (MAR_FOL_1)

After identifying this issue in learning, Mark adjusted his strategy use by using social strategies, such as interacting with L1 Chinese speakers to compensate, which demonstrates good learner self-regulation in solving problems and improving strategy use, as can be seen from the following report two months later.

> The end of each chapter of my most recent course book always presents various sentence patterns […] so my main task in the near future is to look for opportunities to use these phrases in order to memorise them and make them a part of my everyday speech. (MAR_FOL_4)

Mark actively plans to use certain phrases he has learned from the textbook in practical conversations with L1 Chinese speakers. This demonstrates learning vocabulary in an intentional manner, planning for practising certain lexical items and effort being put into learning the use aspect. In later reports, Mark continued to increase his participation in study groups and language exchange activities with L1 Chinese speakers, but also carefully evaluated and selected activities, as shown below.

> While my own desire for military-style organisation forms the remainder of the problem. […] the last article that we used was quite complicated for me and there were too many new words. While this is useful as a challenge for me, it conflicts with my regular reading and I have no time to memorise all the new stuff. Ideally, the article would contain words I'm familiar with so that I can just concentrate on speaking, rather than learning new words. (MAR_FOL_7)

> Last year I had the opportunity to practise with a Chinese friend; that came to an end in October. Since then I have had only occasional opportunities to practise – most of my learning has revolved around reading and writing. I'm hoping that I can continue to practice with Ying on a regular basis because it's obvious to me that for the last six months I've just been treading water. Admittedly I've learnt new grammar and characters by reading books, but the lack of practical experience really showed today and I felt quite deflated. (MAR_DIA_9)

Mark's reflection, as suggested from the above examples, is quite in-depth, for it indicates that he considers a number of factors, such as whether the activities match with his own proficiency level, learning pace and preferences, specific goals for different activities, difficulties or limitations in learning, the ratio of new words in the activities, the learning environment and how the activities should be organised (see FOL_7 and 9 for more information). These evaluation, reflection and causal attributions can help develop knowledge, awareness and beliefs about his own study. In addition, he plans quite specifically about his goals and ways to conduct learning activities based on his learning needs.

> Ying criticised my pronunciation […] It will take many more months of listening before I understand the exact nature of the sound – only then will I be able to attempt to pronounce it correctly. For this reason, I have suggested that she be less strict with me regarding pronunciation. From my perspective, it's more a matter of time and experience that will enable me to improve my pronunciation. (MAR_DIA_10)

> Recently I've been noticing problems with my pronunciation. […] I decided to see a Chinese teacher to help me understand where I need to focus in order to improve. (MAR_DIA_16)

Judging from his reports, Mark frequently reflects on his own learning, identifies problems and proposes further plans and solutions, including seeking help from a language exchange partner or a teacher, which demonstrates a high degree of learner self-regulation.

6.3.5 Consolidating word knowledge

Mark uses deliberate and systematic consolidating strategies for character learning. He consolidates by handwriting 200 old characters as a daily routine and has a rotating system. He looks at the Pinyin-meaning side of the character lists, then recalls and handwrites the characters from memory one by one on an exercise sheet. If he forgets a character, he checks the answer from the back side of the notes. This consolidation activity involves retrieval and spaced repetition, which are all effective for vocabulary memorisation. Mark can handwrite most characters fluently, almost without hesitation.

In addition, his use of characters in reading textbooks and texts from online chatting helps consolidate them in a less structured way.

Mark emphasises character consolidation strongly, as "I find it is the only way for me to memorise characters" (MAR_INT_1), and reported his reasoning "behind this obsession with writing characters repeatedly" as being that "I'm old" (MAR_FOL_1), thus indicating his perception of the age factor. He has also developed his learner belief that characters need to be consolidated in a structured way from monitoring and evaluating his own study, as stated below.

> M: […] a couple of times I have decided not to do this, because I thought, OK, I have memorised all these now. I don't need to do this anymore […] and I realise even just for a couple of months, they have left my memory. So, I do find that if I don't do this daily kind of character writing, I do forget them. Even if I read them, I forget how to write them. (MAR_INT_1)

Besides aiming to keep the character knowledge, Mark also pays extra attention to tones when he looks at the Pinyin whilst handwriting characters, which is the last aspect he has managed to learn. This suggests that Mark enhances his word knowledge in consolidating activities.

> M: […] actually the Pinyin [on the character lists] is useful, because in some way it helps me memorise both Pinyin and the tone marks. The tone marks, as I said earlier, they are the last thing I kind of memorise, but I think nonetheless, whenever I look at the list, I do subconsciously notice the tone mark. So, even when I am writing the characters, the tone marks kind of sink in slowly, gradually. (MAR_INT_2)

Mark does not use deliberate or structured consolidating strategies for words except during his second time of reading the textbook. He finds "because I'm reading much more quickly, I'm encountering regular words much more frequently, helping my conversation with friends (MAR_FOL_8)", thereby indicating that by consolidating words through reading he becomes better at applying these words to speaking.

6.3.6 Using word knowledge

When using words in conversation, Mark tries to retrieve and visualise the tone marks and "I find my head moving" (MAR_INT_1), mimicking the tone mark shape (e.g. straight line, V-shape) so as to emphasise the tones and say them accurately. When trying to retrieve words that he does not use very often, he reported that "I do end up thinking about the characters, and how they look, and what those characters are" (MAR_INT_2),

which indicates that he tries to use character/morpheme knowledge to activate his word knowledge.

6.4 Mark's Chinese vocabulary learning approach: an overview

Mark learns Chinese vocabulary in a structured and methodical way, and his overall approach seems to be primarily influenced by some personal factors, such as his extremely conscientious and self-disciplined personality, his analytic learning style, his strong interest in Chinese characters and his high degree of self-regulation (both meta-knowledge and use of meta-strategies) in response to the specific task factor of learning Chinese vocabulary and other personal, task and contextual factors. He puts deliberate effort in learning lexical items encountered from reading the textbooks and focuses on different aspects of word knowledge through different activities laid out as a set of steps. He consciously separates the learning of characters (i.e. word parts) and words, first, learning the characters by employing a daily character handwriting activity and later using them to process words (i.e. character combinations) whilst reading textbooks. As he reads the same textbook twice, he has the opportunities to establish form knowledge (i.e. the spoken form, written form, word parts) and basic form-meaning connection of a word, first, and during the second time reading, with the aim of establishing the meaning and use aspects of word knowledge, he pays more attention to comprehending the word in the text. Mark is a highly self-regulated learner. He plans his learning activities and selects strategies based on careful consideration about various factors. He displays thorough evaluation and reflection about his own learning, spots limitations and weaknesses and tries to improve by changing or adjusting strategies. The use of these meta-strategies contributes to his learner meta-knowledge development, regarding which, he reported discovering more about the Chinese language system and what strategies work or do not work for him while making progress in his Chinese learning.

Mark has adopted different approaches for learning characters and words in Chinese in that characters are mostly learned through intentional learning activities, whereas words are learned in a more incidental manner. Surely his success with character learning has partly resulted from the time and effort he puts in to practising writing characters daily, which demonstrates great commitment and self-discipline. However, his overall learning approach is also strategic. He selected and learned the most commonly used 400 characters mostly with non-orthographic-knowledge-based strategies, such as handwriting and spaced repetition. By the time he participated in this study, he had developed the knowledge and skills mainly to use orthographic-knowledge-based

strategies to learn characters. He divides a character into components, identifies phonetic/semantic components, and uses the components to associate characters skilfully. These strategies increase depth of processing and attach new information with existing knowledge effectively. The use of these strategies requires basic orthographic knowledge (e.g. strokes) and skills (e.g. dividing a character), character-component knowledge (e.g. radicals) and solid mastery of basic, simple characters, for they are often used as components in compound ones (as explained in 2.3.1). To obtain these kinds of knowledge and skills, Mark's handwriting and repetition at the initial stage, using radical-search, paying attention to stroke order and radical information when using a dictionary along with regular and structured consolidation, all appear to have made important contributions to his vocabulary learning. Being able to draw on all these strategies has made his character learning very efficient. Mark's case demonstrates a developmental pattern for using character learning strategies: he started with shallow processing strategies, engaging in activities that could help develop orthographic knowledge and skills along the way and consequently, he has become able to use deeper processing strategies.

Mark puts less emphasis on learning words than characters and this could be a limitation in his learning. He uses morpheme-related strategies to process words, i.e. paying attention to the constituent character in a word, analysing the meaning relationship between the characters and the whole word as well as associating words based on the constituent characters, but not intentionally. He does not note down information other than a simple translation nor does he practise or review words in a structured manner. He appears to be able to acquire incidental knowledge about how to use a word from language use activities, such as his second-time reading of the textbook and talking with L1 Chinese speakers. The study has not identified much use of specific strategies for learning the meaning and use aspects, such as extensive use of dictionaries (e.g. browsing different meaning entries of a word in the dictionary, comparing and identifying the core meaning, reading and analysing example sentences or extracting collocational patterns of a word), which can help to form a more comprehensive and accurate understanding about a word, for such knowledge is very necessary for using words in language use activities. Mark tries to use words in his conversation, but this depends on the availability of opportunities to do so and some words might not be practised. Some more intentional strategies, such as using words to construct sentences, performing translation or creative writing would help. However, this requires more study time and Mark has already invested a considerate

amount in this. So far, Mark's learning focus seems to be on character learning, which has contributed to a solid, explicit word-part knowledge that can be used to process words effectively. However, as he progresses to a higher level, simply recognising characters rather than having comprehensive knowledge about words, might well limit his skills development. Reallocating available study time at this point would perhaps be beneficial, for whilst being able to handwrite characters is desirable, it could prove advantageous for him to put less effort into this activity in favour of word learning, whilst still engaging in character recognition. Mark's strategy uses, the influences of various factors, and his overall vocabulary learning approach are further discussed in comparison with other participants in Chapter 8. In the next chapter, Emily's strategies are discussed. She puts her main effort into learning words, but also attends to word parts

CHAPTER 7 CASE STUDY: EMILY

7.1 Introduction

The case to be reported in this chapter is an advanced-level learner who is referred to as Emily and is the last of three case studies. Emily's case was chosen to be reported in detail because she is a successful learner who has progressed from beginning to advanced level and passed HSK level 6, the highest level corresponding to CEF level C2 (Hanban, 2005) within only two years of full time studying Chinese in China. She has managed a set of strategies that are especially relevant to learning Chinese vocabulary. Different to Sarah and Mark who have mainly been studying Chinese part-time in the UK, Emily achieved her high proficiency level from studying Chinese full-time and living in China. During the data collection period, she was adjusting to a new context, which is to continue learning Chinese part-time by herself in the UK. She reported noticing limitations in using the same strategies that she had used in China and hence, had to some extent changed her strategy uses.

7.2 Emily's learner profile

Emily is 27 years old and a graduate from University College London, who majored in Geography. She speaks English as her L1 and also learned French and German at school, self-evaluating her current proficiency level for both as basic. She works as an executive assistant in a management consultancy firm in London, the main interest of which is bringing Chinese investors to the UK.

Emily moved to China to teach English as her sister was living and studying in China in 2009. In 2011, she started to learn Chinese as a full-time student as it seemed to be "a fun thing to do" (EMI_INT_2) and she passed HSK level 6 in 2013. She said the main reason why she has continued to learn Chinese is because she enjoys doing challenging things and learning Chinese is "so like up and down in your emotions" (EMI_INT_2) and "when you think you have mastered something, there is always more that is challenging" (EMI_INT_2).

There are four stages in Emily's Chinese learning history:

- **Stage 1 living in China but no intentional learning (2009-2010)**
  She worked as an English teacher in China and learned Chinese very informally by picking up basic words to get by.

- **Stage 2 learning full-time at Chinese Universities (Sep/2011-Feb/2013)**
  She attended full-time courses and had four-hour classes every weekday morning. She would also spend two hours every weekday doing homework, previewing and reviewing. In addition, she started to use Chinese to interact with native speakers.

- **Stage 3 preparing for HSK at a private language school (Feb-Aug/2013)**
  She studied at a private language school with flexible lesson timing and a focus on passing the HSK level 6. She used Chinese for daily conversation and put most of her effort into improving her reading skills to pass the exam.

- **Stage 4 self-studying in the UK (Sep/2013-data collection period)**
  She came back to London and started to self-study Chinese.

The data collection of this study occurred at stage 4 and Emily's main Chinese learning activities during this time were: she tried to self-study using a business Chinese textbook for a short period of time, but eventually stopped because she was not interested in the subject and did not set a studying routine. She regularly attends a weekly Chinese reading study group, for which she self-studies the reading materials in advance. She reads Chinese books before going to sleep every night and sometimes uses Chinese to search information for work. She listens to a Chinese news podcast made for L1 Chinese speakers and occasionally watches TV or films in Chinese for pleasure. She also occasionally speaks Chinese with a colleague and native speaker friends in London.

7.3 Emily's use of strategies in vocabulary learning sub-tasks

This section discusses Emily's use of specific strategies for each vocabulary learning sub-task, including those she used during the data collection period, and the ones she reported using in China, as they could be very relevant to her Chinese learning success.

7.3.1 Encountering new words

Emily mainly used three sources to encounter new words in China: previewing her lessons/textbooks, reading Chinese books for fun, and interacting with L1 Chinese speakers on a daily basis. In the UK, she uses a wider range of strategies: studying a Chinese business textbook and the reading materials for a weekly study group by herself, reading Chinese books for fun, reading Chinese articles for work, listening to Chinese podcasts and watching Chinese films as well as interacting with L1 Chinese speakers in London. The major change between learning in China and in the UK, as Emily described it, is that one needs to "go out of your way and keep it interesting and keep learning things"

(EMI_INT_2). She reported some evaluation and reflection about different learning sources, and tries to have more intentional learning activities to "learn" rather than merely "use" Chinese, demonstrating good learner self-regulation in response to the language environment factor. The following subsection categorises her sources when encountering new words into four kinds: intensive reading, extensive reading, listening, and interacting with L1 Chinese speakers.

a. Intensive reading

During intensive reading, Emily not only reads the text, but also learns the new vocabulary afterwards. In China, she would always preview for her courses; in the UK, she self-studied a business Chinese textbook for a while and works on the reading materials provided by a Chinese reading study group. Emily directly reads the texts, marks (e.g. underlining, circling) unknown words, and tries to infer them first. Marking the text and guessing before verifying could increase the attention on the new words and lead to better learning. Emily deliberately uses inferring, because she wants to be more mentally engaged.

> E: […] by trying to make myself think about it rather than just looking in the dictionary, I am trying to like learn more, cos it is too easy to just look everything up all the time without thinking about it. (EMI_INT_2)

She especially puts emphasis on guessing the sound of a character or word.

> E: […] If I am looking at the characters, and I don't recognise them, rather than just immediately looking it up with the handwriting function, I will try and guess the Pinyin, and have a few goes and see if I can, like, work out what the Pinyin is. (EMI_INT_3)

Emily does not use handwriting-search, but does use Pinyin-search, which pushes her into guessing the Pinyin of an unknown character. When she checks a word in the vocabulary glossary, she also tries to skip reading the Pinyin and pronounce the word by herself, as reported below.

> E: I am not looking at the Pinyin. I am just looking at the characters and the English. I am like trying to skip over the bit in the middle. […] Just because I feel like I learn it better, if I […] can imagine how to say it, then it goes in my mind better than I am just reading, like this [pointing at the Pinyin]. (EMI_THI_1)

As discussed in 3.4.1, there is adequate evidence that knowing the sound is linked or potentially leads to knowing the meaning of words in reading Chinese, and guessing the sound of a character and then verifying it can strengthen the sound-to-symbol

correspondence, thus making it a good strategy. Emily has realised the effectiveness of this strategy and actively uses it in learning, thereby demonstrating good self-regulation. After inferring, Emily verifies her guess with a dictionary, takes notes and establishes word knowledge.

Emily admitted that she does not have as much and finds it hard to keep to intensive reading activities in her self-study in the UK. When she attended courses in China, she used these strategies to preview lessons every weekday, because she would use the words the next day in class or during exams. As a full-time learner, she also had the time to use these strategies regularly. During her part-time self-study, she reported not having the same strong motivation to learn words, with it being much harder to find the time and keep the learning as a routine alongside her job and social life, so she tends to engage in more extensive reading (i.e. looking words up but no learning afterwards). This reflects how the immediate study context can influence strategy uses, and part-time self-study requires more self-regulation strategies to plan the learning and generate motivation.

After reflecting on her learning in the UK and noticing the limitations as being lack of motivation and effort in learning words properly, Emily evaluated attending the Chinese reading study group a better strategy. This group is a tandem-learning group in which L1 Chinese and L1 English speakers help each other's English learning and Chinese learning. Every week the group organiser selects a Chinese article, makes it into learning materials (i.e. editing a Pinyin-plus and translation-plus version) and puts them on the internet before the event, so the attenders can prepare in advance. Emily spends about half an hour reading the text and looking up words in the dictionary. She also quickly reviews the words just before the study group meeting starts. Emily reported preferring this strategy, because it sets a regular routine and as she needs to use the words in the reading materials to discuss with other people at the meeting, it gives her more motivation and reasons actively to establish word knowledge. She, therefore, tries to attend the study group regularly and puts significant effort into her preparation and participation. This shows good self-regulation in that Emily reflects and identifies limitations in her learning, whilst subsequently finding ways to improve it. It also highlights the value of having study groups in a non-target-language environment to motivate advanced learners into putting effort into learning vocabulary.

b. Extensive reading

Emily encounters new words through reading Chinese books for fun or Chinese articles for work, but she does not learn these words deliberately afterwards. The Chinese books Emily has been reading are the Chinese version of the *Harry Potter* series. She started to read book 1 when she was in China, and carried on, being on book 4 during the data collection period. When seeing an unknown word in extensive reading, Emily keeps on reading until she finds the unknown word important for comprehension, in which case she will go back to make a guess and then verify it with a dictionary. This demonstrates that she pays selective attention for learning words in extensive reading. The ability of using this strategy was reported as only being formed after she reached a higher proficiency level.

> E: […] When I was reading my first paragraph, it took me […] forever cos […] every single word I would have to look up. And also, I did not have the technique of disregarding things that I don't think important. […] I can remember looking up the words like "Harry Potter lives at the Private Drive", and I can remember looking up the word for "private", […] now I probably wouldn't. I see the character, […] I have read the book in English, so I would know what it meant or I know what it is supposed to mean […] now I would be like "something, something *lu* [i.e. road]" or "something, something *jie* [i.e. street]". But at the time, […] I would not even know that. So, I would be like looking and did not know where words began or where words ended […] but now it is much faster. (EMI_INT_2)

Emily reported that at when she was at a lower proficiency level she was not able to segment words easily nor to decide whether words were important, so she could not pay selective attention and had to look words up frequently. Now she uses a sentence-analysing strategy and can at least guess what an unknown word is supposed to be (e.g. a name for something). This reflects how strategy use is influenced by the proficiency level factor. Emily explained that undertaking extensive reading activities in Chinese is both for the challenge and for fun.

> E: I just like a challenge, and […] it is like a challenge to try and get to the end of the book […] I got the first book when I […] had only been learning Chinese for six months, but […] I wasn't able to read it. It just reminds me now that I can just see a sentence and I don't need to look it up. (EMI_INT_2)

> E: […] I am doing it for my own fun, and it is interesting. […] I genuinely find it fun to see words translated, like that is a funny translation like that; whereas […]. (EMI_INT_2)

Reading *Harry Potter* used to be a challenge Emily wanted to meet, but later on it became a source for obtaining a sense of fun and achievement, which can further generate motivation for learning. However, whilst Emily enjoys extensive reading, her self-evaluation below suggests that she believes extensive reading is not enough for establishing word knowledge.

> E: […] the most amount of time that I spend where I encounter a new word would be from reading articles, especially through work. But the reason I found it frustrating is that I never get to write down the words and learn them, and learn how to use them. And so I feel that all of my learning is so superficial now and it is partly my own fault for not trying harder to write the words down. But even if I learn a word, I don't know how to use it, I don't hear it in context, and that is the thing. (EMI_INT_3)

Due to the lack of direct effort in learning words, Emily evaluated her vocabulary learning from extensive reading as being superficial. She believes that she should invest more energy in learning words thoroughly, especially regarding how to use them, because she no longer has the language environment from which she can learn naturally. This is good learner self-reflection on own limitations, and Emily has been trying to increase the amount of intensive reading activities, but for various practical reasons, such as limited time and lack of motivation, as discussed earlier, she cannot do as much as she would like and this has led to frustration.

c. Listening

Emily undertakes listening activities in the UK, such as listening to the BBC Chinese news made for L1 Chinese speakers once or twice a week and occasionally watching a Chinese film. She does it mainly for practice and to improve her listening skills, but also to encounter more advanced vocabulary to learn.

> E: […] by listening to the podcast […] I kind of get my ear in tune to listening to that kind of level of conversation, rather than just every day, which is what I normally, you know. I feel like it is like trying to push myself a bit rather than just chatting to my friends, going to the meet-up group, not really saying anything too challenging. (EMI_INT_3)

> E: It just forces me to engage my brain more cos even when I am talking about it, even when I am like reading […] if I am just reading *Harry Potter*, it is literately… I am just kind of keeping it up. It is not really pushing me, because I already know the *Harry Potter*-vocab, and it is more of a, I feel I am plateauing, but with this I feel like I am trying to learn something. (EMI_INT_3)

Compared with casual conversation with friends and reading *Harry Potter*, Emily evaluated that listening to the Chinese news broadcast provides more challenging contents and she uses it to push herself to learn beyond "plateauing", which demonstrates good learner meta-knowledge about own proficiency level and different strategies, including the use of meta-strategies to evaluate and plan. However, similar to extensive reading activities, Emily considers the vocabulary learning from listening activities as being passive, as reported below.

> E: The limitations of it are I never write anything down, I never follow it up with any kind of further study, and I don't discuss it with anybody, so I am literally […] it is highly passive, I am just listening. Sometimes I […] will pause it and just type the pinyin […] in my dictionary, and I will just scan quickly to see if there is a word that jumps out at me that probably was in the context of that sentence. (EMI_INT_3)

Searching for new words in the dictionary can increase attention to them, but Emily believes that she has not learned to the full extent, because she has not followed up with further effort so as to gain comprehensive understanding of new words. On the one hand, this again demonstrates good self-evaluation and reflection, but on the other hand, it shows a mismatch in her self-regulation between her learner beliefs (i.e. more intentional vocabulary learning effort is needed) and actual strategy uses.

d. Interacting with L1 Chinese speakers

Emily interacts with L1 Chinese speakers to learn new words in both China and the UK. She considers using this strategy in China was very useful and in fact one of her main sources for encountering new vocabulary. She started do so from the very beginning stage of her learning the language, as reported below.

> E: […] so I started working at this language school in Hangzhou in September. By the end of my first semester […] February time […] my confidence was more that I felt I could speak Chinese to them. And then we were planning lessons in Chinese, and we would discuss […] even before when I was still like, very much a beginner, I would sit there and try and listen to what people were saying in the office and stuff. (EMI_INT_1)

Even though Emily had a period of time when she did not directly interact with L1 Chinese speakers and give output, she tried to absorb and accumulate input actively. The delay in producing output is an affective strategy for dealing with anxiety and building up confidence. This reflects on her personality as being conscientious and also persistent, for as she mentioned feeling "really scared because I could not understand" but kept

trying until her ears became "attuned" to the sounds (EMI_INT_1). She then started to learn new words from conversations.

> E: […] When I kind of reach the point that I felt comfortable talking with my Chinese colleagues in Chinese, so much of the things that I learned to do with work, were basically things I heard them say, and I would repeat it back to conversation. I always remember the words for the teaching plan for the lesson, because so often we were talking about it. I have never studied it, but I kind of just picked up things like that. And phrases and useful things, but only just from hearing it repeatedly over and over again. (EMI_INT_2)

Even during the beginning stage, Emily reported learning new words and phrases by hearing and repeating them frequently in natural language use activities. She did not feel overwhelmed by the less-controlled vocabulary input and learned in an incidental manner. This could be related to her personality trait of having a very high tolerance of ambiguity. Also, she mainly learned through a work environment, in which a certain group of words were naturally selected and reused, because "we planned lessons together and played the same activities, it was the same words being used" (EMI_INT_1), which might have, in a way, restricted the vocabulary input and thus, given her sufficient opportunities to reinforce words. She reported later learning vocabulary from other contexts and using some strategies to support this incidental vocabulary learning process.

> E: […] If I am conscious of a word that I don't necessarily know, I will just listen to the whole sentence, hear the context, and just make a little assumption in my brain. (EMI_INT_3)

> E: I can kind of talk around it, and see if I get a positive response. So, if someone asks me a question, and I am not 100% sure what they are asking me, […] I will discuss something that is related to it, and see how they respond to it […]. (EMI_INT_1)

> E: […] a lot of language learning is kind of almost predicting what people are gonna say, […] if you think you already know what someone […] is likely to say, it is more of a case of recognising that is what I expected them to say than kind of go starting from nothing. (EMI_INT_1)

The communication strategies being used, such as guessing based on the context, talking around the subject matter to obtain responses, and predicting using schematic knowledge, all help Emily to stay in the conversation, which increases her chances of further acquiring new words.

Emily also interacts with L1 Chinese speakers in the UK, such as attending the reading study group to "try and use some words that I don't know, or talk about some words I

haven't come across before" (EMI_INT_3). However, as she is at an advanced level, she evaluated that the quality of learning from the group "depends on who is there, what level of conversation you can have" (EMI_INT_3). She also uses Chinese to interact with her colleague or when meeting friends in the UK, but evaluated it as being less useful in terms of encountering new words for two reasons: the non-target-language environment simply does not provide sufficient input to introduce new words and casual conversations tend to involve the same simple vocabulary, which is why Emily tries to partake in intensive reading and listening activities (as discussed earlier) to encounter new words in the UK. Emily's case demonstrates how the effectiveness of the same strategy, i.e. interacting with L1 speakers, can be influenced by the language environment and proficiency level factors. She, as a highly self-regulated learner, attends to these factors and adjusts strategy uses accordingly.

To summarise Emily's strategies for encountering new words, she learned most of her vocabulary when she was in China through two sources: intensive reading required by her courses, where words could be learned thoroughly and learning from the target-language-environment, naturally. In the UK, she finds the first source helpful, but she does not have strong motivation to continue using it, whereas the second source she considers less useful due to an inadequate language-input environment owing to her more advanced level. During the data collection period, Emily explored other sources or better ways to implement certain strategies (e.g. attending the reading study group for better intensive reading), and used a wider range of strategies including intensive and extensive reading along with listening and interacting with L1 speakers. She considers her current progress in her learning as being unsatisfactory, which frustrates her, because she thinks she is not reaching her full potential. However, in reality, she is a highly self-regulated learner and is in the process of improving and adjusting her learning in response to the change in contexts (i.e. in China/UK, full/part-time).

7.3.2 Searching for word information

Emily uses inferring, an e-dictionary and asking L1 Chinese speakers in order to search for word information. She seeks information regarding both individual characters and words.

a. Inferring

Emily reported inferring words in both listening and reading. She uses the communication strategies, as discussed in 7.3.1.d, to infer words in conversation and evaluates this in

listening as being harder than doing so when reading, because the written characters provide more clues. Emily infers both unknown characters and whole words during reading. To infer the sound or meaning of an unknown character, she uses the phonetic and semantic components directly or indirectly. The direct use of character-components is knowing and using the sound or meaning of the phonetic or semantic components to form the guess (same as with Mark's main character guessing strategy discussed in 6.3.2). Emily also reported that for many radicals "I just know that that is the radical, don't necessarily know what it means" (EMI_INT_1) and she often guesses based on other characters sharing the same component, thus suggesting an indirect use of character-components to infer. This could be related to her strategy use for establishing character knowledge: she divides a character into its components to reduce the number of information chunks for memorisation and then tries to build connections between those characters sharing the same component, but she does not make any special effort in memorising the sound or meaning of the components themselves (discussed more in 7.3.4.d).

When inferring the meaning of unknown words, Emily also uses character/morpheme knowledge directly and indirectly. The direct use of character knowledge involves explicitly knowing and using the definition of the constituent characters to form the guess of the target word (same as with Mark's main word guessing strategy discussed in 6.3.2). Emily occasionally uses this strategy, but reported that she often does not possess explicit character knowledge and cannot articulate the definitions for individual characters (unless they are one-character words). She, however, has some rudimentary understanding about the character meaning based on the words in which a character appears, so she mainly uses words containing the same constituent characters to guess. She gave the example of 平安 (píng'ān) meaning "safely", reporting that if she were to guess this word, she thinks about what other words contain 平 (píng) and 安 (ān), respectively. She thinks about 平 (píng) as being related to 和平 (hépíng) meaning "peace", and 安 (ān) as being related to 安全 (ānquán) meaning "safe". In her mind, 平 (píng), therefore, has the "peace-ish" meaning and 安 has the "safe-ish" meaning, which explains why the word 平安 (píng'ān) would mean "safely" exactly. She also reported that when trying to guess the meaning of a two-character word, she often sees herself "making a two-character word into a four-character word, this word is this word and this word", e.g. 平安 (píng'ān) is 和平 (hépíng) and 安全 (ānquán). So, Emily's word guessing strategy is to use words she knows

containing the same constituent characters to infer the target word and the characters are only used as the knots or bridges to retrieve or connect the words, thus indicating an indirect use of character knowledge to infer words. She explained that she would not know that 平 (píng) actually means "being flat" on its own. Whilst she tends to check the meaning of individual characters, she does not try to memorise them and hence, often does not have that information explicitly in mind. This suggests that Emily's word guessing strategy could be influenced by her strategies for dealing with the morpheme-word relationship (as discussed in 7.3.4.b).

In addition to the use of linguistic cues, Emily reported using contextual cues when reading to infer. She reported analysing the sentence structure to see what part of speech the unknown word might be as "I identify the verb and the noun" (EMI_INT_1), e.g. whether the unknown word is a thing or is used to describe how something is done. She also thinks about the collocational patterns of the words used next to the target word, as this could give some semantic or syntactic indication about the unknown word. Emily reported learning and being trained to use these two strategies from her previous courses in China, as the class often had such lesson activities, where the students were asked to identify sentence components (e.g. subjects, objects) and parts of speech of words in a sentence as well as to name what other words could go with a certain word (learning collocational patterns). This again shows that inferring strategies can correspond with the strategies used for establishing word knowledge and also influenced by pedagogical influence.

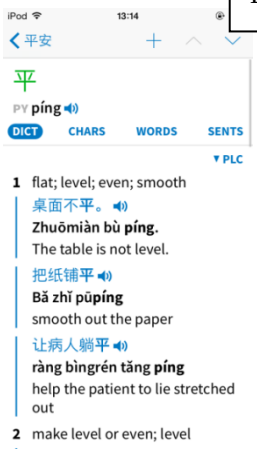
b. Using a dictionary

Emily uses Pleco e-dictionary, which can also give pop-up definitions for words when she reads a Chinese text electronically. She always uses a dictionary to look up words from intensive reading to form a more thorough understanding, even though the glossary might already provide basic English translation. She mainly uses Pinyin-search and uses handwriting-search only if she fails to guess the Pinyin. She pays attention to the Pinyin and the character shape, if she does not already know the characters, which rarely happened during the data collection period as she has managed to learn most of the basic characters. She browses all the meaning entries, both the character-version and the English-version of the example sentences, trying to work out the part of speech based on the sentences. If it is a multi-character word, Emily pays attention to checking the meaning of each constituent character, as reported below.

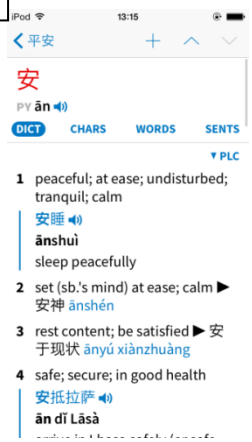
> E: […] if it is a two-character word, I will look up the two characters individually, and look at the definition of the two individual characters. And then I will look at words that the character is used in and the two individual characters. And then from that I try and build up an understanding of how the two words fit together to make the other word. (EMI_INT_3)

Three morpheme-related strategies are reported: first, Emily checks the definition of each constituent characters and then other words containing the same constituent character (a function Pleco provides). Finally, she tries to reason why the two (or more) constituent characters are put together to form the target word, i.e. the semantic connections between the constituent characters and the whole word. Using the word 平安 (píng'ān) as an example, below are screenshots of Pleco that Emily would search through.

Definition of the target word 平安 (píng'ān)



Definition of the compositional character 平 (píng)



Definition of the compositional character 安 (ān)

Other words containing the compositional character 平 (píng)

Other words containing the compositional character 安 (ān)

Figure 7.1 Screenshots of information searched for learning 平安 (píng'ān)

Emily explained why she uses these three morpheme-related searching strategies.

> E: Because they [i.e. the characters] have their intrinsic meaning and putting the two together makes, unless it is phonetics, there has got to be a reason why they are in the word. […] I feel like there is just some kind of massive map of characters in my mind, and try to make all the connections between individual characters. (EMI_INT_3)

By checking the definition of the constituent characters, Emily is trying to comprehend the underlying logic of the word formation for a word and by checking other words containing the same constituent characters, she actively attempts to connect words in her mind. Due to the linguistic features of Chinese vocabulary (i.e. characters representing morphemes), this association is most likely to be a semantic one. Both the reasoning and the associating processes can increase depth of processing and set up good conditions for establishing word knowledge. Emily believes the use of these strategies as her "trick" for learning Chinese vocabulary, and reported good understanding about how Chinese words are formed by characters. She also seems to have an intrinsic interest in understanding how words are formed and to build connections between characters and words, reporting "it is more interesting than actually useful" (EMI_INT_1), "I am just trying to spread the knowledge further and further" (EMI_INT_3), and "it is like doing a massive puzzle […] you will be like constantly working towards like making this complete picture" (EMI_INT_2). She could not trace back to exactly how she came to use these strategies, but mentioned that when her sister taught her Chinese words, she always explained the definition of constituent characters. She later discovered the function that Pleco provides

to show words containing the same character and found it interesting and helpful. Emily also seems to have an analytic learning style, whereby she prefers actively to break down a word into word parts in order to process it.

Besides paying attention to learning word-parts in the dictionary, Emily also focuses on the use-aspect. Similar to Sarah, who reported paying selective attention to learning more complex words based on parts of speech, Emily has similar beliefs and strategy uses.

> E: Adjective to me is just not so important cos I am like it is not integrated to the meaning of the sentence really. (EMI_INT_3)

> E: I mean verbs are very important, and I want to know all the verbs […] nouns I think are obviously important, […] But I feel like things like verbs, it is harder to guess a verb […] verbs have an actual action, and it doesn't necessarily correspond, like the character doesn't necessarily convey, you can't guess, whereas if you are looking at a noun, you can guess from how it is made up. (EMI_INT_3)

Emily explained that she considers verbs more important as they are harder to guess based on the constituent characters, which is quite an insightful reflection as word formation for verbs are often less transparent and involves morphemes for abstract-concepts, thus it being harder to guess the underlining logic of it. Emily reflected about the difficulties of inferring different types of words, and developed a belief that she should pay more attention to learning verbs, which she reported planning and following up, thereby showing a selective process.

Emily also pays attention to the collocational patterns of a word, i.e. what words often go with a target word.

> E: It is just what words go with it. […] if it is verb, then I want to know […] like the words that will go with the verb. And I think I have said to you before about how I use it, like adjective to me is just not so important cos I am like it is not integral to the meaning of the sentence really. (EMI_INT_3)

She obtains such information by analysing the example sentences and extracting such collocational patterns of a word by herself.

> E: I am looking at the example sentence, which has *huòdé mǒu rén de qīnglài* ["to obtain someone's favour"], *huòdé* ["to obtain"] someone *de* ["'s"] *qīnglài* ["favour"]. It is like a different usage. This is to show someone *de* ["'s"] *qīnglài* ["favour"], (EMI_THI_5)

In learning the word 青睐 (qīnglài) meaning "to favour", Emily successfully identified a collocational pattern, which is "*huòdé mǒu rén de qīnglài"* meaning "to obtain someone's

favour". She also analyses the sentence structures and identifies the subject, verb, object and modifying phrases in a sentence to understand where the target word "fits in into the sentence" (EMI_INT_1). Emily reported learning to use the strategies of extracting collocational patterns of a word and analysing sentence structures from her courses in China and has found them very helpful so she has kept using them in her self-study. This points to the value of having explicit vocabulary instruction and exercises on sentence analysing in contributing to learner autonomy and use of strategies for learning how to use a word in self-study.

Besides learning the grammatical functions and the collocational patterns (the immediate context), Emily also pays attention to the general contexts or register of a word.

> E: That is, for the context of how the word might be used, in what situation it is used, cos I know that when I am in a class, if I am in a class being taught by a teacher, they will tell me what situation it is used, and what it is not used. […] just some verbs where in English you might be up to use with other words, but in Chinese you only use it in a certain way. So, when I am looking at the example sentences, I am to figure out what context you can use it in and […] when I say context I guess I kind of mean for overall situations, rather than specific words. Try to get the general situation that can use it, but then sometimes it does give specific words it can be used with. (EMI_INT_3)

Emily has good meta-linguistic awareness about how words can be used differently in different languages, so she emphasises obtaining the use aspect of word information. She pays attention to the "situation", "context" and also the formal/informal register regarding which she reported that "when I see something that is formal in the dictionary that makes me feel better like I shouldn't necessary need to know it" (EMI_THI_3). This awareness and relevant strategy use might well come from the good explicit vocabulary instruction she received before.

After obtaining word information from the glossary or the dictionary, Emily goes back to check if her understanding fits the text. This is an important monitoring strategy use that could ensure her selecting the relevant meaning entry for the target word. She sometimes can spot her misunderstanding of a word. For example, in EMI_THI_5, she gradually adjusted her understanding by going back and forth between the glossary and the text and in the end achieved a more accurate understanding.

> E: I just went back to look at the sentence, because when I first saw that "favour"[i.e. the translation of the target word given in the glossary], […] I did not look to check that it was a *dongci* ["verb"]. I was thinking, like I thought it was a noun, and I thought that was strange in the context,

> but then I went back to look at the sentence and then it is clearly a verb, and then I went back there [i.e. the list] and realised that is a verb, so it makes sense to me, it makes sense to me in the context of the sentence. (EMI_THI_5)

Emily realised that her initial understanding about *qīnglài* as meaning the noun "favour" (i.e. help) was not accurate and did not fit the context. In the end, she adjusted her understanding such that *qīnglài* means the verb "favour" (i.e. like).

c. Asking a teacher/L1 Chinese speakers

Emily reported asking questions to her teachers during the courses or to L1 Chinese speakers. She prepares the questions she wants to ask when previewing the materials, because "you get so much more if you already know which questions you need to ask and where you have problems" (EMI_INT_1), and she has the goal that "in class I should really work out how to use it, and if I did not, I could ask the teacher and then write down their explanation (EMI_INT_1)", thus suggesting she is active and autonomous. She also prefers being answered to in Chinese, as reported below.

> E: I learned from nothing in China, and so from the beginning I had to just try and understand what the teachers were saying without knowing what they were totally saying, […]. The teacher never spoke in English, so you just had to fill in the context. So, when I learnt things I was just having to fill in the gaps and I think it was just the way it has been, […] If I am conscious of a word that I don't necessarily know, I will just listen to the whole sentence, hear the context, and just make a little assumption in my brain. (EMI_INT_2)

Consequently, Emily mentioned that studying in the reading group in London, "I get frustrated by having to switch back to English all the time" (EMI_INT_3), as she is "used to talking about Chinese in Chinese, and the idea of talking about it in English is, it just makes no sense to me" (EMI_INT_3). This again indicates that she has a high level of tolerance of ambiguity, a good learner trait for language learning, and she is good at using communication strategies to facilitate comprehension. The all-Chinese teaching approach and living in China might have contributed to developing her ability of using these communication strategies, and these strategies, in turn, could have helped Emily to pick up further words naturally from interacting with L1 Chinese speakers.

Emily reported (and this is also verified by the observation data) that she asks for character-information, if she hears a new word in conversation and cannot immediately pin down what characters the word uses.

> E: I would want to know like which character are we talking about, […] because then it makes sense in a context in my mind […]. (EMI_INT_1)

Similar to Mark, Emily also uses a character-information searching strategy (as explained in 6.3.2). Having the character-information could help her pin down morphemes and reason the meaning connections between these and words, hence being able to understand "why that word is what it is" (EMI_INT_1).

7.3.3 Keeping and using records of word information

Emily keeps simple, yet, well organised vocabulary notes with a clear focus on the word knowledge she wants to learn.

a. Types, formats, and aspects of word information in the learners' records

Emily reported keeping notes frequently and regularly during the courses in China, but much less so regarding her self-study in the UK. She sometimes uses the Pleco search-history function to keep track on those words she has looked up recently. For this study, her notes in relation studying the aforementioned Chinese business textbook in the UK were examined, which she reported as being kept in a similar way to her notes in China, so as to understand her general note-taking strategies. Below is a copy of part of her notes.

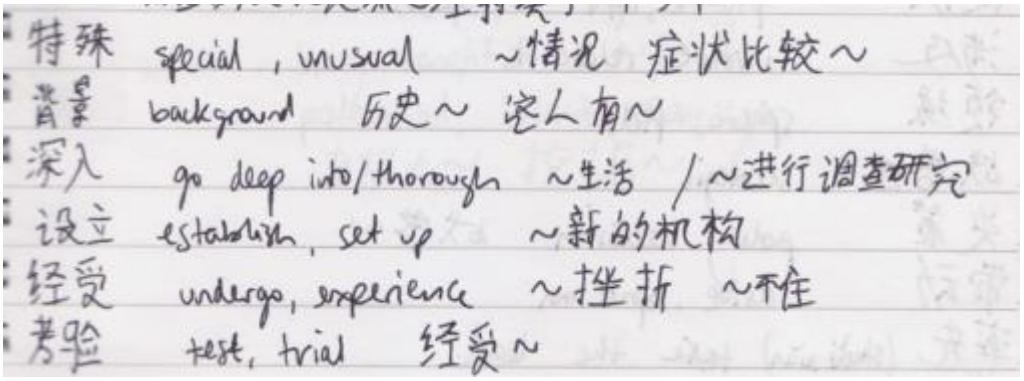


Figure 7.2 Emily's notes for self-studying a Chinese business textbook

Emily notes down three aspects of word information: the words in characters and Pinyin, if there is a new character (left column), one to two meaning entries of the words in English (middle column) and the collocational patterns of the words (right column). Her notes suggest that as an advanced learner who has managed the most commonly used characters, Emily no longer needs to spend much effort in keeping the form-aspect of word knowledge and this could be freeing up her attention so as to be able to analyse word parts, bring up associated words and to process meaning as well as the use aspects

of word knowledge. The meaning entries she notes down seem to be one or often several core meanings of the words, thereby supporting her report that she browses all the meaning entries and selects some to note down. The process of meaning-selection naturally involves analysing, comparing and synthesising, which are all good cognitive strategies that could increase the depth of processing. She also notes down at least one collocational pattern for each meaning entry. She uses the symbol "~" to represent the target word in the phrase, and this is a good strategy that helps her note things down quickly. She explained the reasons for noting down collocational patterns below.

> E: I try and make a note of those, just because I feel that learning those two things together, it creates another memory for me to be kind of fired off in the future. If I see the word, if I can't remember it, but I see the word that it is used with, then I might then be able to then go back in my mind to it, you know. (EMI_INT_3)

Noting down and learning collocational patterns of a word is used to form syntax connections between words, which is an important aspect of knowing a word, and could help provide cues to guessing words (as discussed in 7.3.2.a) or to retrieving them (as discussed in 7.3.6). This shows in-depth self-reflection in finding effective strategies and she explained why she does not usually note down whole sentences, but only the phrases to indicate the patterns.

> E: […] if I am looking for particular like usages when I write it down, I will just write down the kind of mini-phrase […] unless the whole sentence is interesting or useful. […] I won't write down the whole sentence coz it doesn't matter. I can make up the rest of the sentence. (EMI_INT_2)

Emily often extracts a "subject + verb" or "verb + object" kind of phrase to note down, because as an advanced learner, she knows how to form the rest of the sentence easily. This strategy might actually contribute to vocabulary learning more than the saving made in character-copying time, as extracting mini-phrases inevitably involves analysing the sentence to identify which words are most relevant to the target word (hence forming a collocational pattern with the target word), and this could lead to deeper processing than reading and copying the whole sentence passively. It also singles out the new usage for Emily to focus and learn. She was found to be very skilful at identifying collocational patterns by herself. A pattern she noticed (as discussed in section 7.3.2 b), 获得…的青睐 (huòdé mǒu rén de qīnglài), meaning "obtain someone's favour", was separated by other words in the sentence, but she identified it successfully. This indicates that Emily is good at analysing sentences components and this enables her to note down collocational

patterns well. This note-taking strategy again was reported by Emily as related to previous lesson activities in her courses in China, thus inferring a pedagogical influence on the use of learning strategies.

b. Strategies for using the learners' records

Emily reported that she used to review her notes regularly before doing her homework for the courses in China, but had become lazy and did not review her notes much in the UK. She more often just looks at the words in the search-history function in Pleco, which keeps a record for all the words she has recently searched. Her learning has become less-structured due to the lack of motivation, as mentioned in 7.3.1., which has proven to be an obstacle to her further improving her Chinese.

7.3.4 Establishing word knowledge

Emily uses some very effective strategies for establishing word knowledge.

a. Dealing with multi-aspects of word knowledge

Emily was asked to learn every aspect of word knowledge simultaneously during the courses and she did not experience much difficulty in learning characters right from the beginning, but she did separate learning the character handwriting from other aspects of word knowledge in her study.

> E: […] for me, reading a word and writing a word is different, […] so there are really like four aspects, because the writing is like a separate part. […] So, say the reading, and the understanding, and the pronunciation kind of came at the same time, and it was the writing that is a separate section, where I actively try and learn how to write the character. (EMI_INT_1)

Emily did not feel the need to delay learning characters and only separated the learning processes for character recognition and handwriting. This is perhaps due to the fact that she had relatively sufficient study time (30 hours per week) as a full-time learner, and also had the advantage of living in a target-language environment, which provided her with a great amount of input and output opportunities to reinforce words naturally. Even under such circumstances, Emily reported that she gradually realised that she could not afford to learn to write every single character and had to be selective in learning to write them.

> E: I can remember just kind of right at the beginning, I can remember thinking I am gonna try and write every single character. And then when you get to a point when you are learning more words in kind of

> understanding and reading faster than you can really learn how to write them, so I can remember getting to a point where I just I cannot, I cannot learn every single word in the textbook, because there are too many for me to be able to write every single word that we learn […]. (EMI_INT_1)

Emily, being an ambitious learner, wanted to learn every character diligently and then realised that this goal was not realistic due to the time-consuming nature of learning handwriting. So, she adjusted her expectations and started to pay selective attention, thereby delaying the learning of handwriting some characters.

> E: I would write the word I needed to write for a dictation, and I would read the words that I did not need to write for a dictation. (EMI_INT_1)

Later, she became even more selective and only learnt certain aspects of form knowledge, according to the course requirement or her own judgement based on whether she was likely to use the word in a spoken or written context, as reported below.

> E: […] whereas now my reading vocabulary, and my speaking vocabulary, and my listening vocabulary, they are all kind of different […] that was just reaching the point, where if you want to get better in reading, you just have to like accept the fact that you are not gonna be able to know how to use all those words as in speaking, or like not necessarily gonna remember it like hearing it in a sentence. (EMI_INT_2)

This paying selective attention strategy is very necessary, because as Emily's proficiency level progresses, she needs to absorb much more vocabulary at a faster pace and deal with some advanced words that she will only encounter in certain contexts. She manages her attention and effort strategically, which demonstrates good self-regulation. Also, regarding how her character-handwriting skill has progressed, she reported now "the learning of how to read a character and how to write a character is basically the same thing: if I can read it, then I can write it", whereas "at the start, you really have to learn how to write a character" (EMI_INT_1), thus indicating the influence of proficiency level on strategy use.

b. Dealing with the morpheme-word relationship

Emily uses strategies to deal with morpheme-word relationship efficiently. She reported feeling fascinated about how Chinese words are formed logically from the very beginning stage of learning 你好 (nǐ hǎo) "hello" and being told (by her sister who taught her the most basic words) that 你 (nǐ) means "you" and 好(hǎo) means "good". She continues analysing word parts every time she learns new words. Her strategies for dealing with the

morpheme-word relationship include those mentioned in subsection 7.3.2 regarding searching for word information, which are: 1) searching for a definition for the target word; 2) searching for definitions for the constituent characters; 3) searching for words containing the same constituent characters; and 4) reasoning for the semantic links between the constituent characters and the whole word. Emily reflected that whilst she started trying to connect words from the beginning, she did not always have other words to link the target word with and her ability of associating words improved as her vocabulary size grew (see EMI_INT_2 for more information). She also said that it was very helpful to use the Pleco function as it shows all the words containing the same constituent character. As explained earlier, Emily has explicit knowledge that characters help to build words and there should be logic in word formation. She also probably has an analytic cognitive learning style as she wants actively to break down a word into parts and subsequently, to analyse them. She also reported an intrinsic interest in understanding the word formation, as reported below.

> E: I want to know like the root kind of course of why something is how it is, and so by kind of breaking it [a word] down as much as I can, I can understand like why it is that, like I don't just want to take a face value, and be like ok, that's the word, I want to know why. I want to know why it is that...and I guess by doing that it kind of gives me another thing to like base my, you know, another like trigger to go back to my mind. I have kind of got a deeper understanding of what it means. (EMI_INT_2)

Whilst both Mark and Emily use morpheme-related strategies, the latter uses them more purposefully, systematically and consistently, perhaps due to her intrinsic interest in understanding word formation. Moreover, she also sees the practical value of using these strategies. Emily also uses them more efficiently, as she has a clear focus that her main learning goal is to memorise the target word only and not the constituent characters or other words containing the same characters at the same time, as she stated below.

> E: I don't study the individual characters, I study the words, and I just happen to know the characters. […] I have like a vague understanding of what the characters mean, but I would not be able to give a dictionary definition and often. (EMI_INT_1)

> E: I am not trying to remember the individual definition of that character and I am then trying to link it to another word that I have already known. […] I mean the individual character just doesn't mean anything to me. I always just try to turn it into two characters. (EMI_INT_2)

> E: I don't necessarily learn all of the words, but I just have it in the back of my mind that it can be used with those little words. So […] it is almost like I have a kind of background vocabulary that I cannot access, but I know that I have seen it in the past, and I have something I can draw on, but I couldn't necessarily, like I think I will find it very hard if you give me a character for me to like say a whole lot of words […]. (EMI_INT_1)

Emily directs her main attention and effort towards learning words, and the learning of constituent characters or other words is controlled as only peripheral. Consequently, her morpheme knowledge seems to be implicit, as compared to Mark's, which was memorised directly from learning characters, but seems to be as effective in contributing to guessing or processing words to learn.

> E: […] when I think individual characters, I am really thinking of all the words I associate with that one character, so I am never really thinking of it as what that one character means. I am thinking of the whole mass of words (EMI_INT_3)

In fact, she believes that one can better understand Chinese characters and words, if it is accepted that the meanings of a character are vague.

> E: […] people at my work have been discussing with me about how they can't understand that, is it the year of sheep, the year of goat, or the year of ram. And I am saying it is open to interpret, and it is more of a sense, like the character has a feeling of sheepy, goaty-ness. It doesn't matter, you know. You can add a character at the beginning to change to be more specific, but the actual character itself just has an intrinsic meaning, and you can only really get that if you are just happy to not know specifically what it is. (EMI_INT_3)

The report further indicates that Emily probably has a high tolerance for ambiguity as she was not bothered by having to accept vague meanings of characters. She thinks it is not necessary to equate individual characters with specific definitions or translations, as it is the words being used and characters are only the components, as the following shows.

> E: I know every character has a meaning, but to me it is not useful, because you don't speak in single characters, so I do it from like a usefulness point of view cos it is just better use of my time to learn things I can actually use. (EMI_INT_2)

> E: It is more helpful to know the word to be able to use it in a sentence. It is not like, there is no point of knowing individual characters, but I want to be able to use it and knowing the individual meaning. It is just there is no use for me. (EMI_INT_2)

Emily's beliefs about characters/morphemes can be summarised as: she believes that it is useful to have a vague understanding about characters, but it is not necessary to memorise

them specifically and directly, because they cannot be directly used in a sentence. Consequently, her strategies for dealing with the morpheme-word relationship are: she makes a direct effort to learn actual words by memorising their definitions and usages. In order to learn words better, she pays attention to word parts/morphemes/characters, analyses word formation logic and connects words sharing the same word parts. During this process, could gain some understandings about individual characters, but this knowledge is more of a by-product and implicit.

c. Learning the spoken form of a word

Emily reported using three strategies to learn the spoken form or to build the sound and meaning connection of a word at the beginning stage: she would cover part of the vocabulary list and retrieve either sound or meaning or use e-flashcards for repetition. When she had more morpheme knowledge, i.e. during the data collection period, Emily stated that there is no process for only learning the sound, because learning a word involves reasoning and remembering the new "character combination". Her special emphasis on always inferring the sound based on the characters or the meanings first (as discussed in 7.3.1.a), arguably, can contribute to better learning of the spoken form.

For tone learning, Emily reported that when she was in China it was easier to capture these as she would be "just repeating what I heard all the time" (EMI_INT_3), thus indicating a more incidental approach. She also used some deliberate strategies, such as using a colour system to present words in different colours to reflect, straightforwardly, the different tones on her e-flashcards and dictionary (see Figure 7.1). For example, she used red to represent the first tone, and then all the words or word parts that were pronounced as the first tone were always shown in red. Technology tools such as Anki e-flashcards and Pleco dictionary have allowed her to set up such a colour system and then all the words are shown in corresponding colours. This is a good strategy for learning tones. Emily noticed that since she was back to the UK she has tended use the wrong tones more and so, she tries to check them whenever she looks up a word, thus reflecting the influence of language environment on strategy uses.

d. Learning the written form of a word

Emily separated the learning processes of character recognition and handwriting at the beginning. She learned character recognition mainly through repeated exposure from reading and self-testing using a vocabulary list and drilling on flashcards. For handwriting characters, Emily reported that she would "write it a million times" (EMI_INT_3) to

"force it into my brain and feel natural" (EMI_INT_2). She also reported using some orthographic-knowledge-based strategies and these presumably contribute to both character recognition and production. She talked about processing characters in terms of their character-components, rather than strokes, as illustrated below.

> E: […] if it is made up obviously of different bits, I remember the different bits. I don't really, I don't remember characters by the stroke order, because if I see how it is written, then I know what the stroke order […] I remember the bits of the character, then by knowing the bits of the character, I know the stroke, order rather than just knowing the stroke order of the character. (EMI_INT_1)

The use of component-strategies helps reduce the number of information chunks that need to be memorised and hence. could improve learning outcomes. Emily does not necessarily use components for phonetic or semantic clues, as "I […] don't necessarily know what it means" (EMI_INT_1) and "if I am able to create a meaning for myself, then I probably do. But I don't like think too deeply into the meaning. I just […] break it down into separate bits" (EMI_INT_2). She admitted that knowing the meanings of radicals can be helpful. The meanings of which can be quite general, but "being a foreigner learning Chinese, having any kind of clue to start with is useful, because we don't have any framework or any kind of like background knowledge to know why it might be what it is" (EMI_INT_2). However, she does not rely on using radicals to memorise characters, because "it doesn't really mean that much" (EMI_INT_2). Even though Emily does not use components to process character sounds and meaning directly, she does use them to mentally group and attach new characters with characters she has learned based on shared parts, saying "I just kind of remember a bit that is like a bit from another character and so I just have that association (EMI_INT_2)". This indirect use of character-components also involves deep processing, and judging from Emily's reporting, is also effective. It could help forming some implicit character-component knowledge, which Emily describes as forming her own theory or story about a component. Having mastered a large number of characters, she finds it much easier to remember a new one now and if she can recognise it, she can handwrite it.

e. Learning the meaning and use aspect of word knowledge

Emily's use of strategies for searching and keeping a record for word information (discussed in 7.3.2 and 7.3.3) includes some deliberate attempts in learning the meaning and use aspects of word knowledge, including analysing sentences, paying attention to sentence components (e.g. subjects, objects), parts of speech, and collocational patterns

of words, which are all grammar-based strategies. She learned to use these during her previous courses in China and reported initially feeling lost in class.

> E: At Hagongda, we spent lots of time […] identifying what different parts of the sentence were […] what was the object, what was the subject, and I never understood why we were doing it. […] A lot of my classmates were Russians, […] and they found it really easy and I think it might have been because they maybe do that the same thing in Russia. But in England we never ever do that […] it sounds really stupid, but I couldn't tell you what was the object and the subject […] at the time, I genuinely felt like I was the only person in the class who did not understand why we were doing it. (EMI_INT_1)

Emily was taught with an unfamiliar grammar-based teaching approach and felt confused about some lesson activities. It took her a semester to understand fully the point and the benefit of doing them, as reported below.

> E: It is so much easier to work out how a sentence makes sense, because you know you are missing something from the sentence […] eventually, by the end of the term, I just about to grasp it and then I saw why. (EMI_INT_1)

Emily analyses sentence structures to learn a word and monitors the sentences she has constructed, seeing this form of analysing as being very helpful. She also uses this strategy to grasp the main idea in reading and to make the judgement about whether a word is important for comprehension, as reported below.

> E: When I was actually preparing for the HSK 6, it kind of became clear to me why it was useful, because […] it is basically what I do now, I disregard the not important bits of the sentence […] I am trying to identify the main verb, the main subject and I don't care about the bits. […]. (EMI_INT_2)

Similar to Sarah's strategy use for learning the meaning and use aspects of word knowledge, Emily's learning also involves quite deliberate rule-seeking, as can be seen below, when she extracts collocational patterns, such as "subject + verb", "verb + object", or "adjective + noun" from analysing example sentences.

> E: […] I know that there are some words that you use together, and some words you don't use together, so I am just trying to learn the rules, I guess basically, because I know that some verbs you would only use with particular nouns, and you know, things like that, so I am just trying to be as accurate as I can, rather than just vaguely looking at it. (EMI_INT_2)

Emily has good meta-linguistic awareness about the collocation features of words and she wants to be accurate in using words. so she pays attention to these patterns. She also

learned this strategy from her courses, as one of her teachers would always write down five phrases on the blackboard when taught a new word. Besides learning in a more deliberate and intentional way, Emily also reported learning how to use a word from real contexts by hearing people talking and she enjoyed using this strategy in China very much.

Emily's strategies regarding explicitly learning about the use aspect of word knowledge are all influenced by pedagogical influences and this perhaps highlights the value of having explicit vocabulary instruction, as well as a more traditional grammar-based teaching approach, which might sound negative and out-of-fashion in the UK FL teaching context. Arguably, this teaching approach and also the use of relevant learning strategies suit learners with an analytic cognitive learning style, which Emily appears to have. Also, teachers could need to explain the grammar terms and have explicit instructions on strategies, especially for learners from a context which does not tend to teach or encourage these types of strategies.

7.3.5 Consolidating word knowledge

When Emily was studying on her courses in China, she regularly tested herself to consolidate character recognition (e.g. flashcards) and evaluated it as being helpful, but not for remembering characters for dictation, in which case she needed to physically write characters repeatedly, as reported in 7.3.4.d. For word learning in general, she would review her lessons every day, and also pointed out that living in China provided her with many opportunities to consolidate words naturally, as "I would learn a word and I would probably hear it used in the same day or I can just ask my friend" (EMI_INT_3). She tried to use Chinese in real life as much as she could and actively engaged in socialising situations with L1 Chinese speakers. She finds it hard to consolidate new words in the UK due to lacking the language environment for natural exposure, strong motivation, and special effort as well as not having the time to dedicate to such consolidation. The discussion session in the reading study group can sometimes provide opportunities for her to practise words learned from intensive reading, but other attendees sometimes switch to English which frustrates her. Emily is aware of this limitation, saying "I still feel I don't get enough practice" (EMI_INT_2), but she has not been able to discover the appropriate strategies for consolidation in the UK.

7.3.6 Using word knowledge

To activate character-shape knowledge in handwriting, Emily reported visualising the character in her mind and thinking about what components there are. She also uses her

collocational-pattern knowledge to support recognising words, saying "if I can't remember it, but I see the word that it is used with, then I might then be able to then go back in my mind" (EMI_INT_3). Lastly, sentence-analysing strategy is reported as a monitoring one, when Emily hears or reads a sentence and wants to make sure her comprehension is correct, or when she needs to construct a sentence by herself.

7.4 Emily's Chinese vocabulary learning approach: an overview

There could be a number of reasons why Emily has succeeded in learning Chinese vocabulary: she likes a challenge and is willing to persist towards achieving her goals (the personality factor); and she mostly studied in a Chinese-using environment (the language environment factor), being taught through some very good Chinese courses (the immediate learning context factor). Last but not least, Emily self-regulates her learning based on a comprehensive consideration of various personal, task and contextual factors, and uses strategies very effectively and especially made use of the special linguistic features of Chinese vocabulary, e.g. her strategies in dealing with the morpheme-word relationship, including paying attention to the constituent characters, associating words containing the same constituent character, and reasoning for the semantic links between the constituent characters and the whole word. She has good meta-linguistic knowledge about Chinese vocabulary, which supports her strategy use to be efficient: she sees the characters being the building blocks for Chinese vocabulary, so she makes some effort to analyse them. However, she is also aware that actual words are the lexical units used in sentences, so she directs her main attention to learning and memorising words, rather individual characters. She emphasises inferring, processing, and memorising the sounds of characters, which are believed to be closely linked to activating word meanings in reading. She pays selective attention to establishing multi-aspects of word knowledge, and mainly uses character-component strategies to learn characters, which are also found to be more effective than rote repetition and stroke-related strategies alone. She has explicit learning on how to use a word, and reported using sentence-analysing, extracting collocational patterns, paying attention to parts of speech when using a dictionary, keeping notes and using Chinese to communicate. These strategies were introduced by her teachers through lesson activities, and Emily recognises their effectiveness and keeps using them in her self-study. When she was in China, her vocabulary learning was well balanced with intentional vocabulary learning (e.g. preview, review) and natural language use activities (e.g. interacting with L1 Chinese speakers, reading the Chinese version of

Harry Potter). She seems to have mastered some very good communication and reading strategies to support her vocabulary learning from these sources.

Emily's strategy uses might well have been influenced by her personality traits (e.g. high tolerance of ambiguity, conscientious, persistent), interests, learning styles and teaching approaches or lesson activities. She seems to have enjoyed learning in a less-controlled and incidental manner from a very early stage, engaging in natural talking and reading to increase language input so as to obtain a holistic sense of the language so that she can gradually acquire vocabulary. Her case is especially informative in reflecting how proficiency level, part/full-time study mode, and language environment can influence strategy uses. As an advanced level learner, Emily has the character knowledge, reading skills, and sentence-analysing skills to infer, decide whether words are important for comprehension, analyse how to use a word by herself and to monitor her own comprehension as well as language output. Nowadays, she rarely encounters new characters and can also memorise characters more easily, which frees up her attention to deal with other aspects of word knowledge in-depth. However, despite Emily being able to engage in more natural language use activities, it is perhaps also harder for her as an advanced learner to stay motivated and put sufficient effort into learning words thoroughly so as to improve her level rather than plateauing. Regarding this, she reported that now she use strategies for further learning new words (e.g. taking and using notes, establishing and consolidating word knowledge) much less than previously. Also, learning in the UK has provided fewer natural contexts for her to encounter, learn, and consolidate words, which thus requires emphasis on intentional learning effort. However, she has found it harder to commit time and effort in relation to part-time self-study when compared to full-time studying on a course where there is much more study time available and external forces, such as homework and exams. Emily is highly self-reflective and has consequently identified these issues in her learning. Whilst she was not fully satisfied with her own learning during the data collection period, she has done well in terms of improving her vocabulary learning by attending the reading study group regularly, employing a wider range of strategies to encounter words, and especially choosing sources that can bring in more challenging vocabulary to learn. Emily's case shows the difficulties advanced CFL learners face in a part-time, self-study and non-target-language environment. Participating in group study with learners of a similar level might be a solution. After reporting the three key participants Sarah, Mark and Emily, each representing a different proficiency level, the next chapter compares their strategy uses

and self-regulation for a more comprehensive understanding about CFL learners' vocabulary learning process.

CHAPTER 8 DISCUSSION

8.1 Introduction

Chapters 5, 6 and 7 have, in detail, reported three key participants' strategy use as well as how these were impacted upon by person, task and context-factors. These case studies have provided rich descriptions of a group of individuals in a particular setting. That is, the case study approach is used to offer a situated view of learners. Based on these findings, Chapter 8 offers a more comprehensive and complete picture of how various types of learners tackle the task of Chinese vocabulary learning based on the three key participants, but also drawing on data from the other five participants in the pilot and main study. Some strategy uses of the highly self-regulated learners in this study, i.e. Sarah, Mark, Emily, Adam, Jack and Luke, are compared with those of the less self-regulated ones, i.e. Betty and Fiona. This is to ensure that key findings on specific strategies (presented in Appendix 15) and self-regulative influences (i.e. learners' meta-knowledge and use of meta-strategies) for learning Chinese vocabulary, including the ones identified from the non-key participants, are explained and discussed. This also helped to construct the comparison between the highly self-regulated and less self-regulated learners in this study, and these findings are then used to contribute to theoretical understandings of learners' self-regulation. Due to the word limit of this thesis, the non-key participants, especially the less-regulated ones, are not reported individually, but a brief discussion of the criteria used to identify key participants (i.e. Sarah, Mark, Emily), other highly self-regulated learners (i.e. Adam, Jack and Luke), and less self-regulated learners (i.e. Betty and Fiona) is presented in 4.4.2. It is therefore critical to include some data from the non-key participants in this chapter in order to elaborate on the key differences. Furthermore, the data here also helps to support another comparison made based on cross-case analysis of all participants regarding their overall vocabulary learning approaches (including strategy use and self-regulation), i.e. the fine brush and freehand approaches. The chapter is organised in three parts so as to discuss the key findings: first, 8.2 identifies the Chinese vocabulary learning strategies used in the six vocabulary learning stages and explains the possible reasons why strategies are implemented in different ways, especially between highly self-regulated and less self-regulated learners. Second, there is consideration of the influencing factors identified and discussion of their roles in vocabulary learning in 8.3. The section first discusses how various personal, task and contextual factors can influence learning even when they are not consciously considered in learners' self-regulation process, hence they are referred as the non-regulative factors. Then the section

further examines the self-regulation factor (including both learners' meta-knowledge and use of meta-strategies in response to the various personal, task and contextual factors), especially comparing highly and less self-regulated learners in this study. Based on the findings in the first and second sections, the last part of the chapter discusses two different types of learners in vocabulary learning and highlights the differences between their learner beliefs and strategy uses.

8.2 Use of strategies in the vocabulary learning stages

This section discusses the strategies used by the case study learners. These were identified using the analytical framework I devised (see Appendix 12) based on an inductive coding process followed by a deductive coding process (using the LLS and VLS frameworks reviewed in 3.2.2 and 3.3.2 as possible lenses for analysis). My analytical framework categorises strategies into six vocabulary learning stages (proposed in 3.3.1), which include:

1. Encountering new words;
2. Searching for word information;
3. Keeping and using records of word information;
4. Establishing word knowledge;
5. Consolidating word knowledge;
6. Using word knowledge.

A comprehensive inventory of strategies grouped into each vocabulary sub-task is presented in Appendix 15. The strategies that are specific to CFL context and generic strategies that may be used for learning all languages as well as the factors which influence the use of these strategies are discussed below.

8.2.1 Use of strategies in encountering new words

The strategies that are most relevant at the stage of encountering new words are source strategies and those for handling new words initially, and the specific strategies are listed in Appendix 15. The participants of this study use a number of sources to gain access to new words, including intentional vocabulary learning activities using pedagogically designed sources, such as vocabulary lists, textbooks, lessons, or non-pedagogically designed sources, such as intensive reading and listening with authentic language materials. They also engage in natural language use activities, such as interaction with L1 Chinese speakers, and extensive reading and listening. Learners' choices of using what

sources appear to be influenced by the specific nature of learning Chinese vocabulary, the language environment, proficiency level, and personality factors.

The Chinese orthographic system is the obvious barrier for learning from natural reading, whilst the large number of homophones and the tonal system hinders learning from natural conversation, so beginners, such as Sarah, typically use pedagogically-designed materials (e.g. vocabulary lists, lessons). More advanced learners use some natural language use activities as they find them interesting and motivating, but highly self-regulated learners, such as Emily and Jack, try to put direct effort into further learning words and consider intentional learning as being necessary. This could be because Chinese vocabulary shares fewer cognates with English and uses tones and characters, and therefore its learning requires more deliberate processing and structured consolidation for L1 English speakers. In fact, the highly self-regulated participants across all proficiency levels in this study place emphasis on carrying out intentional vocabulary learning in Chinese, although some of them (e.g. Mark, Emily) report using a completely different approach, mainly through natural language use activities, for learning other languages. My data also suggest that acquiring Chinese vocabulary incidentally requires a larger amount of input and output, preferably provided within a Chinese-using environment. Emily and Adam reported learning vocabulary primarily from daily interaction when they were in China, but evaluate this strategy as less effective now they are back in the UK, due to lack of input to encounter new words and output opportunities to use words for natural consolidation. So now they make greater use of intentional vocabulary learning activities.

Perhaps due to the time-consuming nature of learning Chinese vocabulary (especially the difficulties in relation to form knowledge), strategic learners who are at a lower proficiency level and have limited study time, such as Sarah and Mark, purposefully restrict their vocabulary input to guaranteeing sufficient time for establishing and consolidating vocabulary knowledge, whilst trying to avoid feeling overwhelmed and frustrated. This is similar to a "shutting down" strategy identified by Winke and Abbuhl (2007) with their American CFL learners, who reported "*I'm often thinking, whoa, no more new characters, and just shut down, stop taking stuff in.*" (p. 707) to limit the amount of information received, control frustration, and recognise own limits in processing information when learning Chinese vocabulary. However, Sarah and Mark's strategy in restricting and blocking vocabulary input is more planned: they select certain sources to learn from and neglect others (e.g. creative writing, interaction with L1 Chinese speakers),

suggesting a more macro level of self-regulation than random, temporary "shutting down". More advanced learners, such as Emily and Luke, typically do not need to control input as they no longer need as much consolidation effort to remember words. Furthermore, the personality factor also appears to have an influence: both Sarah and Mark display strong conscientious personality traits and set learning accurately as part of their goals, whereas Jack, who is more relaxed and spontaneous, enjoys learning from reading and listening to things that interest him without worrying about how much he has remembered, so he does not limit the input.

This study has also identified strategies for dealing with new words encountered, including selecting words for further learning, initial word analysing, and planning for appropriate strategies as the next step. Barker (2007) noted the absence of discussion on word-selection strategies, because word-selection has traditionally been considered an issue for teachers and material writers, rather than learners. However, randomly occurring vocabulary is an intrinsic part of language learning (Lewis, 1993), and teaching materials could provide more vocabulary than the individuals can realistically handle (Waring, 2002), as the degree of usefulness and relevance of a word is a subjective matter. Learners can benefit from using strategies to select words for further learning based on their own goals (Nation, 2013) or word-factors and learner-specific factors (Barker, 2007). However, McCrostie (2007) found his participants had neither awareness nor the strategies needed to select words and so treated all unknown words equally. Some participants in this present study appear to be more strategic. Mark searches for character-frequency information and Emily looks for informal/formal word-register information, both doing so from the dictionary, to support their selection. Sarah and Emily use the part of speech, with Sarah considering verbs and conjunctions more important to learn, because they can be used to construct sentences and often have complex and nuance usages, while nouns are much easier to pick up in context. Emily reported a similar opinion regarding verbs and also expressed the view that verbs are harder to infer in comparison to nouns and adjectives. Consequently, they both reported putting more effort into learning verbs or conjunctions, whilst selecting only the most useful nouns or adjectives to learn. While Sarah and Emily share many common views, their beliefs contrast with the learners in McCrostie (2007) work, who considered nouns the most important, and then verbs, followed by adjectives, with adverbs being seen as the least important. McCrostie (2007) did provide learners' own rationales for these criteria, but Sarah and Emily's criteria seem to be well considered and developed. Some participants

in this study also select words based on their beliefs about the general usefulness and relevance of a word (Sarah and Adam), its importance in a specific context (Emily), and its interest to them personally, e.g. Jack learns vocabulary only from the reading materials he is interested in reading and from writing about his personal experiences. All these three word-selection strategies are in line with the criteria used by two successful learners in Gu (2003a).

Some participants use strategies relating to analysing a word immediately after encountering it in terms of evaluating its learning difficulty. Sarah retrieves words that look or sound similar, whilst Mark recalls characters sharing the same components from their lexical repertoire and considers words that cannot be attached to existing knowledge as being difficult. Sarah also compares words in her vocabulary lists and pays most attention to words with similar forms. The use of analysing strategies naturally involves activating prior knowledge, comparing and making associations, which can increase the depth of processing and contribute to better learning outcomes (Craik & Lockhart, 1972). My data also lend support to previous findings that efficient learners select from a number of strategies rather than depending on just one (Gu & Johnson, 1996; Hulstijn, 1993) and they choose strategies based on the nature of the task (Bogaards, 1998). The available strategy options include ignoring, inferring, consulting a dictionary or an L1 speaker, inferring-and-verifying, and noting down. Emily reported ignoring words that are not important for comprehension when reading for pleasure, but always inferring-and-verifying during intentional vocabulary learning activities. Mark always looks up new characters, but only notes down the high-frequency-use ones. He infers unknown words in conversation so as to communicate better, but tries to avoid inferring in reading the textbook and always uses a dictionary instead. The inferring-and-verifying strategy is considered beneficial for vocabulary learning (Fraser, 1999), but some learners, such as Mark, appear not to be fully aware of its value and hence, do not use it. To sum up, the strategies used at this stage mainly involve meta-strategies for selecting sources and words, which are extremely important for providing the appropriate vocabulary to be learned. Some cognitive strategies are also relevant for increasing a learner's mental engagement with new words from the beginning and setting effective groundwork for the upcoming stages.

8.2.2 Use of strategies in searching for word information

The participants of this study mainly use four types of strategies relevant to search for word information: inferring (meaning or sound), using dictionaries or translation tools,

asking others, and strategies for making use of the information and managing learning (see Appendix 15 for all specific strategies). Due to the nature of Chinese, learners encounter particular challenges and they have different ways to implement these strategies. The study also identified relevant learner beliefs, use of meta-strategies and some other factors influencing the strategy uses at this stage.

My study finds that some learners, such as Sarah and Emily, use inferring strategies actively so as to be more mentally engaged with learning, whereas others, such as Mark and Jack, have very cautious attitude towards guessing and do not use it deliberately. All the participants reported that they would always try to verify their guesses, as they find it hard to guess accurately with Chinese words. As the existing literature does suggest the success rates for guessing either words or characters tends to be low (Guo, 2004; Jiang & Fang, 2012; Songhao Liu, 2001; Zhu & Cui, 2002), the learners' decision to use guessing-and-verifying is strategic. With respect to guessing words in a spoken context, only the advanced learners (Emily, Luke) reported guessing and learning words in spoken contexts along with using some good communications strategies, such as guessing based on the context, talking around to obtain responses and prediction using schematic knowledge. Learners at lower levels, such as Mark, Adam and Jack, all find it hard to guess words from listening, mainly due to the lack of listening skills for recognising sounds and tones accurately and perhaps also the necessary communication strategies.

A special task in CFL reading is to infer the sound or meaning of individual characters. Previous studies have suggested that CFL learners have very limited ability in terms of using components (especially phonetic components) to guess the sound and meaning of a character (e.g. Jackson et al., 2003; Ma, 2007). Mark is an example in this study of someone who demonstrated skilful character guessing through either using semantic or phonetic cues directly provided by the components or characters containing the same character components. His guessing seems to be supported by his ability to quickly retrieve character-component knowledge and previously learned characters that share the same parts. These abilities could be attributed to his use of character-component strategies as well as his daily character learning and consolidation activities, which allow for immediate activation and association in relation to both components and characters. This research has also identified a strategy of using spoken Chinese knowledge to infer the sound of a character in written form. When Sarah recognises the sound of one character in a two-character word and tries to infer the other character, she recalls all the words she knows in spoken Chinese containing the sound of the character she does know. This

strategy use directly supports theories that suggest that a stronger development of spoken Chinese can facilitate reading (Everson, 1998; Hayes, 1988).

With respect to guessing the meaning of a word in reading, the findings of this study add evidence to the existing literature that CFL learners analyse word parts, and there are two ways of implementing this strategy: they could use their knowledge of the constituent characters (e.g. Everson & Ke, 1997; Songhao Liu, 2001; Qian, 2005) or use words containing the same constituent characters (Everson & Ke, 1997). Furthermore, the outcomes suggest that learners' primary inferring strategy corresponds to their strategies for dealing with the morpheme-word relationship: Mark, who learns character directly, primarily uses character knowledge, whilst Emily, who learns word directly, tends to use word knowledge. Mark seems to possess a more explicit and ready-to-use morpheme knowledge, which Emily does not have and this is what enables him to form guesses. However, because Emily often uses morpheme-related strategies to establish associations between words sharing the same morpheme, her inferring strategy also appears to be effective. Similar to the advanced CFL learners in Everson and Ke (1997), Emily uses the "sound it out" strategy to pronounce an unknown word first and sentence-analysing strategy to support guessing. She also monitors and verifies her guesses with the context, thus suggesting more strategic inferring than the CFL learners who did not do so in previous studies (e.g. Songhao Liu, 2001; Zhu & Cui, 2002). Lastly, Emily reported using her collocational-pattern knowledge on the adjacent words to elicit a guess on the target word, which, to the best of my knowledge, has not been reported in previous literature.

The participants in this study also use dictionaries and translation tools to search for word information, with the strategies employed mainly involve two aspects: searching strategies and strategies for obtaining various types of word information. There are some CFL specific issues in using dictionaries, for example, locating a word (especially when not knowing how to pronounce the word) in a dictionary is not a straightforward task and requires strategies. Before the arrival of e-dictionaries such as Pleco, learners used to be limited to using radical-search if they do not know the Pinyin. However, now they have the option of handwriting or copying the character on the touch-screen of their devices, and the input software will try to recognise what character it is, show a few possible options for learners to choose from, and then locate the word in the dictionary. The data suggests that learners of this study overwhelmingly welcome e-dictionaries, especially learner dictionary such as Pleco. My data suggests that Pinyin-search is preferred by all the participants when it is available and handwriting-search is most of the learners

preferred choice when Pinyin is not, with only Mark using radical-search. The technology-related strategies (using e-dictionaries, handwriting-search) make it possible for beginners who do not have orthographic knowledge or skills to use radical-search to look up a word in the dictionary without knowing its pronunciation. However, the data also suggest that it is very important to provide Pinyin for beginners, as they may also have difficulties in copying characters with complex shapes accurately enough in handwriting-search for the e-dictionary to recognise, as seen in Sarah's case. Moreover, learners may miss out on the benefits of using radical-search. Radical-search requires orthographic knowledge and takes a longer time, with more steps to complete, compared to handwriting-search, but it could contribute to learners' orthographic knowledge and the ability to identify character components, as seen in Mark's successful case of character learning. Word segmentation difficulties can be solved by e-dictionaries or translation tools to some extent, although learners still find themselves unable to segment words and they have to ask native speakers for help.

The data reveal that participants vary in their focuses and abilities in obtaining word information from using dictionaries. Emily's case confirms what Jing Wang (2012) discovered, i.e. that advanced CFL learners mainly use the dictionary for consolidating prior vocabulary knowledge and unknown words, as they rarely encounter new characters. Some learners (e.g. Betty) only check for the basic form and meaning information, while others search for more, with the extra information they pay attention to appearing to be influenced by their special interests in Chinese vocabulary learning and meta-linguistic knowledge. Mark, who puts emphasis on character learning, pays special attention to obtaining character information, including radicals, stroke order, and the HSK level to decide how frequently a character can be used. Emily, who has an interest in learning morphemes and developing vocabulary networks, takes extra steps to search for the meaning of the constituent characters in a word and other words containing the same constituent characters. Sarah, Emily and Adam pay extra attention to the meaning and use aspects, whereby they browse all the meaning entries and read the example sentences in the dictionary. Emily further elicits information from reading the example sentences, such as parts of speech, register, collocational patterns, what sentence components the word can be used with, and possible contexts the word can be used in, thus demonstrating very thorough independent vocabulary learning when using the dictionary. Emily's strategies, as explained in 7.3.2.b, are supported by her higher proficiency level and mastery of sentence analysing. They also appear to be highly influenced by the teaching strategies

she was taught previously and this suggests the benefit of having good explicit vocabulary instruction.

The social strategy of asking others for help has been identified previously (e.g. Schmitt, 1997), but not discussed extensively. The data again suggest that learners use these strategies in very different ways. Mark and Betty tend to simply ask for basic meaning information or help with comprehension, with Mark also asking for correction of his pronunciation. Some learners use these strategies for more in-depth meaning and use aspects of learning. Jack uses a website that allows users to correct each other's creative writing using their own L1. Both Emily and Adam prepare their questions before coming to class, and Sarah actively asks questions to test and confirm her understanding of the meaning and usage of a word, whilst also searching for explanations for her errors (see 5.3.2 for details). Sarah's good meta-linguistic knowledge about how words can be used differently in different languages and explicit knowledge about her own L1 words would appear to be the key element in raising good questions. She believes her knowledge was developed through undertaking high-level English and French translation exercises. As Sarah knows what specific questions to ask to understand and learn the target word, she can arguably obtain more information from asking a teacher or an L1 Chinese speaker, than learners who do not have this knowledge. This points to the value of having translation exercises, a seemingly out-of-fashion learning activity, which can be designed to nuanced differences between words.

Lastly, highly strategic learners use the information obtained for further planning, including word-selection (discussed earlier) and choosing the appropriate strategies for the next stage in their vocabulary learning. Sarah, for example, tends to make an initial judgement about whether the target word is complex to learn based on whether it has a broad range of meanings or usages as well as her meta-linguistic knowledge on the L1 translation (see 5.3.2 for details). She deals with the learning of simple words through memorisation, but deliberately pays more attention to complex words by observing how they used, marking them in the notes for further practise, avoiding the danger of linking them with one L1 word and writing a description of her own. Less strategic learners do not appear to use these strategies.

In summary, the participants of this study have been found to implement the strategies of inferring, using dictionaries and asking others in various ways. It would appear that differences in their implementation influence how much information learners obtain and this has a further impact on vocabulary learning outcomes. Inferring strategies can be

better used by more advanced and learners who can fluently make use of previously learned Chinese vocabulary knowledge, whilst learners' interests, meta-linguistic knowledge, proficiency level and strategy knowledge can all affect how well they use a dictionary as well as how much they benefit from asking others.

8.2.3 Use of strategies for keeping and using records of word information

This section discusses the types and formats of learners' vocabulary notes, aspects of word information selected to note down and strategies for using the records made (see Appendix 15 for all specific strategies identified).

The highly self-regulated learners in my study decide the types and formats of their vocabulary notes based on a comprehensive consideration of their proficiency level, focus or interest in vocabulary learning, and the strategies they have for using the records. Sarah keeps notes in Pinyin rather than characters so that she can understand her notes well. Mark has made a deliberate decision to focus on learning characters, so he keeps a separate note for all the characters encountered. Mark, Jack and Luke all split the character or word information on different sides of the paper or on word cards as they plan to use the notes to test themselves later. Less self-regulated learners, such as Betty, keep notes enthusiastically, but do not use them regularly. Betty reports trying to use characters without Pinyin to note down, considering only that this can push her into learning characters. However, as she has not mastered the characters well enough, she needs to look up the characters again when she uses the notes and this slows down her learning pace considerably, whilst also distracting her from learning other aspects of word knowledge.

This study has also identified strategies for selecting information to record, which include flagging complex words for further learning, noting down Pinyin, tones and mnemonics for learning unknown characters as well as registering character/morpheme meaning and other words containing the same character/morpheme for word-part learning. Highly self-regulated learners appear to have thoroughly considered which aspects of information it is useful to include in their notebooks, and so are more selective. For the meaning aspect, meaning-selection and meaning-synthesising strategies are used. Meaning-selection strategies involve selecting the relevant meaning based on the text, or one or two meanings for learning the word, in general. Emily selects and monitors the meanings based on the context, whereas Sarah reported that she selects the closest or the core meaning, which can be used to guess other meanings, or the meaning that is most

commonly used so that it can be reinforced easily. As Nation and Newton (1997) pointed out, selecting the core meaning relies on the ability to identify shared meaning in the various senses of the word and can help learners become more independent. Meaning-synthesising strategies are used when a word is considered complex and not able to be mapped onto one or two translation equivalents, in which case, Sarah usually writes a description to synthesise the meanings. Lastly, strategies for learning the use aspect include noting down example sentences, parts of speech, collocational patterns, limitations of using the word and contexts in which the word can be used. Strategic participants select good example sentences to note down and have different criteria for selecting these. Both Sarah and Adam select sentences that they believe they might be able to use. Sarah also tries to select the ones that are not too specific (e.g. not set phrases), so that she can analyse the usage from the examples and she prefers sentences with few unknown words apart from the target word. Adam, however, prefers sentences for their learning potential, for example new words or grammar contained in the sentences. Instead of noting down the whole sentence, Emily notes down the collocational patterns extracted from the examples, which can save time and involves an extra sentence analysing process aimed at benefiting learning further. This strategy has not been identified previously but may benefit vocabulary learning greatly.

My study has found that highly self-regulated learners have specific plans and make regular use of their records of word information. Notes are used for consolidation, e.g. Sarah and Emily read the notes weekly or daily, whilst Mark tests himself on the characters. Some strategies are used to recycle words and to enhance word knowledge. For example, Sarah uses her notes to select words to use in a sentence or for creative writing activities and asks the teacher to correct as well as explain the mistakes, which enriches her knowledge about word use.

To summarise, highly self-regulated learners, who are seen to obtain information more comprehensively in the previous task, here use note-taking strategies to narrow the range of word information obtained, which otherwise can be too overwhelming to take in. That is, they use selection strategies to a great extent so as to have a clear focus. In order to select information, the learners reported analysing and comparing word meaning entries and examples, or extracting possible patterns for using the words. These cognitive strategies help establish word knowledge and increase the depth of processing, thereby leading to deeper understanding and longer-lasting learning outcomes, which could explain why paying selective attention is associated with desirable vocabulary learning

outcomes (e.g. in Gu & Johnson, 1996). Learners' choices or criteria for selection are influenced by their learner beliefs, proficiency level, focus or interests in relation to learning and the strategies they have for using the records.

8.2.4 Use of strategies in establishing word knowledge

The stage of establishing word knowledge is not a clear-cut, separate process and can co-occur with any of the other stages from encountering the new word to using it. As presented in the inventory (Appendix 15), it involves some strategies specific to Chinese vocabulary learning, such as those for dealing with multi-aspects of word knowledge, dealing with morpheme-word relationships, tone learning and character learning strategies. There are also generic strategies used for learning the spoken form as well as the meaning and use aspects of word knowledge. These strategies are discussed in the following five subsections.

a. Strategies for dealing with multi-aspects of word knowledge

This sub-task mainly involves choosing the aspects of word knowledge to pay attention to, an issue that is not unique to Chinese vocabulary learning. Vocabulary learning is an incremental process (Schmitt, 2008) and learners are not likely to learn everything about a word at one attempt. There are limited processing resources that a learner can allocate during general learning (Wickens, 1991), including vocabulary acquisition and the learning regarding one aspect might compromise the learning of another (Barcroft, 2002, 2006). Nation (2013) points out that learners need planning strategies to choose which aspects of word knowledge to learn first. However, their self-regulation in choosing the aspects of vocabulary knowledge to focus on or ignore until later is rather unexplored in the strategy literature, perhaps because this is traditionally considered as a decision for teachers or researchers. The debates on separating the teaching of spoken and written Chinese as well as character-based versus word-based teaching approaches have not been addressed from a learner strategy use perspective, except perhaps by Shen (2005, p. 57), who identifies "I learn how to say a word before I learn the characters", as a highly-used strategy.

Due to the challenges in form learning, especially the extra layers of learning tones and characters that lack obvious sound-to-symbol correspondence, the necessity of using strategies that foster paying attention to learning different aspects of word knowledge in Chinese vocabulary, as suggested by my data, appears to be very strong. All the participants provided similar reports on the difficulty of learning Chinese: in Jack's

words, “the mental overload, it is enormous” (JAC_INT_P), and Betty calls it “mentally draining” (BET_INT_1), as learning Chinese requires them to attend to many different aspects simultaneously. Sarah, Fiona and Luke characterise the difficulty as like learning two foreign languages at the same time: it is one thing to learn how to say a Chinese word and how to write it in Pinyin, whilst it is a completely unrelated process to learn how to recognise and write the same word with characters. Sarah further reflects that before using strategies to self-regulate, she could not learn any aspects well enough to feel she was making progress and this further caused problems in her affective aspect, whereby she felt overwhelmed and frustrated. Emily finds it unrealistic to learn all aspects of form knowledge and reported having vocabulary she can only understand in a spoken context or a written context but not both. For this reason, she has delayed or given up the handwriting of some characters. The data suggest that the challenges in learning Chinese are not merely the difficulty of individual tasks like learning the characters or the tones, but also at a macro-level, learners’ uncertainty of how to deal with the overwhelming information of Pinyin, the tones, the characters, the meaning and the use aspects, which all compete for their attention. However, the highly self-regulated learners in this study actively manage their attention to solve this issue.

Two approaches seem to be used by the participants of this study: the “spoken Chinese before written Chinese” and the “characters/word parts then words”. The former, corresponding to the teaching approach of the same name, means delaying character learning so that learners can focus on learning the spoken language first. Sarah, Jack, Adam, Emily and Luke mainly use this approach, but have different extents of delaying characters. Sarah’s approach, as demonstrated in Figure 8.1, divides the learning task into the most steps. Emily delayed character handwriting to expand her vocabulary size faster at an earlier stage, but reported that given her current advanced level, she is now able to learn handwriting almost simultaneously with recognition. Jack and Adam have both given up handwriting and only learn to recognise characters as they can type these. The other approach, “characters/word parts then words”, refers to learners putting the main effort into learning the characters first, and later use the character/word part knowledge to process and learn words. Mark is the only learner in this study who takes this approach and his strategies for dealing with multi-aspect of word knowledge are demonstrated in Figure 8.2.

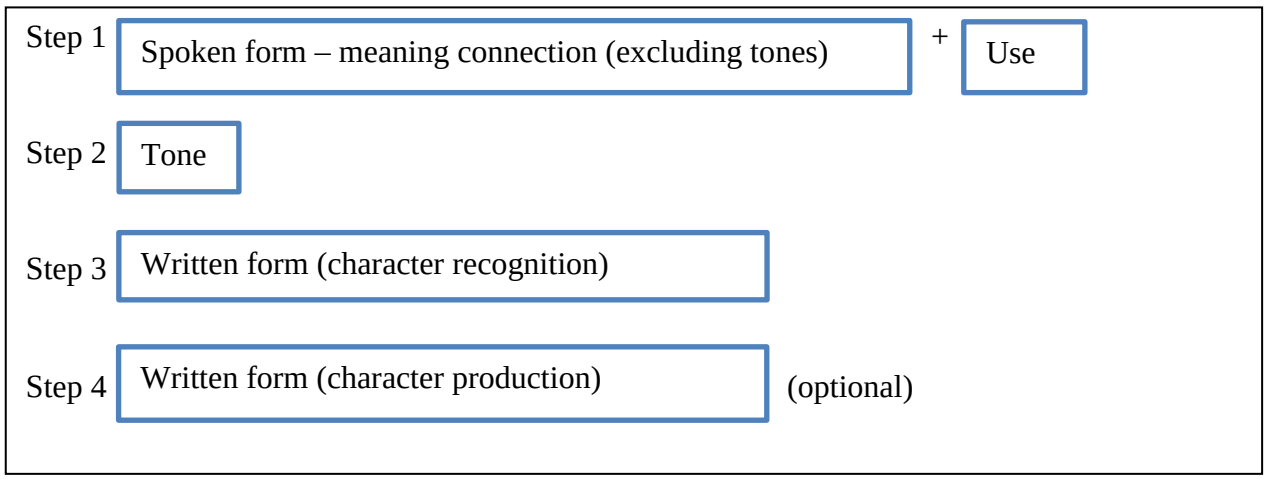


Figure 8.1 Sarah's strategies for dealing with multi-aspects of word knowledge: A "spoken Chinese before written Chinese" approach

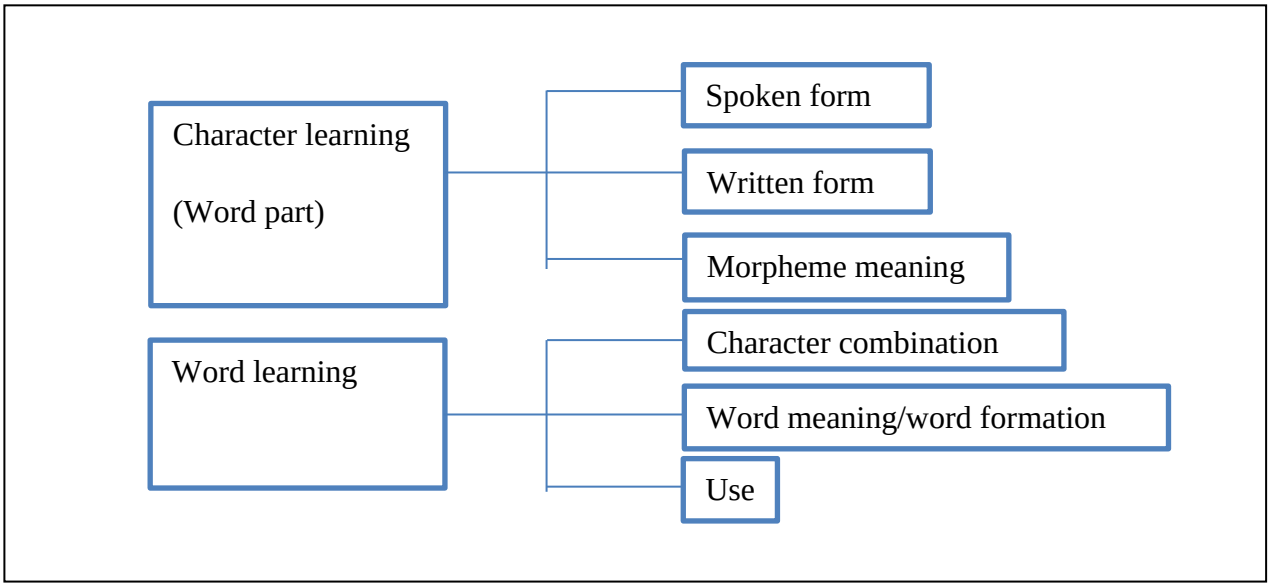


Figure 8.2 Mark's strategies for dealing with multi-aspects of word knowledge: A "characters/word parts then words" approach

The two approaches identified both have their own merits and limitations, some of which have been discussed in subsection 3.4.1 in relation to the corresponding teaching approaches. The data reveal that learners who take the "spoken Chinese before written Chinese" establish a spoken form-meaning mapping first, and can use this mapping to facilitate character recognition later by retrieving either its sound or its meaning (no need for both). The activation of one aspect naturally leads to that of the other aspect through the spoken form-meaning connection. The spoken Chinese knowledge can also facilitate guessing a character in a two-character word (as discussed in 8.2.2). Taking away the

time-consuming character learning also allows the learner to pay more attention to the use aspect of word knowledge and enables the use of spoken Chinese immediately, which can further motivate learners. The disadvantage of this approach, especially if character recognition is delayed, is that it could a have a negative impact on learners' ability to recognise and pinpoint morphemes. It can also hinder the development of morpheme knowledge in Chinese due to the large number of homophone-morphemes, as can be seen from Sarah's case (see 5.4.1). The merits of the "characters/word parts then words" approach include the fact that it requires the learner to devote a lot of effort to character learning (sound, shape, meaning) and this can contribute to better morpheme knowledge, which is essential for using morpheme-related strategies to guess word knowledge (as discussed in 8.2.2) and expand vocabulary (as discussed in 8.2.4.b). The disadvantage, however, is that learning characters in isolation can be an extremely boring, time-consuming work and not all learners have the time, or are self-disciplined and dedicated enough to persevere with it. If the first step of character learning is not completed well, word learning can be compromised and the advantages of dividing the task into two parts will be lost. This can be seen from Betty's case, as she tries to learn characters directly from a book, but does not memorise them well, so she benefits very little from this approach. Also, delaying or neglecting the learning of meaning and use aspects of word knowledge could have a negative impact on learners' skill development.

The influencing factors on how much a learner needs to divide the learning task seems to depend on their proficiency level, personality traits as well as the amounts of study time and natural input available for consolidation. Sarah is the most selective in dealing with different aspects of word knowledge, and this most likely has resulted from the fact that she learns at a slower pace at her beginners' level, has a conscientious personality trait of aiming to learn accurately, and has limited study time as well as few opportunities for natural input for consolidation (see 5.3.4.a for details). Emily and Adam, however, started learning Chinese as full-time students in China and continued living in China for two and four years respectively, so that they are able to learn character recognition at the same time as the sound, meaning and use aspects. Jack has a very relaxed personality and he does not require himself to be accurate all the time, and therefore is not as selective as Sarah. Mark has dedicated very regular and extensive study time, and his personality traits of being highly-driven, self-disciplined and conscientious support his learning individual characters in isolation. In addition, learners' decisions on what aspects of word knowledge they learn first appear to be influenced by their interests and beliefs. Sarah is

more interested in becoming able to speak Chinese and believes handwriting to be less useful (as do Adam and Jack), while Mark prefers learning from reading and believes handwriting is the only way to remember characters. Lastly, the data appear to indicate that learners need some strategy instruction about possible ways of dividing up the task of vocabulary learning. Sarah started to use "spoken Chinese before written Chinese" after being taught this way and Mark, who does not use this approach, reported that the idea of separating spoken and written Chinese simply never came to him. Now that he has heard of it, he sees it as a being beneficial for learners at lower levels. However, being taught with a certain teaching approach does not necessarily mean the learner will absorb the idea and use it as a learning strategy. Betty stopped delaying character learning after she left a programme that employed this approach, and does not use any strategies to manage her attention towards learning (despite reporting that she feels overwhelmed and frustrated by learning characters at the same time as the spoken language). So, her previous behaviours might only involve complying with what the teacher has asked rather than being a strategy.

b. Strategies for dealing with the morpheme-word relationship

Word parts can be used to facilitate vocabulary development and relevant strategies have been identified in previous studies on learning Indo-European languages (e.g. Schmitt, 1997). Nation (2013) suggests that using this type of strategy helps to see connections between related words, check guesses from context and strengthen form-meaning connections as well as facilitating working out the meaning of a word, thereby benefiting vocabulary learning and use. The findings from my study show that word-part or morpheme-related strategies can also be used for these purposes in Chinese vocabulary learning, but are engaged with in different ways. Some learners, e.g. Sarah, Jack, and Fiona, mentioned using inflectional or derivational morphemes when learning other foreign languages, but they do not recognise the morphological units in Chinese or are not fully aware of possible Chinese-specific morpheme-related strategies, or have difficulty in using them (see 5.3.4b and 6.3.4b). Due to the specific features of Chinese morphology, i.e. the majority of morphemes being bound roots, and the main word formation method being compounding, learners need to develop awareness and strategies for dealing with morpheme-word relationships in Chinese. The data suggest that highly self-regulated learners evolve in their strategy use regarding this aspect, and they seem to deal with the morpheme-word relationship according to two different approaches, i.e.

"word-based vocabulary learning with attention to constituent morphemes" and "characters/word parts then words".

"Word-based vocabulary learning with attention to constituent morphemes" is in line with the word-based teaching approach (as discussed in 3.4.1), and Emily is the best example in this study of a learner who uses this (see 7.3.4.b for more details). The main strategies pertaining to this approach include making a direct effort to memorise actual words rather than individual characters, recalling or searching for the meanings of the constituent characters in a word without forcing the memorisation of them, analysing possible meaning connections between the constituent characters and the whole word, and recalling or searching for other words containing the same constituent morphemes. The process of extracting semantic information from compound words can help form morphological awareness in Chinese (H. S. Zhang, 2016). "Characters/word parts then word", as explained in the previous section and demonstrated in Mark's case (see 6.3.4.b for more details), involves memorising the individual characters, first and directly, whilst word learning becomes secondary. The two approaches both have merits and limitations, hence it is perhaps premature to say one is better than the other, as the debate continues about whether word-based or character-based vocabulary is better. According to my data, the word-based method brings an additional learning burden by asking learners to pay extra attention to word parts while learning words, whereas the character knowledge accumulated this way might not be as explicit. However, it is easier to implement and perhaps a better way of using learners' time, as it encourages the learner to direct attention to memorising lexical units which can be directly used in constructing sentences. The "characters/word parts then words" approach can be very hard in relation to affective aspects of learning due to the boring process of memorising individual characters. The time and effort needed for memorising word parts that cannot be directly used in communication, may be better used in developing skills.

The factors influencing this approach include pedagogical or peer influence, for as Emily reflects, she uses these strategies because her sister taught her in this way at an early stage. There are also the availability of study time and the proficiency level factors. At a lower level, Emily had the advantage of studying full-time to digest the new information brought in by using these strategies and later when she rarely encountered unknown characters in words, her attention was freed from memorising character-sound/shape. Consequently, paying attention to the constituent morphemes does not introduce completely new information, but rather, nowadays, reinforces, adjusts or enriches her

previous character knowledge. She also has a bigger vocabulary size to which she can associate a new word. The interest factor also plays a role, Emily has an intrinsic interest in understanding the logic behind word formation, while Sarah has a stronger interest in learning the spoken language. Lastly, certain knowledge (e.g. characters) or strategies (e.g. using a dictionary) could be required to support using these strategies. Betty, who also sees their value (because her teacher uses them to teach vocabulary in class) and wants to use them in her own study, does not know how to find words containing the same constituent morphemes. Sarah and Adam both try to associate words without knowing or verifying with a dictionary to see if they share the same character, so the associations they make are based on sounds rather than morphemes.

c. Strategies for learning the spoken form

Learning the spoken form (excluding tones) of a Chinese word shares many generic strategies with learning words of other languages, such as repetition and comparing. This study further identified more active ways of implementing repetition, such as having different learning focuses and goals every time they repeated, which can all be found in Sarah's case (see 5.3.4.c for more details). One set of Chinese-specific strategies is the Pinyin-related ones, include mastering the Pinyin accurately and fluently, visualising the Pinyin in speaking, or noting down in Pinyin. An important yet neglected aspect of learning the spoken form of a word (in the LLS research field) is to learn and memorise the tones. As explained in section 2.2, a tone is attached to each syllable to differentiate meanings or express grammatical functions and therefore, memorising the tones of a word involves memorising 1 or 2 tones. Some tone learning strategies this study has identified confirm previous findings (Arrow, 2004; Hu, 2007; Hu & Tian, 2012) that learners pay attention, repeat immediately, ask for and note down tones when learning a new word, visualise the tone marks for words in listening and speaking, use gestures to mimic tone marks when speaking, apply a colour-coding system for tone learning and practise tone perception. Sarah reported a strategy of learning and practising the tones of a word in a sentence, which is briefly mentioned in Hu (2007) without much explanation. Sarah reported that when she tries to learn the tone of a word, she endeavours to put that word in a sentence and listens to that sentence a few times to get the feeling or the rhythm of it. She finds this helpful, because it is easier to get the rhythm of the whole sentence like learning a song and later when she needs to use the individual word, she thinks about the rhythm of the sentence and isolates the word from it. Lastly, some new tone learning strategies are revealed from my data. These are seeking correction from native speakers

(Mark), having a separate exercise to add tone marks for one's own writing or homework to practise retrieving tones (Sarah) as well as pronouncing the syllable in four types of tones, consecutively and then pronouncing it in the tone type which it is supposed to be (Sarah). In this way, the differences between types can be emphasised and it is easier to pin down which tone type should be pronounced. This strategy seems to be exceptionally useful for beginners who have not solidly grasped the four types of tones.

d. Character learning strategies

The data suggest that highly self-regulated learners use meta-strategies to a great extent for character learning, and this is in line with Shen (2005), who identified structured preview and review as two commonly used metacognitive strategies for doing so. Comparing Sarah and Betty's cases for this study, it can also be seen that selecting some characters to learn first, learning to recognise a character before writing it, and having a system or routine to review are very important. Moreover, the data indicate that when study time is limited, selecting a reasonable number of characters to learn is especially necessary as it relates to realistic goal-setting. Sarah learns the most frequently used characters first and controls the number she learns, so that she does not feel overwhelmed and can learn these characters well, which leaves her feeling she is making progress and hence, is motivated to learn more (see 5.3.4.d). Betty, who tries to learn all characters in her vocabulary lists, does not have sufficient time to review, so she does not master characters well enough to be able to use them, saying "when you see them, you are like, […] I kind of recognise it, but I am not quite sure" (BET_INT_2). It further makes her feel frustrated and gradually lose confidence, "you think you cannot learn, […], it is kind of a negative reinforcement to your learning sort of thing" (BET_INT_2). At the beginners level, it is also more important to recognise characters before handwriting them, as the recognition task is easier (Ke, 1996), so learners are more likely to accomplish it and feel motivated by the progress (contributing to the affect aspect). Moreover, the process of learning to recognise characters forms orthographic awareness and prepares the learner for handwriting (Ke, 1996). After learners reach a point where they can recognise a group of characters consistently, they can use them in reading, which further helps the handwriting task and provides a sense of achievement. Lastly, some of the participants have different review systems, such as using websites or pursuing daily routines. Those who do not have one, such as Fiona, Betty and Jack, often have moments described as "you don't grasp them quickly" when reading (BET_INT_2).

This study has also identified some generic memorising strategies used for character learning, which mainly involve learning characters in isolation as symbols, rather than tools for meaningful communication. These strategies include creating or using mnemonics (e.g. imagining a character as an image) and some form of repetition (e.g. drilling on flashcards, visualising or writing the character repeatedly or hanging lists on a wall), some of which have been identified previously (Grenfell & Harris, 2015; Jiang & Zhao, 2001; S.-h. C. Wang, 1998). It has emerged that mnemonics are used, some being self-created (Luke), whilst some are created by others, e.g. Sarah uses a website. Shen (2004) suggested that both self-generated and instructor-guided elaboration lead to better character retention than rote memorisation. Repetition is often regarded as a shallow-processing strategy and has been linked to less desirable character learning outcomes in some studies (e.g. G. Zhao & Jiang, 2002). However, some studies have also shown that learners, especially beginners, use repetition the most frequently (e.g. McGinnis, 1995) and have evaluated it as effective (e.g. Ke, 1998a). My study provides some explanation of why beginners favour this approach, in that the data show that learners have different ways of using repetition, including repetition with sound/meaning access (e.g. drilling on flashcards and retrieving either the sound/meaning or the character) and without such access (e.g. copying in grids). From the learners' reports, they serve different functions: the former targets sound-to-symbol or meaning-to-symbol correspondence, whilst the latter contributes to forming orthographic awareness, which can have a long-term benefit for character learning. Fiona and Sarah both reported paying more attention to stroke order, the space between strokes and the position of the strokes and components in a character in handwriting, not thinking about the sound and meaning. Furthermore, the data also suggest that in some cases repetition is used in combination with "orthographic knowledge-based learning strategies". Sarah pays attention to naming the strokes and stroke order, whereas Mark divides the character into components, retrieves the sound and meaning of the components and forms connections between characters. Hence, their use of repetition is not about repeating the character itself without processing it (a shallow processing strategy), but rather, to reinforce the principles of writing stroke order, to divide a character into components and to make associations between characters. This "repetition of analysing" could be essential for beginners being able to develop the ability of using Chinese orthographic knowledge skilfully and fluently as well as to become ready to use "orthographic knowledge-based learning strategies" without repetition. This can be seen with Emily's case, as she described that she would need to write a character

"a million times" in the beginning, but now she can look at a character, break it into parts, write it once and then be able to write it afterwards.

This study has also identified some character applying strategies, which involve using characters in semi-authentic or authentic language use activities, such as taking notes, reading and writing. These strategies are the least frequently used by beginners in some studies (e.g. Jiang & Zhao, 2001), but are significantly related to desirable character learning outcomes (e.g. G. Zhao & Jiang, 2002). The benefit of using these strategies, as argued by G. Zhao and Jiang (2002), is that they allow learners to use characters as a tool for real communication rather than just symbols they need to memorise. My data support this view in that Sarah, Adam and Jack, who use these strategies evaluated them highly, because they feel writing and reading sentences or articles makes character learning more meaningful, interesting, and real. Sarah and Jack both value using creative-writing (by typing) to learn characters, as it allows them to select what characters to learn when deciding what to write and thus, makes the learning more relevant to them, which in turn renders memorisation easier.

Lastly, my data also show the use of orthographic knowledge-based learning strategies, a category of character learning strategies that has been discussed extensively (e.g. Shen, 2005). Learners in my study use stroke strategies (most can be seen in Sarah's case, 5.3.4.d), including learning about Chinese strokes, naming each stroke when writing a character, writing characters in grids as well as paying attention to checking and writing in the correct stroke. They also deploy order character-component strategies (best seen in Mark's case, 6.3.4.d), including dividing characters into components, identifying semantic/phonetic components, analysing semantic/phonetic connections between the component and the character, and using semantic/phonetic components to associate characters. G. Zhao and Jiang (2002) asserted that using character-component strategies positively relates to character learning outcomes, thus suggesting that there could be great value in encouraging students to use these strategies. However, previous findings (e.g. Jiang & Zhao, 2001; McGinnis, 1995) also suggest that beginners do not use components often, with one possible reason being that many semantic-phonetic characters (which character-component strategies work the best for) are not used in basic and high-frequency words, which beginners would encounter often (DeFrancis, 1984; S.-h. C. Wang, 1998). My data in addition have indicated that beginners have serious difficulty in using character-component strategies. Fiona often mixes up character-components, and so she does not see the logic and benefits of using these strategies, stating that "I kind of

wish I have not had so much explanation about the origin of the characters because I think if I literally just learn them it would be less confusing" (FIO_THI_4), so she prefers to use generic memorisation strategies. Indeed, using character-component strategies requires the ability to divide characters into components logically, being able to recognise components accurately, and applying component knowledge to various characters, all of which need to be developed (as shown in Shen & Ke, 2007). Based on the data from my study, DeFrancis'(1984) suggestion, that the most beneficial way for beginners to learn characters is to start with a small number of high-frequency characters and ignore the components, seems to be appropriate. He argued that once beginners have accumulated enough character knowledge, teaching the semantic and phonetic components then would make more sense to learners, as they could utilise what they already know to rationalise the semantic and phonetic links. In addition, solid previously-learned character knowledge is needed for associating characters based on shared components. Both Mark and Emily can easily recall characters to associate a new character with, whereas Betty often attempts to do so, saying that she has seen the component in other characters, but cannot actually remember what the characters are. Lastly, learners' personality traits can also play a role, especially their tolerance for an orthographic system that only reflects meaning and sound in an irregular way. As the semantic connections between the components and the whole characters can be abstract and the phonetic connections can be only partial, some learners, such as Jack and Fiona, find the rules "messy" (JAC_INT_P), whereas Emily and Mark are content with seeing just a little connection.

e. Strategies for learning the meaning and use aspects of word knowledge

The strategies identified for the sub-task of learning the meaning and use aspect of word knowledge are generic for learning other languages. They appear to fall into two categories, one involving more intentional, rule-seeking processes, whilst the other requires more incidental, natural acquiring processes. Some deliberate rule-seeking strategies include consciously using L1 knowledge and meta-linguistic knowledge to analyse similarities and differences between Chinese words and corresponding L1 words, such as Sarah does (see 5.3.4.e and 8.2.2). Translation can be used in a very active way, e.g. Sarah reported, first, translating a sentence into English word-by-word, followed by translating it more holistically, and then, comparing how words are used differently, a conscious comparison that can help establish the use knowledge of a word. Emily uses deliberate rule-seeking strategies to analyse what sentence component (e.g. subjects, predicates) the word can be used as, extracts collocational patterns of a word, or pays

attention to word order. Arguably, learners with an analytic learning style prefer to use these strategies, as seen in the case of Sarah and Emily's, who report that breaking language material into parts can help them learn better. Some strategies are used to test one's own understanding and seek feedback to enhance use knowledge further (e.g. Sarah's sentence writing). Jack asks his teacher to highlight only the error, which he then figures out how to fix himself, and subsequently, he rewrites the sentence so as to increase the depth of processing. The data also revealed the strategies of paying attention to the context a word can be used in (Emily and Sarah) and trying to write a paragraph rather than a single sentence to practise choosing the right word for a certain context (Sarah). These could be very good yet neglected strategies, for as Miller (1999) has asserted, a very important aspect of knowing a word is having a cognitive representation of the set of contexts in which a given word form can be used to express a given meaning. The less intentional strategies for learning the meaning and use aspect of words include observing how native speakers use a word and copying and using it in that way (Emily and Adam). Mark and Jack also reported expecting to use the words in various natural language use activities and gradually grasping how to use them. Learners' beliefs about how words should be learned and the language environment seem to influence their choices or strategies for this task.

The stage of establishing word knowledge, as can be seen from 8.2.4, is complex and has multiple aspects. Strategies for dealing with multiple aspects of word knowledge and dealing with morpheme-word relationships help to set the tone for the whole stage or even the whole vocabulary learning process. The strategies used in the previous information-searching and keeping stages appear to be very relevant to this stage, as highly self-regulated learners continue to select the information they notice and note down to deepen their vocabulary knowledge. Learners have various ways of implementing the strategies they choose, and their strategy uses are influenced by their beliefs, proficiency level, interests, personality traits, immediate study context, language environment as well as the special nature of learning Chinese vocabulary. Some previously identified strategies have been re-examined with these influencing factors for a more comprehensive understanding of how they are used and why.

8.2.5 Use of strategies in consolidating word knowledge

For the stage of consolidating word knowledge once established, the data indicate that learners either use deliberate consolidating strategies or non-deliberate ones (see Appendix 15 for specific strategies). The deliberate approaches include repetition, self-

testing or creating opportunities to use the word to consolidate a predetermined and specified set of vocabulary, which Sarah and Mark both use extensively. Betty reviews her notes of meetings with her language exchange partner, and tries to reconstruct the whole conversation. Jack also has a good strategy, which involves creating a cloze exercise himself by randomly taking ten words out from a text he has studied and trying to put them back. The non-deliberate consolidating strategies mainly involve consolidating words through re-encountering them during natural language use activities. Learners who have lived in China, such as Emily and Adam, reported using these strategies. Jack also reads a Chinese article every week, expecting to reencounter high-frequency words often enough to consolidate. The data suggest that learners' choices of use consolidating strategies are influenced by their beliefs and the language environment. Jack believes that consolidating words through reading is best as it is more interesting and motivating. Emily used non-deliberate consolidating strategies in China as the environment provided sufficient language use opportunities, but tries to use deliberate consolidating strategies now she is back in the UK.

8.2.6 Use of strategies in using word knowledge

Strategies used for retrieving and better using word knowledge are rarely discussed (if any) as a separate category. My study has identified two categories of such strategies and they are highly relevant to general FL vocabulary learning: those for activating word knowledge and those for achieving better performance (see Appendix 15 for specific strategies). Sarah reported retrieving or visualising the context from which the word was initially encountered or learned to "draw the word to the front of my mind". This seems to relate to what Sanaoui (1995) identified as contextual association strategies, in which the learners connect a word with a particular event they have experienced or a situation when the word first appeared, but in her study, the strategy appears to have been used for establishing word knowledge, rather than retrieving it. Sarah also recalls the example sentence or phrase of the word she has memorised to activate the sound, tone, meaning, usage or analysing how the word should be used. Emily visualises what components are there in a character when she tries to handwrite it, or uses her collocational-pattern knowledge to support recognising words in reading. Mark visualises the characters when he tries to process an unfamiliar word and retrieves its meaning in a spoken context. The learners' activating strategies have been found to be closely related to those deployed for establishing word knowledge. This points to the value of remembering example sentences/phrases, analysing character components in learning characters, analysing word

parts when learning words and establishing collocational-pattern knowledge, as they can all create mental hooks that later can be used to facilitate activating word knowledge. There are also strategies used for achieving better performance. Sarah visualises the Pinyin and the tone marks, whilst Mark, Betty, and Luke all use their body gestures to emphasis the tones when speaking. Emily analyses the sentence structure to make sure she understands the word correctly in reading. These strategies all contribute to better pronunciation or comprehension of words.

8.3 Possible influencing factors on strategy uses

A main aim of this study was to identify possible factors that can influence strategy use in Chinese vocabulary learning and how they work. Some factors have been identified within specific contexts in 8.2, and in this section I bring them together to discuss in more general terms their relations with learning. The data indicate that a number of factors, and they can be classified using Gu's framework as person factors (such as interests in learning Chinese, learning styles, personality traits, proficiency levels), context factors (such as. language environment, immediate context) and task factors (e.g. the special task nature of learning Chinese). These factors can also be analysed through a different lens, that is, whether the factors enter the learner's self-regulation or decision-making process, or fail to be included in such a process. This study finds that certain factors can potentially influence strategy use regardless of learners' awareness or self-regulative effort. This section next discusses how the factors influence strategy use without being considered in individuals' self-regulation, and hence these are classified as non-regulative factors. In addition, the section discusses the learners' self-regulation factor, including their meta-knowledge and use of meta-strategies, which can also influence strategy use in a more direct and conscious way.

8.3.1 Non-regulative factors and strategy uses

Non-regulative factors are seen in my study to influence learners' strategy uses in subconscious ways. Take learner interest as an example, learners can follow their interests, e.g. Sarah is more interested in conversational Chinese, whilst Mark is more attracted to characters and they both naturally and perhaps not entirely intentionally put more effort into those aspects they are interested in. However, when learners think consciously and strategically about a factor in planning (e.g. whether to act in accordance with their interests, or to stretch themselves a little to balance their learning), this factor influences strategy use through learner self-regulation, which is discussed in the next two sections.

The learner interest factor influences learners' strategy use and this can be especially seen when they do not have enough time to learn everything they are interested in, which results in them failing to have a good grasp of the knowledge they need. Betty has a strong interest in characters and she reads a book to learn them directly. However, she cannot devote sufficient time to this and ends up feeling rather frustrated that she cannot make good progress with them, but she still perseveres.

An analytic and holistic cognitive learning style also seems to play a role. Regarding which, Sarah reported preferring to break a sentence down into parts, calling this "learning properly", thus suggesting that she has an analytic cognitive learning style. She uses many deliberate rule-seeking strategies and divides her learning into more sub-tasks than other learners. A related factor is personality traits, for which my data have revealed that learners who appear to be conscientious (Sarah), self-disciplined, persistent, and driven (Mark) tend to use more meta-strategies to plan and evaluate their learning, and do not mind using deliberate yet boring strategies such as repetition, if they see the value of using them. This is in line with Ehrman's (2008) finding on how personality influences strategy uses. Learners with higher tolerance of irregularity (Emily, Mark) evaluate orthographic-knowledge-based character learning strategies as more helpful and report using them more than those less tolerant (Fiona, Jack).

As the use of some strategies requires certain knowledge and skills, the proficiency factor has a strong impact on learners' strategy uses. A typical example is the use of orthographic-knowledge-based character learning strategies, which require learners to have character or character-component perception ability, knowledge about the orthographic system (e.g. how phonetic-component work), character-component knowledge (e.g. the meaning or sound of a semantic or phonetic component) and character knowledge. Beginner Fiona, who is missing the perception ability to differentiate character-components with similar shapes, finds the orthographic system confusing and does not use these strategies.

There are also the context factors, including language environment and immediate study context, such as available study time, part/full time, and how well and structured the teaching is. The language environment provides natural language input and output opportunities. As a result, Emily and Adam both used the strategies of interacting with native speakers to encounter and consolidate words when they were in China, but not so much in the UK. Part-time learners appear to have more trouble attending to all aspects of word knowledge simultaneously, as seen from Sarah's and Betty's cases.

Lastly, the special nature of Chinese vocabulary, i.e. sharing few cognates with English, using a different kind of morphology, having tones and using characters, all require learners to use strategies differently to learning other languages, which obviously influences the strategy uses. For example, sharing few cognates with learners' L1 means they cannot use inter-lingual cues to guess and process words and thus, more intentional learning is required in order to process and consolidate the form to memorise.

8.3.2 Learner self-regulation and strategy uses: meta-knowledge

In Oxford's (2011b) strategic self-regulated language learning model, strategies and meta-strategies are both supported by learners' meta-knowledge. My data support this model, with three types of meta-knowledge having been identified. The first is learners' knowledge about relatively factual content, such as the aspects of word knowledge in Chinese, the character/morpheme-word relationship and orthographic system. The second type is learners' awareness of their own strategy uses, progress and problems in learning. The last is learner beliefs, which reflect certain values in decision-making, such as how vocabulary in general should be learned, the importance of characters and tones, and the effectiveness of various strategies.

Knowledge

A number of instances on how learners' knowledge can influence their strategy uses have been identified in 8.2. Learners (e.g. Sarah, Mark) who know about the various aspects of word knowledge in Chinese regulate their learning more systematically and comprehensively. They are more selective in planning what aspects of word knowledge to learn and when to learn them. Also, the knowledge about the character/morpheme-word relationship in Chinese influences the use of morpheme-related learning strategies. Sarah only started to pay more attention to reoccurring sounds and characters in different words as well as more morpheme-related strategies when she recognised characters as the morphological units in Chinese. Both Mark and Jack appear to believe that characters do not have fixed meanings, e.g. Mark refers to the meanings he notes down as not "official", whilst Jack calls characters "syllables", saying they are similar to "-ful, -less" and consequently, they do not use morpheme-related strategies to their full extent. Emily, however, understands the nature of this aspect better and uses strategies more consistently. Learners' knowledge of the orthographic system, i.e. if they have direct character-component knowledge, influences the types of strategies they use for learning characters. Mark uses character-component knowledge directly, whereas Emily uses characters

sharing the same component to help process new ones. Although in general, the more the learner knows about the linguistic features of Chinese language, the better they can use relevant strategies, the knowledge aspect in isolation does not seem to be a key factor in differentiating between highly and less self-regulated learners differ. Both Fiona and Betty demonstrated good knowledge about certain aspect of Chinese language, but they do not seem to use it to support strategy use. Highly self-regulated learners sometimes were found to use strategies ineffectively due to the lack of important knowledge at the beginning, as seen in Sarah and Mark's case. However, as they make effective use of meta-strategies (discussed in 8.3.3), they often notice the problems in their learning and try alternative ways to adjust their strategy uses.

Awareness

The focal learners also have different levels of awareness about their own strategy uses, learning progress and problems in learning, and this appears to be a key difference between the highly and less self-regulated learners. The three cases reported in previous chapters can all articulate their own actions in detail, explain the reasons for using certain strategies and can report their beliefs about the effectiveness of specific strategies clearly. Other highly self-regulated learners can also report specific problems they identified in their own learning, and further strategy uses in attempt to solve these problems. In contrast, Betty often stated that she is not sure what she does to learn because her learning is "not necessarily a conscious thing" (BET_INT_1) and "I don't know if that helps" (BET_INT_2). She was less aware of own strategy uses and the effectiveness of her strategies than the other focal learners. She also did not identify any specific problems in learning and believed, in general terms, that her undesirable learning outcomes were due to lack of study time. My study has found that learners who are more aware of their own strategies (especially planning), the reasons for using particular strategies and of the effectiveness of strategies can use meta-strategies better to improve their learning, yet learners' awareness about their own learning is most likely the result of the effective use of a series of meta-strategies (especially the self-assessing and self-diagnosing chains) effectively. This highlights the important role of meta-strategies, which is discussed in 8.3.3.

Beliefs

Lastly, this study has identified a variety of learner beliefs that can further influence their use of meta-strategies and strategies. The learners reported beliefs about how vocabulary

should be learned, either “learn vocabulary and then put it to use” or “acquire vocabulary in context” , also identified in Gu and Johnson (1996). Learners with the former belief, e.g. Sarah and Mark, reported their belief that vocabulary should be learned and then be practised or used; using more structured and deliberate strategies to learn and then use. Learners with the latter belief, e.g. Betty and Jack, reported their opinion that vocabulary should be learned through natural conversation or reading, and they have a more natural and incidental approach. This seem to be a strong influencing factor resulting in the two different approaches of vocabulary learning further discussed in 8.4.

The participants reported various views about the importance of characters and tones, which influence the amount of effort they contribute to learn these aspects. Sarah, Adam, Jack, who believe character handwriting the least important, deal with this aspect the last or give it up entirely, whereas Mark, who believes character handwriting to be important, learns this aspect the first. Adam believes that tone learning is not very important, so he often neglects it, whereas Sarah, who believes the opposite plans a series of strategy uses. Some learners reported feeling embarrassed about pronouncing tones: as Betty explains it, “you feel like you are being dramatic or exaggerating” (BET_INT_1) and Fiona, “the tones remind me of how we speak to children” and “I would never infantilise myself in this way” (FOI_FOL_1), which would thus appear to inhibit their use of tone learning strategies.

In addition, the learners reported their beliefs about the effectiveness of different approaches and strategies, some of which have been mentioned in 8.2. This is a key area where highly and less self-regulated learners differ, as the beliefs of highly self-regulated learners reported seem to be more specific to themselves as learners, the task of learning Chinese, and the contexts in which they learn, whereas the beliefs less self-regulated learners reported appear to be much more general. For example, highly self-regulated learners believe learning Chinese, in general, requires a more structured, deliberate approach and involves more repetition and memorisation tasks than learning other languages and this is a task-specific belief. As a consequence, they use more planning and deliberate strategies when learning, e.g. Sarah’s use of a vocabulary list and Mark’s daily handwriting exercises, which are all strategies they use exclusively for Chinese. Less self-regulated learners, such as Betty, appeared to report beliefs that are very general, for example, the belief that learning naturally is the best way to learn. Consequently, the strategies they use are less appropriately adjusted to their specific situations. The differences between highly and less self-regulated learners in their beliefs about the

effectiveness of strategies and approaches may be a result of their use of meta-strategies (especially self-assessing and self-diagnosing process), which is further discussed in 8.3.3.

8.3.3 Learner self-regulation and strategy uses: use of meta-strategies

The previous literature has emphasised the importance of using meta-strategies and metacognitive strategies in language and vocabulary learning (Griffiths, 2008b; Gu & Johnson, 1996; Naiman et al., 1978). Anderson (2008) and Oxford (2011b) both identified types of meta-strategies to facilitate learning. Based on my data, I have found that it is true that the use of individual meta-strategy in isolation is important, but the process of combining certain meta-strategies into clusters to self-regulate at a macro-level is as important, if not more so. Less self-regulated learners in this study are found to use meta-strategies, but what they seemed to fail to do is to use them in a more connected manner. More specifically, by comparing the highly and less self-regulated learners' use of meta-strategies, I have identified two key self-regulative processes in which the use of meta-strategies strongly influences learners' meta-knowledge system and their specific strategy uses. One is the use of monitoring, evaluating, reflecting and causal attribution, which can help learners develop learner meta-knowledge to influence strategy uses further. The other is to consider more consciously between various meta-knowledge and influencing factors for planning and orchestrating further strategy uses.

The self-assessing and self-diagnosing chain

The first process identified from the data can be seen as a learner self-assessing and self-diagnosing process, which involves the use of monitoring, evaluating, reflecting and causal attribution strategies. It is in line with the self-reflection phase proposed in Zimmerman's self-regulation model, and the post appraisal of the effectiveness of vocabulary learning phase proposed in Tseng and Schmitt (2008). These meta-strategies are indicated through participants' self-evaluative comments, reflection about learning progress or problems, and the reasons they give for continuing or changing certain strategy uses. The three cases reported in detail are all very active in using meta-strategies for this process. For example, Sarah self-evaluated her early stage of Chinese vocabulary learning as unsatisfying and identified a few problems and the reasons as "tried to learn too many words at the same time", "did not spend enough time to consolidate", "learnt all aspects of word knowledge simultaneously and there was too much to attend to". Mark also came to realise learning characters from a list is not effective, and reflected that he needed more opportunities to use words in real context. Emily evaluated her learning in

the UK as passive and identified the reasons as the lack of motivation and language environment. She also evaluated the strategy of interacting with native speakers used in the UK as not being as useful as in China.

Although Zimmerman (2002) and Tseng and Schmitt (2008) both theorised the role of this chain of meta-strategies in their self-regulated learning models, what seems to be missing in the literature is how this chain of meta-strategies can be implemented effectively, and comparison of the findings on the highly and less self-regulated learners in this study can provide some answers. This study firstly finds that less self-regulated learners do evaluate their learning, but only in a very general sense. The highly self-regulated learners tend to take a step further to reflect and have specific causal attributions for the problems, successes or failures they have evaluated, whereas less self-regulated learners tend to stop at a simple, general self-evaluative result. This can be seen from the above-mentioned examples of Sarah, Mark and Emily, as they all identified very specific reasons for their desirable or undesirable learning outcomes, while less self-regulated learners like Betty did not.

Furthermore, this self-diagnosing process, although highly dependent on learners' evaluation and reflection, is also largely dependent on the follow-up planning to test and confirm ones' self-diagnoses. All highly self-regulated learners, especially the three key participants, reported many incidents, in which they identified a problem, proposed a hypothesis on what may be the causes of it, and then tried different strategies until the problem seems to be solved. Their diagnoses are hence confirmed and so they are more confident to say that a certain strategy is more effective than others for them. Their planning of different strategies to try out is discussed in more detail in the next section, i.e. the planning at a macro-level chain, but the use of the planning chain is found to be highly relevant for learners' effective use of the self-diagnosing chain. This highlights the importance of using the two self-regulative chains coherently.

After reaching specific causal attributions and trying different strategies to find the most effective ones, the last important role of this self-assessing and self-diagnosing process, as suggested from the data, is that it helps learners to develop meta-knowledge, especially their beliefs about what strategies work or do not work for them (rather than others), in their situation (rather than generally) and for the task at hand. It is mentioned in 8.3.2 that highly and less self-regulated learners in this study differ mainly on two types of meta-knowledge, their awareness of their own learning, and person-specific, context-specific or task-specific beliefs about strategies. These types of meta-knowledge, arguably, can

only be obtained through learners' own reflection, as they tend to be so individualised. The extra-step of thinking about why a certain strategy works for them is critical, as they become more aware of the links between factors and strategies, and are more likely to adjust their strategies when a certain factor changes. Sarah, Mark and Emily all demonstrated strategy adjustment in response to changes such as their proficiency level and language environment. The lack of this type of meta-knowledge is found to have a negative influence on learners' use of the planning at a macro-level chain. Betty, who was unable to report such meta-knowledge, seems to plan and change her strategy uses randomly, as discussed in the next section. In other words, the use of the self-diagnosing chain is also highly relevant for learners' effective use of the planning chain, and this highlights the importance of using the two self-regulative chains coherently. The findings relating to the self-assessing and self-diagnosing chain are used in developing the materials for improving learners' self-regulation, i.e. questions 1-4 (presented in 9.4).

The planning at a macro-level chain

Zimmerman (2002) theorised a forethought phase in his self-regulation model, which includes meta-strategies such as goal setting and strategic planning. This study, however, finds that while both highly and less self-regulated learners use such strategies, they differ mainly on whether they plan at a macro-level, for which learners weigh up different parts of meta-knowledge that are all valid to them, or apply more recently developed meta-knowledge, decide which are more relevant to the current situation and then select and orchestrate corresponding strategies. These meta-strategies can first be inferred from learners' reports about their reasons to use or not use certain strategies, especially when they hold one belief to be valid, whilst also taking into account the various abovementioned influencing factors. Both Sarah and Emily agree that talking with native speakers is a good strategy, but choose to not use them for different reasons. Sarah believes that she should do so when she has raised her proficiency level a little higher, whilst Emily believes that with her more advanced level, she can no longer benefit much from only basic conversation. These strategy selections indicate good planning. Betty, however, seems to plan her strategy use on one belief, i.e. learning naturally is the best way to learn, without thinking about other factors, such as her proficiency, language environment etc.

Planning at a macro-level can also be identified when learners change their strategy use coherently based on the new learner meta-knowledge they develop (from the self-diagnosing chain), especially when it involves a change of approach at a macro-level. To

solve the problem identified, Sarah has started to use vocabulary lists to restrict and select words, uses more consolidation strategies and learns only some aspects of a word first. Mark has changed his strategy of encountering characters through lists to reading books and in planning more activities to talk with language exchange partners. Emily has started going to a reading study group, which is giving her more motivation to learn and she is deploying more intentional vocabulary learning activities (e.g. listening to the news) to learn more advanced vocabulary. These all indicate a very conscious process of improving their own learning. Betty, however, appears to plan her strategies randomly and they have no particular relation with the meta-knowledge she has developed. In her diary, she reflects that previewing and reviewing for lessons and going to the reading study group is "exceptionally" helpful, but does not plan and does not follow up their usage. She often plans based on a strategy someone mentioned, rather than her own evaluation (see BET_FOL_1).

Lastly, the planning at a macro-level can be reflected in learners' orchestrating and combining a variety of strategies to attend to cognitive or affective needs. This is especially important with vocabulary learning because it is a multi-aspect and incremental process (Nation, 2013; Schmitt, 2008), which each aspect and stage requiring a different set of strategies. When planning at the macro-level, the strategy-chain covers various purposes. Sarah has a number of such strategy-chains in her learning. For example, she encounters vocabulary from the list, marks the complex words and then uses them to write her own sentences or paragraphs in Pinyin in order to practise the spoken form, meaning and use. She then adds tones and characters for her Pinyin-version of writing to practise tone and character learning. She then shows this writing to her teacher in class, which enriches her knowledge on how to use them. These strategies are nicely orchestrated to ensure multiple revisiting of the words and the learning of different aspects of word knowledge. Mark also has planned different strategies for different stages of learning, whereby he purposefully and consistently encounters and learns new words in intentional learning activities, subsequently practising what he has learned in natural language use activities. Jack, equally as good as Mark at planning at the macro-level, uses strategies in opposite ways. He encounters new words in language use activities first, e.g. reading an article, writing a paragraph, and then takes out the new words and asks his teacher to design exercises for him to practise and learn intentionally. Betty's strategies, however, all appear to be disconnected. She encounters completely different sets of vocabulary from class, talking to native speakers, watching TV and studying a character book,

without connecting them in any way. This indicates lack of planning at a macro-level to orchestrate strategies. The findings relating to the planning at a macro-level chain are used in developing the materials for improving learners' self-regulation in CFL, i.e. questions 5-10 (presented in 9.4)

In section 8.3, I have identified a number of personal, task and contextual factors and discussed how they influence strategy use when they do not enter learners' self-regulation (i.e. non-regulative factors) and when they do (i.e. the self-regulative factors). The former can influence strategy uses, so learners could take more control of their learning by becoming more aware of these and actively deciding whether it is in their best interest to use strategies accordingly or stretch their strategy use. Learners' self-regulation can also influence strategy use, including their meta-knowledge and the use of meta-strategies. I have identified two processes of combining certain meta-strategies into clusters and some specific key elements in implementing them to better self-regulate: the self-assessing and diagnosing process and the planning at a macro-level process. These two processes not only influence learners' current strategy uses, but also shape their future strategies and their ability to improve their learning. The former process helps explain why some learners are more aware of their strategy uses and effectiveness, which the latter elucidates why some learners use strategies coherently and consistently, whereas others use them in isolation and randomly.

8.4 Fine brush and free hand learners

It has become evident when describing Sarah, Mark and Emily in each case study chapter that these three key participants all have their own merits in terms of their learning strategy choices and qualities, all of which are distinct: Sarah has her meta-linguistic awareness and macro-level self-regulation; Mark employs self-discipline and the use of character learning strategies; and Emily uses strategies for dealing with morphemes and aspects of word knowledge that focus on use. Apart from these individual merits, there are also apparent similarities and differences between their learning approaches, so that they can be further grouped. Sarah and Mark both have predetermined and specified sets of vocabulary they aim to master accurately, and they put effort into learning individual words from this set. They are what Gu (2003a) refers to as fine brush learners, who focus on the details of word learning and intentionally try-out to use the words. In comparison, Emily learns in a much less controlled manner: she reads and listens and has a great amount of target-language input, but she does not pay as much attention to learning the individual words encountered and she is similar to Gu (2003a) attribution of the free hand

learner, as she uses more extensive reading, is more concerned with the overall understanding, only focuses on words they find interesting and prefers to use words in real situations rather than deploying deliberate consolidation. Gu's (2003) identification of the fine brush and free hand learners was developed based on two successful cases in learning English. Having examined the eight participants of my study, it is clear that all the learners fit well into these two categories. With more data, I further explain more differences between the two in the following subsections, including their learner beliefs and strategies.

8.4.1 Fine brush learners

The fine brush learners in my study are Sarah, Mark, Adam, Luke, and Fiona. They typically believe in learning vocabulary through intentional learning activities and then putting that vocabulary to use. Such beliefs can be identified from Luke's evaluation that encountering words in real contexts can help him remember them better, but only if he has already learned them previously, otherwise "you are not gonna take it out" (LUK_INT_P). They also seem to value accuracy of learning as more important than having fun from it and have positive views about putting deliberate effort into learning individual words meticulously. Influenced by their learner beliefs, fine brush learners all display four key features in their strategy uses.

The first feature is that fine brush learners often have a predetermined and specified set of vocabulary, e.g. HSK vocabulary lists or a textbook they have decided to learn, and they aim to master them accurately. They might still have language use activities, such as interacting with native speakers, but these are considered mostly as opportunities to practise the words they have learned or to develop various skills. Even when they are at a relatively advanced level, they still distinguish language "learning" and language "using", and treat words encountered from the two differently. Luke, the other very advanced learner in my study, stated that he always has "two types of reading", "studying" and "reading" activities (LUK_INT_P).

Second, Fine brush learners tend to apply an atomistic approach in dealing with new words. This can be seen from Sarah's comprehensive learning of various aspects of word knowledge and Mark's high standards for managing characters. Even in some language use activities, such as watching Chinese TV shows, Adam would be "pretty much pausing a lot" to hear words clearly to learn.

The third feature is that fine brush learners deliberately plan their learning activities around practising the set of vocabulary they aim to learn. As reported earlier, Sarah chooses words from the vocabulary lists to conduct her writing activities, whilst Mark tries to use the words from the lessons in his conversations with native speakers. Adam also reported how he attempts to incorporate the words of a lesson into writing a summary so as to practise using words from the text.

The fourth feature is that fine brush learners often will not move on to the next level until they consider they have mastered the set of vocabulary they aim to learn. Consequently, they engage in more planned systematic reviewing, deliberate consolidation and self-examination. This theme can be seen in Adam, Luke, Sarah and Mark's approaches to reviewing. Fiona stated a similar principle that "even if it takes me another year to get to the point when I actually know the characters" (from her volume 1 textbook) and "I don't see any point of doing volume 2, doing more lessons and just having more characters I don't quite remember" (FIO_INT_3).

8.4.2 Free hand learners

The free hand learners in this study are Emily, Jack, and Betty, and they contrast with the fine brush learners in several ways. Regarding the learner beliefs, they typically believe vocabulary can be better acquired through context. Emily reported her belief that vocabulary can be best learned through natural conversation, and Betty also reported that meeting with language exchange partners to learn a language is the next best thing to being in that country. She believes that intentional learning could be "forcing the learning in a way" and "learning for the sake of learning" (BET_INT_1). Free hand learners value keeping the learning real, authentic, interesting and relevant, seeing these aspects as being more important than achieving accuracy. Jack believes that using newspapers to learn is better than using textbooks, because the latter "is not real". For him, "the one thing I found important is relevance, and […] meaningful, and talking about things I am interested in etc." (JAC_INT_P). He also is of the view that a word is only a very small element in the language and "you cannot be this kind of self-aware because you only have this limited time", and his plan for learning a word is begin to see the word more by "reading and reading a lot" (JAC_INT_P). Betty also reported similar negative beliefs about effort put into learning individual words, "if you are trying to deconstruct it to that level all the time […] it is always gonna be a theoretical kind of, so I think it is a bit of blocker" and instead, opined "you have to get a feel of the language" (B_INT_1). Under

the influence of these learner beliefs, free hand learners' vocabulary learning has the following features.

Free hand leaners are more comfortable with learning words from using the language, as seen from Emily's case, and Jack and Betty also reported using extensive reading and talking to native speakers as their main resources for encountering new words to learn. They also select words, but decisions are often made on-the-spot based on interest. Hence, there does not appear to be a predetermined and specified set of vocabulary they aim to learn for the current period of time.

They also apply a more holistic approach, whereby they pay more attention to how the new word fits into their immediate or wider contexts. Despite Jack drilling words when preparing for a group study so that he will be able to read articles without checking the Pinyin and Betty reviewing her notes, these activities are conducted in a much less systematic way when compared with fine brush learners.

Moreover, free hand learners do not self-examine their learning outcomes as structured, and are less bothered by the fact that they might not have "learned" the words encountered. For example, Betty said "I don't know if I necessarily remember everything" (B_INT_1) from her weekly conversation with a language partner, and her review strategy for this is to read her notes on the new words, and "I try to put them back into a story, that is a good exercise" (B_INT_1). It can be seen that even for reviewing, Betty tries to reconstruct a conversation and learn words in a free hand way.

Free hand learners devote the majority of their study time to reading, listening, interacting with native speakers, or engaging in creative writing and expect to pick up words naturally from re-encountering them in different contexts. The most typical free hand learner in my study is Jack, who learns words primarily from reading authentic articles with the help of plug-in translation software and writing a diary in Chinese. For learning activities, such as reviewing, practising and consolidating a certain set of words, free hand learners do not feel motivated to do so, as reported in Emily's case. Jack reports that using a textbook to learn is not authentic and meaningful reproduction, and Betty says she does not want to always be trying to "learn" very intentionally, as she does not want to turn her learning into a chore. In short, free hand learners try to learn from real, authentic, interesting and relevant language use activities.

In this subsection, I have added more description to two types of learners first labelled by Gu (2003a) in his study on the strategies used by two successful learners. The outcomes

of my study suggest that these two types of learners are different, not only in the aspect of surface-level strategy use, but also in terms of their learner beliefs. The main differences can be summarised in Table 8.1.

Key Features	Fine brush learners	Free hand learners
Learner beliefs	to learn vocabulary through intentional learning activities and then put it to use value accuracy more value deliberate effort put into learning individual words	to acquire vocabulary in context Value being interesting Value "get a feel" about language
Vocabulary scope	Having a controlled, clear scope	Selecting words on the spot
Attention to individual words	Atomistic	Holistic
Main learning activities	Deliberate practice	Language use
Self-examination	Intentional	Incidental

Table 8.1 Features of fine brush and free hand learners

There could be a number of factors that help shape the learner approaches. It could be related to cognitive learning styles, as learners with an analytic style are more likely to become fine brush learners. It could be due to the personality factors, regarding which Ehrman (2008) has pointed out that learners who are more conscientious tend to hold high standards about the accuracy of learning. They are more organised and self-disciplined in learning, enjoy analysing fine distinctions and try to be precise in learning and using words, expressions and grammar. Consequently, they are more likely to be the fine brush learners. In contrast, learners with a motivation of simply wanting to enjoy the experience of learning the language are more likely to become free hand learners.

Furthermore, my data suggest that the two learning approaches, although originally identified from successful cases, are not necessarily good or bad. Each learner might have a default approach, that which they intuitively find more comfortable, but the most appropriate approach for someone can change according to their situation. The approach of the fine brush learners is more suitable for learners of lower proficiency and for knowledge accumulation tasks, because it is more intentional, whereas that of free hand learners is more suitable for learners of higher proficiency and for skills development.

Highly self-regulated learners stretch their styles when necessary, for as can be seen from the data, Sarah seems to be a free hand learner when learning French, because she is at an advanced level, but she chooses to be a fine brush learner of Chinese.

8.5 Conclusion

In this chapter I have brought forward my data analysis in relation to the three key participants and have also drawn on data from the other five participants in the study along with the relevant literature together to discuss the main themes of this study. It has been shown how due to the special linguistic features of Chinese, its learning process involves the use of some special strategies, different ways of implementing these, as well as some generic strategies identified from learning other languages. I have situated these strategies in the six vocabulary learning stages to reflect the task factor, in general, and to develop a comprehensive list of Chinese vocabulary strategies, which covers the whole learning process. Some stages appear to have more of a "preparation" nature, such as encountering, obtaining information and keeping records. Meta-strategies, especially a set of selection strategies, are used for these stages to a great extent, whereby highly self-regulated learners filter information to focus. The word establishing stage is especially complex in Chinese vocabulary learning and needs to be managed at a macro-level. As the tones and the characters introduce extra layers of information, highly self-regulated learners are found to use strategies to deal with multi-aspects of word knowledge to avoid feeling overwhelmed, using "spoken Chinese before written Chinese" and/or "characters/word parts then words". Due to the special morphological features of Chinese vocabulary, learners are seen to use different strategies to deal with the morpheme-word relationship, such as "word-based vocabulary learning with attention to constituent morphemes" or "the characters/word parts then words". In addition to discussing special strategies, this study has also involved re-examining some generic vocabulary learning strategies that are traditionally believed to be passive and negative, such as repetition and using L1. Through so doing possible ways to implement them in learning have been identified such that their potential merits can be realised. Chinese learning seems to require more deliberate strategy uses for the consolidation stage, and some have been uncovered that can help retrieve information and improve performance when using a particular word.

This chapter has also discussed the possible factors that can influence strategy use in Chinese vocabulary learning and the interwoven relationship between them. I have identified some non-regulative factors, such as motivation and interests in learning,

learning styles, personality traits, proficiency levels, language environment, immediate context and the special task nature of learning Chinese. I have found that for highly-regulative learners, the influences coming from certain non-regulative factors are secondary, in that they deliberately decide whether they should be influenced by these factors or stretch themselves by engaging in other strategies so as to achieve more balanced learning. Learners have found to use strategies relying on their meta-knowledge, including knowledge about factual contents, awareness of own learning as well as their value-orientated beliefs about learning in general and the strategies they know of. However, a direct influence from the meta-knowledge might not be strategic, as a strategy decision is better made in consideration of various factors rather than just one. Consequently, the use of meta-strategies is very necessary and I have identified two key strategy chains both entailing important functions. The self-assessing and self-diagnosing chain involves the use of monitoring, evaluating, reflecting and causal attribution, which can help learners develop learner meta-knowledge to influence further strategy uses. The other is planning at a macro-level, which is to consider consciously between various learner meta-knowledge and influencing factors so as to plan and orchestrate further strategy uses.

Lastly, this chapter has described two types of learners, the fine brush and the free hand learners and highlights the main differences between their beliefs and use of strategies. It has further provided some explanations on what the influencing factors could be in forming the two types of learners, and it has been pointed out that a highly self-regulated learner stretches their style to meet their needs.

Based on the discussion, I conclude my key findings and contributions in the next chapter and propose possible implications and directions for future studies.

CHAPTER 9 CONCLUSION

9.1 Introduction

While there is a growing interest in learning Chinese as a foreign language, and vocabulary learning remains one of the central components in respect of this, many studies have focused on word retention in Chinese, but much less has been written about Chinese vocabulary learning as a multi-stage process, on the whole and learners' actions at each stage. This thesis has had the objectives of exploring L1 English speakers' vocabulary learning by investigating the learning strategies they use, how they use them, and why they use them in various vocabulary learning stages and sub-tasks. To achieve its aims, a wide range of data (interviews, learner diaries, think-aloud activities, observations, and learning products) collected from eight motivated adult learners has been drawn upon and three key participants have been studied in depth. In the final chapter, I first review the key findings critically to respond to the research questions of my thesis. The data collected from my eight participants inform a list of vocabulary learning strategies and their specific implementations in learning Chinese. Both the learner' accounts and my analysis further identify a number of possible influencing factors for strategy uses. Then, I highlight my contributions to the knowledge and use them to propose implications for CFL teaching and learning. Last, I reflect on the limitations of my study and suggest possible directions for future work.

9.2 Responding to the research questions

RQ1. What strategies do L1 English speakers use and how do they use them in learning Chinese vocabulary?

RQ1 was aimed at identifying a comprehensive list of vocabulary learning strategies and to provide detailed descriptions of how they are used (maybe differently) in L1 English learners' Chinese vocabulary learning. To identify, describe and explain these strategies effectively, I have reported them in relation to the six vocabulary learning stages in the case study chapters and the discussion chapter. Here, I address this question by revisiting the strategies identified for each stage and sub-task, pointing out the similarities and differences between strategies used specifically for Chinese vocabulary learning and more generic ones as well as by comparing the merits and limitations of the different strategies and approaches where appropriate.

a. The encountering new words stage

The strategies used for encountering new words include source strategies and those for dealing with new words. The data show that CFL learners use both intentional vocabulary learning activities and natural language use activities to gain access to new words. The specific nature of Chinese vocabulary has strong influence on the use of source strategies, and highly strategic learners across all proficiency levels self-regulate to use sources that involve intentional learning to a greater extent in the CFL context than in learning other languages. Their reflections also indicate that it might be harder for L1 English speakers to acquire Chinese vocabulary incidentally, especially when they are not immersed in the target language environment. Similar to what has been noted in Winke and Abbuhl (2007) as a temporarily "shutting down" strategy, this study further finds its highly strategic learners, in consideration of the contextual factors (limited study time, no language environment for natural reinforcement), restrict the vocabulary input in a more planned and controlled manner to reach a better learning outcome and avoid being cognitively and affectively overwhelmed. The strategies for dealing with new words encountered are relevant to generic vocabulary learning in other languages. My study supports previous findings that learners select words for further learning based on pedagogically designed language materials (e.g. HSK vocabulary lists, textbook), word factors such as frequency or register information, or their own beliefs, interests, and self-evaluation of importance. My study identified some well-developed learner beliefs regarding the parts of speech (e.g. verbs and conjunctions are more important), which are different from previous findings (e.g. McCrostie, 2007). I also found that highly self-regulated learners analyse words to assess the learning difficulty and plan further strategies including choosing to ignore unimportant words during word-selection, inferring, consulting with a dictionary or a native speaker, and/or taking notes. The use of these strategies involves more reasoning, comparing, and associating, which made their learning at this stage more active than the less self-regulated learners.

b. The searching for word information stage

The strategies in relation to searching for word information include inferring a word or a character, using a dictionary or translating tools and asking others. To infer a word, some generic inferring strategies are identified, such as predicting based on background knowledge and analysing sentence structure to guess the parts of speech, which were seen from previous studies (e.g. Schmitt, 1997). My study identified the strategy of using collocational-pattern knowledge on the adjacent words to elicit a guess on the target word,

which has not been discussed previously and yet could be highly relevant to guessing in any languages.

I also identified some issues and inferring strategies that are more specific to Chinese vocabulary. Inferring in a spoken context was reported as being used by only advanced participants in this study due to the difficulties in recognising tones. For analysing word parts to infer, the participants either use character knowledge directly (as identified in e.g. Qian, 2005), or use words containing the same constituent characters (as identified in e.g. Everson & Ke, 1997), and this study further found that learners' preferences for using either inferring strategy correspond to their strategies for dealing with the morpheme-word relationship in vocabulary learning. Mark who prefers "characters/word parts then words" approach makes more use of the former strategy and Emily who uses "word-based vocabulary learning with attention to constituent morphemes" approach prefers to use the latter strategy.

Inferring the sound or meaning of a character is a special task in Chinese, for which learners use character-components or characters sharing the same component (as identified in e.g. Shen, 2005). They also use their spoken Chinese knowledge to infer characters in written contexts, which lends support to the theoretical proposals (e.g. Hayes, 1988) and the "Spoken Chinese before written Chinese" teaching approach (e.g. Packard, 1990). A reverse strategy is identified for the first time, which is thinking about what the characters are for an unknown word in spoken contexts (to access and process word parts). This strategy is used by learners who have mastered characters very fluently, and this suggests that character learning is not only crucial for reading and writing, but also for vocabulary development in Chinese due to the morphological role of characters. Another aspect which has not been discussed previously is that inferring in Chinese is found to rely heavily on learners' existing Chinese vocabulary knowledge, i.e. their mastery of character components, characters, or words they have learned. This highlights the necessity of having sufficient consolidation in learning.

Searching-strategies with e-dictionaries and word segmentation in reading are also CFL-specific strategies, learners can use technology-related strategies to some extent but there are also difficulties in applying these strategies. My study has also found that learners have various focuses, ways and steps in using dictionaries and translation tools. Mark who has a focus on learning characters puts more effort into obtaining information, such as their radicals, stroke orders and making frequency checks. Emily who has an interest in understanding word formation and developing her/his vocabulary network looks for

information on constituent morphemes and words containing the same morpheme. Sarah and Emily who value learning how to use a word properly, to a great extent use meaning-obtaining and usage-obtaining strategies, which involve browsing, selecting and monitoring meaning entries, reading examples and obtaining information, such as parts of speech, registers, collocational patterns, and grammatical functions. The strategies of analysing the example sentences in dictionaries to understand the possible contexts in which the target word can be used, and to abstract collocational patterns for using the word are especially relevant to effective vocabulary learning in general. Explicit vocabulary instruction especially through sentence analysis may be relevant to the successful use of these strategies. The implementation of asking others is examined, and my study has elicited that learners with good meta-linguistic and explicit L1 knowledge can intentionally ask more specific questions to others to seek rules and the similarities and differences between target words and corresponding L1 words. Highly self-regulated learners can obtain information more comprehensively than less strategic learners, and they use the information obtained to assess learning difficulty and plan for further strategies from simple memorisation and drilling, to observing how it is used in various contexts, choosing to avoid linking it with one L1 word and writing a meaning description.

c. The keeping and using records of word information stage

This study has found that keeping records of word information has a central role in vocabulary learning, yet very few studies investigated this task. This study provides findings to fill this gap. Apart from the strategies of keeping vocabulary notes in Pinyin or character, noting down individual characters or actual words primarily, other strategies identified in this stage are relevant to vocabulary learning in other languages. Low proficiency-level learners can benefit from using Pinyin to take notes, as it avoids their attention being distracted by character learning and neglecting other aspects of learning. Highly self-regulated learners design the types and formats of their records according to the vocabulary learning activities they plan to pursue, and continue to narrow the word information for learning by carefully selecting the information to note down. A well-organised and designed vocabulary notebook can be used in various activities in later stages of learning so that the learners' overall strategy uses appear to be connected and coherent across different tasks. In addition, highly strategic learners used a variety of strategies involving selecting and analysing to a greater extent at this stage. After searching for meanings, they use meaning-selection strategies to note down one to two meanings, which they believe to be the core, most commonly used, or to have the most

relevant meaning to them. A meaning-synthesising strategy has also been identified when the learner finds no L1 word that fully captures the concepts or usages of the target word and writes her/his own description. Neither of these strategies has been identified from strategy research, and learners should be encouraged to use them, as they involve active comparing, analysing and synthesising of the meanings and thus, can increase the depth of processing (Craik & Lockhart, 1972). Furthermore, strategies for selecting good examples are used and there is a great deal of variety in the criteria, such as valuing usefulness, those that can be used frequently, those are not too specific or have fixed saying, that have fewer unknown words and those have learning potential in the sentence. Also, strategies for extracting and noting down collocational patterns of a word from the example sentences (rather than the whole sentence) are used and should be encouraged to more advanced learners, as they push them into focusing specifically on the new information.

d. The establishing word knowledge stage

This stage involves a great number of generic and special strategies. First, although foreign language learners are in general advised to plan which aspects of word knowledge to learn first (Nation, 2013), my data suggest that a special challenge in CFL vocabulary learning, in addition to the well-recognised difficulties in aspects of learning the tones and the characters, comes from the fact that learners need to attend to more aspects of word (i.e. form) knowledge in Chinese than learning a non-tonal language with more obvious sound-to-symbol correspondence. Therefore it is perhaps even more crucial for CFL learners to self-regulate at a macro-level for dealing with different aspects of word knowledge. All participants reported feeling "mental overload" currently or at some point of their CFL vocabulary learning, yet only the highly strategic learners managed to unpack this more complicated learning task into manageable steps for themselves. Some participants were found to feel cognitively and affectively overwhelmed and eventually demotivated because they are not aware of the strategies to use. There has been little exploration of CFL learners' self-regulation to solve this issue in the existing literature, except perhaps by Shen (2005, p. 57), who identifies "I learn how to say a word before I learn the characters", as a highly-used strategy. The issue has been traditionally considered as a decision for teachers or researchers, and has been to some extent discussed through the current debates about integrated versus separate spoken and written Chinese, and character-based versus word-based teaching approaches (e.g. Songhao Liu, 2010; Packard, 1990; P. Zhang, 1992). These teaching approaches divide the learning task for

the learners by delaying teaching the characters, or directing learners' attention to individual characters or actual words primarily. By investigating how highly strategic learners self-regulate on this matter, this study identified a number of factors that can influence how much a learner needs to divide the learning task and their choice of strategies. These findings can be used to inform the current above-mentioned pedagogical debates. The study confirms a few benefits of "Spoken Chinese before written Chinese" argued in previous literature, which seems to focus on learners' proficiency level and interest factors, e.g. removing character learning at the beginning stage allows for more attention on the spoken form (esp. tones) and use aspect, which helps develop skills and it is good for learners' affective aspect of learning. The development of spoken language can facilitate character recognition later. It is especially welcomed by learners who are more interested in learning conversational Chinese. This study also raised a concern regarding the disadvantage of using this approach, that is, when learners reach the intermediate level, delaying character recognition can have a negative impact on their ability to recognise and use morphemes, which has not been identified previously. In addition, certain contextual factors, learners' personality traits and beliefs can also influence the strategy use for this aspect. Highly strategic learners with limited study time outside the Chinese-using environment were found to be more in need of dividing the task. Moreover, learners with a conscientious personality trait tend to aim to learn accurately so that they are more in need of dividing the task into smaller steps. Learners who are self-disciplined are more likely to succeed in using the character-based approach. Lastly, some learners perceive character learning (especially handwriting) more essential than others, and they have difficulties separating the learning of written and spoken Chinese and favour the character-based approach. These findings have a number of implications for teachers related to selecting the appropriate approach for their learners (see more on 9.4), but also show how complex the issue is, and it may be impossible to for a teacher to choose an approach that works for everyone in their class. Strategy instruction may empower learners to choose the appropriate strategies to attend to their own needs especially when they are taught in an approach which they do not feel comfortable with, or to continue their learning effectively after leaving the courses.

Second, my data suggests that Chinese vocabulary learning also requires learners' self-regulation at a macro-level to deal with the morpheme-word relationship. Some learners do not recognise the morphological roles of characters, and the lack of this meta-knowledge is affecting their use of morpheme-related strategies to facilitate vocabulary

development more effectively. In terms of informing the current debate regarding the word-based and character-based teaching approaches, my study uncovered that learners perhaps can benefit the most from taking a word-based approach, but a number of morpheme-related strategies should be used to attend to the word parts, hence the "word-based vocabulary learning with attention to constituent morphemes" approach. My findings first support the many benefits of the word-based teaching approach argued previously, e.g. it allows learners to put direct effort into learning the lexical units which they can actually use, and it appeals more to the affective aspect of learning as well as being good for developing skills. Learners can still develop morphological knowledge and awareness, which is found useful for vocabulary development and inferring, by using morpheme-related strategies, such as paying peripheral attention to the constituent morphemes, analysing the semantic connections between constituent morphemes and whole words, and associating other words containing the same constituent morphemes. The "character/word parts then word" approach, in theory, has its advantages in character learning and morphological awareness development, but requires too much study time, delays skill development and is hard for learners' affective aspect.

A great variety of strategies for establishing the spoken form have been identified. For learning the spoken form, listening and repeating, comparing and self-evaluating own pronunciation, and practising retrieving the meaning or sound are identified and are generic to FL vocabulary learning. Pinyin-strategies are Chinese-specific and are very useful for coping with the Chinese deep-orthographic system. My data have also supported some tone teaching and learning strategies proposed or identified previously (Arrow, 2004; Hu, 2007; Hu & Tian, 2012), such as paying attention to them, repeating, asking for and noting down tones, visualising the tone marks, using gestures to mimic tones marks, applying a colour-coding system, purposefully seeking correction from native speakers and practising tone perception. This work has provided more detailed description and explanation on how the strategy of learning and practising the tones of a word in a longer language unit is used, which is only briefly mentioned in Hu (2007). My study has also identified new tone learning strategies, such as having a separate exercise to add tone marks to practise retrieving tones as well as pronouncing a syllable in four tone types consecutively and then pronouncing it in the correct tone type.

The outcomes of the study add more learner specific implementations, explanations and evaluations to the four categories of character learning strategies identified previously. The findings support Shen (2005) perspective on the importance of using meta-strategies

for character learning and have further uncovered the necessity of selecting some characters to learn first, learning to recognise a character before writing it and having a system or routine to review. The findings on generic memorisation strategies bring fresh views about the merits of repetition and possible ways to use it. Character-applying strategies are good for the affective aspect of language learning and can be used by learners across all levels, which supports Jiang and Zhao's (2001) contention that these types of strategies (contradicting what people would normally expect) are not influenced by proficiency. The orthographic knowledge-based learning strategies, however, require a certain knowledge and skill base. The research outcomes lend support to DeFrancis'(1984) pedagogical suggestion that the most beneficial way for beginners to learn characters is to start with a small number of high-frequency used characters, and ignore the components until they have mastered a group of characters with which they can rationalise how components work.

Lastly, this study has identified a number of strategies for learning the use and meaning aspect, which are all highly relevant to general FL vocabulary learning. The merits and possible ways to use L1, translation and sentence-analysing strategies to benefit vocabulary learning, especially when learners have good meta-linguistic knowledge, explicit L1 vocabulary knowledge, and use these strategies cautiously and consciously for rule seeking have been discussed. Strategies that involve testing someone's own understanding, seeking feedback, correcting and rewriting sentences are especially good for enriching word knowledge. My study has also identified some context strategies, including paying attention to observing in what context the word is used and writing a paragraph rather than a sentence to practise the ability of choosing the right word for a certain context. These strategies can develop the cognitive representation of a set of contexts in which a given word can be used to express a given meaning, which has been recognised by Miller (1999) as an important part of knowing a word.

e. The consolidating word knowledge stage

This study has identified both deliberate and non-deliberate consolidating strategies. The former includes consolidating a clear set of vocabulary by repetition, self-testing or creating opportunities to use the word. The latter pertains to re-encountering words in natural language use activities without a clear agenda. These strategies are generic to vocabulary learning in general, but Chinese does appear to require more consolidation because of the tones and characters (both the learning for recognising and handwriting). It has emerged that highly self-regulated learners consider deliberate consolidating

strategies for Chinese necessary, especially for those at a lower proficiency level or in a non-Chinese-using environment. Less strategic learners of this study seem to be less sensitive to this, although they are equally passionate and hardworking at learning Chinese, they tend to underestimate the amount of effort needed for consolidation and do not use consolidation as much. Consequently, they do not seem to master what they have learned fluently enough, which has a further negative impact on their use of inferring strategies, and various strategies for establishing word knowledge (e.g. orthographic knowledge-based strategies). That environment plays a role in influencing strategy choices, is in line with Kojic-Sabo and Lightbown's (1999) finding that EFL learners use more consolidation strategies than ESL learners.

f. The using word knowledge stage

My study has uncovered some previously-neglected strategies that help learners to activate or perform using the word knowledge better. Activating strategies include visualising characters for handwriting, retrieving the context from which the word was initially encountered or learned to activate the sound, tone, meaning, and usage knowledge, using collocational-pattern knowledge to support recognising words in reading. In addition, visualising the characters to process an unfamiliar word and retrieve its meaning in spoken contexts has been found to be beneficial. Performing strategies include visualising the Pinyin and the tone marks, using body gestures to mimic the tone marks for better pronunciation and analysing the sentence structure to monitor own understanding in reading.

It has been elicited that the learners' activating strategies are closely related to those for establishing word knowledge, which are embodied in appreciating the value of remembering example sentences/phrases, analysing character components in learning characters, analysing word parts in learning words and establishing collocational-pattern knowledge. For, these can all contribute to creating mental hooks that later can be used to facilitate word knowledge activation.

Based on findings in relation to this research question, I have developed an inventory for Chinese vocabulary learning strategies categorised for the six vocabulary learning stages (see Appendix 15), which could be used in CFL teaching, learning or future research.

RQ2. What factors seems to influence learners' strategy use?

This study has identified a number of influencing personal, contextual and task factors for strategy use, which are further discussed in terms of non-regulative and self-regulative factors depending on whether they enter learners' self-regulation or not. These factors include learners' motivation and interests in learning, learning styles, personality traits, proficiency levels, language environment, immediate context and the special task nature of learning Chinese. A major part of learners' self-regulation is to recognise these factors and know when to act in accordance with them as well as when to stretch a little to achieve better learning outcomes.

The influences of the self-regulative factors, i.e. learner meta-knowledge and use of meta-strategies are in line with some well-established frameworks on learners' self-regulation (e.g. Oxford, 2011b; Zimmerman, 2002). I identified various types of CFL specific learner meta-knowledge regarding characters and tones, which have not been mentioned in previous literature. In addition, highly and less self-regulated learners in this study differ mainly on two types of meta-knowledge, their awareness of own learning, and person-specific, context-specific or task-specific beliefs about strategies. The data suggest that a better developed learner belief system can help support strategy uses more effectively, but is also a result of effective use of meta-strategies.

As previous studies mostly identified, described and emphasised the roles of individual meta-strategies (e.g. Anderson, 2008; Zimmerman, 2002), my research interest regarding the self-regulative factors has been to examine the interwoven relationship among them and to identify specific key processes and aspects in self-regulation, which can potentially influence how well learners self-regulate. I have compared each participant learner's strategy selection processes and explanations and have found two self-regulative processes that are very relevant to good vocabulary learning. The self-assessing and self-diagnosing process, which influences strategy use by helping to generate person-specific, context specific and task-specific learner beliefs, that can be further used to help learners improve their own strategy uses. Furthermore, this study finds that highly self-regulated participants, compared to the less self-regulated ones, are better at three aspects in implementing the self-assessing and self-diagnosing chain: they make further and specific causal attributions for their self-evaluation, they test and confirm their diagnoses accordingly, and they develop person-specific, context-specific or task-specific beliefs about strategies. Consequently, they benefit from using these meta-strategies to a greater extent than their counterparts.

The second is the planning at a macro-level process. The key for a more effective use of the planning chain, as demonstrated by the highly self-regulated learners in this study, involves weighing up among different meta-knowledge that they perceive as being valid (including the understanding of various influencing factors) and applying more recently developed meta-knowledge into action, as well as deciding which are more relevant to the current situation. It also involves selecting a reasonable amount of vocabulary to learn based on own study time and learning pace, selecting some aspects of word knowledge to learn first to avoid feeling overwhelmed, based on own interests and needs as well as selecting and orchestrating corresponding strategies to cover and balance the learning of various aspects of word knowledge and different stages of vocabulary learning. Engaging in these two self-regulative processes can enable learners to evolve and take more control of own learning. Consequently, highly self-regulated learners use strategies more appropriately, coherently, and also can improve their strategy use and meta-knowledge system.

By comparing learner meta-knowledge and also the ways that strategies are chosen and regulated, I have further added more detailed descriptions about two different types of learners, the fine brush and the free hand learners, as originally put forward by Gu (2003a). Building on Gu's work, I discuss three further findings. Through providing comprehensive descriptions, I have uncovered the key differences between the two types, which in relation to their beliefs about how vocabulary should learned, perspectives on valuing accuracy, areas of interests, and paying deliberate attention in learning individual words. Under these learner belief influences, they use strategies differently regarding the aspect of whether or not to: use a predetermined and specified set of vocabulary; adopt an atomistic or holistic approach in dealing with new words; and engage in deliberate or non-deliberate consolidation. I have also provided an explanation in relation to the possible influencing factors that can shape the two approaches. Lastly, I have found evidence that highly self-regulated learners actively decide and choose between the two approaches, rather than relying on an intuitive decision.

9.3 Overview of original contributions

This study has made some original contributions in terms of its theoretical development and empirical evidence in general LLS and self-regulation, FL vocabulary learning, and the CFL specific context. For general LLS and self-regulation, by identifying, describing and evaluating strategies in close relation to the personal, task and contextual factors of individual cases, this study has provided some empirical evidence on why strategies are

chosen, why they are used in certain ways, and why the effectiveness of the same strategy could be different for different learners. The study has pointed out that the various personal, task and contextual factors can influence learners' strategy uses in a subconscious way (the non-regulative factors), but good language learners consciously and strategically consider all these factors, so that their strategy use is primarily influenced by their self-regulation. This work has complemented the current self-regulation frameworks by identifying two self-regulative processes (i.e. the self-assessing and self-diagnosing chain and the planning at a macro-level chain) that rely on the use of meta-strategies in a chain rather than in isolation. In addition, benefiting from the semi-longitudinal case study approach showing the evolvement of highly self-regulated learners' strategy use over time, the study has further identified specific steps and aspects which can improve the implementation of these two self-regulative processes. For better use of the self-assessing and self-diagnosing chain, learners need to make further and specific causal attributions for their self-evaluation, test and confirm their diagnoses accordingly, and develop person-specific, context-specific or task-specific beliefs about strategies. For better use of the planning at a macro-level chain, learners need to weigh up different types of meta-knowledge (including the understanding of various influencing factors) comprehensively, apply more recently developed meta-knowledge into action, and select and orchestrate corresponding strategies to cover and balance the learning of various aspects of word knowledge and different stages of vocabulary learning. Thirdly, by comparing learners' self-regulation processes and the use of specific strategies, this study has furthered the understandings of two types of learners, i.e. fine brush learners and free hand learners and pointed out some cross-over and nuanced styles between their learner beliefs and use of strategies. Lastly, this study has provided fresh data on lifelong, non-degree learners, a group of learners who were neglected in the LLS and self-regulation field.

For the general FL vocabulary learning area, this study constitutes qualitative interpretive empirical research that has identified a comprehensive list of vocabulary learning strategies with detailed descriptions of the ways in which these are implemented. It therefore firstly brings some fresh views about strategies that are traditionally believed to be passive, such as using vocabulary lists, repetition and L1/translation, by pointing out the possible ways to implement them so as to make them beneficial to vocabulary learning. Learners with better meta-linguistic knowledge can better implement the strategies of using L1/translation and obtaining information from both the dictionary and asking others,

and learners with better sentence analysing skills can better obtain information from the dictionary. Secondly, I have developed a framework of vocabulary learning stages based on the existing literature and my data, and categorized strategies systematically based on it. Using this framework, I have investigated strategies used across a wide range of vocabulary learning stages and tasks that go beyond the presentation and retention of words, some of which have been neglected previously and understanding with regards to them is very much needed (Gu, 2003b). More specifically, the study identified extensive strategies and specific ways of implementing them for encountering new words (e.g. selecting, initial analysing on the unknown word, planning for appropriate strategies for further learning), obtaining word information (e.g. using dictionaries, asking others), keeping and using records of word information (e.g. meaning-selection, meaning-synthesising, noting down collocational patterns extracted from the examples strategies), using word knowledge (e.g. activating word knowledge, achieving better performance), all of which have been rarely discussed in such detail in previous literature. Lastly, the strategies identified in this way are situated with specific tasks so that they can be better understood. This has also contributed to the identification of the fine brush learners and free hand learners in vocabulary learning, as the two groups tend to use the same learning behaviours for different tasks. The fine brush learners use natural language use activities for consolidation purposes, whereas the free hand learners use it for both encountering new words and consolidation. The method of identifying and reporting strategies systematically in relation to the specific vocabulary learning task is also an original approach.

Lastly, my study has also added some in-depth qualitative evidence to describe how vocabulary learning strategies are used in the specific CFL context. Some similarities and differences between vocabulary learning strategies used for Indo-European languages and those used for Chinese have been identified. The inductive analytical approach has allowed for the exploration of the possible special features of Chinese vocabulary learning strategies. In relation to this, it has emerged that L1 English learners rely more on intentional vocabulary learning, and need strategies for dealing with different aspects of word knowledge to avoid feeling overwhelmed. Moreover, my study has uncovered new strategies for dealing with the morpheme-word relationship so as to develop vocabulary better. It has also added some tone learning strategies to the existing inventory, and identified the more active ways of using repetition and orthographic-knowledge-based strategies for beginners. The study also highlighted a few technology-related strategies,

more specifically, using e-dictionaries such as Pleco, dictionary searching strategies such as using handwriting-on-screen search or Pinyin-search, and using Pinyin-to-character typing method to replace handwriting characters. Lastly, this study had some highly self-regulated participants, each bringing their own strengths in learning, and they provided some good examples of how strategies can be applied when learning Chinese. Some of the strategies identified could be developed into teaching strategies or recommended to other learners as potentially better options than their current approaches. The findings of this study can therefore be used to inform the current CFL pedagogical debates, adding evidence from the learners' perspective to support "spoken before written Chinese" and word-based vocabulary learning approaches.

9.4 Implications for CFL teaching and learning

Drawing on the data and my findings, I propose the following implications for CFL teaching and learning. As this study has mainly involved investigating the strategies and learning processes of participants learning Chinese in the UK, part time and on non-degree courses during the data collection period (strategies used in China, full time and on a degree course have not been excluded), pedagogical suggestions drawn from such a data set are more relevant to teachers and learners of this type of context. The first pedagogical implication is that teachers should be urged to consider the context factors when designing their course. This factor seems to be neglected by the three programmes on which some of participants are or were studying. All these courses involve teaching spoken Chinese and written Chinese at the same time, require learners to learn handwriting characters and provide an amount of vocabulary that is much more than learners can digest with a part time schedule. The curriculum they use might work well with full time learners and/or learners taking a degree in Chinese language, as they have much more time to learn the language and so they can develop spoken and written Chinese simultaneously. Moreover, these learners have the language environment to provide natural consolidation opportunities so they can learn more words. Participants of this study, however, either dropped out from the course they were on, because they could not keep up with the teaching pace or they remained, but felt frustrated about learning Chinese, being constantly in doubt about whether they were intelligent or diligent enough to learn the language. It is consequently advised that a "spoken before written Chinese" approach will probably work much better for part time learners and a course should be conducted such that a manageable amount of vocabulary is taught.

Another recommendation is that learners who are learning without a Chinese-using environment need more help in maintaining motivation, as the learning is on a very theoretical process given the lack of opportunities to apply it. Teachers could help address this by having more language-use activities in or outside the class, such as encouraging learners to use Chinese to write a diary, finding or editing materials for learners to read, or organising after-class study groups (preferably with native speakers at present) to create more reasons to use and learn the language. Encouraging learners to choose the words they are interested in and using them to write a short paragraph, whilst subsequently sharing what they have written with the class, can also bring more fun into the learning. Also, it may be contrary to the expectation, but advanced learners, who despite engaging in language use activities more freely, might find it more difficult to maintain motivation, because they do not feel the need to put in the effort to "learn", rather than merely to use. Semi-organised reading study groups or forums that require those attending to read or listen to a material before coming and then getting them to discuss the chosen topic (which naturally provides opportunities to use new words) is a good way to push advance learners into expanding their vocabulary.

Lastly, learners need help in becoming more self-regulated in Chinese vocabulary learning. It would be helpful to provide them a list of learning strategies (and the strategy framework developed from this study could be used for this purpose) so that they know *what* they can do to learn. Moreover, learners need more guidance in making sense of the strategies, which is how to choose the appropriate strategies and how to implement them to fit their own learning preferences (i.e. the use of meta-strategies to manage). Motivated adult learners (as suggested from this study) typically can or do search for information about the Chinese language and the possible learning strategies, but what they often miss is the understanding of what all these mean to *them*. Teachers can provide some guidance in explaining the differences between strategies, the merits and limitations in using a certain approach such as "spoken Chinese before written Chinese" as well as pointing out the main factors learners need to think about when choosing strategies. Below, I propose some questions that teachers could use to encourage their students to reflect and plan strategy use in learning Chinese vocabulary for better self-regulation:

1. What strategies did I use in the learning task of …?
2. How well did I do? What might be the reasons for the success or failure of the task?

3. What other strategies can I try to improve my learning? Which one seems to be working most effectively?
4. Why do I find these strategies most effectively? Is it because of my personalities, learning styles, interests, proficiency levels, language environment, immediate study context, or the task specifically? When should I consider of changing my strategies?
5. How much time can I contribute to learn Chinese every day/week?
6. How many words can I learn and consolidate every week?
7. Do I *need* or *have time* to learn (all) the Chinese characters for the words I learn?
8. Do I *need* or *have time* to learn character handwriting if I can type them?
9. Which aspects of word knowledge are the most essential to me and should be dealt with first?
10. How should I balance my cognitive and affective aspect of learning with the right amount of things-I-should-do (i.e. learning activities that might not be too much fun but are necessary and effective) and things-I-enjoy-doing (i.e. activities that can help generate supportive emotions and maintain motivation)?

I have also developed two teaching materials that can be used to encourage and improve learner self-regulation in character learning and tone learning, respectively. They focus on both guiding learners to pay attention to their cognitive and affective aspects of learning.

Self-regulation for Character learning

1. **Planning your character learning**
    - **You have the option of separating character learning from your word learning**

You can learn to use words to make sentences in speaking, and choose only to learn the characters for some of the words in reading and writing.

When choosing what characters to learn, try to start with those for words that you often use or those with simple configurations or one that are interesting to you.

- **It is important to decide a reasonable amount of characters to aim and learn according to your own situation**

  You can try for a few days/weeks and find out how much time you can spend on learning and how fast you can memorise characters, and then set realistic goals accordingly. It is better to focus on learning a

  few, but mastering them well, rather than trying to memorise too many characters and not being able use any of them fluently enough to read or write.

  Reaching your target will give you more motivation to continue learning and you will learn increasingly faster after you have mastered some characters fluently, as new characters can be attached to them

- **You could learn to recognise more characters than you can handwrite**

  Learning to recognise characters is not as time-consuming as learning to handwrite them

- **You could learn to recognise a character first**

  It is easier to recognise a character than to handwrite it and learning to recognise it can help with learning to handwrite it

2. Compiling your own character list

- **Putting the characters you decide to learn together with its Pinyin and meaning and form a list**

  It is much easier to test yourself and check your progress with a separate note

- **Marking the characters you remembered on the list to show your progress, if that gives you extra sense of achievement**

3. Using mnemonics

- **You could find other peoples' mnemonics**

  Use online resources, e.g. https://www.memrise.com/

- **You could invent your own mnemonics**

4. **Watch animation on how the character is written**

   - **This is to help you get a sense of how a character is constructed with strokes**
     It might not make much difference for your character memorisation immediately, but you will gradually form an understanding about the principles of writing strokes, which will help your handwriting characters greatly.
   - **You can find animations of how characters are written on the following websites**
     http://www.archchinese.com/chinese_english_dictionary.html
     http://cn.yes-chinese.com/zh-cn/tzg/

5. **Analysing the character components**

   - **You can get help from your e-dictionary**
     E-dictionaries, such as Pleco, often identify the components in a character for you.
   - **Practise breaking down a character into components and checking with the dictionary**
   - **Identify semantic and phonetic components in the characters**
     The semantic and phonetic clues given by the components are not specific and reliable, so you probably still need to memorise characters by some form of repetition. However, the components can give some indication and help you associate new characters with the ones you know.
   - **Associate new characters with the characters you know containing the same components**

6. **Having a review system**

   - **Review your character list regularly**
     Try to recall the sound and meaning of the character.
     Write out the character based on the Pinyin and meaning for the ones you aim to handwrite.
   - **Use a website to remind you what characters need to be reviewed**
     e.g. https://www.memrise.com/
   - **Use the search-history function in your e-dictionary**

- **Use flashcards**
  You can find e-flashcards made for different sets of vocabulary based on HSK levels, textbooks, etc. on the internet, e.g. http://ankisrs.net/

7. Using characters in context

- **Reading**
  If you are a beginner and cannot find many suitable materials, you can read, try to "translate" the sentences or paragraph you have written in Pinyin into characters, and later practise reading them and learning these characters first.
  You can also randomly take some characters out from a text you have learned in your textbook and try to put them back in the right place.

- **Write sentences or paragraph in characters**
  If you are a beginner, try to write the sentence in Pinyin first and focus on using the words and grammar correctly. Then add characters by typing or handwriting and focus on reinforcing them.
  Beginners can also use your character list and see what sentences you can write with them.

8. Raising word-character awareness

- **Characters are the building blocks of Chinese vocabulary**
  Whenever you learn a new word (two or three characters), practise viewing it as a character-combination unit and try to break it down into its component characters.
- **Check character definition in the dictionary**
  You could note them down, but you do not need to memorise them as they add more to the learning burden. Character definition will gradually sink in when you check them frequently enough.
- **Try to make sense between the character definition and the word meaning**
  The semantic links between the word parts and words will not always be straightforward to you. Even if you cannot see the connections, the analysing process can still lead to deeper processing. You could also ask your teachers or L1 Chinese speakers for an explanation.

- **Think whether I know other words that also have this character**
  You can get help from your e-dictionary, e.g. Pleco has the function of showing you other words containing the same character.
  You only need to pay attention to the words you have already learned and build connections between them.

Self-regulation for Tone learning

1. **Try and have some visual or other representations of the tones**

   Using another sense to help you learn the tones. You can link tones with:

   - **Its tone marks (i.e. shape**)
   - **The tone numbers (i.e. 1st tone, 2nd tone)**
   - **Using a colour system**
     You can set your e-dictionary or e-flashcards to show words in different colours in relation to the tones**,** e.g. 1st tone characters or words are written in red**.**
   - **Creating different ways to represent the tones in typing**
     You can use different fonts to represent different tones when typing in Pinyin
     1st TONG 2nd Ping *3rd zhuan* 4th gaO

2. **Practising tone perception**

   The ability of hearing tones needs to be trained. You can use certain applications specifically designed for this purpose, or listen to the recordings of your textbook and have some sentence dictations, but have your focus on hearing the categorising of the tones. This can improve your tone perception skill and can contribute to tone production as well. Check with your textbook for answer and ask your teacher or L1 Chinese speakers, if you have trouble perceiving certain tones.

3. **Practising pronouncing the tones**

   You can pronounce (mentally or out loud) the syllable with four tone types consecutively first, and reinforce again the correct tone type for the syllable you are learning or practising

4. **Listening to recordings and mimicking the tones for certain syllables or words individually**

5. **Listening and mimicking the tones for a phrase or sentence and trying to get the rhythm of the whole sentence, like when learning a song (rather than focusing on each word individually)**

   For certain short sentences or phrases that are very frequently used, such as "My name is…?", "I am English", "how are you?", you could practise and recite the whole sentence as individual units and "sing" them frequently. You can then isolate individual words from them, such as "my" and "you" and use them in other sentences.

Lastly, a suggestion regarding the findings on fine brush and free hand learners, is that teachers will need teaching strategies to attend to the needs for both groups. However, they should also point out when the learners could benefit more from stretching their styles. As suggested by my data, the differences between the two groups are deeply rooted in their beliefs and use of meta-strategies. However, regardless of these differences, highly-regulated learners' choices of task-specific strategies are governed by their self-regulation system. As free hand learners can benefit from working with unfamiliar words, teachers could provide them with more materials, but they should be very clear about the core or important vocabulary to be learned at the current stage so that fine brush learners will not feel overwhelmed. Teachers could also advise free hand learners to restrain their style and focus on learning words more intentionally and mastering the basic characters and words well at a lower proficiency level. Moreover, they could also push fine brush learners to engage in more language use activities when they are at a higher level.

9.5 Research limitations and future works

This study has benefited from a qualitative approach as this has allowed for the in depth exploration of an under investigated area, namely, that of learner self-regulation in Chinese vocabulary learning. However, this research approach has its limitations. The first is that the findings of this study and the interpretation of the data collected, are influenced by my personal beliefs, experiences and possibly personal biases and idiosyncrasies. I have tried my best to stay critically reflexive and scrupulous by keeping a research diary and welcoming critical feedback from my supervisors and audiences at presentations for a number of conferences. Also, data for this study were collected from

a small number of participants, who share similar traits as highly motivated and independent, which means that the findings might not be generalisable to a larger population or transferable to another setting. In addition, in order to investigate learners' strategy uses in their natural settings with the least interference, I did not ask all of them to perform the same activities or strategies, which makes it harder to compare the qualities of their strategy uses without more collecting more evidence. Another limitation is that I did not conduct objective measurement on learners' vocabulary knowledge, because I was reluctant to do anything which might deter my learners from continuing in my study. Lastly, the findings regarding the influencing factors would be more robust, if I had measured these factors (e.g. overall proficiency, personality) rather than relying on my own estimation and assessment. This limitation is partly because before the factors were identified and analysed from the data, it was not clear which would be relevant and thus, should be measured. However, now that my study has identified a number of possible influencing factors, and provided some explanation as to how they can influence strategy uses, future studies could be conducted building on this by measuring their salience as well as investigating their relationship with strategy use more scrupulously.

9.6 Conclusion

This study has involved taking a qualitative case study approach to investigate the vocabulary learning strategies used by L1 English adults when learning Chinese as a foreign language. Interviewing, think-aloud protocols, observation along with collected learner diaries and learning products were used to obtain data from eight participants, with thematic analysis being applied to yield findings on strategy use and its possible influencing factors.

The research, first, has identified a comprehensive list of vocabulary learning strategies used in CFL learning, which have been categorises into six vocabulary learning sub-tasks to reflect the purpose of each strategy use. The detailed description of each learner's implementation of strategies suggests great individuality differences in learning Chinese as well as some commonality in response to the general task of learning Chinese vocabulary. It also points to certain similarities between the strategies for learning Chinese vocabulary and vocabulary of other languages, such as learning the meaning and use aspect. However, it has also brought to light some special types of strategies or ways of applying them in CFL learning, such as strategies for tone and character learning and word part strategies. There has also been exploration of the influencing factors for strategy uses and has been found that the learners' personality traits, learning styles,

interests and motivation, language environment, immediate study context, proficiency level, and the special task nature of learning Chinese can possibly influence learners' strategy uses. In addition, it has emerged that learners' self-regulation supported by their meta-knowledge and the use of meta-strategies also influences strategy uses. Highly-regulated learners are very reflexive and can develop meta-knowledge based on own strategy uses. They also consider more comprehensively the abovementioned influencing factors when selecting strategies, and apply the meta-knowledge recently developed into further learning so as to improve their strategy uses. Moreover, these findings have contributed explanations for why vocabulary learning strategies are used in certain ways and have led to the identification of the key elements needed for good self-regulation in vocabulary learning. Lastly, based on the overall strategy patterns and learners' self-regulation processes, this study has resulted in an extended definition of two types of learners, namely, fine brush and free hand learners, as earlier identified by Gu (2003a). This has involved identifying the specific features of the two, which has allowed for comparison in relation to the differences regarding their learner beliefs, use of meta-strategies and their deployment of strategies in some of the vocabulary learning stages. Based on these findings, the study has proposed suggestions for CFL pedagogy and developed materials that can be used to facilitate learners to become better self-regulated in CFL vocabulary learning.

The process of doing this PhD has been at times challenging and demanding, but it has taught me many precious lessons. I have gained expertise in conducting research, in particular in narrowing the research focus through the initial analysis of my data, presenting and discussing my study with my supervisors and other researchers at conferences and gradually developing my thesis. I have also realised the importance of finding a balance between controlling my data collection by using methodical data collection instruments (e.g. predetermined interview questions) and "going with the flow" to allow my participants to tell their stories, creating the space for "surprises" to happen. I found that adult learners in particular often bring such a lot of their previous learning experience and expertise into learning Chinese, which is often their third, fourth, or even fifth language. In other words, the learners have a lot to share, and my role as an LLS researcher has been to give voice to the participants and engage them more fully in my study. My data collection worked much better when I listened, probed, and then found the bits that were most relevant to my study and did not limit the participants to reporting only on the subjects I had planned to ask them about.

In addition, the process of conducting this study itself has been enlightening and empowering for me as a Chinese teacher. Before embarking on this research, I had familiarised myself with various theories concerning general SLA[6] and vocabulary acquisition, as well as the literature about Chinese linguistics and CFL teaching and learning. All of these enabled me to participate fully in different aspects of my teaching and tutoring (as well as researching). My original intention in conducting this research, however, was to find out what learners did not know about Chinese and Chinese vocabulary learning, so that we, as teachers, can "educate" them to become better CFL learners. Having completed this study, I feel that I was naïve and arrogant to assume that it was only the learners that need to be informed. I have been incredibly privileged to have met and worked with some very good language learners, who take charge of their own learning, and are simply very good language teachers to themselves. These learners have shown me that they can identify specific issues, difficulties and challenges and some effective solutions in a very sophisticated way. Working with my participants has pointed me, an experienced teacher of CFL, towards unexpected ways to improve my teaching that I would not have thought of otherwise. I realise that I cannot expect all my future students to be as motivated and strategic as some of my participants, but I will always stay humble and learn from my students to improve my teaching.

Lastly, I feel very grateful to have had a total of four-years to conduct this study, allowing me many opportunities to reflect on the questions I needed to ask, to develop my research approach, and to draw my interpretations out of the data. There were moments that I had doubts about the significance of my study and whether I have discovered enough to justify it as a PhD thesis. Having completed the thesis, I now believe that the findings regarding how different individuals implement strategies, how they adapt their strategy use to the specific problems of learning the Chinese language, and how they self-regulate, have all added some small but important pieces to the huge puzzle that is the process of foreign language and vocabulary learning.

[6] SLA is used to refer to second language acquisition

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APPENDICES

Appendix 1 Guidelines for Keeping a Learner Diary

Thank you very much for participating in this study. My research is about what native English speakers do to learn Chinese vocabulary and how this learning process can be influenced by various factors. I am particularly interested in getting to know 1) what you do to learn, 2) how you do it and 3) what your evaluation/thoughts/feelings are about your own learning process. Therefore, as part of the participation, I would like to invite you to keep a learner diary for me to read it at certain times, and I may also want to interview you about it later on. Here are some guidelines about how to do it.

Things to talk about in the diary

There are no hard and fast rules about what you should include in your diary. In short, you can write ***anything*** that is relevant to your Chinese learning. Here are some of my suggestions about what you might want to write down based on my areas of interest. You do not need to respond to all of them.

1. What have I learned/practised/reviewed today?
   E.g. a list of vocabulary, sentence structures, grammar points
   What difficulties/ problems/challenges did I face in today's learning?

2. What exactly did I do to learn them?
   How did I carry out these activities?
   - In-class learning activities/strategies
     E.g. what did the teacher ask me to do?
   - Out-of-class activities/strategies
     E.g. talking to a native Chinese speaker, reading an article, participating in group learning

3. How successful/effective was my study/learning?
   What made it successful or not successful?
   Am I satisfied with myself/teacher/programme/teaching material?

4. What have I discovered about Chinese or Chinese learning today?
   Did my teacher say anything about what the Chinese language system/learning is like?

Have I discovered any “rules” about Chinese or any “trick” about learning Chinese?

5. How does the learning make me feel today?
   E.g. excited, satisfied, bored, or frustrated

When to write it

This again is entirely up to you based on your schedule of learning, but I suggest the following.

• Add an entry about what you just did immediately after finishing a learning activity (it could be just one sentence so you won’t forget about doing this bit– you can always come back to elaborate upon it later on)

Plus

• Write an overall review at the end of the day or week, commenting on some Chinese-learning activities/strategies you feel particularly important or interesting during this period of time

Ways of keeping a diary

- Write it down in a notebook
- Or write it electronically on your computer, tablet, or smart phone

Language(s) used in keeping the diary

- English or Chinese, or both
- Draw a diagram, if you feel words are not enough to illustrate this point

I sincerely hope you will find it interesting as well as useful to keep a diary to reflect on your own Chinese learning. If you like, I could also give you feedback at the end of my research to help you improve your learning.

Appendix 2 Questions for the 1st and 2nd Semi-structured Interview

Background information

- Where are you from?
- What is your first language?
- What other language(s) have you learned? Where did you learn them?
- What languages are you learning at the moment?
- How long have you been learning Chinese?
- How much time do you spend learning Chinese per week?

Questions for the 1st Interview

1. **<u>What activities do you undertake to learn Chinese now?</u>**
   Are you taking a class? Where/when/how often etc.?
   Aside from classes, what other activities do you do to learn?
   <u>(Plus for advanced learners only: what have you done to learn Chinese?)</u>
   (Let participants talk first, in the end ask about the aspects they have not mentioned)
   - Enrolled on courses or self/ group-learning
   - Intentional/Incidental learning activities
   - Materials (e.g. dictionary) and tools (e.g. electronic device)
   - Social interaction or strategies

2. **<u>What do you do to learn Chinese vocabulary now?</u>**
   <u>(Plus for advanced learners only: what have you done to learn Chinese vocabulary?)</u>
   What do you do to learn...?
   Could you show me how you learn …?
   Could you give me an example about learning …?
   What do you do when you meet a word for the first time in reading/listening?
   What do you do when someone says a word you don't know?
   Suppose there is a word very important to you and you need to learn it properly, what would you do?
   Where do you usually meet new words?
   What tools or resources do you use to find out the necessary information to learn a word? What information do you think is necessary?
   What do you do to remember…for the first time?

What do you do to consolidate your knowledge of something you have already learned?

What do you do to practise …?

What do you do to learn how to use a word?

How do you decide if you have learned a word?

- Spoken form: Pinyin, tones
- Written form: character writing
- Morphemes: character and the meaning it represents
- Meaning-Form connection
  Sound-meaning

  Shape-meaning
- Sound-shape connection
- Usages

3. Have you found Chinese vocabulary difficult to learn?
   Which aspects of vocabulary learning do you find difficult? How do you deal with it?

4. **How do you feel about learning Chinese vocabulary in general?**
   What do you do when you feel anxious about or bored with learning Chinese vocabulary? (Affective strategies)

5. **For advanced learners only: has your learning approach for Chinese vocabulary changed? How? Why?**

6. **For advanced learners only: what advice would you give to someone who recently started to learn Chinese about the best way to learn Chinese words?**

Questions for the 2nd Interview

1. Why are you learning Chinese?
2. Why do you learn Chinese vocabulary in … way?
3. What do you know about the Chinese or Chinese vocabulary system?
   Do you find it logical or systematic?
4. Have your teachers ever talked about what the Chinese vocabulary system is like? Have they talked about how to learn Chinese vocabulary? What have you found useful and what not?

5. If you know a word well, what does that mean? What is it that you need to learn about a word before you can say you "know" it? Are there different degrees of knowing?
6. Have you learned other languages before? Was it very successful? What do you think is the best way to learn a foreign language? Is learning Chinese very different from learning other foreign languages?
7. From the diary/observation/notes, I see you do …, could you tell me why do you do that?
8. What do you think is the best way to learn Chinese vocabulary? Ideally, if you have enough time/resources, would you do something else to improve your learning?
9. Have you thought about doing …? Why don't you do…?

Appendix 3 Sarah's data: sample pages from the 1st interview (with colour coding[7])

R[8]: Okay, so where do you usually meet new words for you to learn?

S[9]: At the moment mostly in the vocabulary list, that's just because there is a set of vocabulary list for the different levels, and because there is obviously there is like an infinite number of words you could learn, it is helpful to have a list to kind of feel like you are making progress, and feel like you are learning vocabulary that is picked up in teaching materials and things so it is constantly reinforced, and but as I have said in my notes, I don't think it's, I hate learning vocabulary from vocabulary lists, because I just think it is really difficult to memorize, and you don't learn the sense of what the words really mean, you just learn the English equivalence which doesn't really work in a foreign language, because often words don't translate directly, so I prefer learning words like in lessons, it is really helpful when something comes up, and we talk about how it is used and think about a couple of sentences for the examples. I find it much easier to remember words that way, and through watching the *Growing Up with Chinese* series that is quite good at picking up unknown words or phrases in each episode and explaining how it is used and giving some examples and replaying the clip that uses it, and I find that helpful because then if I am trying to think of a word then I think "oh I know that because I encountered it when I was doing this …" and then I can visualize the clip of it in my head and then I can think "okay" that kind of helps me draw the word to the front of my mind, and so I guess it is maybe more time consuming, but I think it is more useful in the long run.

R: You mentioned watching this TV show and picking up new words from it, is it difficult, like in terms of isolating that is the thing I don't know and then looking it up in a dictionary, and try to find out the meaning?

S: That TV show in particular helps because it is designed for people learning Chinese, so what they do is they play a clip of people having a conversation or something, and you watch the whole thing with no interruption first, and then they will go back through and

[7] Explanation of the colour coding:
Green – source strategy
Yellow – learner meta-knowledge: knowledge, awareness, beliefs
Pink – use of meta-strategies: monitoring, evaluating, planning, etc.
Grey - activating word knowledge
Red – strategies for keeping and using records of word information
Blue – strategies for searching for word information

[8] R – Researcher
[9] S - Sarah

they will say did you notice that at this point they said this, and they say the sentence slowly in Chinese which means it is much easier to follow what is being said, and then they will explain what a particular new word or phrase means, and they will be playing the original, the shortened clip that just saying that part, so that's quite helpful for having an explanation coz otherwise it is quite easy to watch something and think "oh, I pick up words like pronouns and things that I can use … "and you can see from the contexts what they mean, so it is quite helpful they actually break down what is being said and explain it, and in reading or when we are doing lessons, we will come cross a word, it is quite useful to pick up new words because it will just be when I want to say something and I hit a block where I realize I don't know the word for that. Or like reading something like this, for example, where it is easy to identify which bits are…you know.

R: Yes. How long does it take to watch one episode of that TV show and finish the learning?

S: I think they are about 20 minutes or half an hour, they are not that long.

R: Okay, do they show you the characters in that TV show?

S: Yes.

R: okay, do you take notes during you are watching that, or is it just …

S: Yes, I did, I noted down, and I did not note down everything, but anything I thought it was useful or like the new vocabulary from it, I made a note on my phone when I was watching it, and then I could read it on the tube on the way to work afterwards, coz I think, I think it probably takes about three times of encountering a new word to remember it, and some words it is more difficult, I don't know why, but for most words I think if you see it once in context, review it again, once more, and then perhaps the third time if you use it remembering it without sort of seeing it in prompt then if you remember it the third time, it is stuck and you can think "okay I know that word". But it does not work for everything, some words for some reason, I just, for those certain words, it is easier to remember them than the others [laughing].

Appendix 4 Sarah's data: sample pages from the 1st think-aloud activity

S: Okay. So if we take the next one in this list then *wai*, I look at it first and think can I think of anything this word can connect to, or do I know this word already. I think it might be linked to *outside*, but I am not sure, it is the only thing come to my mind, so I will have to look it up [Observation notes: typing in to Pleco dictionary].

R: Why do you think it is linked to *outside*?

S: I am not sure. I think it is possibly for the word *foreigner*? *Laowai*? Which is probably from being in China or hearing it mentioned or something, and so that's the only thing, I don't know why, sometimes that is funny, you look at a new word and you cannot explain why you had that connection in your head, just something come to your mind.

R: Do you look at the character or the pronunciation, at this point?

S: I think naturally I read the word first, so I will look at the pinyin, and then I will look at the character and see if it's got anything in it that I recognise that might give me a clue about what the meaning is, or anything about the word. Here the character doesn't help me really; I don't recognise anything in that. So it is just a sound that's familiar. And then I will look it up.

[Observation notes: Typing pinyin into the dictionary]

S: And I see there are a lot of meanings, it could be *outer, outward, outside, other, foreign, besides, in additional, beyond*, so there are a lot of different ways that it can be used, and it is linked to being outside, and I probably have heard it in words related to *foreigners* before. And then I will look at the sentences, to look at anything, if there is anything that will help me to remember it more. So here a lot of these are very specific uses, and so it looks like from this it is a word that I will need to pay attention to how it is used to learn it properly, because it is not, it is not just a straightforward translation of *outside*. They can be used in a lot of structures and phrases, so I will write down that it means *outside* or *foreign* coz those seem to be the closest meanings, and I think if I learn it as that, I will be able to guess the other meanings from that, but I will sort of mentally think that is the word I will need to pay attention to, because it is not as simple as say like *tiaowu, dance* is probably gonna be used as that in most context, and I will see that as an easy word, I would think that is fine, I can learn it and I don't need to worry about it.

R: Yeah, so when you look at the example sentences, do you look at the translation, like the English?

S: So, again, I don't feel at this stage looking at the characters helps me that much, so I will look at the, I guess, I will look at both, I will look at the English and see what kind of phrases they are, so here *be away from home all year*, that is not really, that is kind of a specific term of phrase, not particularly useful to learn why enough from the text, so that's no, that's not…and a lot of these are, like *look out of the window*, that is maybe a bit more useful, but again quite specific sort of phrase that none of these are using, I don't know, they are all quite specific, but once I have looked at that, so *look out of the window*, then I look at the pinyin, and think do I know these words, so *kan*, yes, okay I know that word, that is familiar, *chuang*, I know it is window, so that's another thing I am familiar, okay, that's familiar, I recognise that, and now *wai* is the new word, so if I was going to pick a sentence to illustrate this word to help me remember it, I would pick something like that where I know the other words already, because then it focuses on the... yeah, and I hope to try and pick something that I think I can use a lot, because when you pick something really unusual, it is gonna be hard to practise.

R: Yeah, that's great. Okay, at this point, are you going to move to the next one?

S: Yeah. Should we just do another one? Okay, so the next one is *wan*, and the first thing I spot about this is that the next word is also the same character and sound and then a different character added on... And we have got two, well, on this side, one, two, three, four, four other words afterwards that all have the similar sound, but different tones and different characters, and so that would be my first thing that would flag, like, I need to pay attention to this because this is gonna be confusing, and then I will think I know *wan* meaning to *have completed an action*, and I know it meaning *late*, and, but I am not sure which one is which, so then I will look up the word. And then I will look for the character that matches and find it is this one, so here it says it means *intact, whole*, to *run out, use up*, *to finish completely over*, *be through* or *to pay*, so there is quite a few different meanings, so I will probably look at sentences before I choose one to write down, and it looks like *to finish* is the most common examples, so I am gonna choose that as the meaning I write down for it. *To finish*. And then I will look at the other words that have the same character because I want to see if they are connected. So yeah, if I look at the next one, *wancheng*, it says *accomplished, completed, fulfil, bring to success* and *conclusion*, so that links with me for having the senses for finishing the other words, this is a sort of fuller version, so I am noting down that... […]

Appendix 5 Sarah's data: sample learner diary entries

Learner diary entry 3

Wednesday 16th July

I read over the vocabulary list on my way to work. I don't like this way of learning words as I find my attention is always drawn to the words I recognise and know already, which fools me into thinking I remember more than I do. It's also too easy having the English and the Chinese together – it would be better to practise recalling the English when I see the Chinese word, and then try to remember the Chinese word from the English. I also dislike learning words out of context. I find it much easier to remember words if I have encountered them naturally as I have something to connect them to and something to jog my memory when I need to recall them. Often with Chinese, words don't translate directly from English, and learning vocab lists out of context encourages mistranslation. However, it is useful for familiarising myself with the vocab I need to know for the exam, and hopefully when I encounter the words I don't know in context, I will have more chance of recognising and remembering them.

Learner diary entry 4

Saturday 19th July

I reviewed my notes from previous lessons and wrote a diary of my week in Mandarin. This took quite a long time as I was trying to practise the structures I had learnt recently, so I had to think about how to incorporate them in the writing. It also took a long time as I wrote it out once in pinyin, and then typed it out in characters and checked the characters against the words. Checking the characters with the words is time consuming and feels frustrating at first, but as I began to recognise characters and realised I could read from the Chinese, it felt much more satisfying. I find it easier to recognise and remember them if I have written them myself because I have had to take the time to think about the words and sentence structures. I need to make myself do this more often so that I actually learn to read Chinese characters.

Appendix 6 Mark's data: sample pages from the 1st interview

R: Could you say a bit more about how you use this list?

[10]M: The first thing I do, I look to see if I am familiar with the character in the first place, and not simply the character but the way it is actually being used. If I am not familiar with the character, it goes straight on to my list.

R: When you say you see if you are familiar with the character, you mean you know the sound and the meaning of it?

M: Yeah, and how to write it. There are two aspects to this, there is the character itself, am I familiar with how to write it, how to pronounce it, what its basic meaning is; but there is also its meaning as a word when combined with another character. So again I have to look at that. So what I am doing when I look at these introductory characters, I am looking to see if I need add any to the list, and I am also looking for new words that consist of characters I already know. So I am trying to distinguish here between characters and words, if you like. That is what I do when I work my way through this lots. So I will just go through, one by one, I will just follow the book exactly.

R: When you go through them one by one, firstly you see if you know the character, and then you check the sound and the meaning to see if you are right?

M: Yeah.

R: And then for this, it is a word, do you see the meaning directly? I am assuming you recognise the first character and then recognise the second; do you work it out the meaning by yourself first or...?

M: No I genuinely look at the meaning; I have not yet acquired that ability to infer the meaning unfortunately, so I do have to look at the definition of the word, more or less every time. These days sometimes I can kind of have a lucky guess but you know it can be ballpark, but it is not really specific enough so I will always have to really get a concrete definition. So at this stage I don't really want to start inferring and I do really want to learn the specifics of a word's meaning.

R: So you see the word and the meaning, and just go through like that? You read them?

[10] M - Mark

M: Yes, that's right. That is kind of my introductory familiarisation with the new words, if you like. And the reason I do this rather than trying to do any memory tricks is because following, here we have, this is qi, and this is qi, so this is actually introducing some phrases using the word, the character qi, so this is doing for me what I will have to otherwise do it myself.

R: What do you mean otherwise you will have to do it yourself?

M: In that it is giving me usages of this character, so I am becoming familiar with how that character is used, you know contexts, where it is used. So when I first look at this, at this stage I don't have to actually start to think how this is used and I don't have to look it open, you know look for examples of usages because I know that here, there are gonna be examples, OK? So my first kind of pass through this is really just to look for new characters, and new character combinations, OK? The next part is kind of examples of usages, so then I will just kind of read through all these lot. Now I am not really taking notes when I go through all this because as far as I am concerned, it's here, I can refer back to it any of the time, whereas I also know that all these characters and words will be further flashed out in subsequent parts of this chapter in more depths and more detail, so usually by the time when I have completed a chapter, by the time I have started reading the text I have got a good understanding of what those characters are, what they mean, so a chapter really introduces you to new characters and words, and by the end of the chapter, you have actually started using it, you actually re-read it in a little kind of story.

R: When you use this list, do you read them out loud when you see them?

M: Actually very often I do, yeah, when I am reading, I read out loud, if I am at home. If I am on a train or in a café, I tend to keep quiet.

R: And do you test yourself with this list or do you just see if you remember them later?

M: No, no I don't test myself; I will do that chapter and then move on. And I do actually forget a lot of these, and I am always hoping that of the course of the book I will see them again and again. Actually that doesn't always happen, and I am aware that is a shortcoming in my kind of study method in that this may cover a particular topic, and that topic may not be relevant to the subsequent chapters, so I may encounter some characters here that I am going to forget about in the next 4 or 5 chapters. I am aware of that; that is a problem. But you know… haha.

Appendix 7 Mark's data: sample page from the 1st think-aloud activity

[Observation notes: Copying characters from the answer sheet, and cope each character once]

[Observation notes: Pronounce it and write it and immediately analyses the phonetic and semantic clues]

[Observation notes: Radical & character-connection]

M: I am looking for things that may jog my memory in future for how to, when I read this one [pointing at the pinyin-English note], I am looking for anything in that character that may remind me of what it should look like. For example, for this one, 纲, which I have written as *main point*, it has the components 冈, so that will, when I see the word 纲 I will try and remember that it has this component. Once I remember that, the only thing else I have to remember is the second component.

M: Now 惩, this is probably stretching it, a bit, it has the character 征 obviously that is stretching it, but what I remember is that it ends with –ng, like I said it is not precise, it is not scientific, but it helps you jog your memory when I try to think of what it looks like.

M: The next one, which is 憨, which I described it as *naïve*, now this one looks like the difficult one for me to remember. In fact, when I look at those components, nothing there particularly reminds me of han. So I know that the next time I go through these characters and I try to move beyond 钉 [a character on the list] and try to remember these characters I have just written now for the first time, I may remember 纲, I probably won't remember 惩 I definitely won't remember 憨 so I will have to probably repeat this a couple of times once I have looked at the answer just in order to help me memorise it.

[…]

M: Simply because this memory jog in fact it has 冈 in there so I only need to remember the one additional component which is, err… I think that is 丝, I think I just need to remember that. And very often I found that if I remember one component, I seem to remember visually what the character looked like first time I wrote it, so I almost have like a photograph in my memory, and when I remember the 冈 part, it brings up the photograph in my mind and that is how it works. 惩 I will have difficulty because like I said the thing I can remember about it is the 征 component, and cheng is not quite near

enough to zheng for it to really kind of spring to mind. 憨 I can't see anything in there that reminds of han so there is nothing there, it is completely, from my perspective, that is a completely new character, there is nothing there that can kind of give me a hint of what it should look like.

M: Now 雷 from a phonetic point of view, there is nothing to remind me of what that character should look like. But because it is *thunder* I will probably remember that there is a 雨 component in there somewhere so that memory trick will help me with that one.

M: So the kind of memory trick kind of varies, sometimes they are phonetic, sometimes they refer to the meaning.

M: So tang, which I have written as *carbon*, I think the only thing that helps me understand 碳, is the fact that it has this 石 in there, which usually means some kind of material, not always, but sometimes. […]

M: The next one, 芒， which I have written as *beard*, I think that this one I will remember, because it is very similar to 茫, and it is actually easier to write so I will probably remember that just because its phonetic aspect.

Notes based on Think-aloud data

杭 – 亢 the –ang type of sounds

恰 – I can't see anything that is gonna remind me of that character

嚷 – 壤 to do with soil so I will remember this one relatively easily. The mouth.

绵 – I am not sure how I can memorise that one.

毙 - Now this one I will remember this component 比 as it is 比 which is comparison which provides phonetic. This lower part looks like it derives from 死, but I will probably forget that, so it will takes me a couple of times to remember that one solidly.

撤 - to me this is no logic in it. If I analyse this, it has the 手 component, 育 as in education, and 文，so nothing there will remind me that che should look like that, so again I can almost predict that I will have problems memorise that one. There is nothing phonetically to remind me that and meaning wise there is nothing there that strike me as it should me 撤.

Appendix 8 Mark's data: sample learner diary entries

Learner diary entry 9.

29/05

Afternoon: language-swap chatting with Ying, a new friend from China.

I spent over two hours alternating between English and Chinese. The main thing to strike me was the fact that my spoken Chinese has declined since last year, along with my listening powers. Last year I had the opportunity to practice with a Chinese friend; that came to an end in October; since then I have had only occasional opportunities to practice – most of my learning has revolved around reading and writing.

I'm hoping that I can continue to practice with Ying on a regular basis because it's obvious to me that the last 6 months I've just been treading water. Admittedly I've learnt new grammar and characters by reading books, but the lack of practical experience really showed today and I felt quite deflated.

Learner diary entry 12.

11/06

While talking with Ying today, I noticed that she had some big problems trying to understand certain sounds that I was speaking, for example, 周末. I realised that my pronunciation is based upon my interpretation of the pinyin sounds that were detailed in my first Chinese book.

While a book can never be that accurate in describing sounds, it's even less so when regional accents are taken into consideration. Coming from Yorkshire, my understanding of written phonetics varies quite a lot when compared that of people from other regions. The book is doubtless intended for those who speak with a correct English accent, so anyone else will invariably misinterpret the sounds.

This is not an argument for regional accent phonetics; rather, it's an admission that I should have spent more time listening to correct Chinese speech, rather than relying on my own image of how pinyin should sound.

Appendix 9 Emily's data: samples pages from the 1st interview

R: when you first see new words in your preview, what is the first step do you do?

E[11]: When I first see new words, err...I would look them up...?

R: In a dictionary?

E: In a dictionary, yeah. Now, now, yeah, if I am looking up new words, if I am previewing for the meet-up group, I just, I just start reading it from, you know, just like, from completely cold, I will not look it up, I will just start reading and then if I get to a word that I don't know, I will firstly look it up in a dictionary, and then try and kind of get a sense of why it means that from the characters. In, if it... I get a definition, and then I, if I don't, if I don't immediately under-stand why it means that, then I will look at the breakdown of the characters, and try and piece together why it means that. And once I have kind of figured that out, then I will always write it down, and then I write down some examples using the technique that I have just said to you where I try to work out what other words it can be used with, and if it is something that I really, sometimes I write an example sentence down as well, but yeah, that's pretty much what I do with the new words. Err...yeah. I think that's kind of what I've always done, really, in the past. It is just in the past when I was learning from a textbook, the, there would always be the explanation next to the word, but I think I would still generally look it up in the dictionary, just because my understanding of the word is linked to the character and link to why it means that, I just wanna know why... [laughing].

R: when you say why it means that, you mean why this character and this character, they put together, they mean that meaning?

E: Yeah, yeah, yes.

R: So in a way, it is the meaning of individual characters.

E: Yes, yeah. But then, like I said, I don't ever learn the individual character meaning, I just kind of, when I have a sense of what one-character means and what another character means, and then put together, I kind of learn the whole word as it were, you know, I have a sense of why. And sometimes, sometimes I don't necessarily look it up, sometimes I just kind of make a story up in my head of why it means that. You know what I mean? Sometimes, and sometimes, it might be right, it might be wrong, but like, I have, I guess

[11] E – Emily

I have some, like I never really, because I didn't go in like basic, basic level, I never actually got taught, like, all of, I wanna say of learner's time but, like all of the radicals, and kind of what they mean. I just know that that is the radical, don't necessarily know what it means, and so I feel like, so some of them just feel like over the time I just made up these things, that's what it means, and it makes sense in my head, and it might not be necessary right. So when I am looking at characters, I am trying to find, you know, like clues, when I learn how to write a character, or if I try to remember how to write a character, I definitely think all the different parts of what makes it up, and I find that is quite important to me when I am learning a character and thinking like...but I completely understand sometimes there was not really any reason behind it, and it doesn't bother me, like I know some of my, some of my friends, you know, would be like why it is like this?

R: Why is the system not perfect?

E: Yeah, exactly, whereas it doesn't bother me, I am just interested to know if there is a pattern or not.

R: So, so the process you were talking about is, the individual character, like the writing, the structure of the character...

E: But I think it is, obviously that's how I write it, but I think it is also linked in my brain when I am trying to remember it, when I am remembering a character or a word, I kind of, I am drawing from all of that, you know, the way the character is, yeah, it is very strange cos as you have noticed, like I cannot write a lot of character that I know, but once I see them, I know them, but if you describe them to me, then I probably would then be able to write it down so I don't know, it is very confusing...[laughing]

R: When you remember, when you try to memorise how to write a particular character, do you always like try to divide it into several parts, instead of stroke by stroke?

E: Yeah. If there are obvious parts, if it is made up obviously of different bits, I remember the different bits. I don't really, I don't remember characters by the stroke order, because if I see how it is written, then I know what the stroke order without having to, you know what I mean? Like I remember the bits of the character, then by knowing the bits of the character, I know the stroke order rather than just knowing the stroke order of the character.

[…]

Appendix 10 Emily's data: samples pages from the 1st think-aloud activity

R: If you could show me how you preview words by yourself. So that is a list of words with text.

E: Yes. Previewing a lesson or previewing the list of characters, or both?

R: Maybe both. So if you have a new text, a new lesson.

E: If I have a new text, like a new lesson, I would normally look at the text first, because I just found it more interesting than looking at a list of words. So yeah, I am gonna do that.

[Text title: 海尔集团的核心管理体系 Translation: Haier Group's core management system] [Observation notes: check unknown words in the list]

E I can't remember, what that is (额), and so when I cannot remember what that means, I just have a quick look at the list to see if it is in the new word list, but I can't see it in the new word list, so...

R: Only that one character?

E: it looks like, I am just [Observation notes: reading the sentence again], I don't know, there are obviously three characters together (营业额) [Observation notes: reading the text]

R: are you still trying to figure out the meaning of that word?

E: Well, I am reading on the sentence to see what the rest of the sentence says, and then when I have read that, like I will then go back and see. ...you see now at this point I will just look it up. but it is annoying me because I feel like I know what it is, but I don't....

[Observation notes: she decided to look the character up in the Pleco dictionary, she hand-writing the character 额 on the screen] [Segmentation]

P: Oh, I remember learning this, when I was learning the book and I stopped learning the book, and that is why I don't know what it means, I learned that. *Maoyie* [translation: volume of trade], but because I don't care about *maoyie*, I stopped learning [laughing]. So it is actually fazhan chengwei quanqiu yingyee, not three characters in a row, [发展成为全球营业额 Translation: developed into a global volume of business] in that case, I don't

know the character afterwards as well. Why is it, something ji, some kind of measurement, something.

[Observation notes: she hand-writes the character yu in the Pleco]

E: Now I am confused, yuji, I am confused, I am sure, I am confused about why I could not work that out, because it makes no sense, but that's what I mean, now that I see that, that is what it means, I can look at them and think, well of course, *in advance*, *count*, kind of, but just because I was thrown by the whole sentence and not really knowing necessarily what it would mean in that context. It probably has something to do with the fact that I am not really familiar with this kind of, this kind of, word.

[Observation notes: reading the text] [Observation notes: she identified another new character: 佼 in 佼佼者]

E: It is the kind of word that looks simple, it looks I should know it but I can't remember. Shenme shenme zhe. Guonei qiye zhong de something. I am just gonna look it up again.

[…] [Observation notes: she looks up the character jiao]

E: And also... it is confusing... [laughing]

R: What is the meaning?

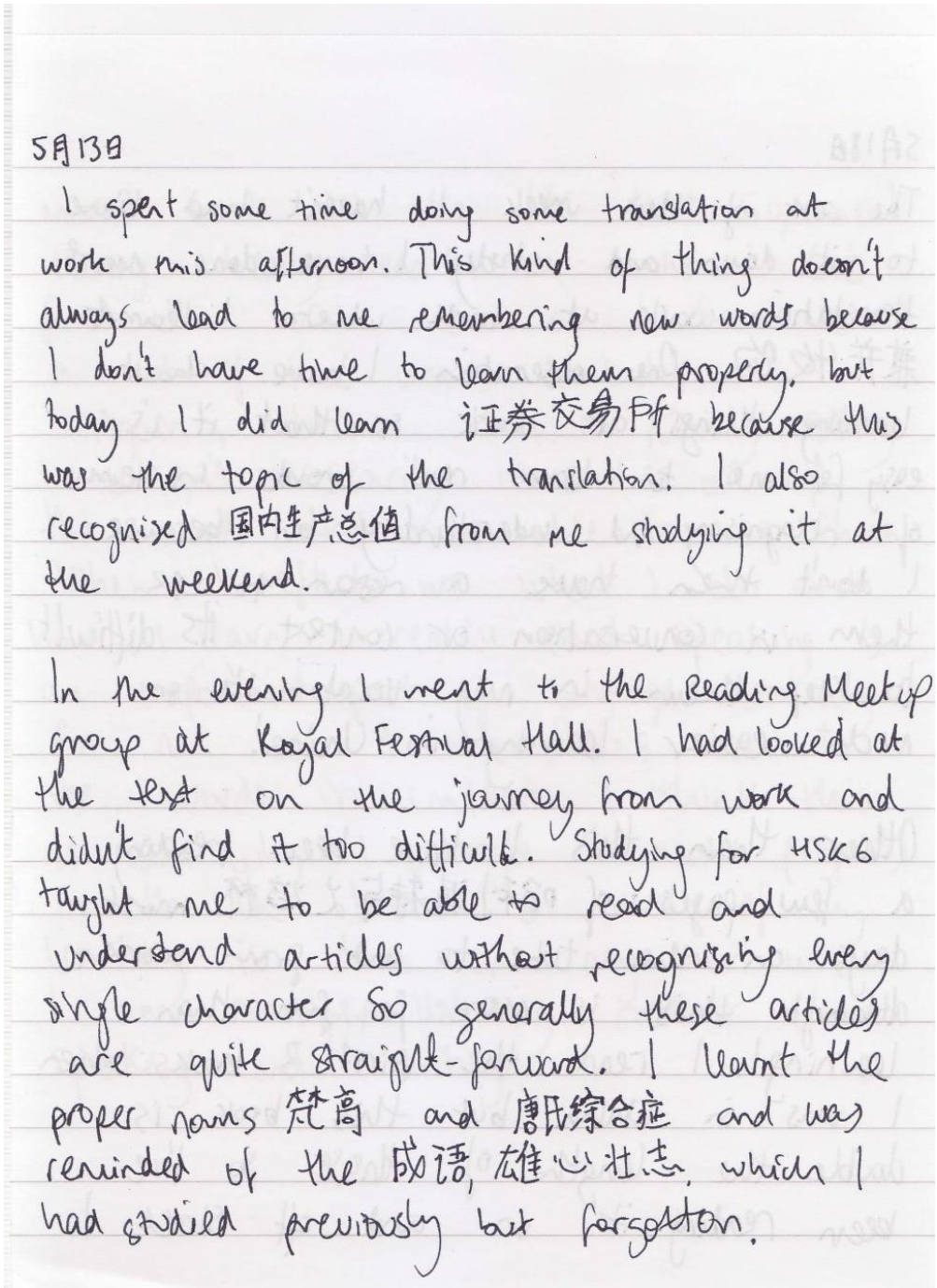
E: the meaning of the character, the first meaning is handsome, which confuses me...hahaha, let me see if, actually I will just look at the words

[Observation notes: she clicked on the WORD function in the dictionary which listed all the words that have this character in it]

E: Oh, there we go, jiaojiao zhe, oh [Observation notes: she read the entries for the word jiaojiao zhe]

E: Yeah, I guess it just confuses me it seems like a really simple character but I generally don't remember ever learning it before. So, that jiaojiao zhe, I would have no way of guessing what it was. Obviously I could tell it is like something from the *zhe*, like, I don't know, like describing some kind of thing. [Observation notes: Reading jiao again in dictionary]

Appendix 11 Emily's data: a sample learner diary entry



5月13日

I spent some time doing some translation at work this afternoon. This kind of thing doesn't always lead to me remembering new words because I don't have time to learn them properly, but today I did learn 证券交易所 because this was the topic of the translation. I also recognised 国内生产总值 from me studying it at the weekend.

In the evening I went to the Reading Meetup group at Royal Festival Hall. I had looked at the text on the journey from work and didn't find it too difficult. Studying for HSK6 taught me to be able to read and understand articles without recognising every single character so generally these articles are quite straight-forward. I learnt the proper nouns 梵高 and 唐氏综合症 and was reminded of the 成语, 雄心壮志, which I had studied previously but forgotten.

Appendix 12 The analytical framework of this study

This analytical framework includes two parts:

A. Chinese vocabulary learning strategies
B. Factors that influence strategy uses

A. Chinese vocabulary learning strategies

Sub-task 1: Encountering new words

1. Sources to encounter new words

- Intentional learning activities with pedagogically designed sources
- Intentional learning activities with non-pedagogically designed sources
- Natural language use activities

2. Strategies to hand new words initially

- Highlighting the new words
- Selecting words for further learning
- Initial word analysing
- Planning for appropriate strategies for further learning

Sub-task 2: Searching for word information

1. Inferring strategies

- Inferring words in a spoken context
- Inferring words in a written context
- Inferring characters in a written context

2. Strategies for using a dictionary or translating tool

- Searching strategies
- Strategies for obtaining information – word segmentation
- Strategies for obtaining information – spoken form
- Strategies for obtaining information – written form
- Strategies for obtaining information – word parts
- Strategies for obtaining information – meaning and use

3. Strategies for asking others

- Asking for basic meaning or comprehension help
- Asking for character information to help processing the word
- Asking for extensive meaning and usage

4. **Strategies for making use of the information and managing the learning**

- Using the information to support word-selection
- Evaluating the learning difficulty of a word
- Planning appropriate strategies for further learning

Sub-task 3: Keeping and using records of word information

1. **Types and formats of the records**

- Types of the records
- Formats of the records

2. **Aspects of word information in the records**

- Highlighting the complex words
- Form knowledge
- Meaning knowledge
- Use knowledge

3. **Strategies for using the records**

- For referencing
- For consolidating word knowledge

Sub-task 4: Establishing word knowledge

1. **Strategies for dealing with multi-aspects of word knowledge**

- Spoken Chinese before written Chinese
- Character/word parts then words

2. **Strategies for dealing with the morpheme-word relationship**

- Word-based vocabulary learning with attention to the constituent morphemes
- Character/word parts then words

3. **Strategies for establishing the spoken form knowledge**

- Generic strategies
- Pinyin strategies
- Tone learning strategies

4. **Strategies for establishing the written form knowledge**

- Meta-strategies for character learning
- Generic memorising strategies – repetition

- Generic memorising strategies – repetition plus systematic review
- Generic memorising strategies – repetition plus meaning access
- Generic memorising strategies/orthographic-knowledge based strategies – repetition plus orthographic-knowledge based strategies
- Character applying strategies
- Orthographic knowledge-based strategies – stroke strategies
- Orthographic knowledge-based strategies – component strategies – strategies for learning the components
- Orthographic knowledge-based strategies – component strategies – strategies for learning the phonetic-semantic characters

5. **Strategies for establishing the meaning and use aspect**

- Deliberate rule-seeking
- Deliberate learning
- Learning incidentally

Sub-task 5: Consolidating word knowledge

- Deliberate consolidating
- Non-deliberate consolidating

Sub-task 6: Using word knowledge

1. **Strategies for activating word knowledge**

    - Retrieving the context from which the word was initially encountered or learned
    - Using collocational pattern knowledge of a word
    - Visualising the characters to process an unfamiliar word and retrieving its meaning in a spoken context
    - Thinking about what components there are in a character when handwriting it

2. **Strategies for better performance**

    - Visualising
    - Using body gestures to emphasise the tone
    - Analysing the sentence structures to monitor

B. Factors that influence strategy uses

1. **Interests**

- Learning conversational Chinese
- Learning characters and reading in Chinese

2. Personality traits

- Being conscientious and wanting to learn accurately
- Being relaxed and taking-it-easy
- Being self-disciplined and can accept boring tasks
- Being highly persistent, driven, and willing to take on challenges
- Having a high tolerance of ambiguity and/or irregularity

3. Cognitive learning styles

- Analytic learning style
- Holistic learning style

4. Proficiency level

- Listening skills
- Reading skills
- Character/morpheme knowledge
- Skill of dividing a character into its components
- Character component knowledge
- Character handwriting skills for handwriting-search
- Communication strategies
- Strategies for establishing word knowledge

5. The Task

- Characters: lacking of script to sound correspondence, time-consuming to learn
- Tones
- Sharing few cognates with English

6. The Context

- The language environment
- The immediate study context – teaching strategies or approaches
- The immediate study context – full-time or part-time

7. Learner meta-knowledge

- Knowledge – about the Chinese language
- Knowledge – about a strategy
- Knowledge – Meta-linguistic knowledge
- Awareness - about own learning goal
- Awareness – about own progress
- Awareness – about own strengths and limitations in learning
- Beliefs – about general FL learning
- Beliefs – about general vocabulary learning
- Beliefs – about Chinese and Chinese vocabulary learning

8. Use of meta-strategies

- Use of monitoring, evaluating, reflecting and causal attribution
- Use of macro-level planning – applying the recently developed learner meta-knowledge to adjust further learning
- Use of macro-level planning – considering various factors comprehensively when choosing strategies
- Use of macro-level planning – orchestrating strategies to balance the needs in vocabulary learning
- Use of macro-level planning – use of the meta-affective strategies

Appendix 13 A list of conferences in which parts of this thesis have been presented and peer reviewed

1. Situating Strategy Use: The Interplay of Language Learning Strategies and Individual Learner Characteristics (16-17/October/2015)
2. Acquisition of non-western languages: the interface between language learning and language teaching Conference (10/October/2015)
3. 13th The British Chinese Language Teaching Society International Conference (08-10/Jul/2015)
4. 11th The British Association for Applied Linguistics: Language Learning & Teaching SIG Annual Conference (02-03/Jul/2015)
5. London Second Language Acquisition Research Forum (15/Nov/2014)
6. 12th The British Chinese Language Teaching Society International Conference (09-11/Jul/2014)
7. 10th The British Association for Applied Linguistics: Language Learning & Teaching SIG Annual Conference (03-04/Jul/2014)
8. 3rd International Symposium on Chinese Language and Discourse (11-13/Jun/2014)
9. 9th Newcastle upon Tyne Postgraduate Conference (04/Apr/2014)

Appendix 14 Recruitment letter, consent information sheet and consent form

RECRUITMENT EMAIL/LETTER TO TEACHERS OR ORGANIZERS

Dear colleague,

I am a teacher of Mandarin and a PhD student at King's College London. I am conducting research on learning vocabulary in Chinese as a foreign language. The aim of my study is to understand what adult learners do to learn Chinese vocabulary, what difficulties they have, and what help they may need to do to better self-regulate their studies and become more autonomous in learning Chinese.

I would like your help to find 1 or 2 students who are willing to participate in my study. Participation in the study involves keeping a learner diary about what they do to learn and submitting their notes, exercise sheets, etc. for me to photocopy. I will also conduct interviews with each participant about their learning experience, and observe how they learn in natural settings or asking them to perform some learning activities in front of me. The activities involved in participating in this study are either those that learners would do normally as part of their routine learning, or, if they are additional or different from what they normally do, they could be beneficial for their learning. I would also like, if possible, to observe participants in their normal classes. In observations I would focus on the participant and not on other students or the teacher. The purpose of observations is to help me identify participants' language learning strategies and give me a context within which I interview participants to find out about their strategy use. I would also do my best not to cause disruption to your class or to the participants. Participation would be completely voluntary and all the data I collect from your student would be confidential and anonymous so that no institution or individual can be identified from my report.

Would you be willing to help me find participants in your class or in your independent learning group? If you or your class/group is interested and would like to find out more, please contact me and I will be happy to explain my research in more detail and provide you with an information sheet to help you to decide whether you want to take part.

Researcher: Yu Yang

Email address: yu.y.yang@kcl.ac.uk

INFORMATION SHEET FOR TEACHERS

REC Reference Number: **REP(EM)/12/13-82**

A Study on Vocabulary Learning Strategies Used by Adult Learners in Learning Chinese as a Second/Foreign Language

We would like to invite you to participate in this postgraduate research project. You should only participate if you want to; choosing not to take part will not disadvantage you in any way. Before you decide whether you want to take part, it is important for you to understand why the research is being done and what your participation will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information.

The aim of my study is to understand what adult learners do to learn Chinese vocabulary, what difficulties they have, and what help they may need to better self-regulate their study and become more autonomous in learning Chinese.

The participants needed for this study are adult learners who learn Chinese as a foreign language, i.e. your students. In order to study them, I was hoping you could help me recruit participants from your class, and also allow me to conduct in-class observation if your student decides to participate.

If you agree to participate, I will sent recruitment email/letter to your students (or visit your class to briefly introduce my study if this is preferred). If any of your students agree to participate, I would like to observe some of your lessons in your class to find out about what participant does in class to learn. This is also to help me to interview students about how they feel about learning vocabulary. I will take written notes based on my observation. The specific time to observe your class will be discussed with you and your students.

The information provided by you will be treated in the strictest confidence and the recordings and transcripts will be kept securely. When the data is transcribed your name will be removed and the names of schools' and any other identifying details will be changed to preserve your anonymity. No individual will be able to be identified in my report.

It is up to you to decide whether to take part or not. If you decide to participate, you will be asked to sign a consent form, and are still free to withdraw from the study at any time and without giving a reason. You may also withdraw any information you have already provided up until 01/Sep/2014 when data is transcribed for use in the final report.

If you have any questions or require more information about this study, please contact the researcher using the following contact details.

Researcher:
Yu Yang
MPhil/PhD student

Department of Education and Professional Studies
King's College London, Franklin-Wilkins Building-Waterloo Bridge Wing,
Franklin-Wilkins Building, Room: G-11
Stamford Street
London SE1 8WA UK

If this study has harmed you in any way, you can contact King's College London using the details below for further advice and information:

Supervisor:
Dr. Nick Andon
Lecture in English Language Education
Programme Director, MA in ELT & Applied Linguistics
Department of Education and Professional Studies
King's College London, Franklin-Wilkins Building- Waterloo Bridge Wing,
Franklin-Wilkins Building
Stamford Street
London SE1 8WA UK
Email: nick.andon@kcl.ac.uk
Telephone: +44 (0)20 7848 3715

CONSENT FORM FOR PARTICIPANTS IN RESEARCH STUDIES

Please complete this form after you have read the Information Sheet and/or listened to an explanation about the research.

Title of Study: A Study on Vocabulary Learning Strategies Used by Adults in Learning Chinese as a Second/Foreign Language

King's College Research Ethics Committee Ref: REP(EM)/12/13-82

Thank you for considering taking part in this research. The person organising the research must explain the project to you before you agree to take part. If you have any questions arising from the Information Sheet or explanation already given to you, please ask the researcher before you decide whether to join in. You will be given a copy of this Consent Form to keep and refer to at any time

- **I understand that if I decide at any time during the research that I no longer wish to participate in this project, I can notify the researchers involved and withdraw from it immediately without giving any reason. Furthermore, I understand that I will be able to withdraw my data up to the point of 01/Sep/2014.**

- **I consent to the processing of my personal information for the purposes explained to me. I understand that such information will be handled in accordance with the terms of the UK Data Protection Act 1998.**

- **I consent to my interview being audio recorded.**

Yes	No

Participant's Statement:

I -

_____

agree that the research project named above has been explained to me to my satisfaction and I agree to take part in the study. I have read both the notes written above and the Information Sheet about the project, and understand what the research study involves.

Signed **Date**

RECRUITMENT EMAIL/LETTER TO LEARNERS

Dear students,

I am a teacher of Mandarin and a PhD student at King's College London. I am conducting research on vocabulary learning in Chinese as a foreign language. I would like to find 2 to 5 adult learners who are willing to participate. The aim of my study is to understand what adult learners do to learn Chinese vocabulary, what difficulties they have, and what help they may need to better self-regulate their study and become more autonomous in learning Chinese.

Activities involved in this study are either part of your learning routine or could be beneficial to your Chinese learning. For example, you may find that reflecting on and talking about your learning experience interesting and also helpful for your further Chinese vocabulary learning. If you would like to participate, I will ask you to keep a learner diary about what you do to learn and also provide me with your notes, exercise sheets, etc. for photocopying. I will also conduct interviews with you about your learning experience, and observe how you learn in natural settings or asking you to perform some learning activities in front of me.

If you are interested in participating in my study or if you would like to find out more, please contact me and I will be happy to explain my research in more detail and provide you with an information sheet to help you to decide whether you want to take part.

Researcher: Yu Yang

Email address: yu.y.yang@kcl.ac.uk

INFORMATION SHEET FOR LEARNERS

REC Reference Number: **KCL/13/14-217**

A Study on Vocabulary Learning Strategies Used by Adult Learners in Learning Chinese as a Second/Foreign Language

We would like to invite you to participate in this postgraduate research project. You should only participate if you want to; choosing not to take part will not disadvantage you in any way. Before you decide whether you want to take part, it is important for you to understand why the research is being done and what your participation will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information.

The aim of my study is to understand what adult learners do to learn Chinese vocabulary, what difficulties they have, and what help they may need to better self-regulate their study and become more autonomous in learning Chinese.

The participants I am looking for are adult learners who are learning Chinese as a foreign language. Participation in this study involves:

1) Keeping a weekly learner diary about what you do to learn vocabulary
2) Collecting your notes, exercise sheets for photocopying
3) 3 interviews in total (each lasts less than 60 mins)
4) Observation of your learning activities in natural settings (e.g. in-class observation)
5) Performing a couple of think-aloud activities (i.e. speaking out what you are doing/thinking while you are performing a learning activity)

With your permission, we would like to audio record the interview, and video record the think-aloud activities. The video-recording of what you actually do to learn will be analysed alongside the audio data. Data will be transcribed by the researcher alone. Only the researcher and her supervisors will have access to the data collected. There will be no disclosures of personal information beyond this study team. In addition, the information provided by you will be treated in the strictest confidence and the recordings and transcripts will be kept securely. When the data is transcribed your name will be removed and the names of schools' and any other identifying details will be changed to preserve your anonymity. No individual will be able to be identified in my report.

It is up to you to decide whether to take part or not. If you decide to participate, you will be asked to sign a consent form, and are still free to withdraw from the study at any time and without giving a reason. You may also withdraw any information you have already provided up until 01/Sep/2014 when data is transcribed for use in the final report.

If you have any questions or require more information about this study, please contact the researcher using the following contact details.

Researcher:
Yu Yang

MPhil/PhD student
Department of Education and Professional Studies
King's College London, Franklin-Wilkins Building-Waterloo Bridge Wing,
Franklin-Wilkins Building, Room: G-11
Stamford Street
London SE1 8WA UK

If this study has harmed you in any way, you can contact King's College London using the details below for further advice and information:

Supervisor:
Dr. Nick Andon
Lecture in English Language Education
Programme Director, MA in ELT & Applied Linguistics
Department of Education and Professional Studies
King's College London, Franklin-Wilkins Building- Waterloo Bridge Wing,
Franklin-Wilkins Building
Stamford Street
London SE1 8WA UK
Email: nick.andon@kcl.ac.uk
Telephone: +44 (0)20 7848 3715

CONSENT FORM FOR PARTICIPANTS IN RESEARCH STUDIES

Please complete this form after you have read the Information Sheet and/or listened to an explanation about the research.

Title of Study: A Study on Vocabulary Learning Strategies Used by Adults in Learning Chinese as a Second/Foreign Language

King's College Research Ethics Committee Ref: KCL/13/14-217

Thank you for considering taking part in this research. The person organising the research must explain the project to you before you agree to take part. If you have any questions arising from the Information Sheet or explanation already given to you, please ask the researcher before you decide whether to join in. You will be given a copy of this Consent Form to keep and refer to at any time.

- **I understand that if I decide at any time during the research that I no longer wish to participate in this project, I can notify the researchers involved and withdraw from it immediately without giving any reason. Furthermore, I understand that I will be able to withdraw my data up to the point of publication 01/Sep/2014.**

- **I consent to the processing of my personal information for the purposes explained to me. I understand that such information will be handled in accordance with the terms of the UK Data Protection Act 1998.**

- **I consent to my interview being audio recorded.**

Yes	No

- **I consent to my think-aloud activities being video recorded.**

Yes	No

Participant's Statement:

I -

_____

Agree that the research project named above has been explained to me to my satisfaction and I agree to take part in the study. I have read both the notes written above and the Information Sheet about the project, and understand what the research study involves.

Signed **Date**

Appendix 15 An inventory for Chinese vocabulary learning strategies categorised for the six vocabulary learning stages

Sub-task 1: Encountering new words

1. **Sources to encounter new words**

- **Pedagogically designed sources** – using a vocabulary list/textbooks, etc.
- **Pedagogically designed sources** – having lessons/watching instructional video programmes/study groups, etc.
- **Intentional learning/natural language use activities** – reading
- **Intentional learning/natural language use activities** – listening
- **Intentional learning activities/natural language use activities** – writing
  Intentional learning/natural language use activities – interacting with native speakers

2. **Strategies to hand new words initially**

- Highlighting the new words
- Paying attention to the sounds, tones and characters of the word
- **Selecting words** – using a pedagogically designed source to help select words
- **Selecting words** – searching for the frequency, grammatical function, register information about a word to help select words
- **Selecting words** – learning words that are important/useful/interesting/relevant to the task at hand
- **Initial word analysing** – activating prior knowledge that are relevant to the word
- **Initial word analysing** – analysing, comparing and associating a new word based on the sound/the compositional characters in the word
- **Planning for appropriate strategies for further learning** – evaluating the difficulty of learning the word
- **Planning for appropriate strategies for further learning** – choosing to ignore/infer/ use a dictionary/note it down

Sub-task 2: Searching for word information

1. **Inferring strategies**

- **Inferring words in a spoken context** – using the context and predicting what people are going to say
- **Inferring words in a spoken context** – talking around the subject and see people's responses
- **Inferring words in a spoken context** – asking what the characters are to support guessing the meaning of the word
- **Inferring words in a written context** – using the context and background information

- **Inferring words in a written context** – using the collocational knowledge of a word
- **Inferring words in a written context** – analysing the sentence structure to infer the part of speech
- **Inferring words in a written context** – inferring the sound of the word first and then its meaning
- **Inferring words in a written context – using word parts** – inferring the meaning of a word based on the meanings of its constituent characters
- **Inferring words in a written context – using word parts** – inferring the meaning of a word based on other words containing the same constituent characters
- **Inferring characters in a written context** – recalling what words containing the sound of a constituent character in the word
- **Inferring characters in written context** – inferring the meaning/sound of a character based on character components
- **Inferring characters in a written context** – inferring the meaning/sound of a character based on other characters containing the same character components
- **Inferring characters in a written context** – inferring the sound/meaning of a character based on the words containing the character

2. Strategies for using a dictionary or translating tool

- **Searching strategies** – Pinyin-search/Radical-search/Handwriting-search/English-search
- **Strategies for obtaining information – word segmentation** – typing one character and looking at the possible words in a dictionary
- **Strategies for obtaining information – word segmentation** – typing the whole phrase into a dictionary or a translator software
- **Strategies for obtaining information – spoken form** – Pinyin and tones
- **Strategies for obtaining information – written form** – character(s) and its/their radical(s), stroke order, HSK level
- **Strategies for obtaining information – word parts** – sound and definition of the constituent characters in a word
- **Strategies for obtaining information – word parts** – other words containing the same constituent character
- **Strategies for obtaining information – meaning and use** – browsing all meaning entries
- **Strategies for obtaining information – meaning and use** – choosing the core/relevant meaning of the word
- **Strategies for obtaining information – meaning and use** – monitoring the meaning-selected based on a context by analysing the sentence structure
- **Strategies for obtaining information – meaning and use** – reading examples
- **Strategies for obtaining information – meaning and use** – identifying the possible contexts of which the word can be used
- **Strategies for obtaining information – meaning and use** – identifying its part of speech or the sentence components they can be used as
- **Strategies for obtaining information – meaning and use** – identifying its collocational patterns
- **Strategies for obtaining information – meaning and use** – identifying the register of the word

3. **Strategies for asking others**

- Asking for basic meaning or comprehension help
- Asking for character information to help processing the word
- Asking for extensive meaning and usage

4. **Strategies for making use of the information and managing the learning**

- Using the information to support word-selection
- Using the information to evaluate the learning difficulty of a word
- **Planning appropriate strategies for further learning – for complex words** – try not to link the target word with a particular word in English or write a description myself
- **Planning appropriate strategies for further learning – for complex words** reading the example sentences more carefully to see how they are used and the limitations
- **Planning appropriate strategies for further learning – for complex words** marking them and planning for observing, using and monitoring the use
- **Planning appropriate strategies for further learning – for simple words** memorising by repetition

Sub-task 3: Keeping and using records of word information

1. **Types and formats of the records**

- **Types –** Having separate notes for character learning
- **Types –** Having notes for actual words
- **Formats –** Notebooks and sheets
- **Formats –** Word cards
- **Formats –** Using Pinyin to note down
- **Formats –** Using characters to note down

2. **Aspects of word information in the records**

- Highlighting the complex words
- **Form knowledge –** Pinyin
- **Form knowledge** – tones
- **Form knowledge** – characters
- **Form knowledge** – mnemonics
- **Form knowledge – word parts** – the meaning of each word part
- **Form knowledge – word parts** – words containing the same word part
- **Meaning knowledge** – selecting one to two meanings to note down
- **Meaning knowledge** – synthesising and writing a description for complex words
- **Use knowledge** – selecting good example to note down
- **Use knowledge** – noting down the part of speech
- **Use knowledge** – analysing and noting down the collocational patterns

- **Use knowledge** – analysing and noting down the constrains of using the word
- **Use knowledge** – analysing and noting down the context in which the word can be used

3. **Strategies for using the records**

- For referencing
- **For consolidating word knowledge** – reading the notes
- **For consolidating word knowledge** – self-testing
- **For enhancing word knowledge** – using the notes for writing sentences

Sub-task 4: Establishing word knowledge

1. **Strategies for dealing with multi-aspects of word knowledge**

- **Spoken Chinese before written Chinese** – learning the spoken form and meaning and use first
- **Spoken Chinese before written Chinese** – learning the Pinyin before the tones
- **Spoken Chinese before written Chinese** – delaying learning both character recognition and handwriting
- **Spoken Chinese before written Chinese** – delaying learning character handwriting only
- **Character/word parts then words** – learning individual characters first
- **Character/word parts then words** – using character knowledge to process words

2. **Strategies for dealing with the morpheme-word relationship**

- **Word-based vocabulary learning with attention to the constituent morphemes** – developing morphemes knowledge by paying attention to characters
- **Word-based vocabulary learning with attention to the constituent morphemes** – recognising characters reoccurring in different words
- **Word-based vocabulary learning with attention to the constituent morphemes** – learning the definition of a word directly
- **Word-based vocabulary learning with attention to the constituent morphemes** – paying some attention to the constituent morphemes
- **Word-based vocabulary learning with attention to the constituent morphemes** – analysing the meaning connection between morphemes and words
- **Word-based vocabulary learning with attention to the constituent morphemes** – associating words containing the same morphemes
- **Character/word parts then words** – learning individual characters first
- **Character/word parts then words** – using character knowledge to process words

3. **Strategies for establishing the spoken form knowledge**

- **Generic strategies -** hearing the word repeatedly
- **Generic strategies -** repeating the word out loud or mentally
- **Generic strategies** – comparing and evaluating own pronunciation with the recording
- **Generic strategies** – practising to retrieve the meaning or sound
- **Pinyin strategies -** mastering the Pinyin accurately and fluently
- **Pinyin strategies -** visualising the Pinyin in listening or speaking
- **Pinyin strategies** – writing sentences in Pinyin
- **Tone learning strategies** – paying attention, e.g. asking for tone information and noting down tones when learning a new word
- **Tone learning strategies** – listening and practising tones repeatedly
- **Tone learning strategies** – visualising the tone marks for words in listening and speaking
- **Tone learning strategies** – using gestures to mimic tones marks in speaking
- **Tone learning strategies** – practising tone perception, e.g. performing tone dictation exercises
- **Tone learning strategies** – applying a colour-coding system in note-taking and e-dictionary for tone learning
- **Tone learning strategies** – having a separate exercise to add tone marks for own writing or homework to practise retrieving tones
- **Tone learning strategies** – memorising a longer lexical unit and then isolating the word, e.g. listening, learning and practising the tones of a word in a sentence
- **Tone learning strategies** – pronouncing the syllable of a word in four tones consecutively and then pronouncing it in the correct tone type to emphasis the differences between them
- **Tone learning strategies** – asking others to correct tone mistakes

4. Strategies for establishing the written form knowledge

- **Meta-strategies for character learning** – selecting some characters to learn first
- **Meta-strategies for character learning** – learning to recognise characters first before learning to handwrite them
- **Meta-strategies for character learning** – having a system for learning and consolidation
- **Generic memorising strategies** – creating and using mnemonics
- **Generic memorising strategies** – **repetition**
- **Generic memorising strategies** – **repetition plus systematic review**, e.g. using Memorise website
- **Generic memorising strategies** – **repetition plus meaning access -** self-testing using notes or flashcards
- **Generic memorising strategies/ orthographic-knowledge based strategies** – **repetition plus orthographic-knowledge based strategies** – writing characters in repetition and paying attention to strokes and stroke order
- **Generic memorising strategies/ orthographic-knowledge based strategies** – **repetition plus orthographic-knowledge based strategies** – writing characters in repetition and paying attention to character components
- **Generic memorising strategies** – seeing characters in natural exposure
- **Character applying strategies** – using characters to read
- **Character applying strategies** – using characters to write

- **Orthographic knowledge-based strategies – stroke strategies** – learning stroke name and saying stroke names in writing characters
- **Orthographic knowledge-based strategies – stroke strategies – stroke order** – learning about the principle
- **Orthographic knowledge-based strategies – stroke strategies – stroke order** – watching animation
- **Orthographic knowledge-based strategies – stroke strategies – stroke order** – handwriting characters in grids
- **Orthographic knowledge-based strategies – stroke strategies – stroke order** – Paying attention to stroke order when writing it
- **Orthographic knowledge-based strategies – component strategies – strategies for learning the components -** learning about the components directly
- **Orthographic knowledge-based strategies – component strategies – strategies for learning the components -** developing understanding about the components from the characters
- **Orthographic knowledge-based strategies – component strategies – strategies for learning the phonetic-semantic characters -** identifying the semantic/phonetic components
- **Orthographic knowledge-based strategies – component strategies – strategies for learning the phonetic-semantic characters -** analysing the semantic/phonetic links between the component and the characters
- **Orthographic knowledge-based strategies – component strategies – strategies for learning the phonetic-semantic characters -** associating other characters containing the same components

5. **Strategies for establishing the meaning and use aspect**

- **Deliberate rule-seeking –** using L1 knowledge to ask questions
- **Deliberate rule-seeking –** using a translation strategy, translating a sentence word by word, paying attention to word order, translating it into a proper L1 sentence to see how the word is used differently
- **Deliberate rule-seeking –** extracting the collocational pattern or the word order
- **Deliberate learning –** using words from a notebook to write sentences
- **Deliberate learning –** planning to try and use some words in conversations
- **Deliberate learning –** seeking for correction on own language use
- **Deliberate learning** – rewriting sentences
- **Deliberate learning** – memorising some sentences fluently so that later the usage of a word from the sentence can be analysed
- **Learning incidentally –** paying attention to seeing how it is used in spoken or written contexts

Sub-task 5: Consolidating word knowledge

- **Deliberate consolidating** – reviewing and repetition
- **Deliberate consolidating** – self-testing
- **Deliberate consolidating** – creating opportunities to use the vocabulary
- **Non-deliberate consolidating** – natural language use activities

Sub-task 6: Using word knowledge

1. **Strategies for activating word knowledge**

    - Retrieving the context from which the word was initially encountered or learned
    - Recalling example sentences of the word/set phrases in which the word is found and analysing how the word should be used
    - Using collocational pattern knowledge of a word
    - Visualising the characters to process an unfamiliar word and retrieving its meaning in a spoken context
    - Thinking about what components there are in a character when handwriting it

2. **Strategies for better performance**

    - Visualising the Pinyin when speaking
    - Visualising the tone marks
    - Using body gestures to emphasising the tone
    - Visualising the characters when speaking
    - Analysing the sentence structures to monitor whether I understand the word correctly