

**SECOND LANGUAGE ACQUISITION OF CHINESE VERB-NOUN
COLLOCATIONS**

A Thesis Presented

by

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To my dearest Grandpa Changlu Chen

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ABSTRACT

SECOND LANGUAGE ACQUISITION OF CHINESE VERB-NOUN COLLOCATIONS

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This study aims to investigate the acquisition of verb-noun collocations in Chinese by learners who study Chinese as a foreign language. By conducting a survey, this research attempt to discuss the following issues. 1) Does learners' acquisition of verb-noun collocations increase with years of learning? 2) Is learners' acquisition of verb-noun collocations related to the usage frequency of the verbs? 3) Are there any differences between patient objects and non-patient objects in verb-noun collocation acquisitions? 4) Does natural L2 exposure have an impact on collocational competence?

Seven verbs are selected in this study, 看 *kan*, 开 *kai*, 做 *zuo*, 走 *zou*, 放 *fang*, 打 *da*, 带 *dai*. In order to answer the research questions, a survey which consisted of four parts was conducted. This survey was done in a public university in Massachusetts, USA. In total, 82 Chinese learners were participated in this study, and they were grouped into three instructional levels: Second-Year Chinese learners, Third-Year Chinese learners, and Fourth-Year Chinese learners.

The data in this research show that the use of collocations is related to learners' language proficiency, and this study has identified a hook-shaped learning curve in the acquisition of verb-noun collocations. In addition, frequency is significant to the verb-noun acquisition, and the usage frequency of verbs plays a vital role compared to nouns. Furthermore, at all three proficiency levels, learners had a higher accuracy rate with regard to patient objects in verb-noun collocations.

Collocations are problematic for learners who study Chinese as their foreign language; thus, it is essential for instructors to discuss effective teaching methodology for collocations. In this paper, some implications for teaching Chinese verb-noun collocations are provided by the researcher.

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CHAPTER 1

INTRODUCTION

In the language teaching field, there is a metaphor that compares grammar to the ‘bones’ of a language, and the vocabulary as the ‘flesh’. The significance of vocabulary is also highlighted by Wilkins, who states that, “Without grammar very little can be conveyed, without vocabulary nothing can be conveyed” (1972: 111). Hence, vocabulary learning is to some degree significant for language learners seeking to improve their language ability.

However, as Zimmerman (1997) states, the learning and teaching of vocabulary have been undervalued in the field of second language acquisition throughout its varying stages, and up to the present time. This is due to the fact that the acquisition of second language vocabulary is a gradual process of learning various different knowledge components. According to Nation (2001), to really ‘know’ a word involves knowledge of nine aspects of that word: spoken form, written form, word parts, form and meaning, concept and referents, associations, grammatical functions, collocations, and constraints on use. Nation's (2001) framework has enabled scholars to study not only single, orthographic words, but to acquire a deeper knowledge of words. As Wray argues, "to know a language you must know not only its individual words but also how they fit together" (2002: 143). Hence, it is vital for foreign language learners to acquire knowledge of how words are combined, and how they are related to other words. According to the framework provided by Nation (2001), the knowledge of ‘collocations’ is one of the most problematic aspects for L2 learners.

Therefore, in the field of second language acquisition and teaching, the importance of learning and teaching collocations is widely acknowledged among researchers and educators. In addition, for second language learners, mastering collocation is one of the most significant challenges that they face. For instance, Palmer (1981) claims that, rather than word by word, language is learned collocation by collocation. Similarly, Lewis believes that, “collocation is the most powerful force in the creation and comprehension of all naturally-occurring text” (2000: 45). Nesselhauf (2003) also suggests that collocations are especially critical for language learners attempting to achieve a high level of proficiency in their target language, because they help to enhance both accuracy and fluency.

Due to the fact that collocations play a significant role in learners’ language learning, as explained above, the aim of this thesis is to study students learning Chinese as a foreign language, focus on their production and recognition of collocations in Chinese, and explore possible pedagogical implications on teaching collocations to second language learners.

The target items in this study are verb-noun collocations. This collocation subset was chosen because verb-noun collocations are one of the most common types of collocation, and the focus of most studies on the teaching of collocations (Bahns & Eldaw, 1993; Chan & Liou, 2005; Nesselhauf, 2003). In addition, in the field of Chinese linguistics, according to Lü (1987) and Wu (1994), in the Chinese language, the verb is the center of a sentence, and the main function of the verb is followed by an object; the other elements are connected with the verb. Furthermore, this is a vulnerable area that

presents greater difficulties for learners. Hence, it is of significant benefit to study the usage of verbs in Chinese.

From the perspective of learners, this study will attempt to discover learners' production and recognition of verb-noun collocations, and identify the difficulties associated with different noun objects for learners. This study also aims to fill in a research gap and shed a light on some unexplored problems in this field, for instance, the effect of L2 language exposure on the acquisition of collocations.

Therefore, based on the frameworks I discussed above, the study of verb-noun collocation involves two elements. One is receptive ability, which refers to the recognition of the collocations; while the other is the productive ability, which refers to the ability of learners to collocate words correctly.

CHAPTER 2

LITERATURE REVIEW

There is a large body of literature on collocations. This chapter will first discuss the definition of collocation and verb-noun collocations in Chinese, and then proceed to review previous literature on L2 learners' acquisition of collocations. Although the present study focuses on verb-noun combinations, the literature review is not limited to this category, as studies of all types of collocations are related, and can help guide the design of research in this area.

2.1 The definition of collocations

John Rupert Firth, who was widely regarded as having pioneered the study of collocations, first presented the term 'collocation' in the article *Modes of Meaning* in 1957. Firth considered a collocation to be part of the meaning of a word, and defined it as "the company words", regarding its relationships with other words (1951: 195). Many scholars subsequently continued and expanded upon Firth's theory, and proposed various definitions and theories. For instance, Palmer (1993) restricted the definition of collocations to idioms whose meaning is not obvious from its components, such as *blow the gaff*. Other scholars have used the term to refer to a phrase within which a word is used in a specialized sense only found in the context of certain types of words, for example *blow a fuse* (Bahns & Eldaw, 1993).

Nesselhauf (2005) summarized the two main views regarding the definition of collocation, one being the frequency-based approach, and the other the phraseological approach. According to the frequency-based approach, a collocation is the co-occurrence of words at a certain distance, and a distinction is made between frequent and infrequent co-occurrences. Hence, this method has also been called the “statistically oriented approach” (Herbst, 1996: 380). This approach can be traced back to Firth (1951), and was developed further by later scholars, such as Sinclair (1991). Sinclair explains that, “Collocation is the occurrence of two or more words within a short space of each other in a text” (1991: 170). From the definitions given above, it can be concluded that the criterion for deciding whether words form a collocation is the frequency of co-occurrence, not the syntactic relationship between the words.

The second approach, according to Nesselhauf, considers “collocation as a type of word combination, most commonly as one that is fixed to some degree, but not completely” (2005: 24). Scholars in the field of lexicography typically adopt this approach. The approach, which takes a phraseology perspective, was proposed by Cowie (1978). Cowie defines collocation as “the co-occurrence of two or more lexical items as realizations of structural elements within a given syntactic pattern” (1978: 132). In other words, in this approach, the term collocation is used to describe any generally accepted grouping of words into phrases. Nation (2001), Howarth (1998), and Moon (1997) used this approach to analyze English collocations, where collocations are defined in a broader sense, and can occur in different forms and with a variety of relations between the words that they are made up of. As the accepted representative of the phraseological approach,

Cowie (1978) distinguished collocations from other types of word combinations, such as 'free combinations' and 'idioms'.

Unlike the frequency-based approach, from the perspective of the phraseological approach, the elements of collocations are required to be syntactically related to each other, and transparent in meaning. That is to say, not all lexical combinations will be accepted as collocations. As Nesselhauf (2005) concluded, in contrast to the frequency-based approach, the phraseological approach considers the degree of substitutability and opacity in meaning to be more important than the frequency of co-occurrence. Hausmann (1989) also supported this approach, and went as far as to conclude that only six combination collocations appear in a pre-defined set of syntactic relations; these are: adjective+noun, noun+verb, noun+noun, adverb+adjective, verb+adverb, verb+noun.

In addition to the two main approaches already described, collocations have been defined in numerous other ways. In the teaching methodology field, the acquisition of collocations was first studied in relation to English as a Second Language (ESL). The definition of collocation that scholars in this area adopted was from a teaching perspective, and was thus a pedagogic definition. Hill (2000) distinguished collocations from other two items: idioms and phrasal verbs. Hill further stated that a collocation is a predictable combination of words; some combinations are highly predictable, some have the status of idioms, while others may be so common that they are not always identified (2000: 51). Language educators' strong interest in habitual combination is best evidenced by their emphasis on define or restrictions on how words can be combined. For instance, according to Richards, Platt, and Webber, the study of collocations focuses on "the restrictions on how words can be used together, for example, which prepositions are used

with particular verbs, and which verbs and nouns are used together" (1985: 46). In addition, Lewis argued that "collocations are not words which we, in some sense, put together, they co-occur naturally" (2000: 132). Thus, Lewis proposed that a typical definition of collocation is "words which are statistically much more likely to appear together than random chance suggests" (2000: 132).

Lewis (2000) further suggested a framework for classifying collocations, which is to set up a continuum, and including: free collocation, restricted collocation, and idiom. Free collocations, also referred to as open collocations or free combinations, are made up of words used in their literal sense. The constituent words are not bound specifically to each other, and they occur freely with many other semantically compatible lexical items. For instance, *buy a book* (television, piano, car...). In the middle of the collocational continuum category is restricted collocations, which have one component, usually called a *node* word (Stubbs, 1995) used in a specialized sense and accompanied only by certain types of collocates.

2.2 Verb + Noun collocations

The Chinese counterpart for the term 'collocation' is 搭配 *dapei*. In terms of what is considered a collocation in the Chinese language, according to Halliday (1961), the syntagmatic association of lexical items can be a morpheme, word, or group. If one accepts Halliday's view, the collocation relationship can be a relationship between word and word, or morpheme and morpheme.

In addition, to study collocations in Chinese, verbs should be examined, since, according to Lü (1987) and Wu (1994), in the Chinese language, verbs are the center of a sentence, and the main function of the verb is followed by an object; the other elements are connected with the verb. Hence, it is of significant benefit to study the usage of verbs in Chinese.

Chao (1965) categorized Chinese verbs into two major classes according to their transitivity; each class is then broken down into further classes in accordance with certain criteria, such as action, quality, or state. In total, according to Chao (1965), Chinese verbs can be classified into nine types: 1. intransitive action verbs; 2. intransitive quality verbs, or adjectives; 3. status verbs; 4. transitive action verbs; 5. transitive quality verbs; 6. classificatory verbs; 7. the verb 是; 8. the verb 有; 9. auxiliary verbs. For transitive verbs, their distinguishing feature is that they can be followed by objects. However, unlike in English, the verbs can be followed not only by patient objects; according to Hu (1962), there are three types of objects that can follow the verbs: patient objects, neutral objects, and agent objects. It remains to be seen whether, due to the different categories of objects in Chinese and English, there are any differences in the acquisition of different types of collocation. This is a field that requires further study.

Among the Chinese verb-object (V-O) phrases, there is one type that should be highlighted and discussed, which is verb-object (V-O) splittable words. Splittable compounds, which are better known among Chinese linguistics as 离合词 *lihe ci* (separate-combined words) in Chinese morphology, are very common in modern Chinese. It is disputed whether the splittable compounds are words or phrases. From the

perspective of forms, splittable compounds are more as phrases, rather than words. Lots of scholars support this opinion, and argue that the word is the smallest unit that cannot be separated, whereas the splittable compounds can be separated, so they cannot be considered words, but phrases. According to Wang (1982), the rule for distinguishing words and phrases is as follows: if another character can be inserted into two characters, those two characters are a phrase, if not, it is a word. Yang (1995) also argued that splittable compounds should be considered phrases from the perspective of teaching pedagogy.

According to Shi (1999), there are 2,960 splittable compounds in the Modern Chinese Dictionary¹, which accounts for 51.63% of all verb object words in the dictionary. The updated 2002 edition of the dictionary had 3,326 splittable compounds. Much research has been conducted in the field of splittable compounds; however, few studies have been carried out on collocations and acquisition of them specifically. It is necessary to include this group of Verb-Object compounds in a study of collocations.

2.3 Previous research on collocations in other languages

As research has shown that collocation is an integral component of second-language (L2) or foreign-language (FL) learning, scholarly interest in collocation has risen substantially since 1990'. Gyllstad (2007) explained that studies of collocation can be grouped into two categories, corpus-driven studies, and experimental studies.

¹ Modern Chinese Dictionary (*Xiandai Hanyu Cidian*) is the most authoritative Chinese dictionary in China. The dictionary uses a double slash “//” to represent the splittability of such units. Namely, the instances of “//”s are equal to the Splittability compounds accepted by the compilers of the dictionary.

Using the corpus-driven methodology, Chi-Man-lai *et al.* (1994) accessed a one-million-word corpus containing essays written by intermediate to advanced level learners of English with Chinese as their L1, and analyzed collocations with the verbs *have, make, take, do* and *get*. Kaszubski (2000) also investigated these same verbs, and compared collocational uses of these verbs between native speakers' corpora and learners' corpora. Howarth (1996) carried out a thorough investigation of collocations in learners' language, and studied the verb-noun collocations in a corpus of 10 essays written by non-native speakers of English with various first languages, and then compared their verb-noun collocations with the verb-noun collocations in native speakers' writing. One of the findings was that L2 learners' collocations were blends of two acceptable collocations with a similar meaning, or were the result of what Howarth (1996) called 'overlap'. For example, sets of nouns that share certain, but not all, verbs (Nesselhauf, 2005).

Other studies on collocations in learner language are based on elicitation tests and production data (Nessekhauf, 2005). For instance, Marton (1997) and Biskup (1992) investigated the collocation comprehension and production of advanced learners of English by means of a translation test. In elicitation studies of collocations, cloze tests and translation tasks are the most commonly used methods of data collection. For example, Bahns and Eldaw (1993) designed a translation test to examine advanced German learners' knowledge of English verb-noun collocations. Moreover, Al-Zahrani (1998) studied the collocation knowledge of 81 advanced Arabic-speaking learners, and tested 50 verb-noun collocations using a cloze test. The study found that knowledge of collocations was strongly related to the overall proficiency of the learners, in addition to a strong L1 influence.

Bahns and Eldaw (1993) used cloze and translation exercises to test the productive knowledge of English verb-noun collocations among German EFL learners. The data they collected showed that, generally, the development of learners' collocational competence did not align with their knowledge of vocabulary. A similar conclusion can also be drawn from the results of a study conducted by Arnaud and Savignon (1997), who compared the vocabulary knowledge of French advanced learners of English with that of native English speakers using a word checklist test and a multiple-choice test. The learners were able to attain native-like performance with rare, low-frequency words, but not with complex lexical units.

2.4 Introduction to studies of collocations in Chinese

The teaching of vocabulary is regarded as an essential component of Chinese as a foreign language education. For instance, Jiang (2002) argued that vocabulary is the primary obstacle for Chinese second language learners, due to the observation that learners make more errors in vocabulary than in grammar. Thus, as a part of vocabulary teaching, collocations should not be ignored in Chinese language teaching. However, compared with the studies of collocations in other countries, this topic has not received much attention, only a few scholars have carried out relevant research in this field. A Ph.D. dissertation by Shen (2006) concluded that typically scholars study three aspects of Chinese collocations. First, rhetoric; and second, studies from the perspective of language acquisition, which focuses on discussing teaching needs and pedagogy in teaching Chinese as a foreign language. In addition to these two aspects, other research has been carried out in the field of language teaching aiming to rectify learners' collocation errors. Most of the studies carried out before the year 2000 focused on the theoretical features of

collocations. For example, Zhang and Lin (1996) studied verb collocations, and compiled several Chinese collocation dictionaries. Shui (2007) categorized verb-object collocations into free combinations and restricted combinations, and discussed the collocations based on the meaning of the words.

After the year 2000, more studies were conducted on learners' acquisition of Chinese collocations. Some of these were from the perspective of teaching Chinese as a foreign language, and discussed the reasons for collocation errors, and also made suggestions on how to improve the students' ability with regard to collocations. Meanwhile, the development of the corpus linguistics provided opportunities for scholars to conduct in depth studies of the acquisition of collocation based on a vast volume of data from the corpus.

For instance, Li (2016) applied the corpus-driven method in a study of collocations to analyze learners' corpora and native speakers' corpora. The learners' corpora was the Chinese Proficiency Test (HSK) Dynamic Composition Corpus, a collection of 11,600 essays written by learners studying Chinese as a foreign language for the HSK test, which was developed by the Research Center for Studies of Chinese as a Second Language at Beijing Language and Culture University. Li (2016) selected a sub corpus from American students in the HSK Dynamic Composition Corpus, and found 163 examples that contained collocations errors. Below (Table 1) is a summary of the findings.

Table 1: The types of collocation errors made by American learners from Chinese Proficiency Test (HSK)

TYPES	NUM BERS	PERCENT AGE	EXAMPLE
VERB+NOUN	108	66%	*危害人权 (侵犯人权)
ADJECTIVE+NOUN	16	10%	*丰富的晚饭 (丰盛的晚饭)
NUMBER+MEASURE WORD +NOUN	12	7%	*一件现象 (一个现象)
NOUN + DIRECTIONAL NOUN	8	5%	*社会里 (社会上)
NOUN + VERB	9	6%	*形象提起了 (形象提升了)
PREPOSITION+NOUN PHRASE+	5	3%	*在他的眼光里 (在他的眼里)
DIRECTIONAL NOUN ADJECTIVE+VERB	5	3%	*健康地生长 (健康地成长)

It can be seen from the above table that verb-noun collocations account for the majority (66%) of the total collocation errors. Of these errors, 78% are due to incorrect choice of verbs. For example, *扔掉别人的生命 should be 结束别人的生命. The other corpus, the BCC Corpus (Beijing Language and Culture University Corpus Center), developed by Beijing Language and Culture University and the Institute of Big Data contains a 15-billion-character collection of text samples of present-day written language from various sources, including microblogging, science and technology, literature, and the press. Other researchers have also used this corpus as a reference when teaching collocations in Chinese. This is because selecting teaching materials based on the high-frequency collocation in the corpus can guarantee that learners will acquire the most common collocations used by native speakers.

In addition to the corpus-driven method, researchers have also studied collocations in Chinese. Xiao and Chen (2008) collected data from Chinese learners at three proficiency levels, and examined their acquisition of Chinese verb-object

construction. In their study, the interrelationship between the vocabulary proficiency and creative collocation abilities of the learners were investigated. The study results had valuable implications for classroom teaching and textbook compilation. Another study of collocations, by Jin (2012), focused on Chinese learners with Korean as their first language, and analyzed the cause of the object-predicate collocation errors they made through error analysis, by identifying the object-predicate collocation acquisition patterns demonstrated by Korean students with intermediate or advanced Chinese proficiency levels.

In terms of studies on splittable words, research has focused on students' acquisition of different split forms. For instance, Ma (2008) discovered that learners' acquisition of different discrete forms of splittable words did not developed at equivalent levels, and also did not align with the improvement in their language ability. Moreover, the acquisition of split forms was slower than the acquisition of unsplit forms at all three proficiency levels. Zhou and Li (2015) carried out an empirical study on the effect of synchronous teaching and sequential teaching on the acquisition of splittable words by Chinese language learners, and concluded that learners exposed to sequential teaching performed better. In addition, learners exposed to both teaching models avoided using the discrete forms of splittable words.

2.5 Objectives of current study

From the analysis above, the previous research can be summarized in terms of methodology and findings. From the perspective of methodology, first, most of the studies of collocation in the field of language learning collected data from intermediate and/or advanced level learners. That is to say, beginner level learners were rarely the

research object. Second, these studies analyze different types of collocations, and the L1s of learners are various, although most studies are limited to ESL. Third, the research methods used have been varied, although translation and cloze tests have been the most popular.

A major aim of existing research on L2 collocations has been to identify the problems in learners' production and discover the causes of these problems. The findings of the previous studies indicate that three factors are related to the use of collocations: first, the influence of L1; second, intralingual factors, such as word frequency; third, learners' language proficiency. More detailed explanations of these factors will be provided below.

First, L1 influence is a significant factor that causes many problems in L2 collocation production. For example, in a study by Chi, Wong and Wong (1994), **do exchange* is translated from the Chinese 做交易 *zuo jiaoyi*. Often, when learners learn a new word for a concept, they may assume that they can extend the use of that word to the same context as the corresponding item in their first language, and this literal process may cause errors when L1 and L2 do not match (Chi, Wong & Wong, 1994); as the example above, in the phrase 做交易, 做 does not match *do*. This is known as over-generalization in second language acquisition. Some scholars, such as Al-Zahrani (1998) and Kaszubsi (2000), also argue that L1 has a significant impact on the use of collocations in the second language; however, other scholars suggest that this influence is weak (e.g. Lesniewsha and Witalisz, 2007).

Second, intralingual factors also lead to L2 collocation production errors; one such factor is the frequency of collocations. In an experimental study, Hussein (1990) observed that students had higher accuracy rate with collocations commonly used in daily life. Another intralingual factor that influences collocation production is the type of collocations, namely free collocations, restricted collocations, or idioms.

Free collocations, to some degree, are easier to acquire, according to some scholars (e.g. Allerton, 1984). This is due to the fact that the co-occurrence constraints for this category of collocation is a matter of semantic compatibility. Allerton (1984:21) explained that "this level of word co-occurrence restriction is not something the speaker has to learn about. Once the meanings of the words are known, the limitation follows automatically"; hence, learners will not produce odd combinations.

Idioms are more difficult for learners, both in terms of comprehension and production. Because the meaning of an idiom is non-transparent, learners might not be able to immediately recognize its intended meaning (Cooper, 1999). With regard to restricted collocations, the selection of a word does not solely depend upon syntactic principles and semantic compatibility, which also poses a great challenge for learners. Chi, Wong, and Wong (1994) conducted a corpus study to analyze English assignments written by students at a university in Hong Kong, and discovered that students experienced difficulties using delexical verbs, such as *have*, *make*, *take*, and *do*. Students often confused these verbs with each other; for example, they made errors like, **do effort (make)*, **make discussions (have)*.

Howarth (1998) identified two possible sources of learner errors. First, the learner may combine two collocations with a semantic similarity in their noun element; for

example, learners may create the phrase **pay effort*, by combining the phrases ‘*pay attention*’, and ‘*make an effort*’. Second, the learner may fill in a collocational gap within a partially overlapping cluster.

Third, in addition to the L1 and L2 factors explained above, the production of L2 collocations has also been found to be related to learners’ L2 proficiency levels. Kellerman (1979) discovered a U-shaped learning curve when studying the phrases of *breken*. Specifically, beginner and advanced level learners were most willing to transfer the use of *breken* to instances further from its core meaning. Kellerman (1979) suggested that beginners may have been more daring and willing to try something uncertain, while advanced learners may have learned various senses of *breken*. In terms of intermediate learners, they were more cautious. However, several scholars have put forth different views. Zhang (1993) and Al-Zahrani (1998) argued that the use of collocations is related to the L2 learner’s proficiency level, while Bahns and Eldaw (1993), and Howarth (1998) argued that there is no relationship between the use of collocations and proficiency. Therefore, it is clear that there is still disagreement about the relationship between language proficiency and the production of collocations.

To conclude, the previous studies shed lights on how collocations have been acquired and what factors are involved in collocation acquisition; however, most of the existing research on collocations in Chinese are focused on native speakers’ corpus. The conclusions of past researchers have provided implications for teaching, but were not followed with an experimental study to test their theories. Furthermore, from the perspective of research methods, the choice of collocations to be studied have previously been based on HSK vocabulary levels. This method is problematic, as the words chosen

from the HSK vocabulary list by researchers may not align with learners' actual language ability, which in turn may affect the reliability of the results.

Furthermore, as the issue of whether splittable words are words or phrases is still being discussed by researchers in the Chinese linguistics field, few studies have yet been done from the collocation perspective that consider splittable words as collocations. In addition, questions related to the design of teaching materials, and teaching pedagogy have not yet been addressed in research. Nor has the issue of whether natural exposure to L2 has an impact on collocational competence. This represents a research gap on the topic of collocations. Nevertheless, the factors related to the acquisition of collocations identified by previous researchers have provided a framework for the design of the present study.

CHAPTER 3

RESEARCH METHODOLOGY

Chapter 2 presented various definitions of collocation and reviewed the existing literature on collocation in terms of both theoretical analysis and inquisitional studies. Drawing on the existing research reviewed in the previous chapter, the present study will focus on verb-noun collocations in Chinese. This is due to the fact that verb-noun collocations are one of the most common types of collocation, and thus the focus of most studies on the teaching of collocations (Bahns & Eldaw, 1993; Chan & Liou, 2005; Nesselhauf, 2003), and also the realization that collocations present a great challenge to language learners, including learners at an advanced level.

The aim of the present study is to discuss the acquisition of verb-noun collocations by Chinese Foreign Language (CFL) learners. This study differs from earlier studies in several respects. In previous studies, the participants have been advanced L2 learners, and the researchers compared those learners to native speakers, or to other advanced learners of different first languages. By contrast, this study investigated three groups of learners at various L2 proficiency levels, and compared the performance of those three learner groups in order to identify the differences in collocation acquisition. Additionally, learners' backgrounds were considered in this study, and heritage Chinese learners² and non-heritage Chinese learners were compared.

Before presenting the research, it is necessary to state the definition of collocation used in this study. As stated in Chapter 2, collocation is a term that has been used and understood in various ways. This study utilizes the language teaching perspective

² Heritage Chinese learners are referring to those who are born in Chinese speaking family, and speak Chinese with their family members at home.

definition of collocation (e.g. Bahns & Eldaw, 1993; Benson, 1989; Keshavarz & Salimi, 2007; Lewis, 2002; Nesselhauf, 2003; Wills, 2003), where collocation means primarily habitual combinations of words, such as *do laundry* and *make a case*. In addition, verb-noun splittable words are also included in this research as one type of verb-noun collocation, due to the fact that there are a large number of splittable words in Chinese, and the syntactic relationships between verb-noun splittable words and verb-noun phrases are the same, thus causes troubles for Chinese language learners.

3.1 Research questions

According to a study by Li (2016), incorrect choice of verbs is the main reason that second language learners make errors in verb-noun collocations. Hence, this study will focus on high-frequency verbs, and examine students' acquisition of the verb-noun collocations related to these verbs.

Based on the research focus, and narrowed down by the literature review, the present study will explore the relationship between verb-noun collocation and L2 proficiency level, L1 influence, word frequency, and types of objects. In addition, two different groups of students, heritage and non-heritage, are also included and compared in this research. More specifically, this study aims to answer the following research questions:

1. Does learners' acquisition of verb-noun collocation increase with years of learning? Is there a relationship between accuracy in learners' production of verb-noun collocations and their level of language proficiency?
2. Is learners' acquisition of verb-noun collocations related to the usage frequency of the verbs?

3. Are there any differences between patient objects and non-patient objects in verb-noun collocation acquisitions?
4. Does natural L2 exposure have an impact on collocational competence?

Answering the above research questions will contribute to second language acquisition (SLA) research in two ways. First, previous research on learning L2 collocations has focused on students in one setting, and few studies have been carried out that examine students with different learning backgrounds. This study will fill this gap and cast light on a previously unexplored problem. Second, this study will enhance understanding of the acquisition of collocations in Chinese, and provide pedagogical implications for teaching.

3.2 Research design

3.2.1 Selection of verbs

Three criteria were applied in the selection of verbs for this research. First, the frequency of the verbs in the textbook *Integrated Chinese*³中文听说读写, most popular Chinese textbook in America; second, the number of meanings the verb has; and finally, the type of verb. In the university in which the research was conducted, the textbooks used in the elementary and intermediate Chinese courses were *Integrated Chinese*. Hence, the word frequency of the Level 1 (part 1 and 2), and Level 2 (part 1 and 2) of the

³ *Integrated Chinese* is published by Cheng & Tsui Company. The Third-edition of this textbook is used when the research was conducted.

Integrated Chinese series textbooks were analyzed. AntConc was used to analyze the frequency of the words; below is a table showing the verb frequencies.

Table 2: The Frequency of Verbs in *Integrated Chinese* (Level 1 & 2)

No.	Word	Accumulation	Frequency
1	是	433	2.0097
2	有	265	1.23
3	学	161	0.7473
4	来	159	0.738
5	看	153	0.7055
6	去	145	0.673
7	说	139	0.6452
8	要	126	0.5848
9	吃	100	0.4641
10	想	99	0.4595
11	买	68	0.3156
12	打	64	0.2971
13	给	62	0.2878
14	能	61	0.2831
15	请	54	0.2506
16	找	53	0.246
17	开	52	0.2414
18	听	46	0.2135
19	用	46	0.2135
20	问	40	0.1857
21	做	39	0.181
22	住	37	0.171
23	走	31	0.1439
24	教	30	0.1392
25	爱	27	0.1253

26	聊	25	0.116
27	放	24	0.114
28	叫	23	0.1068
29	玩	21	0.0975
30	写	20	0.0928
31	带	19	0.0882

After selecting the highly frequent verbs in the textbook, the category of the verbs need to be taken into consideration. As discussed in Chapter 2, according to Chao (1965), verbs can be classified into nine types. Using Chao's (1965) classification, all of the verbs listed in Table 2 were filter. In addition, as this research is studying Verb-Noun (V-N) collocations, only transitive verbs were considered.

Furthermore, according to *A Collocational Dictionary of Common Chinese Verbs* (Yang, 1988), verbs were selected based on their meanings. Some verbs were filtered out in the research, due to their limited definitions. For instance, 学 *xue*, has two meanings in the dictionary; one is "study, learn"; the other is "imitate, mimic." Additionally, some free combinations, for example, the verb 买 *mai*, can be followed by a wide range of nouns, and there are no restrictive rules regarding those nouns. Thus, these types of verbs are not considered in this research. In addition, regarding to earners' language ability and the vocabulary they have learned, this study attempts to investigate their acquisition of the collocation knowledge they have already learned, rather than of new collocations. Hence, verbs followed by nouns that learners have not learned from the textbook were

also excluded from the research. As a result, this research analyzed the following seven verbs, which met all three criteria: 看 *kan*, 开 *kai*, 做 *zuo*, 走 *zou*, 放 *fang*, 打 *da*, 带 *dai*.

3.2.2 The semantic entries of the verbs

The semantic entries of the verbs in this research were taken from *A Collocational Dictionary of Common Chinese Verbs* (Yang, 1988), but other dictionaries were also taken into consideration. As this research focuses on verb-noun collocations, some definitions that only can be followed by sentences, instead of nouns, were not selected for the study. For instance, in *A Collocational Dictionary of Common Chinese Verbs* (Yang, 1988), the sixth and seventh semantic entries of the verb 看 *kan* ('depend on'), were not included in the research, because they cannot be followed by a noun.

3.2.3 Designing the survey

The first step in the research process was to select the verbs; then, in order to answer the research questions, students' production and recognition of verb-noun collocations needed to be tested. As discussed in the literature review chapter, there are three main methodologies to investigate the knowledge and use of collocations by L2 learners that can be utilized. First, is traditional error analysis of selected language samples; second, is elicitation of collocations through various elicitation techniques; and, finally, the analysis of large learner corpora, using common established corpus analysis techniques.

Conducting a survey is the most convenient yet efficient way to carry out this type of research. Hence, a test survey on paper was designed to collect data to answer the research questions. The survey consisted of four parts, with different tasks: 1) provide background information; 2) use the appropriate single verbs to fill in the blanks and explain the meaning in English; 3) multiple choice; 4) translation from Chinese to English.

In the second part of the survey, students were asked to use the appropriate single verbs to fill in the blanks and explain their meaning in English. This section attempted to determine whether there were any differences in the production of collocations between regular meaning and irregular meaning of the verbs. In other words, it attempted to answer the question: does the regular meaning of a verb has the high accuracy of the production of verb-noun collocations.

The third part of the survey was multiple choice, which aimed to study students' reorganization of verb-noun collocations. Four choices of answer were provided; one was an incorrect answer, and the other three were correct examples. Of the correct choices, one is collocation only exists in Chinese, but not in English; the other two are shared by both Chinese and English. The type of object was also a concern when designing the survey. As discussed in Chapter 2, objects can be grouped into different types; hence, of the other two choices, one was a patient object, the other was a non-patient object. The incorrect choice was designed based on a negative transfer of English, and was a collocation in English, but not in Chinese. The last part of the survey consisted of a translation task from Chinese into English.

3.3 Participants

The participants in this study were college students studying Chinese as a foreign language at a public university in Massachusetts. Learners were grouped into three instructional levels: Second-Year Chinese learners, Third-Year Chinese learners, and Fourth-Year Chinese learners. The three different instructional levels were based on the number of semesters the students had studied Mandarin Chinese at the university for. The Second-Year group consisted of students who had completed four semesters of intensive Chinese classes by the end of the Spring 2016 semester; specifically, in the university where the research was conducted, students who had completed the second year Chinese courses. The Second-Year students had studied all of the Level 1 and 2 *Integrated Chinese* textbooks when the survey was conducted.

Correspondingly, the Third-Year and Fourth-Year groups consisted of students who had continued to study Mandarin Chinese after completing the second year Chinese courses. The Third-Year group was made up of students who had completed the third year Chinese courses, and the Fourth-Year group was made up of those who had completed the fourth year Chinese courses. Furthermore, all participants were American college students with an age range of 18-24 years old, but from different backgrounds. Some were heritage students, and some were from Asian countries, such as Japan and South Korea. However, the background information collected in the survey revealed that all participants stated English as their first language. Below is a summary of the participant information.

Table 3: Number of participants who completed the survey

	Non-Heritage	Heritage	Total
Second-Year Chinese Learners	25	16	41
Third-Year Chinese Learners	19	5	24
Fourth-Year Chinese Learners	11	6	17

3.4 Procedure

All of the survey data was collected on-site by the researcher in classrooms. The survey was carried out at the end of the 2016 Spring semester. There was no time limit for completing the survey, and the participants were urged not to consult anything or anyone. It is estimated that, on average, participants took 15 to 20 minutes to complete the survey. Detailed instructions were provided in both Chinese and English.

3.5. Grading

All the survey were graded by the researcher herself, and then the researcher calculated how many students in each group received the correct answers. For instance, Section 2, NO1, the verb-noun collocation is 看电视 *kan dianshi*, the number of student got the correct answer 看 *kan* is 41 in the Second-Year group, 24 in Third-Year group, and 17 in Fourth-Year group, respectively.

In Section 2, only the seven target verbs can be regarded as the correct answers. Some verbs which are synonym to those target verbs cannot received points. For instance, in the sentence “学生要听力考试了，老师在教室（ ）录音”，放 *fang* is the correct

answer, the other verbs, such as 播 *bo*, cannot receive the point. In addition, in order to ensure the validity of the accuracy, the grading of the English translations was checked by a native speaker of English.

CHAPTER 4

EXPERIMENTS AND RESULTS

In Chapter 3, the research methodology was introduced. This chapter will introduce the survey, and provide details of the four experiments carried out for this study.

4.1. Experiment 1

4.1.1 Experiment design

In this study, a 2×3 mixed experimental design analysis of variance was adopted, with the semantic meaning (common and uncommon meanings of verbs) as a within-subject variable, and proficiency levels of Chinese, which consisted of three sample groups: Second-Year Chinese learners, Third-Year Chinese learners, and Fourth-Year Chinese learners, as a between-subject factors. The dependent variable was accuracy. More specifically, how many participants in each level got the correct answer in Section Two.

4.1.2 Materials

In Section Two of the survey, the seven verbs listed were those introduced in the previous chapter, namely 看 *kan* (to look), 走 *zou* (to walk), 放 *fang* (to put), 开 *kai* (to open), 带 *dai* (to bring), 打 *da* (to hit), and 做 *zuo* (to do). The common meaning and the uncommon meaning of these verbs and the verb-noun collocations were chosen based on the BCC corpus and *A Collocational Dictionary of Common Chinese Verbs* (Yang, 1988). For instance, 打鼓 *dagu* (beat a drum) was a collocation where verb 打

has a common meaning; by contrast, 打交道 *dajiaodao* (make contact with) was a collocation where 打 *da* has an uncommon meaning. 走路 *zoulu* was a common meaning collocation, while 走亲戚 *zou qinqi* (visit family) was an uncommon meaning collocation. Additionally, the format of this experiment was such that participants were asked to use the appropriate verbs to fill in the blanks in the sentences. In this way, the content was given, so that participants could make verb-noun collocations based on the content. For example:

小白很喜欢 () 电视。

他每天 () 路去学校。

4.1.3 Results

The accuracy of collocations in Section Two was calculated by the researcher. As introduced in Chapter three, in total, there are 41 participants in Second-Year group, 23 in Third-Year group, and 17 in Fourth-Year group. The table 4 below demonstrates how many participants in each group receive the correct answers in all the 14 tasks in Section Two, and their percentage of accuracy.

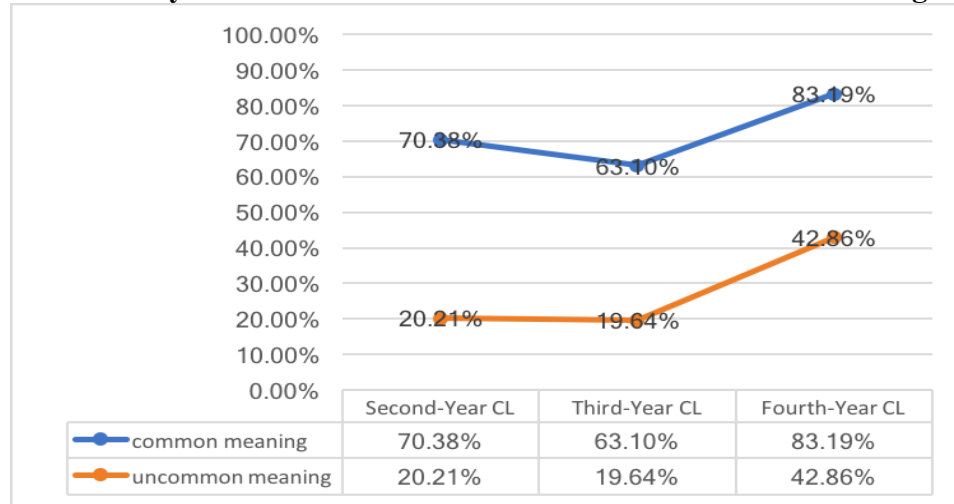
Table 4 Number of participants received the correct answers in Section Two

	Second-Year Chinese Learners		Third-Year Chinese Learners		Fourth-Year Chinese Learners	
NO. 1	41	100%	23	96%	17	100%
NO. 2	31	76%	17	71%	16	94%
NO. 3	6	15%	1	4%	8	47%

NO. 4	0	0%	0	0%	2	12%
NO. 5	7	17%	4	17%	4	24%
NO. 6	38	93%	12	50%	15	88%
NO. 7	21	51%	9	38%	7	41%
NO. 8	2	5%	5	21%	9	53%
NO. 9	17	41%	12	50%	13	76%
NO. 10	7	17%	5	21%	8	47%
NO. 11	20	49%	12	50%	14	82%
NO. 12	33	80%	23	96%	12	71%
NO. 13	5	12%	2	8%	8	47%
NO. 14	32	78%	14	58%	17	100%

The raw data was reorganized according to the category of semantic meanings. NO. 1, 2, 6, 11, 12, and 14 are considered as the common meanings of the verbs; on the contrary, NO. 3, 4, 5, 7, 8, 9, 10, 11, and 13 are grouped into the uncommon meanings of verbs. The Figure 1 below shows the trends of the accuracy among the three proficiency levels.

Figure 1: Accuracy of collocations with common and uncommon meanings of verbs



The results of the repeated measurement analysis of variance showed that the main effect of semantic meaning is significant, at $F(1,18) = 32.559, p < 0.0005$. This is evidence that learners performed better on the verb-noun collocations when the verb had a common meaning. That is to say, compared to collocations where verbs have uncommon meanings, the common meaning counterparts were easier for learners to acquire. The accuracy for verbs with uncommon meanings was 42.86%, while for the common meaning it was 83.19%, almost twice as accurate.

Furthermore, the main effect of proficiency level was also significant; it can be seen from the data that $F(1, 18) = 288.099, p < 0.0005$. This shows that learners' ability of collocations on common meanings and uncommon meanings varied in accordance with proficiency levels. More specifically, as revealed in Figure 1, in terms of common meaning, there was a U-shaped development; the Third-Year Chinese learners had the lowest accuracy, at 63.1%, while the Second-Year Chinese learners had a higher accuracy at 70.38%, and the fourth-Year Chinese learners went back up again. Moreover, in the case of uncommon meanings, accuracy decreased from intermediate learners to lower advanced learners; however, it only decreased by 0.57%, less than the 7.28%

observed in the case of common meanings. Nevertheless, there was a sharp increase in accuracy between Third-Year and Fourth-Year Chinese learners, from 19.42% to 42.86%. What is more, the interaction between semantic meanings and proficiency levels was not significant ($F(2,18) = 0.142, p = 0.868$).

4.2. Experiment 2: Semantic meanings and students' backgrounds

4.2.1. Experiment design

For this test, a 2×3 mixed experimental design was adopted to investigate the relationship between Chinese learners' backgrounds and their accuracy with regard to semantic meanings. Specifically, within-subject is semantic meaning, including common and uncommon meanings. The between-subject factor was students' backgrounds, which consisted of three sample groups: heritage Chinese learners; non-heritage Chinese learners who had experience studying in mainland China or Taiwan; and non-heritage learners without experience studying in mainland China or Taiwan. The dependent variable was accuracy.

4.2.2 Materials

The materials used were the same as in Experiment 1.

4.2.3 Results

The data was analyzed as same as Experiment 1, and the accuracy rate of the three groups of students with various background was shown in the Table 5 below. In Table 5, G1 refers to the heritage learners, G2 refers to non-heritage learners with study abroad

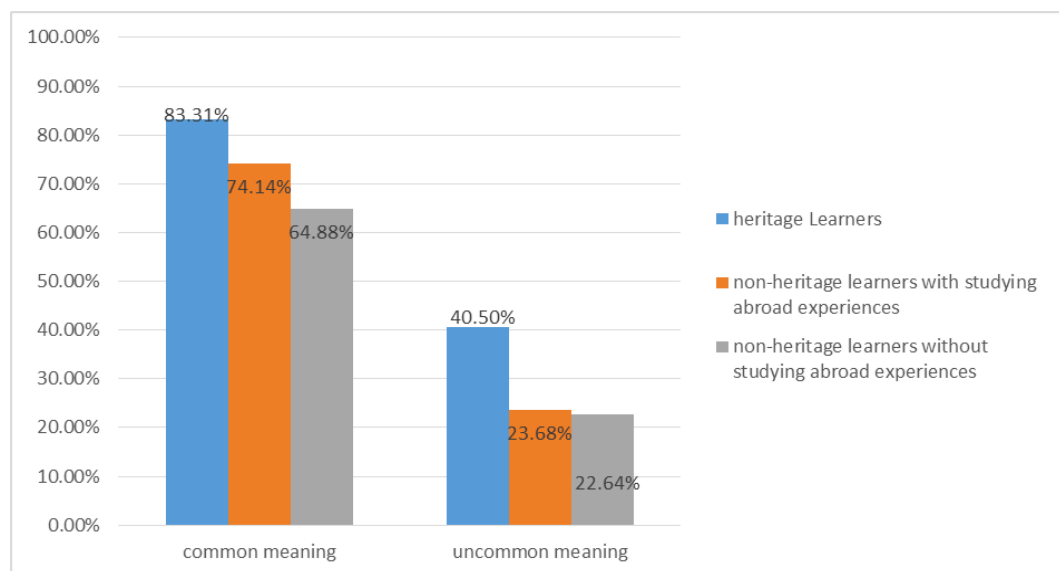
experiences, and G3 refers to those non-heritage learners without study abroad experiences.

Table 5: Three different background groups' accuracy rate of collocations when verbs have common and uncommon meanings in Section Two

	Second-Year Chinese Learners			Third-Year Chinese Learners			Fourth-Year Chinese Learners		
	G1	G2	G3	G1	G2	G3	G1	G2	G3
Common meanings	80%	70%	62%	50%	72%	39%	89%	86%	86%
Uncommon meanings	28%	14%	16%	14%	28%	10%	54%	32%	43%

When the data from the three proficiency levels combined, the Figure 2 below shows the differences among the three backgrounds groups.

Figure 2: Accuracy of collocations when verbs have common and uncommon meanings



As shown in Figure 2, heritage learners achieved the highest scores for both the common meaning and uncommon meaning groups. Of the non-heritage learners, those

who had experience studying in mainland China or Taiwan were more accurate than those who had studied Chinese only at their university in the USA. It should be noted that in the uncommon meaning group, the mean accuracy of the second group (have studied abroad) was only 1.04% higher than the third group (had not studied abroad); however, when comparing the mean accuracy for common meaning, the learners who had studied abroad out performed the learners who had not, at 9.29%.

In addition, the results of the repeated measurement analysis of variance showed that the main effect of semantic meaning was significant, at $F(1,60) = 71.948$, $p < 0.0005$. The main effect of learners' background was also significant, at $F(1,60) = 417.007$, $p < 0.0005$. However, the interaction between semantic meanings and learners' background was not significant, as the data showed that $F(2,60) = 0.260$, $p = 0.772$.

4.3. Experiment 3

4.3.1 Experiment design

In this experiment, a 2×3 mixed experimental design was applied to identify the various proficiency levels of Chinese learners' with regard to object types. Specifically, the within-subject was object types, including patient object and non-patient object. The between-subject factor was language proficiency, which consisted of three groups: Second-Year Chinese learners, Third-Year Chinese learners, and Fourth-Year Chinese learners. The dependent variable was accuracy.

4.3.2 Materials

This experiment was related to the third section of the survey, a multiple-choice test where participants were asked to circle the nouns that could be collocated with the

verbs. Then, participants were asked to translate the verb-noun collocations into English. For example,

玩: Ⓐ. 花招儿 Ⓑ. 游戏 Ⓒ. 电脑 D. 运动
(employ tricks) (play games) (play computer) ()

As mentioned in the methodology chapter, the four choices in this section were designed based on types of objects and English-Chinese meanings. More specifically, one was a patient object, one was a non-patient object, one was a verb-noun collocation possible in English but not possible in Chinese, and finally one was a verb-noun collocation only possible in Chinese, and not in English. However, due to the fact that the verb 走 *zou* does not have a patient object, when analyzing these factors, the verb 走 dropped.

4.3.3 Results

The Table 6 demonstrates the percentage of accuracy for patient and non-patient objects followed by the verbs. In the following collocations, 看电影 *kan dianying*, 开车 *kaiche*, 做功课 *zuo gongke*, 放盐 *fangyan*, 打工 *dagong*, and 带钱 *daiqian*, the objects are patient objects; while in the collocations, 看中医 *kan zhongyi*, 开玩笑 *kai wanxiao*, 做朋友 *zuo pengyou*, 放假 *fangjia*, 打喷嚏 *da penti*, and 带电 *daidian*, the objects are non-patient ones. In addition, the Figure 3 below shows the trend of differences among the three proficiency levels in general.

Table 6: Accuracy of Verb-Noun collocations with patient and non-patient objects of three proficiency level learners

		Second-Year Chinese Learners	Third-Year Chinese Learners	Fourth-Year Chinese Learners
看+	电影	100%	100%	100%
	中医	100%	100%	88%
开+	车	100%	100%	100%
	玩笑	80%	83%	100%
做+	功课	95%	100%	100%
	朋友	35%	39%	71%
放+	盐	25%	26%	47%
	假	58%	78%	94%
打+	工	93%	96%	94%
	喷嚏	23%	35%	65%
带+	钱	83%	87%	94%
	电	10%	4%	6%

Figure 3: Mean accuracy for patient objects and non-patient objects of three proficiency level learners

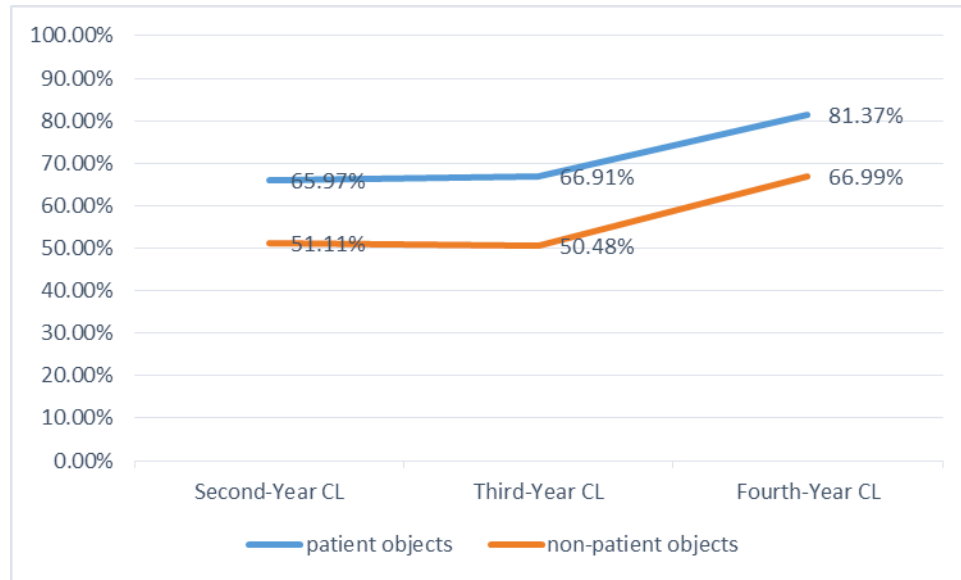


Figure 3 shows that there was a significant difference between the Second-Year and Fourth-Year, Third-Year and Fourth-Year Chinese learners with regard to accuracy.

However, with regard to the accuracy rate of non-patient objects, there was no upward tendency from the Second-Year to the Third-Year group. As the figure shows, the average accuracy rate of Second-Year Chinese learners was 51.11%; however, for the Third-Year group it was 50.48%, 0.63% lower. The Fourth-Year learners had a high accuracy rate, at 66.99%. In terms of the accuracy rate for patient objects, this increased alongside number of years of learning Chinese, from 65.97% at second-year to 81.37% at fourth-year. It can be concluded from Figure 5 that, in general, learners acquire verb-noun collocations better when the objects are patient objects, and that all proficiency levels have this same tendency.

The results of the repeated measurement analysis of variance showed that the main effect of types of objects on verb-noun collocations acquisition was significant. The results show that the total accuracy rates for patient objects and non-patient objects was: $F(1,33) = 24.311, p < 0.0005$. Furthermore, the main effect of learners' proficiency level on verb-noun collocations acquisition was also significant: $F(1,33) = 393.181, p < 0.0005$. That is to say, there was a significant difference between acquisition of verb-noun collocations by learners' proficiency levels. However, the results show that the interaction between types of objects and proficiency levels was negligible: $F(2,33) = 0.177, p = 0.838$.

4.4. Experiment 4

4.4.1 Experiment design

For this experiment, a 2×3 mixed experimental design was applied to determine the influence of L1 on verb-noun collocation acquisition. Specifically, the within-subject

was object types, including patient objects and non-patient objects. The between-subject factor was language proficiency, which consisted of three groups: Second-Year Chinese learners, Third-Year Chinese learners, and Fourth-Year Chinese learners. The dependent variable was accuracy.

4.4.2 Materials

The materials used were the same as in Experiment 3.

4.4.3 Results

The participants' answers of the multiple choices were graded closely by the researcher. As the incorrect answer was designed to test learners' recognition of the collocations in English, while do not exist in Chinese. For example, for the collocation “开书包”, the number of participants in each group believe that it is an incorrect collocation in Chinese are: 16, 12, and 9, respectively. By contrast, for the collocation “开花”, the number of participants believe that it is a correct collocation in Chinese are: 8, 7, and 10, respectively. The Figure 4 below gives a summary of the total accuracy rate for different L1 transfers on Verb-Noun collocations.

Figure 4: Accuracy rate for different L1 transfers on verb-noun collocations

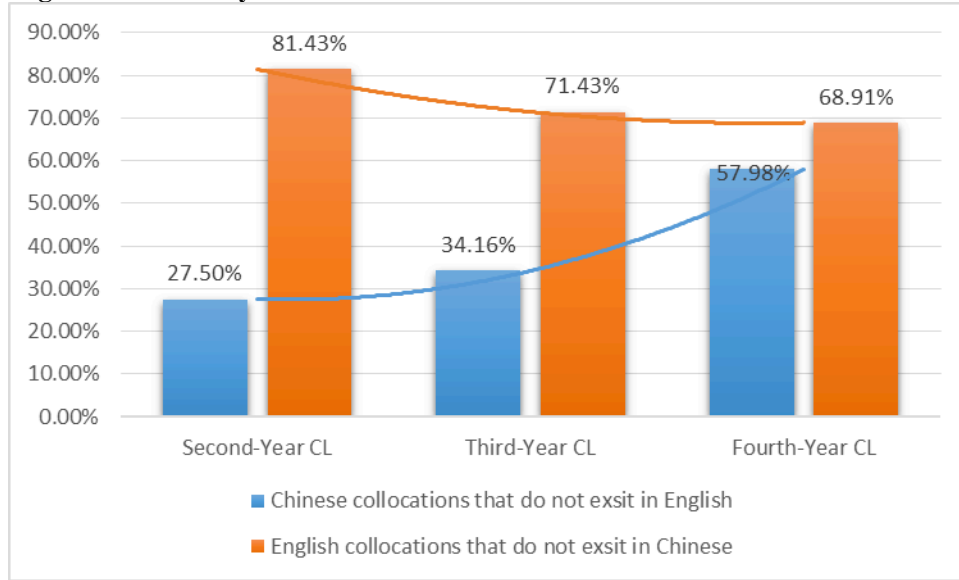


Figure 4 reveals that accuracy rate had an upward tendency when the verb-noun collocations were Chinese collocations that do not exist in English; similarly, there was a downward tendency when the verb-noun collocations existed in English, but not Chinese. For example, ‘play the piano’, cannot be translated as 打钢琴 *da gangqin* in Chinese.

The results of the repeated measurement analysis of variance showed that the main effect of L1 transfer on L2 collocation acquisition was significant: $F(1,18) = 10.651, p=0.004<0.05$. Furthermore, the main effect of language proficiency was also significant: $F(1,18)=337.907, p<0.0005$. That is to say, the performance of learners at different proficiency levels is significantly different. Moreover, the results show that the interaction between the two types of L1 transfer and proficiency levels was negligible: $F(2,18)=1.443, p=0.262$.

CHAPTER 5

DISCUSSION

In Chapter 4, data collected in the background information section of the survey instrument was used to identify participants' Chinese learning experiences, their language proficiency level, and whether they had lived or grown up in a Chinese-speaking environment. Moreover, the data collected in the further three sections, fill in the blanks, multiple choice, and translation, was analyzed quantitatively using the Statistical Package for the Social Sciences (SPSS). Following the discussion of the data collection and data analysis procedures undertaken in this research, this chapter will present the survey results in reference to the research questions stated earlier.

5.1. Research Question 1

Does learners' acquisition of verb-noun collocation increase with years of learning?

Is there a relationship between accuracy in learners' production of verb-noun collocations and their level of language proficiency?

In order to answer this research question, it is necessary to compare the three proficiency level groups' overall accuracy with regard to verb-noun collocations. SPSS software was used to analyze data from the three sections of the survey, which aimed to identify the mean score of the three participant groups, and compare the differences between the various proficiency levels.

Figure 5: Total accuracy rate for the three proficiency levels of Chinese learners (CL)

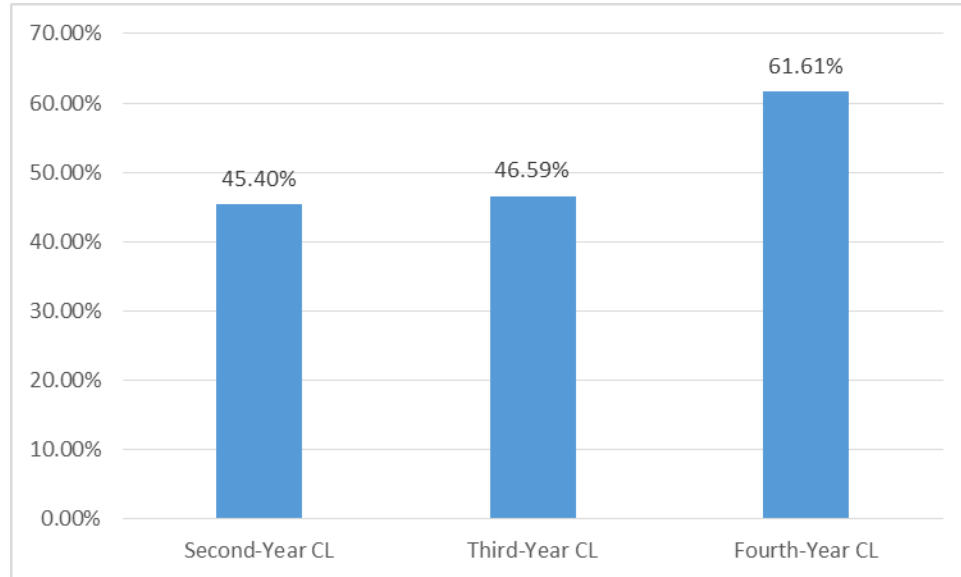
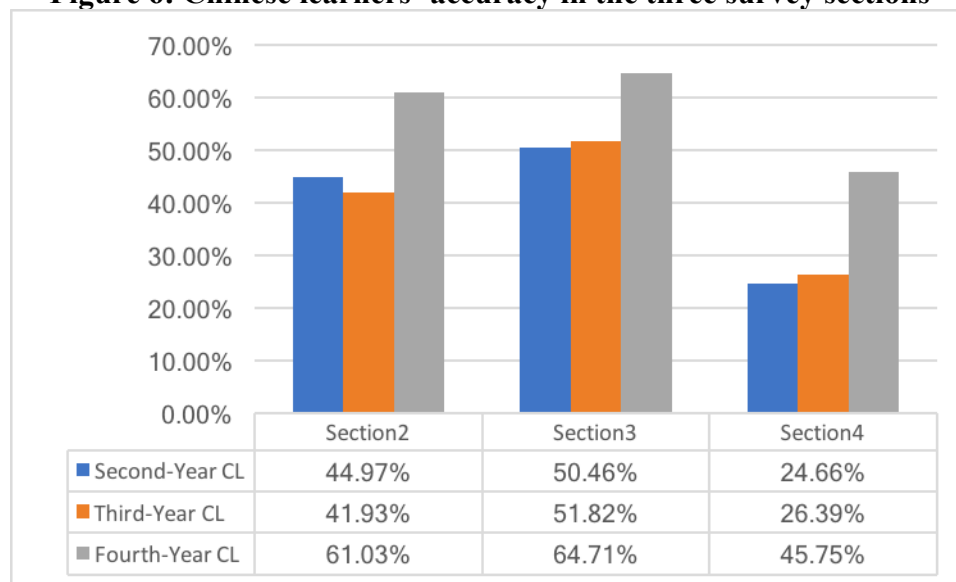


Figure 5 presents a summary of the average accuracy rate of the three proficiency levels in the three sections on the survey. As the figure shows there was an upward tendency with regard to the accuracy rate. More specifically, Fourth-Year Chinese learners had an accuracy of 61.61%, better than the other two groups, which had accuracy rates of 45.4% and 46.59%, respectively. Paired t-tests were also carried out to compare the variance between the three proficiency levels of Chinese learners. The comparison between Second-Year Chinese learners and Third-Year Chinese learners showed that: $t=0.240$, $df=73$, $p=0.811$. The comparison between Third-Year Chinese learners and Fourth-Year Chinese Learners showed that: $t=-8.870$; $df=73$; $p<0.0005$. Therefore, paired t-tests confirmed that Fourth-Year Chinese learners performed significantly better than the other two groups of students; however, there was no statistical significance between the accuracy rate of Second-Year Chinese learners and Third-Year Chinese learners.

The three sections of the survey were analyzed individually; the results are presented in Figure 6. It is clear from the below figure that the Fourth-Year Chinese learners performed better than the other two groups in all three sections. The Section 3 and Section 4 results revealed an upward development from second-year to fourth-year. That is to say, the collocation accuracy developed in line with students' language ability. However, in Section 2, the third-year Chinese learners received the lowest scores among the three groups, at 41.93% accuracy.

Figure 6: Chinese learners' accuracy in the three survey sections



To conclude, in general, learners' acquisition of verb-noun collocations increased with more years of learning. However, from second-year to third-year, this development was not significant, as revealed in the data, which showed only 1.19% growth in total, and specifically, 1.36% in section two and 1.73% in section three, respectively. Despite the development from second-year to third-year, in section one, third-year Chinese learners had a lower accuracy rate than the second-year Chinese learners. Nevertheless, from the third-year to fourth-year, development was significant, not only in regard to the

total average accuracy rate, but data for the three individual sections showed that the accuracy of fourth-year Chinese learners increased rapidly.

Therefore, it can be concluded that, in general, from the second-year to third-year, the development of verb-noun collocations acquisition is very small, even non-existent at some points. However, fourth-year learners experience a sharp increase in their verb-noun collocation ability. In other words, after three years' study, Chinese learners significantly improve their learning efficiency in terms of understanding and using verb-noun collocation.

As was introduced and discussed in the literature review chapter, Zhang (1993) and Al-Zahrani (1998) argued that the use of collocations is related to the L2 learner's proficiency level, whereas Bahns and Eldaw (1993), and Howarth (1998) argued that there is no relationship between the use of collocations and proficiency. The results of the present study support the view that the use of collocations is related to learners' language proficiency. As shown in Figures 7 and 8, this study has identified a hook-shaped learning curve in the acquisition of verb-noun collocations.

Figure 7: Accuracy rate for Section Two

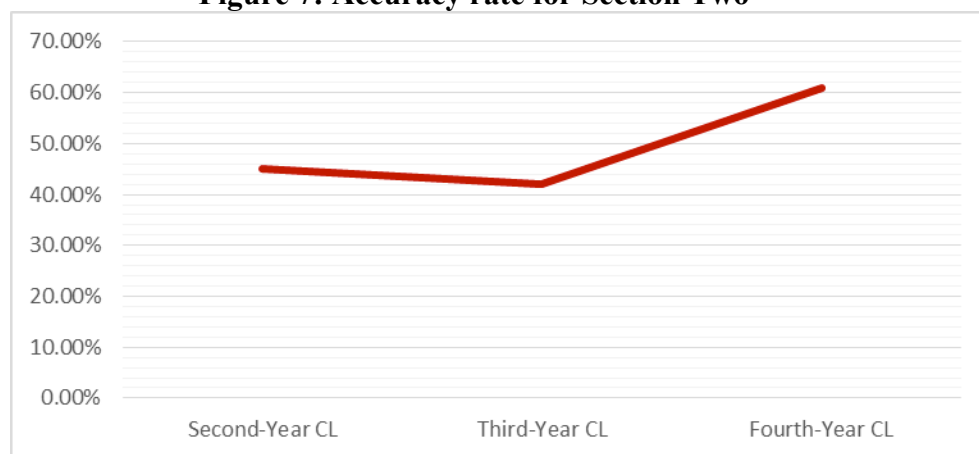
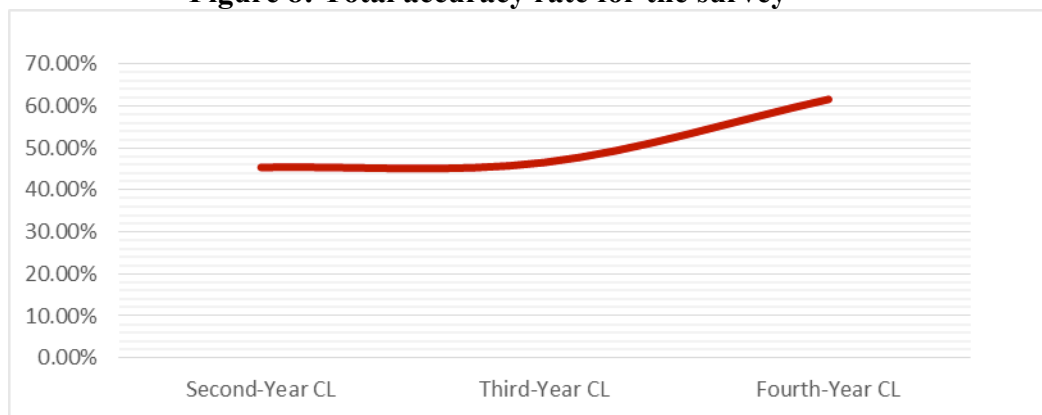


Figure 8: Total accuracy rate for the survey



It remains to be addressed why such a tendency towards the acquisition of verb-noun collocations with regard to language development exists. Kellerman (1979) suggested that beginners are more daring and more willing to try something they are not sure of, whereas advanced learners may have learned various senses of the verbs, and intermediate learners are more cautious. In this case, Kellerman (1979) supported the U-shaped learning curve. In this research, Kellerman's assumption that advanced learners have learned various senses of the verbs, and thus have a better understanding of and ability with regard to collocations, is partly supported. However, it remains to be explained why, from second-year to third-year, there is a downward tendency in accuracy. A closer analysis will go to the materials on the survey.

Table 7: Summary of the definitions of the seven verbs in *Integrated Chinese Level 1 & 2*

Verb			Definitions
看	IC Level 1	Lesson 4 看	to watch; to look; to read
		Lesson 14 看病	to see a doctor; (of a doctor) to see a patient
开	IC Level 1	Lesson 10 开车	to drive a car
		Lesson 6 开会	to have a meeting
	IC Level 2	Lesson 7 开玩笑	to crack a joke; to joke around
做	IC Level 1	Lesson 1 开学	to begin a new semester
		Lesson 2 做	to do
		Lesson 17 做饭	to cook; to prepare a meal
		Lesson 18 做瑜伽	to do yoga

走	IC Level 1	Lesson 10 走	to go by way of; to walk
		Lesson 17 走路	to walk
放	IC Level 1	Lesson 12 放	to put; to place
		Lesson 19 放假	go on vacation; have time off
	IC Level 2	Lesson 20 放心	to feel relieved; to be at ease
打	IC Level 1	Lesson 4 打球	to play ball
		Lesson 6 打电话	to make a phone call
		Lesson 10 打车	to take a taxi
		Lesson 15 打针	to get an injection
		Lesson 16 打太极拳	to do Tai Chi
		Lesson 16 打喷嚏	to sneeze
		Lesson 18 打棒球	to play baseball
		Lesson 18 打乒乓球	to play table tennis
		Lesson 19 打折	to sell at a discount; to give a discount
	IC Level 2	Lesson 5 打交道	to deal with
		Lesson 13 打呼噜	to snore
带	IC Level 1	Lesson 12 带	to bring; to take; to carry; to come with

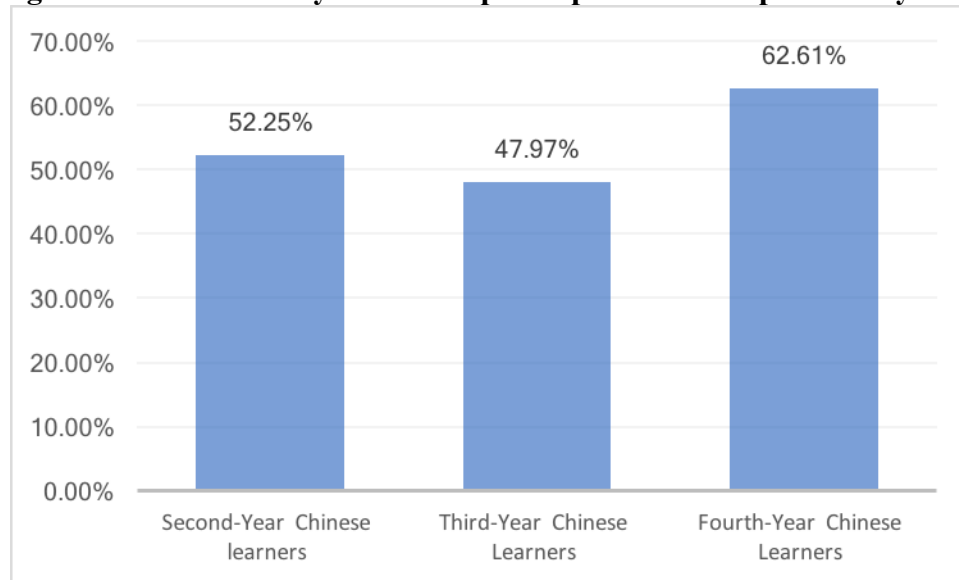
Table 7 shows that at which lessons the students have learned the target verbs. The choice of the verbs and nouns included in the survey used in this study were taken from the *Integrated Chinese* textbooks; for the Second-Year Chinese learners, when the research was being conducted, they were just finishing studying the fourth in the series. Hence, some of the verb-noun collocations would have been familiar to some learners, that is to say, they were high-frequency words for those participants. However, for third-year learners, despite the fact that they had learned the verb-noun collocations before, those particular collocations did not reappear frequently in their current textbook and daily instruction.

Therefore, it can be said that frequency plays an important role in collocation acquisition. For instance, the collocation 打交道 *da jiaodao*, is a phrase that the students learned in Lesson 5 of *Integrated Chinese*, Level 2. When the research was conducted,

the Second-Year Chinese learners were completing the last semester, and had only recently learned the phrase. The accuracy rate for 打交道 amongst second-year learners was 51%, whereas for third-year learners it was 38%, and for fourth-year learners 41%. This argument is further confirmed by the data collected in Experiment 1, and is related to the second research question, which will be discussed later in this chapter.

Nevertheless, the number of participants in each group was not equal in this research, and the proportion of heritage learners and non-heritage learners, learners have been studied abroad in China and those never been to China to study Chinese are not even in each proficiency group; those factors may result in an invalid finding. Hence, a further study was being done to confirm the result of the analysis. Since there are three proficiency levels, and in each level, learners are difference in language background: heritage learners, non-heritage learners who have been studied in China, and non-heritage learners who never been studied in China; I randomly selected two samples from each language background in each proficiency group. For instance, in the Second-Year Chinese learners' group, I randomly selected two samples from heritage learners, two samples from non-heritage Chinese learners who had been studied in China, and two samples from those who had never been studied in China. To conclude, in each proficiency level, 6 participants in total, and specifically, 2 participants in each background group. Below is the result of the mean accuracy rate in each group.

Figure 9 Mean accuracy rate of six participants in each proficiency level



As can be seen from figure 9, the Second-Year Chinese learners' group has a higher accuracy rate than Third-Year Chinese learners, while the Fourth-Year group has the highest accuracy rate, which is 62.61%. This trend consists with the result of the total data. Thus, it can be confirmed that the unequal of the participants in each group did not lead to an invalid finding. The 'hook-shaped learning curve' in this research is reliable.

5.2. Research Question 2

Is learners' acquisition of verb-noun collocations related to the usage frequency of the verbs?

Cognitive and psycholinguistic linguistic theories of language acquisition suggest that frequency plays an important role in language acquisition. According to Ellis (2002), the language processor is tuned to input frequency, since language users are sensitive to the frequencies of linguistic issues in their everyday experiences. Kirsner (1994) further

argued that word frequency has a significant effect on the speed and accuracy of lexical recognition and lexical production processes in L1 and L2. However, as it is widely accepted that frequency is a key determinant of first language acquisition as well as second language acquisition, with regard to the verb-noun collocations, it remains to be seen whether the usage frequency of verb or the noun plays a more important role in acquisition.

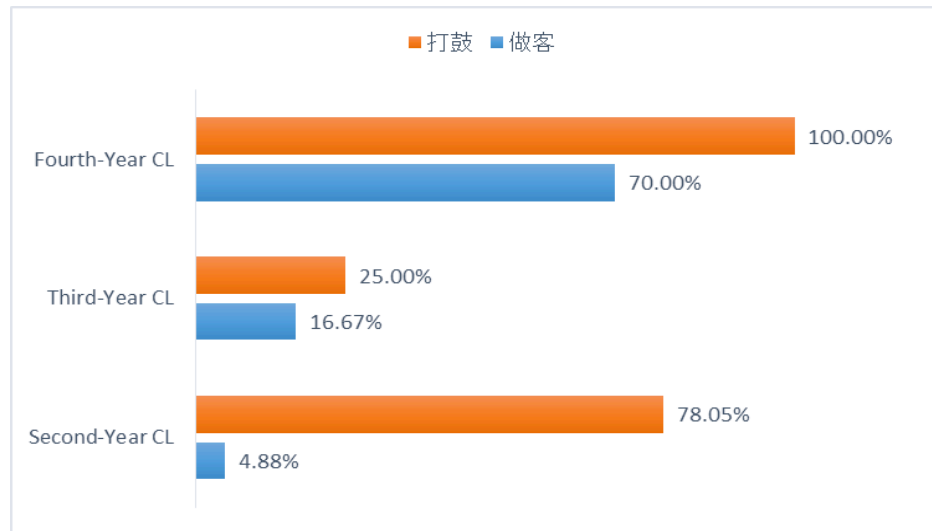
As discussed in Experiment 1, and revealed in Figure 1, in terms of the common meanings and uncommon meanings, learners were significantly more accurate when using common meaning verbs than uncommon ones. There was a significantly higher accuracy rate for common meaning group than the uncommon meaning group, and this was consistent across the three proficiency levels. That is to say, compared to collocations where the verbs have uncommon meanings, their common meaning counterparts were easier for learners to acquire, and for learners at different proficiency levels, the accuracy rate across common and uncommon meanings of verbs was various. For the Second-Year Chinese learners, the accuracy for common meaning verbs (70.38%) was more than three times than for uncommon meaning verbs (20.21%). For Third-Year Chinese learners, the ratio was similar. However, for the Fourth-Year Chinese learners, the accuracy for uncommon meaning verbs was 42.86%, and for common meaning verbs it doubled, to 83.19%. Therefore, it can be said that usage frequency is a more significant factor in the acquisition of verb-noun collocations in second-year and third-year Chinese learners, which can be considered an intermediate language level.

As can be seen from Figure 1, the verb-noun collocations where the verbs have common meanings prompted a higher accuracy rate than those with verbs with

uncommon meanings. However, the analysis of the data presented in Figure 1 did not consider the role of nouns in the verb-noun collocations. There is a question therefore regarding whether the high accuracy of verb-noun collocations was in fact due to the high-frequency verbs. In order to answer this question, two pairs of verb-noun collocation will be compared, No. 9 做客 *zuoke* and No. 16 打鼓 *dagu*, from section one.

The collocation in No.9 is 做客, in this case 做 has an uncommon meaning, while 客 was a high-frequency word from the textbook, which students learned in Lesson 5 of Level 1. By contrast, in collocation No. 16 打鼓, the meaning of 打 was very familiar to learners, while 鼓 was not familiar, as it is not in the textbooks. As revealed in Figure 9 below, at all proficiency levels, the accuracy for the collocation 打鼓 was higher than for the collocation 做客. In particular, for Second-Year Chinese learners, only 2 out of 41 participants filled in the blank with the correct verb 做; the other students gave answers like 当 *dang* (to be), 要 *yao* (need), 得 *dei* (must), 见 *jian* (to visit), and 忘 *wang* (to forget). Most of the learners thought that the answer was 当客, since in English “to be a guest” is a possible collocation. For the collocation 打鼓, 32 out of 41 students got the correct answer, 打, while the other 9 students, left this question blank.

Figure 10: Accuracy for 做客 and 打鼓



Therefore, it can be concluded that frequency is vital to language acquisition, and with regard to verb-noun collocations, the usage frequency of verbs plays a much more significant role compared to nouns. For this reason, language instructors must emphasize the importance of learning verbs, and more time in classrooms should be spent on teaching verbs, instead of nouns. It is also due to the fact that English speakers often pay more attention to the noun in the verb-noun phrase, as Boers et al. (2014) proposed that the noun in verb-noun collocations that usually carries most of the semantic weight of the unit; thus, the English speakers minimized the need to attend to the verb in the phrase.

5.3. Research Question 3

Are there any differences between patient objects and non-patient objects in verb-noun collocation acquisitions?

The results of Experiment 3 provided evidence that can be used to answer this research question. The results of the repeated measurement analysis of variance showed that the main effect of types of objects on verb-noun collocations acquisition was

significant. It is evident that, at all three proficiency levels, learners had a higher accuracy rate with regard to patient objects in verb-noun collocations.

There are a few possible explanations. First is the fact that the English and Chinese languages have different types of object. In *A Dictionary of Linguistics and Phonetics*, Crystal (2008) introduced the object in English as “a term used in the analysis of grammatical functions to refer to a major constituent of a sentence or clause structure, traditionally associated with the ‘receiver’ or ‘goal’ of an action, as in *The cat bit the dog*” (2008: 336). Therefore, in English, objects are only the target of the action or a patient. However, in the Chinese language, the object is much more complicated. Chao (1968) listed three classifications of verb-object relations, such as 1) causative: 跑马 *paoma* (run horses, -- cause horses to run, -- do horse-racing). 2) instrumental: 睡大床 *shui dachuang* (sheep on the big bed). 3) causing to or letting something come into or out of existence: 写字 *xiezi* (write characters). In addition to these three categories, there are more classifications. As discussed in the literature review chapter, there are various views regarding the categories of objects in Chinese.

Hence, as Chinese objects are much more complicated than objects in the English language, misunderstandings can arise. For instance, the English translation of the verb 救 *jiu* is ‘rescue’. In English, rescue is a transitive verb and can be followed by patient objects. Hence, it is not difficult for learners whose L1 is English to understand the Chinese verb-noun collocation 救人 *jiuren*, which means to rescue people; on the other

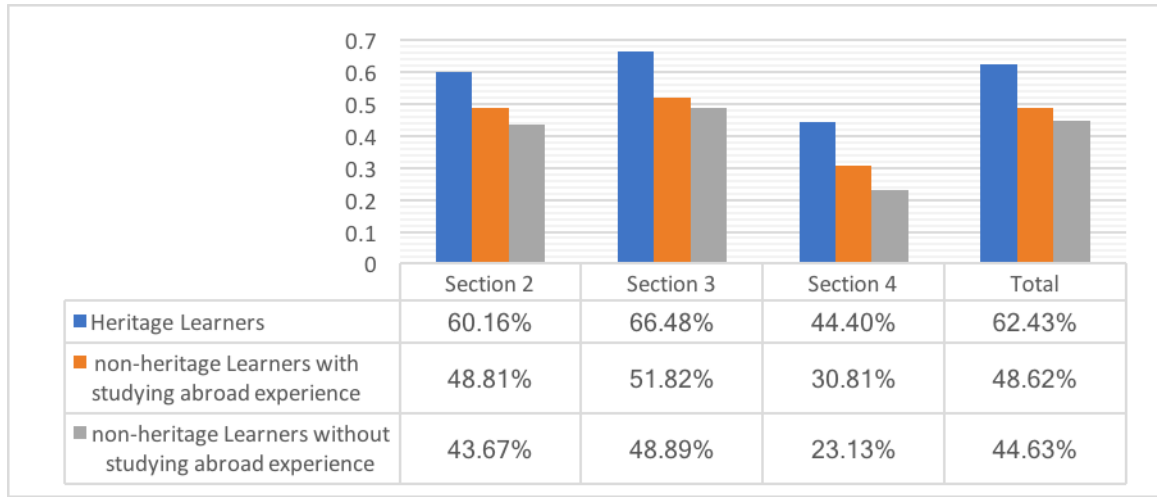
hand, the collocation 救火 *jiuhuo*, which means ‘fight the fire’, is harder for learners to acquire. To conclude, L1 influence is a vital factor affecting Chinese learners’ verb-noun collocations, a fact that was verified in Experiment 4.

5.4. Research Question 4

Does natural exposure to L2 have an impact on collocational competence?

Figure 11 demonstrates the accuracy rate of learners from different backgrounds in three sections separately, and in general. As summarized in Figure 11, heritage learners had the highest accuracy rate among the three groups, at 62.43% in total. More attention should thus be paid to non-heritage learner groups, and to comparing students with and without experience studying abroad in mainland China and/or Taiwan. From the average accuracy rate, students who did have experience studying in China and/or Taiwan had a higher accuracy rate than students who did not have experience studying in these countries. Therefore, it is clear that studying abroad in the target language speaking country is one way to improve learners’ language ability.

Figure 11: Accuracy of learners from different backgrounds



In Experiment 2, a 2×3 mixed experimental design was used to investigate the relationship between Chinese learners’ backgrounds and their accuracy with regard to semantic meanings. The results showed that heritage learners achieved the highest scores for both the common meaning and uncommon meaning groups. Amongst the non-heritage learners, those who had experience studying in mainland China and/or Taiwan had higher accuracy rates than those who studied Chinese only in American classrooms.

In conclusion, it can be said that natural exposure to L2 has an important effect on collocational competence. For heritage learners, Mandarin Chinese or other dialects are spoken in their home environments, and thus it is unsurprising that they showed better acquisition of collocations. On the other hand, the other two groups, students who had studied in the target language environment performed better than those who had only studied the language in the classroom setting in the USA.

Some previous research has examined the similarities and difference in the acquisition of second language learners whose learning has been limited to the formal language classroom in their home country, compared to those who have acquired a

second language in an immersive setting (e.g. Ellis, 2002). However, as Freed (1990) concluded, it has been assumed that combining immersion in the native speech community with formal classroom education can provide the best environment for learning a second language. This assumption is based on the belief that learners who study abroad where the target language is spoken, will eventually become more proficient in the target language.

The findings of the present study support the view that the students benefit greatly from living and studying in the target language speaking countries. Studies by Spada (1985, 1986) and Freed (1990) found that intermediate level learners, whose classroom instruction was grounded in a combination of grammar instruction and communicative approaches, benefit most from interactive out-of-class contact, in other words time spent speaking with native speakers.

Table 8: Average accuracy rate of learners at various proficiency levels

	Heritage learners	Non-heritage Learners with experience studying abroad	Non-heritage Learners with no experience studying abroad
Second-Year CL	52.96%	42.06%	41.46%
Third-Year CL	60.00%	48.99%	38.37%
Fourth-Year CL	74.32%	54.80%	54.05%

The results of the present study confirmed those of Spada (1985, 1986) and Freed (1990). As revealed in Table 8, despite of the fact that, at all three levels, the accuracy rates for verb-noun collocations of non-heritage learners with experience studying abroad were higher than those who had only studied Chinese in language classes in the USA, if the increase of accuracy rates are compared, it is clear that in the second-year and fourth-year groups, the developments were very small. In the second-year Chinese learners

group, non-heritage learners with experience studying abroad outperformed by 0.6% to those who had only studied Chinese in language classes in the USA; and in the fourth-year group, the number is 0.75%. However, in the third-year group, the students with no experience studying in mainland China and/or Taiwan had an accuracy rate of 38.37%, while for those who did have this experience, their accuracy rate was 48.99%.

A paired T-test was conducted to compare the non-heritage learners with experience studying abroad and the non-heritage learners with no experience studying abroad at all three proficiency levels individually. For the Second-Year Chinese learners group, $t=0.393$, $df=73$, $p=0.696$; for the Third-Year Chinese learners group, $t=4.703$; $df=73$; $p<0.0005$. For the Fourth-Year Chinese learners group, $t=0.236$; $df=73$; $p=0.814$. Hence, there was a significant difference between students who had studied abroad in China and those who had only studied Chinese in classrooms in the USA. That is to say, there was a remarkable improvement in the Chinese learners who studied abroad for their Third-Year Chinese learning.

On the other hand, Freed (1990) argued that learners who study abroad will eventually become the most proficient in the use of the target language. The results of the present study do not support this view, since even though learners who went abroad to the target language environment performed better than those who did not, their accuracy rate was still not close to that of the heritage learners.

5.5. Factors that influence the acquisition of verb-noun collocations

As the present study indicates, the acquisition of verb-noun collocations is related to students' language proficiency level, students' background, and whether they are exposed to the L2 environment. From the perspective of linguistics factors, it is not the

equal difficulty for learners to acquire various types of verb-noun collocation. In addition, acquisition is also related to the frequency of verbs in the collocations.

The frequency of verbs in the collocations, to some degree, is related to the semantic entries of verbs. As Lakoff (1987:378) proposed “grammatical constructions form radially structured categories”, the basic meaning is at the center, and more typical than the other meanings on the margins. Li (2008) also believed that the basic meaning is easier for humans to acquire and apply into use. In this case, does it mean that the verb-noun collocations are not a challenge for foreign language learners as long as the verb has the basic meaning? In order to answer this question, I will further analyze the collocations with the verb 看 *kan* in this research.

In the collocations, 看电视 *kan dianshi* (to watch TV), 看电影 *kan dianying* (to watch movies), 看病 *kan bing* (to see a doctor) and 看中医 *kan zhongyi* (to see a doctor of traditional Chinese medicine), all the 看 has the basic meaning, below is the table that presents the accuracy of these four collocations.

Table 9: Accuracy of 看电视，看电影，看病 and 看中医 at three proficiency levels of learners

	Second-Year Chinese Learners	Third-Year Chinese Learners	Fourth-Year Chinese Learners
看电视	100%	100%	100%
看电影	100%	100%	100%
看病	30%	26%	76%
看中医	100%	61%	88%

Since the purpose of this analysis is to check participants' production of the correct verb-noun collocations, the accuracy rates of these four collocations are collected from translation tasks in Section Two and Section Three. It can be seen from the Table 9 that, learners at three proficiency levels have no problems in acquiring the collocations 看电视 and 看电影, but at a low accuracy rate at the collocations 看病 and 看中医. Therefore, it does not align with the statement that the verb-noun collocations are not a challenge for foreign language learners if the verb has the basic meaning.

Firstly, this may be due to the fact that the collocations 看电视 and 看电影, are free combinations, the semantic relation between the verb and noun is looser than the collocations 看病 and 看中医. The collocations 看病 and 看中医, are more restricted in the semantic relationship. Hence, the difficulty for learners acquiring is various.

Moreover, it is also related to the characteristic of Chinese verb-object compounds. As I discussed before, different to English object, the object can serve as tools, materials, etc. in Chinese. The collocations 看电视 and 看电影, the objects are patient, which are familiar to English speakers; while for 看病 and 看中医, the objects are non-patient ones. Specifically, 病 is the purpose object, and 中医 is the way object. As a result, it can be concluded that the grammatical relation plays a more significant role than the lexical relation in learning the verb-noun collocations. Instructors and learners should pay more attentions to the grammatical relation between the verb and noun.

Furthermore, as discussed in the literature review chapter, according to most recent studies, many collocation errors are interlingual, and learners make errors caused by L1 transfer. In the present study, the data showed that L1 influence is indeed a factor that leads to verb-noun collocation errors being made by learners. For instance, in Section 2 of the survey, when participants were asked to choose the correct noun after the verb 打, 15% of the Second-Year learners, 43% of the Third-Year learners, and 18% of the Fourth-Year learners chose the noun 钢琴 *gangqin* (piano), and believed that 打钢琴 was a correct verb-noun collocation. In addition, as introduced earlier, students used “当客人 *dang keren*” as the counterpart Chinese word when attempting to express “to be the guest” in English. This was also the result of a transfer of L1.

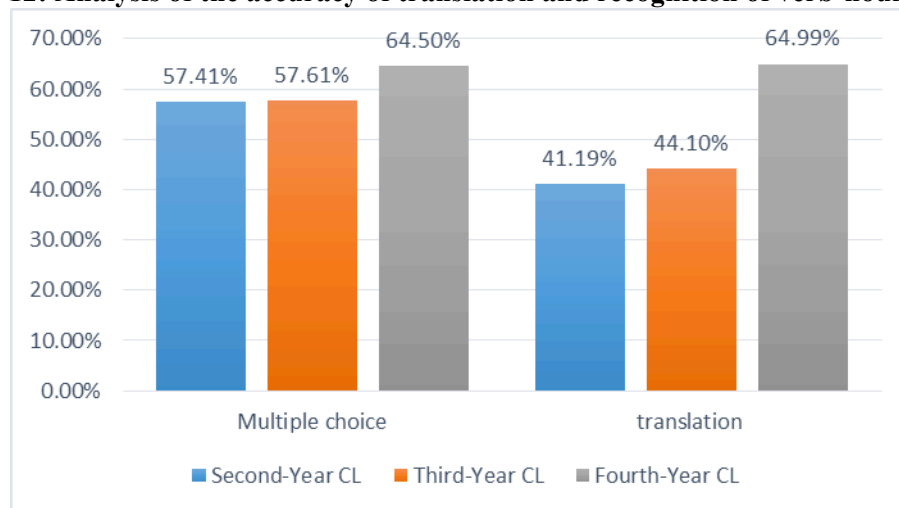
In order to study the effects of L1-L2 difference, in Experiment 4 the accuracy rates of various L1-L2 differences with regard to verb-noun collocations were compared. As shown in Figure 4, L1 continued to be a factor contributing to learner errors, where even more errors were made by advanced level students due to L1 transfer. However, previous research has not looked at how L1 transfer influences learners’ acquisition of L2. In this study, two differences between the two languages were analyzed.

As shown in Figure 4, the accuracy rate of the English collocations that do not exist in Chinese decreased from 81.43% to 68.91%. That is to say, the L1 influence became an increasingly important factor for learners acquiring the second language. Even in learners at advanced levels, L1 influence still hindered their acquisition of the target language. This is due to over generalization of the first language. In particular, when

learners have learned more vocabulary in the target language, they may be more likely to use the target language creatively; hence, they may combine words with other words that they are not sure about. However, for beginner learners and intermediate learners, they may be more conservative in using the target language. In this study, the accuracy rate was higher in the Second-Year learners' group.

Nevertheless, learners' ability to recognize collocations possible in Chinese but not in English improved as the number of years spent learning Chinese increases. In addition, from the comparison between the accuracy of translation and recognition of verb-noun collocations, it is clear that, for some verb-noun collocations, learners' collocation ability remained at the level of recognition, but they did not know the true meaning of the collocations.

Figure 12: Analysis of the accuracy of translation and recognition of verb-noun collocations



As Figure 12 shows, there was a difference between the accuracy rate for multiple choice and translation with regard to proficiency level. In both the Second-Year group and the Third-Year group, participants scored more highly on multiple choice, with an average accuracy rate of 57.41% and 57.61% respectively, while their accuracy rates for translation were 41.19% and 44.10% respectively. By contrast, for learners in the third

group (Fourth-Year Chinese learners), the accuracy rate for verb-noun collocations translation was slightly lower (0.49%) than for multiple choice.

If the performances of Second-Year Chinese learners and Third-Year Chinese learners on the multiple choice test are compared, the t-test result ($t=-0.015$, $df=27$, $p=0.988$) indicates that there was no significant difference between these two groups with regard to verb-noun collocation recognition. Then, if the Third-Year Chinese learners are compared with the Fourth-Year Chinese learners, the t-test result ($t=-4.749$, $df=27$, $p<0.0005$) shows that the difference between those two groups was significant. In terms of translation of the verb-noun collocations, when Second-Year Chinese learners were compared to Third-Year Chinese learners, the t-test results ($t=-0.921$, $df=20$, $p=0.368$) indicates no significance: when the Third-Year group was compared to the Fourth-Year group, the t-test results ($t=-5.066$, $df=20$, $p<0.0005$) shows a significant difference. The nature of experiment tasks affect participants' performance. That is to say, at the second-year and third-year level, learners' ability to produce verb-noun collocations developed slower than their recognition ability. However, when learners were learning Chinese at the fourth-year level, the two abilities developed in line with each other.

The ability to produce verb-noun collocations must be related to the input of collocations. Xin (2014) believed that the input from the textbooks did not play a vital role in the acquisition of verb-noun collocations, and there is no significant relation between the input from the textbooks and the output of learners' verb-noun collocations. Even though, learners have learned most of the verbs from the textbooks, they did not acquire verb-noun collocations from the textbooks. Xin's proposal can be supported by the evidence in this study that the Third-Year Chinese learners who have studied in the

target language settings have a big improvement in the verb-noun collocations. This may be due to the fact that the verb-noun compounds are frequently used in native speakers' conversation; in particular, the verb-noun collocations in the survey are high-frequency compounds for Chinese native speakers. In this way, learners' input of verb-noun collocations increases largely. That is to say, learners have more exposure to colloquial language in study abroad setting, and the increase of input results in the improvement of output.

CHAPTER 6

PEDAGOGICAL IMPLICATIONS

The results of this study have shown that collocations are problematic for second language learners, even for advanced learners. Hence, it is essential for teachers and educators to discuss effective teaching methods for collocations, and a number of scholars have suggested that "collocations do deserve a place in language teaching" (Nesselhauf, 2003: 238). The students who participated in this study had been taught via communicative methods. It is suggested that, for the purpose of facilitating the necessary focus on collocations and increasing learners' awareness of the challenges they present, communicative teaching should be supplemented by form-focused instructions. In this way, the target collocations can be singled out, and students can practice collocations outside of a communicative context.

As concluded by Li (2014), there are three ways for students to learn the meaning of verbs: first, is from the vocabulary list and definitions in textbooks; the second is via a teacher's explanation; third, is from the dictionary. Hence, in order to increase students' knowledge of verbs, and improve their production of collocations, several methods can be implemented.

First, from the perspective of language instructors, when teaching vocabularies, the language instructor can apply explicit method teaching for collocations. As Nesselhauf (2003) states, although rote learning has recently been criticized, along with behaviorism, it is essential that collocations are learned and taught explicitly.

The current experiment results showed that L1 has an influence on learners' production of collocations; thus, explicit teaching can be applied, with an emphasis on crosslinguistic comparison. As Laufer and Girsai (2008) state, a brief explanation of the differences between L1 and L2 in regard to specific collocations, and translation practice for these collocations, may be more effective than other teaching approaches that ignore crosslinguistic variances. For instance, instructors can explain and increase students' awareness when teaching the phrase 打球 *daqiu*, enabling students to realize that although 打 *da* has the definition 'play', not every English phrase starting with 'play' can be translated into 打 in Chinese. In addition, for non-patient object verb-noun collocations, instructors should pay greater attention to, and spend more time explaining these collocations.

Furthermore, an important point when teaching verb-noun collocations is to make the learner aware that the verb cannot be used freely. Of the possible combinations, only the frequent and acceptable ones, as well as the non-congruent ones, should be taught; some semantically possible but collocationally impossible combinations featuring the verb in question should be emphasized, particularly those that are possible in learners' first language. It should be pointed out that although the verb can be used widely, it cannot be used freely without restriction; for instance, unlike the corresponding collocation in English, 'open the bag', 开书包 *kai shubao* is not acceptable in Chinese. Contrasting the verb and its uses with others that have a similar sense would also seem to

be a helpful procedure when teaching collocations, because it highlights the differences in the restrictions of the verbs.

Second, due to the fact that word frequency plays a significant role in the recognition and production of collocations, it is essential to review what we have learnt and repeatedly expose students to the fallibility collocations. In particular, verbs have different meanings; for instance, in the case of the verb 打, as shown in Table 10 below, in the *Integrated Chinese* series of textbooks, students learn 打 in nine lessons throughout the two years. Due to the various meanings of 打, as it is distributed across different lessons, it is difficult for learners to acquire the verb-noun collocations.

Table 10: The verb “打” in *Integrated Chinese*

打	IC Level 1	Lesson 4 打球	to play ball
		Lesson 6 打电话	to make a phone call
		Lesson 10 打车	to take a taxi
		Lesson 15 打针	to get an injection
		Lesson 16 打太极拳	to do Tai Chi
		Lesson 16 打喷嚏	to sneeze
		Lesson 18 打棒球	to play baseball
		Lesson 18 打乒乓球	to play table tennis
		Lesson 19 打折	to sell at a discount; to give a discount
	IC Level 2	Lesson 5 打交道	to deal with
		Lesson 13 打呼噜	to snore

Hence, for language instructors, it will be very beneficial for learners if instructors help them to reorganize the various meanings that the verbs have, and make connections

between these meanings. In addition, when teaching the meanings of a verb, the instructor can review the other meanings learners have already learned, and practice and compare. In this way, students can see the whole picture of verbs, rather than several single unrelated meanings.

In addition to the frequent repetition of the various meaning of verbs, ‘chunk input’ is also vital for learners. The term chunk refers to “a unit of memory organization, formed by bringing together a set of already formed chunks in memory and welding them together into a larger unit” (Newell, 1990: 7). Native speakers can usually find the associations between words, while L2 learners fail to see “connections between words that are obvious to native speakers” (Meara, 1996: 48).

Lewis (1993) stressed that pedagogical chunking should be a frequent classroom activity in vocabulary teaching. That is to say, during students’ learning process, verbs should not be isolated, but connected with the nouns that can be collocated with them. In this way, remembering the collocations can help students to learn proper usage of the verbs. In the present study, the verbs addressed were single verbs, such as 看 *kan* , 打 *da* , and 做 *zuo*; this method of using collocations to help students learn and retain knowledge of the usage of the verbs might be much more effective when applied to disyllable verbs, for example, 改进 *gaijin* , 改正 *gaizheng* , 纠正 *jiuzheng*; 表现 *biaoxian* , 表明 *biaoming* , 表示 *biaoshi*.

However, while chunk input is effective for verbs that have a close relationship with the noun objects, when teaching other verbs that have a less close relationship with

the noun objects, classifying the noun objects, and then making students remember the typical nouns in every group is an effective method of teaching. In this case, the intensive reading, can be an efficient method to increase the input out of classroom settings. As Yamashita and Jiang (2010) stated, a massive amount of exposure to collocations is significant for learners to acquire collocations, some instruction that can increase the amount of input, such as extensive reading, may help boost this process. Sentences containing target collocations can be given by instructors to be used as intensive input for foreign language learners to read collocations in contexts.

CHAPTER 7 CONCLUSIONS

7.1. Summary of the study

This study carried out a survey in order to analyze learners' acquisition of verb-noun collocations in Chinese. Based on the data analysis, the first finding was that, although generally learners' acquisition of verb-noun collocations increased alongside the number of years spent learning Chinese, this was a curve development. There was no significant development from the second year to the third year of learning, and there was even a drop in accuracy when students were in their third year. Nevertheless, there was a sharp increase from the third-year to the fourth-year. Hence, it can be concluded that fourth-year Chinese is a crucial time for students attempting to develop an advanced ability in the Chinese language.

Second, it was found that learners' acquisition of verb-noun collocations is related to several factors, including the types of objects, the semantic meanings of the verbs, and the frequency of the verbs. Specifically, the verb-noun collocations with patient objects, or verbs with common meanings, or high-frequency verbs, were easier for learners to acquire. In addition, it was found that L2 exposure also plays an important role in learners' acquisition. The heritage learners had the highest ability with regard to the verb-noun collocations, comparing with the non-heritage students; students who had experience studying in mainland China and/or Taiwan performed better than students who did not have study-abroad experience. Hence, for students who are learning a foreign language, it is vital to study in the target language speaking country, in particular, in their third year of learning.

Therefore, in terms of pedagogical teaching implications, it is vital for instructors to emphasize the different collocation of verb when applying communicative methods in their language instruction. Additionally, the use of chunks can also greatly increase students' acquisition of collocations.

7.2. Limitations of the research

The present study has several limitations. The research was conducted at one site, and the sample collected was very limited, at a total number of 82 learners. In particular, for the advanced-high level (Fourth-Year learners), 17 responses was not sufficient to make generalizations. In addition to the limited number of the participants, there were different numbers of participants in each sample group, specifically, 41, 24, and 17 respectively. The unbalanced number of students in each group may have affected the results of this research.

Furthermore, in terms of students' proficiency levels, the total sample was divided according to which Chinese course they are enrolled, rather than individual Chinese placement tests. As such, it could not be guaranteed that every student in the same group had the same proficiency level. Both of these limitations have an impact on the external validity of this research.

7.3. Suggestions for further studies

For various reasons, the limitations of this research could not be overcome by the researcher; hence, for future studies on verb-noun collocations, more data should be gathered. Second, more verbs and a wider range of verbs should be studied. In the present study, only eight single verbs were included. Third, further research could be carried out

on teaching methodology, and a comparison of controlled and uncontrolled group of students, applying different teaching methods, could identify and test the pedagogical implications.

Furthermore, a longitudinal study could be conducted in order to trace the development of collocations alongside language ability development. In most of the existing research, when researchers attempt to answer the question of whether the acquisition of collocations is related to the deployment of learners' language proficiency, comparisons have been made between various levels of language students, due to the fact that this is easy to conduct. However, if a longitudinal study on the same group of students' language development, were conducted, it could provide adequate data to answer the same research question.

APPENDIX: SURVEY

This survey is designed for the Master's thesis of the researcher to explore your learning of Chinese vocabulary.

Please respond to the questions below carefully and honestly. Your responses will be kept strictly **confidential and anonymous**, and will only be used for the purpose of this research. This survey will take you only several minutes to complete. I would deeply appreciate your help so much!

Section 1: Background information

1. Which Chinese course are you enrolled in the semester?

2. Have you ever studied abroad in China? If yes, how long?

3. Do you have a Chinese background? (Heritage students or grown up in a Chinese speaking family) If yes, which dialect do you speak? How well you speak that dialect?

4. What is your first language?

Section 2: Please use the appropriate single syllable verbs to fill in the blanks, and explain the meaning of the verbs in English. (You can write Pinyin if you cannot remember the characters).

Example:

王朋要从宿舍搬出去住，他在报纸上（找 to look for ）房子。

1. 小白很喜欢（ ）电视。

2. 他每天（ ）路去学校。

3. 学生要听力考试了，老师在教室（ ）录音。

4. 过年的时候，中国人要串门（ ）亲戚。
5. 他家是（ ）饭馆儿的。
6. 你要去中国，别忘了（ ）护照 passport。
7. 医生跟病人（ ）交道。
8. 去朋友家（ ）客应该带礼物。
9. 他带了花和水果，要去医院（ ）病人。
10. 他不喜欢小鸟被关在笼子 cage里，他（ ）了小鸟。
11. 我去（ ）门，请他进来。
12. 他妈妈（ ）饭很好吃。
13. 妈妈不工作，在家（ ）孩子。
14. 他用手（ ）鼓 drum。

Section 3: Multiple choices: Please circle ALL nouns that can be combined with the verbs, and explain the meaning of the phrases in English.

Example:

玩: A. 花招儿 B. 游戏 C. 电脑 D. 运动
 (employ tricks) (play games) (play computer) ()

1. 看: A. 病 B. 电影 C. 中医 D. 音乐会
 () () () ()

2. 开: A. 车 B. 花 C. 书包 D. 玩笑
 () () () ()

3. 做: A. 家人 B. 生日 C. 功课 D. 朋友
 () () () ()
4. 走: A. 火 B. 朋友 C. 正步 D. 味儿
 () () () ()
5. 放: A. 假 B. 牛 C. 盐 D. 眼泪
 () () () ()
6. 打: A. 电话 B. 钢琴 C. 工 D. 喷嚏 pēn tì
 () () () ()
7. 带: A. 时间 B. 电 C. 钱 D. 路
 () () () ()

Section 4: Translation. Please translate the following words into English.

Example:

玩游戏 play games

1. 开会 _____
2. 开药方 _____
3. 走棋 (qí) _____
4. 放火 _____
5. 打饭 _____
6. 打篮球 _____

7. 打伞 _____

8. 打毛衣 _____

9. 打包 _____

Thank you so much!

BIBLIOGRAPHY

- Al-Zahrani, Mohammed Said (1998). Knowledge of English Lexical Collocations Among Male Saudi College Students Majoring in English at a Saudi University. (PhD). Ann Arbor, MI:UMI.
- Allerton, D. J. (1984). Three (or four) levels of word cooccurrence restriction. *Lingua*, 63(1), 17-40.
- Arnaud, P. J., & Savignon, S. J. (1997). Rare words, complex lexical units and the advanced learner. *Second language vocabulary acquisition*, 157-173.
- Bahns, Jens & Eldaw, Moira (1993). "Should we teach EFL students collocations?" *System*, 21(1), 101-114.
- Benson, M. (1989). The structure of the collocational dictionary. *International Journal of Lexicography*, 2(1), 1-14.
- Biskup, D. (1992). L1 influence on learners' renderings of English collocations. A Polish/German empirical study. In Arnaud, P.J.L. and Béjoint, H. (eds.), *Vocabulary and Applied Linguistics*, 85-93. London: Macmillan.
- Chan, T., & Liou, H. (2005). Effects of Web-based concordancing instruction on EFL students' learning of verb-noun collocations. *Computer Assisted Language Learning*, 18, 231-250.
- Boers, F., Demecheleer, M., Coxhead, A., & Webb, S. (2014). Gauging the effects of exercises on verb-noun collocations. *Language Teaching Research*, 18(1), 54-74.
- Chao, Y. R. (1965). A grammar of spoken Chinese. Berkeley: University of California Press.
- Chi Man-lai, Amy, Wong Piu-yiu, Kitty, & Wong Chau-ping, Mabel (1994). "Collocational problems amongst ESL learners: A corpus-based study." In Lynne Flowerdew & Anthony K. Tong (Eds.), *Entering Text* (pp.157-165). Hong Kong: University of Science and Technology.
- Chi, M. A., Wong, P. K., & Wong, C. M. (1994). Collocational problems amongst ESL learners: a corpus-based study. In I. Flowerdew & A. K. Tong (Eds.), *Entering Text* (pp. 157-165). Hong Kong: University of Science and Technology.
- Cooper, T. C. (1999). Processing of idioms by L2 learners of English. *Tesol Quarterly*, 233-262.

- Cowie, A. (1978). The making of dictionaries and reference works. In P. Strevens (Ed.), *In honor of A.S. Hornby* (pp. 127-139). Oxford University Press.
- Crystal, D., & Crystal, D. (2008). A dictionary of linguistics and phonetics. Malden, MA: Blackwell Pub.
- Ellis, N. C. (2002). *Frequency effects in language processing: a review with implications for theories of implicit and explicit language acquisition*. Cambridge : Cambridge University Press .
- Firth, J. R. (1957). Chapter 15: Modes of Meaning, *Essays and Studies* (The English Association) in *Papers in linguistics: 1934-1951*. London: Oxford University Press. (pp190-215)
- Freed, B. (1990). Language learning in a study abroad context: The effects of interactive and non-interactive out-of-class contact on grammatical achievement and oral proficiency. *Linguistics, language teaching and language acquisition: The interdependence of theory, practice and research* (GURT 1990) ed. By J. Atlatis, 459-477. Washington D. C.: Georgetown University Press.
- Gyllstad, H. (2007). *Testing English collocations: Developing receptive tests for use with advanced Swedish learners*. Språk-och litteraturcentrum, Lunds universitet.
- Halliday, M.A.K. (1961). *Categories of the theory of grammar*. Word 17. 241-292.
- Hausmann, Franz J. (1989). "Le dictionnaire de collocation." In Franz J. Hausmann, Herbert E. Wiegand, & Ladislav Zgusta (Eds), *Wörterbücher, Dictionaries, Dictionnaires. Ein internationales Handbuch zur Lexikographie* (pp. 1010-1019). Berlin: de Gruyter.
- Herbst, T. (1996). What are collocations: sandy beaches or false teeth?.
- Hill, J. (2000). Revising priorities: from grammatical failure to collocational success. In Lewis, M. (ed.), *Teaching Collocation*, 47-69. Hove: Language Teaching Publications.
- Howarth, P. (1998) Phraseology and Second Language Proficiency, in *Applied Linguistics* Vol. 19, No. 1.
- Howarth, P. (1998). Phraseology and second language proficiency. *Applied Linguistics*. 19, 24-44.
- Howarth, Peter (1996). *Phraseology in English Academic Writing. Some Implications for Language Learning and Dictionary Making*. Tübingen: Niemeyer.
- Hu, Yushu 胡裕树 (eds.) (1962) 《现代汉语》.上海：上海教育出版社

- Hussein, R. F. (1990). Collocations: The missing link in vocabulary acquisition amongst EFL learners. *Papers and Studies in Contrastive Linguistics*, 26, 123-136.
- Jiang, N. (2002). Form-meaning mapping in vocabulary acquisition in a second language. *Studies in Second Language Acquisition* 24. 617-637.
- Jin, Xianzhu 金贤珠. (2012). 韩国留学生汉语动宾搭配习得情况分析 & 教学对策 (Master's thesis, 山东师范大学).
- Kaszubski, Przemyslaw (2000). *Selected Aspects of Lexicon, Phraseology and Style in the Writing of Polish Advanced Learners of English: A Contrastive, Corpus-Based Approach*. <http://main.amu.edu.pl/~prezemka/research.html>
- Kellerman, E. (1979). Transfer and non-transfer: Where are we now. *Studies in Second Language Acquisition*, 2, 37-57.
- Keshavarz, M. H., & Salimi, H. (2007). Collocational competence and cloze test performance: A study of Iranian EFL learners. *International Journal of Applied Linguistics*, 17(1), 81-92.
- Kirsner, K. (1994). Implicit processes in second language learning. In N. Ellis (Ed.), *Implicit and explicit learning of languages* (pp.283-312). San Diego, CA: Academic Press.
- Lakoff, G. (1987). *Women, fire, and dangerous things: What categories reveal about the mind*. Chicago: University of Chicago Press.
- Laufer, B., & Girsai, N. (2008). Form-focused instruction in second language vocabulary learning: A case for contrastive analysis and translation. *Applied Linguistics*, 29, 694-716.
- Leśniewska, J., & Witalisz, E. (2007). Cross-linguistic influence and acceptability judgments of L2 and L1 collocations: A study of advanced Polish learners of English. *Eurosla Yearbook*, 7(1), 27-48.
- Lewis, M. (1993). *The lexical approach* (Vol. 1, p. 993). Hove: Language Teaching Publications.
- Lewis, M. (Ed.). (2000). *Teaching collocations. Further developments in the lexical approach*. Hove, England: Language Teaching Publications.
- Li, Fuyin 李福印. (2008). 认知语言学概论. 北京: 北京大学出版社.

- Li, Shouji 李守纪. (2016). 美国留学生词语搭配的偏误分析及其对词语教学的启示. *Chinese as a Second Language. The journal of the Chinese Language Teachers Association, USA*, 51(1), 62-78.
- Li, Tong 李彤 (2014) 外国学生汉语双音节动词动宾语义搭配偏误分析及对策。语文学刊。2014年第六期。
- Lü, S. 吕叔湘 (1987). Shuo “sheng” he “bai” [on “win” and “lose”]. *Zhongguo Yuwen* 1:1-5.
- Ma Ping 马萍 (2008) 留学生动宾式离合词习得研究——以统计学为视角，《汉语学习》第5期。
- Marton, Waldemar (1997). “Foreign vocabulary learning as problem No. 1 of language teaching at the advanced level”. *Interlanguage Studies Bulletin*, 2, 33-57.
- Meara, P. (1996). The dimensions of lexical competence. In Brown, G., Malmkjaer, K. and Williams, J (eds.), *Performance and Competence in Second Language Acquisition*, 35-53. Cambridge: Cambridge University Press.
- Moon, R. (1997). Vocabulary connections: multi-word items in English. In N. Schmitt & M. McCarthy (Eds.), *Vocabulary: description, acquisition and pedagogy* (pp. 40-63). Cambridge: Cambridge University Press.
- Nation, I. (2001). *Learning Vocabulary in Another Language*. Cambridge: Cambridge University Press.
- Nation, I. S. P. (2001). *Learning vocabulary in another language*. Cambridge: Cambridge University Press.
- Nesselhauf, N. (2003). The use of collocations by advanced learners of English and some implications for teaching. *Applied Linguistics*, 24, 223-242.
- Nesselhauf, N. (2005). *Collocations in a learner corpus*. Philadelphia: John Benjamins Pub. Co.
- Newell, A. (1990). *Unified Theories of Cognition*. Cambridge, MA: Harvard University Press.
- Palmer, F.R. (1981). *Semantics- A New Outline*. Cambridge: Cambridge University Press.

- Palmer, H. E. (1993) *Second Interim Report on English Collocations*. Tokyo: Kaitakusha.
- Richards, J. C., Platt, J., & Weber, H. (1985). *Longman dictionary of applied linguistics*. London: Longman.
- Shen, Xiuying 申修瑛. (2007). *现代汉语词语搭配研究* (Doctoral dissertation, 上海: 复旦大学).
- Shi, Maozhi 施茂枝 (1999). 述宾复合词的语法特点, 《语言教学与研究》, 1999 年第 1 期, 页 123-134。
- Shui, Lian. 税莲. (2007) *现代汉语词语搭配原理与动宾搭配研究*[D]. 四川大学, 2007:1-2
- Sinclair, J. (1991). *Corpus, concordance, collocation*. Oxford: Oxford University Press.
- Spada, N. (1986). The interaction between types of contact and types of instruction: Some effects on the second language proficiency of adult learners. *SSLA* 181-199.
- Spada, N. 1985. Effects of informal contact on classroom learners proficiency: A review of five studies. *TESL Canada Journal* 2:51-62.
- Stubbs, M. (1995). Corpus evidence for norms of lexical collocations. In G. Cook & B. Seidlhofer (Eds.) *Principles and practice in applied linguistics* (pp. 245-256). Oxford University Press.
- Wang, Li 王力. (1982). 《汉语语法纲要》 上海: 上海教育出版社
- Wilkins, D. A. (1972) *Linguistics in language Teaching*. London: Edward Arnold.
- Wray, A. (2002). *Formulaic language and the lexicon*. Cambridge: Cambridge University Press.
- Wu, Weizhang 吴为章. (1994). 近十年现代汉语动词研究特点概述. *汉语学习*, (2), 7-17.
- Xiao, Xianbin & Chen, Meishuang, (2008) 留学生汉语动宾搭配能力的习得 on the acquisition of the Chinese V.+O. Construction of Foreign Studnets. *汉语学报* 2008 年第 1 期.

- Xin, P. (2014). 面向对外汉语教学的常用动词 V+N 搭配研究 Mianxiang Duiwai Hanyu Jiaoxue de Changyong Dongci V+N Dapei Yanjiu. 北京：世界图书出版公司.
- Yamashita, J., & Jiang, N. (2010). L1 influence on the acquisition of L2 collocations: Japanese ESL users and EFL learners acquiring English collocations. *Tesol Quarterly*, 44(4), 647-668.
- Yang, H. (1988). A Collocational Dictionary of Common Chinese Verbs (with English Explanations). By Wang Yannong and Jiao Panyong.[Heidelberg: Julius Groos Verlag, 1985. 588 pp. DM58. 00.]. *The China Quarterly*, 113, 136-136.
- Yang, Qinghui 杨庆蕙：《对外汉语教学中“离合词”的处理问题》，载《第四届国际汉语教学讨论会论文选》北京：北京语言学院出版社,1995, pp93-98
- Zhang, Taoshou & Lin, Xingguang 张寿康，林杏光. (1996) 现代汉语实词搭配词典. 北京：商务印书馆。
- Zhang, Xiaolin (1993). English Collocations and Their Effect on the Writing of Native and Non-native College Freshmen. Ann Arbor, MI: UMI.
- Zhou, Lin & Li, Binxin 周琳, 李彬鑫, 2015年《汉语作为第二语言的离合词教学实验研究, 世界汉语教学, 第29卷, 2015年第3期。
- Zimmerman, C. B. (1997). Historical trends in second language vocabulary instruction. *Second language vocabulary acquisition*, 5-19.