University of Massachusetts Amherst

ScholarWorks@UMass Amherst

Masters Theses

Dissertations and Theses

November 2014

An Investigation of Chinese Learners' Acquisition and Understanding of Bushou and Their Attitude on Formal In-Class Bushou Instruction

Yan P. Liu
University of Massachusetts Amherst

Follow this and additional works at: https://scholarworks.umass.edu/masters_theses_2

Recommended Citation

AN INVESTIGATION OF CHINESE LEARNERS' ACQUISITION AND UNDERSTANDING OF BUSHOU AND THEIR ATTITUDE ON FORMAL IN-CLASS BUSHOU INSTRUCTION

A CASE STUDY

A Thesis Presented

By

YANPING LIU

Submitted to the Graduate School of the University of Massachusetts Amherst in partial fulfillment of the requirements for the degree of

MASTER OF ARTS

September 2014

Department of Languages, Literatures, and Cultures

Asian Languages and Literatures

AN INVESTIGATION OF CHINESE LEARNERS' ACQUISITION AND
UNDERSTANDING OF BUSHOU AND THEIR ATTITUDE ON FORMAL IN-
CLASS BUSHOU INSTRUCTION

A CASE STUDY

A Thesis Presented

By

Yan Ping Liu

Approved as to style and content by:

_____

Zhijun Wang, Chair

_____

Zhongwei Shen, Member

_____

Enhua Zhang, Member

                                           _____

                                           Stephen Miller, Unit Director

                                           Asian Languages and Literatures Program

                                           Department of Languages, Literatures and Cultures

                                           _____

                                           William Moebius, Chair

                                           Department of Languages, Literatures, and Cultures

ABSTRACT

AN INVESTIGATION OF CHINESE LEARNERS' ACQUISITION AND
UNDERSTANDING OF BUSHOU AND THEIR ATTITUDE ON FORMAL IN-
CLASS BUSHOU INSTRUCTION

A CASE STUDY

SEPTEMBER 2014

YANPING LIU, B.A., UNIVERSITY OF MASSCHUSETTS AMHERST

MA., UNIVESRITY OF MASSACHUSETTS AMHERST

Directed by: Professor Zhijun Wang

This learner-oriented study investigated the character and *Bushou* information

from first year textbooks, *Integrated Chinese Level 1 Part 1* and *Integrated Chinese Level

1 Part 2,* that are used by the participants; participants' understanding and acquisition of

Bushou; and their attitude on bringing in formal *Bushou* instruction to first year Chinese

language courses. The study first classified all the characters that appear in the

vocabulary lists in the 20 lessons from a set of first year textbooks that the participants

use. Then it identified, organized, and analyzed the *Bushou* that appear in the characters.

After soliciting and understanding students' perceptions of *Bushou* and opinions on

Bushou teaching and learning, and their acquisition of *Bushou* knowledge, a suggestion

will be made on whether or not *Bushou* should be taught in class in this particular

program. Sixty-eight students in Chinese classes from the elementary and intermediate

Chinese classes participated in the study. The study findings revealed that students in

both levels have a fragmented understanding of the concept of *Bushou* and a low level of

Bushou knowledge; however, based on the descriptive analyses of the survey on *Bushou*

teaching and learning, students in these two levels consider *Bushou* knowledge to be

helpful for character learning and the majority of the participant want like to receive formal in-class instruction on *Bushou*.

The study results suggest that curriculum developers should consider incorporating formal *Bushou* instruction into their first year Chinese language program.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

DEFINITION OF *BUSHOU* AND ITS SIGNIFICANCE

Bushou is a Chinese term that is created for the purpose of categorizing characters

in character dictionaries. It is a product of character shape analysis (Hu, 2008). Chinese

characters are grouped together by their *Bushou* in Chinese dictionaries. For example,

characters 海 'ocean', 沫 'foam', 没 'sink', and 清 'cear' all have the *Bushou* 氵

'water', therefore, they are grouped together under the *Bushou* section water 氵. *Bushou*,

which literally means 'section head', is also commonly referred to as 'radical', 'lexical

radical', or 'semantic radical'. In this study the term *Bushou* and semantic radical will be

used interchangebily. Characters in each section are arranged according to the number of

strokes of the non-*Bushou* component(s) that make up the character (Simon, 1959). Not

all compound characters contain phonetic radicals but they all have a *Bushou* and may

contain other components that also appear among the list of *Bushou*. For example, the

character 字 is made up of 宀 and 子. This character's *Bushou* is 宀, therefore, it is

grouped under the *Bushou* 宀 with other characters that have 宀 as the *Bushou*. However,

子 can also serve as a *Bushou*, as in 孩 'child'; therefore, has its own section in the

dictionary. There is wide variability in the usefulness of the information conveyed by

Bushou. Some *Bushou* provide an obvious and direct clue to the meaning of the whole

character, thus, are called transparent *Bushou*. The 10 highly semantic transparent

Bushou include 氵, 艹, 口, 扌, 木, 金, 亻, 虫, 言, 土. *Bushous* that provide a

1

weak or indirect clue to the meaning of the whole character are called semitransparent *Bushou*. *Bushou* that do not indicate the meaning of the whole character are called opaque radicals (Ho, Ting, and Ng, 2003). Chinese characters have undergone thousands of years of transformation; therefore, the effectiveness of using a *Bushou* to infer the meaning of a character is not guarantee. A study analyzed all the characters from ten textbooks in the United States found that only 43.1% of the characters contain useful *Bushou* to infer the meaning of the character (Fan, 2010). *Bushou* can appear in different positions in characters. But for some *Bushous*, its position in different characters is usually fixed. For example, the *Bushou* 氵 'water' usually appears on the left side of a compound character, as in 海 'ocean', 没 'sinking', and 汁 'juice'. Some *Bushou* serve a different function depending on their position within characters, changing from semantic to phonetic, such as 火 *huǒ* 'fire' is the *Bushou* for 灯 *dēng* 'light' but a phonetic component for 伙 *hǒu* 'fellow' (Hu, 2008). It has been estimated that among the 4516 characters from the Xiandai Hanyu Cidian (Modern Chinese Dictionary 1992), approximately 75% of Chinese phonetic compounds have their *Bushou* on the left. Of the remaining compounds, approximately 5% have the *Bushou* on the right, 15% have the *Bushou* on the top, 4 % have the *Bushou* at the bottom, and fewer than 1% have the semantic on the periphery (Feldman & Soik, 1999).

Being familiar with *Bushou* positions is thought to be very beneficial for students to memorize and reproduce characters correctly. The method of using *Bushou* to categorize Chinese characters was invented by a Tang scholar named Xushen. In his

dictionary *Xuewen Jiezi*, 540 *Bushous* were recorded.　However, because some of the

characters in *Xuewen Jiezi* are no longer qualified to be considered *Bushou*; the total

number decreased to 214 (Simon, 1959; Chen & Marshall, 1996; Hu, 2008; Chen, 1968;

Fan, 2010).　In many modern Chinese dictionaries, like 新华字典 *xinhua zidian* that

was published in 1971, only use about 189 *Bushou* (Chen & Marshall, 1996; Anderson,

1979).

　　　　Anderson (1979) suggested that *Bushous* are a great help, therefore, out of the 214

Bushous, students from the West should at least learn the following 56 important ones.

Table 1: 56 Important Common *Bushou* (continued onto next page)

人亻 :human being, man	网：net
口: mouth ，　hole	羽：feathers of a bird
土: earth	耳：ear
女：　woman，feminine	肉月：flesh，　meat
宀：mian2，　roof，　cover	舟：　ship，vessel
山：shan1，　mountain，hill	艹：plants，　grass
彳：chi4，　a step with one's foot	虫：insect，worm，reptile
心忄 忄:heart，mind	衣衤 ：clothes
手扌 ：hand，arm	言讠 ：word，speech，language
日：sun，light，day	贝：cowry，shell，precious
木：tree，wood	走：go，walk
氺氵 ：water	足：foot，sufficient
火：fire	车：car，wagon，vehicle
牛：cattle	辶 ：chuo1，　walk，walking
犬：dog	邑: [ ]+阝，district center
玉王：jade	金釒 钅 ：metal，gold
疒: ni4，　illness，　accident	门：door，porch
皿：vessel，bowl	阜: 阝 +[ ]:fu4, hillock
目，eye	隹：short‐tailed bird
石：stone	雨：yu3，rain，to rain

示礻：omen，announcement	页：leaf，page
禾：grain	食饣：eat，give food to
穴：hollow，cave	马：horse
竹⺮：bamboo	骨：bone
米：rice	鱼：fish
纟：silk	鸟：bird

The following 6 groups of common *Bushous* are also regarded as important (Zhang, 2002).

Group 1: "Man" group. 人／亻 man，力 power，口 mouth，女 woman，心／忄 heart，手／扌 hand，疒 sickness，目 eye，月/肉 flesh，足 foot.

Group 2: "Animal" Group. 牛 ox，犬/犭 dog，虫 insect，马 horse，鱼 fish，鸟 bird.

Group 3: "Actions" Group. 彳 left step, 攵/支 tap, 辶 run and stop, 食 eat.

Group 4: "Nature" Group. 土 soil，山 mountain，日 sun，木 wood，氵/水 water，灬/火 fire，王/玉 field，田 field，石 stone，禾 grain，竹 bamboo，米 rice，糸/纟 silk，艹 grass，钅/金 gold/metal，阝 mound(left side)，雨 rain.

Group 5："Home" Group. 刂/刀 knife，宀 roof，巾 napkin，广 shelter, roof，礻/衣 clothing，门 door.

Group 6："Miscellaneous" Group. 囗 enclosure，大 large，讠/言 word，贝 cowrie，车 vehicle，阝 village(right side), 页 a page．

Even though it has been recognized that character radical knowledge and explicit instruction on how to relate different radicals to the whole of the character contributes positively to character learning (Shen & Ke, 2007), teaching students all the character semant radicals and phonetic radicals in a college level, four-month-long, intensive Chinese language course is unrealistic. After ignoring tonal differences, only a small portion of phonetic radicals gives reliable cues to the pronunciation of characters in modern Chinese. On the other hand semantic radicals do not provide a specific meaning or definition. The semantic radicals suggest only general meaning of or a general

category of meaning of the compound character. Although not all compounds containing semantic radicals are morphologically transparent, the reliability of semantic radicals cueing the meaning of compound characters is much higher than phonetic radicals cueing the pronunciation of compound characters, which would make for a more efficient search strategy (Shen & Ke, 2007; Williams & Bever, 2010). In addition, semantic radicals are used more repetitively in different characters and their number in Chinese is much smaller than the number of phonetic radicals (Qiu & Zhou, 2010). Moreover, compared with phonetic radicals, semantic radicals have greater positional regularities. The position of a semantic radical often provides more information than that of a phonetic radical about its identity; and thus helps a reader to retrieve the information of radicals comparatively faster (Ho, Ting, and Ng, 2003).

Du (2004) analyzed 7000 commonly used characters and found that 5636 (80.5%) of them are semantic-phonetic compounds. If students were sufficient in semantic radical knowledge, when they encounter a new compound character, the information they need to process and internalize will only the partial, which will certainly reduce the time they need to spend on memorizing the new character. The findings above indicate strongly that learning *Bushou* (semantic radicals) will be helpful for students' character learning. Since *Bushou* is perceived to be helpful for character learning, do studetns have sufficient understand and knowledge of *Bushou*? How do students perceive the usefulness of *Bushou* in their character learning process? Is *Bushou* instruction evident in the classroom? And should *Bushou* instruction be incorporated? The questions raised are a few among the many questions to be asked regarding the teaching and learning of *Bushou*. This

study is hoping to provide a general picture of the teaching and learning of *Bushou* in the

Chinese language classrooms.

CHAPTER II

INTRODUCTION

Teaching Chinese as a second language has been carried out for about 60 years since the establishment of the new China. Since the Reform and Open policies in 1978, students that come to study in China have increased continuously. Meanwhile students in foreign countries also become enthusiastic in learning the Chinese language. Therefore, the number of Chinese learners in the world keeps climbing (Hu, 2008). According to the Chinese National Office for Teaching Chinese as a Foreign Language, at the end of 2013, there are 440 Confucius Institutes and 646 Confucius classrooms in 120 countries. Among these numbers, 100 Confucius Institutes and 356 Confucius Classrooms are located in the United States ("Hanban," 2014). By 2012, there were 189 US colleges and universities that offer Chinese language courses (Xie, 2014).

Among all the tasks associated with learning the Chinese language, learning to read and write Chinese characters has been perceived as one of the most challenging tasks in learning Chinese as a foreign language by learners that speak an alphabetic language. One of the main reasons is because the number of letters and morphemes in an alphabetic language is usually limited and after learners master the sound of letter, they can usually infer the pronunciation of a word without even knowing its meaning. But on the contrary, the Chinese language contains a large number of characters and by looking at a character it is quite difficult to decode its meaning or pronunciation accurately (Tse, Marton, and Ki, 2007). It is also believed that foreign languages like Chinese that are linguistically different to English are more challenging for native-English speakers when compared to other Western European languages due to the non-alphabetic nature of the

Chinese writing system (Fan, 2010).

Furthermore, it is noted that students' perception of a learning task is an important factor in their motivation and learning effectiveness. When it comes to the Chinese script, many Westerners still believe that Chinese characters is an ideographic system of writing in which each character represents an object or similarly conveys meaning without regard to sound (DeFrancis, 1984). The first comment that appeared in western literature was made in 1569 by Friar Gaspar da Crusz and he stated that "The Chinas have no fixed letters in their writer, for all that they write is by characters, and they compose words of these, whereby they have a great multitude of character, signifying each thing by a character in such sort that one only character signifies "Heaven," another "earth," and another "man," and so forth with everything else (as cited in DeFrancis, 1984, p. 133)." The anxiety and stress that western learners experience at the beginning of a Chinese language course must be high if all they know about Chinese characters is that they are random pictures that present real objects. It has been recognized that in the teaching Chinese as a foreign language (hereinafter referred to as TCFL) field it is extremely important to cultivate the correct perception among CFL students that the Chinese script has ideographic origins but through the character transformation and simplifying process, most modern characters are not pictographs, but compound characters that are made up of multiple parts that are mostly systematic and are realistically manageable, so that students would not be blindly intimidated by the writing system (Ling, 2007; Tse, Marton, and Ki, 2007).

While correcting the incorrect perceptions of Chinese characters is important, it is also significant to acknowledge that unlike the letters in alphabetic languages, each

Chinese character does contain a large amount of information and it is challenging for a Western learner to memorize and to write the characters. It has been summarized that Chinese characters have complex structures and each character can contain up to eleven types of information. These eleven types of information include phonetic information, semantic information, overall photographic characteristic information, component type information, component combination structure information, stroke type information, number of stroke information, limitation of length of stroke information, stroke order information, selection of radical information, and other related information (as cited in Du, 2004, p. 418). Because of the unique nature of Chinese characters and the special circumstances of the student population with an alphabetic language, instruction of characters is necessary and important and deserves more attention in TCFL (Du, 2004).

In the 1950s and 1960s teaching Chinese as a second language was scattered and relied on the teachers' own teaching experience. Therefore, it was not systematic and scientific. Chinese character teaching was at an even more primitive exploration stage. In that period of time, the focus of teaching was Chinese word phrases and grammar. Students spent five or six months only using *Pinyin* to learn Chinese. Characters were not taught. Textbooks were written in *Pinyin*. After students mastered a few hundred words, then they started to learn characters. The result of this kind of method was giving the students the impression that characters are hard to write, distinguish, and memorize. During this time, character teaching did not attain any improvement, never mind the emergence of research studies or textbooks for character teaching. After the Reform and Opening, teaching Chinese as a second language experienced rapid development. Character teaching also gradually became a part in TCFL. However, compared to word

phrases and grammar, it still wasn't regarded as important. Very little research and

studies were devoted to the teaching/studying of characters up until the mid 90s (Hu,

2008).

Discussions on Chinese character and character teaching theories only started to

climb after the Fifth International Seminar in Teaching Chinese. After that, in 1997, the

China National Office for Teaching Chinese as a Foreign Language held a conference in

character and Chinese teaching in YingChang in Hubei province. In the following year,

the Teaching Chinese in the World Institute combined with the Chinese Teacher

Association in France and organized the first international conference on Chinese

Character teaching (Li, 2008). After the two conferences mentioned above, the number of

articles focusing on Chinese character and character teaching increased steadily as well as

the depth and coverage of the discussion. In 2005, the University of Mainz in Germany

organized the first International Academic Conference on Western learners' acquisition

of Chinese characters. As a result, a book named *The Cognition, Learning and Teaching*

of Chinese Characters was published. At the same time, the practice of teaching Chinese

characters has also continued to gain meaningful development (Li, 2008)

CHAPTER III

LITERATURE REVIEW

From the 1980 to the present date, many theories and practices regarding character instruction have been proposed and different scholars hold different opinions in the principle of character teaching (Li, 2004). Some proposed that the teaching of speaking and written Chinese should be taught in two separate classes; one is a Hanyu course that focuses on the teaching of conversational Chinese with the use of the word as the unit of instruction and taught in a meaning-centered approach. The other one should be a *Hanzi* (character) course that focuses on the teaching of the written characters (Lam, 2011). Scholars also recommended that beginning character instruction should be emphasized by introducing Chinese orthographic knowledge such as the strokes, stroke orders, characters' structures and semantic and phonetic radicals to facilitate character acquisition. Because the majority of Chinese characters are semantic-phonetic compounds, which contain a large amount of available information that is analyzable, some scholars believe that teaching that focuses on the relationship between phonetic and semantic radicals could direct students toward understanding the systematical and theoretical principles of the Chinese characters and obtaining analytical skills to systematically memorize characters that are introduced in class and to successfully infer meaning of new characters in readings or in exams (Li, 2004; Du, 2004; Li, 2008). While orthographic knowledge of characters is important and ideally should be taught to students before their formal study of characters, Ke (1996) voiced that in the American educational system, students can only devote a certain amount of time to study a foreign language. It is unrealistic to expect students to spend a large amount of time memorizing

11

all this extra information on top of learning all the various skills that are outlined in the curriculum of intensive college level courses. Similar skepticism has also been raised regarding teaching characters based on the characters' acquisition principles, from stroke, stroke order, components to whole characters. Hu (2008) pointed out that such a teaching method could not correspond to the words that appear in the students' daily lives. It is also hard to create meaningful lessons that would increase students' interest in learning with this method. Hu suggested that a character-learning task should be specified for each Chinese language class. This learning task is to be carried out near the end of each class. These tasks should aim at teaching students about 10 to 15 components each week.

On the other hand, it has been voiced that because *Pinyin* syllables are made up of the Latin alphabets that are used internationally, *Pinyin* should be introduced first in TCFL classrooms. This practice has commonality with the learners' experience in learning their native language and that by introducing *Pinyin* first students will temporarily avoid the difficulties in distinguishing each character and students will also benefit from learning the correct pronunciation of words, understanding the meaning, and accumulating words before coming in contact with characters (Wan, 2012). However, concerns are expressed regarding the effectiveness and results of *Pinyin* instruction in CFL classrooms. *Pinyin* does not have the function in distinguishing meaning like the character shapes. There are many characters and words with the same pronunciation; it is hard to tell the word meanings apart by using *Pinyin*. Therefore, *Pinyin* can be used to provide support for the character learning process, but the use of *Pinyin* is not an effective approach for learning characters (Hu, 2008; Lam, 2011). A study on programs with delayed character instruction found that students in their second semester always

wanted to write out *Pinyin* when they were asked to translate a sentence in Characters. These students relied on *Pinyin* to both decode and encode meanings. These students self reported that when they started to learn characters in the second semester, it was particularly difficult for them to associate sound and meaning with characters, which made them feel like they were being asked to learn everything they thought they already knew all over again. This issue suggests that *Pinyin* acts as a double-edged sword. On the one hand, *Pinyin* could serve as important scaffolding to assist beginning CFL learners in pronunciation and the acquisition of early levels of speaking and listening proficiency in Chinese; on the other hand, when it is used to replace characters as the main written script, learners tend to establish a connection between meaning and *Pinyin* only. When the connection becomes too strong, learners may find it hard to move beyond the use of *Pinyin* in their study of CFL. In this situation *Pinyin* actually has an inhibitory effect in CFL learners' learning experiences (Ye, 2011).

CHAPTER IV

GENERAL OVERVIEW OF CHARACTER GRAPHIC INFORMATION

This chapter will focus on introducing relelvent characters graphic information and on providing basic definition on terms that are commonly used in the CTFL field.

A. Chinese Orthography

The general definition of orthography in the on-line Merriam-Webster dictionary (2014) is "the art of writing words with the proper letters according to standard usage; the representation of the sounds of a language by written or printed symbols; a part of language study that deals with letters and spelling". In alphabetic languages, words are made up of individual letters. If corresponding language characteristics are embedded into the definition of alphabetic language orthography, the Chinese orthography goes in the following manner: the art of writing characters with the proper components according to standard usage; the representation of the sound by the written or printed symbols; and a apart of the Chinese language study that deals with character components and their writing. Chinese orthography has been defined as the constituents constituting the characters, their positional constraints, and the character themselves (Leong, Tse, and Loh, 2011). In sum, Chinese orthographic knowledge is the knowledge of the characters, which includes the different components that make up characters, their strokes, stroke orders and characters structures and types.

The basic units of the Chinese writing system are characters, or *Hanzi*, meaning the written symbols of the Chinese language. Different from English, Chinese characters can either serve independently as a word in sentences or combine with other character to

form a word. However, two-character words are the majority in the commonly used Chinese words (Shen, 2005; Shen & Ke, 2007). Characters include integral (or single) and compound (or complex) characters (Fan, 2010; Li, 2008; Hu, 2008; Shen, 2005). There are not many single characters but this limited number of single characters has strong character constructability. If students have mastered the sound, shape, meaning, and their function in making up characters, they basically have grabbed the key to understanding characters' structure, and their sound, shape, and meaning (Hu, 2008). The majority of characters are semantic-phonetic compounds (Hu, 2008; Shen, 2005). Radicals[1] are the meaningful and basic orthographic units of characters. Radicals are also often referred to as 'components' in various studies in TCFL (Zhang, 2002; Fan, 2010; Li & Li, 2005; Qiu, 2000). An integral or single character contains only one radical. A compound character contains at least two or more radicals. According to their orthographic functions, radicals can be classified into two categories: phonetic radicals and semantic radicals. Most phonetic radicals in compound characters are themselves individual characters with independent pronunciations and meanings, and may contain one or more radicals. However, they lose their independent meaning when used as phonetic radicals in compound characters. Semantic radicals, which are called *Bushou* in Chinese, are used to indicate the semantic category and are used more repetitively in different characters. (Shen & Ke, 2007; Shen, 2005)

B. Character Development

The earliest record of Chinese writing in quantity is from 1400 to 1200 B.C. in the form of inscriptions on shells and animal bone used for divination and state inventories,

---

[1] In this study, the terms 'radical' and 'component' is are used interchangeably.   'semantic radicals' will be referred to as *Bushou*.

and was first discovered in 1899 in Henan province. From the earliest oracle script to today's standard script, the Chinese script has gone through different stages of development (Hannas, 1997).

The evolution of the Chinese script is roughly through the following order: oracle script 甲骨文 *jiǎ gǔ wén*, bronze script 金文 *jīn wén*, seal script 篆书 *zhuàn shū*（small seal and big seal), clerical script 隶书 *lì shū*, running script 行书 *xíng shū*, and standard script 楷书 *kǎi shū*. The script evolution did not jump from one point to another in a linear model. In any given particular period in history, many scripts were in circulation at the same time. The most significant evolution of the Chinese characters is the progression from small seal script to clerical script. This progression to clerical script gradually rid the characters of their graphic features and led the characters to become more symbol like (Hu, 2008).

It is difficult to count the exact number of characters that were ever created through out the Chinese history. However, the number of characters seems to keep increasing and the most recorded number was 8600. In modern china, an average educated individual knows about 4000-5000 characters (Hu, 2008)

C. Character Categories and Structures

Xu Shen is widely regarded as the first person in Chinese history to systematically analyze the shape, sound, and meaning of Chinese characters. In his book *shuowen jiezi,* he incorporated historical scholarly researches into his analysis of character structures and classified all characters into six categories. The first category of characters are called

"pictograms" 象形 *xiàng xíng*. Characters in this category are deemed to be easy to understand because they are drawings of the shapes of objects. This type of characters is the type that most commonly thought of by Westerners. Characters in this category that we use in modern days are basically basic characters like 山 'mountain'，水 'water'，木 'woods'，人 'person'，大 'big'，女 'female'，牛 'ox'，羊 'sheep'，口 'mouth'，门 'door'，etc. However, some of these characters have already lost the similarity they once had to the objects they represent. The majority of characters in this category are single characters and the number of characters in this category is relatively small.

The second type of characters is "simple indicative" 指事 *zhǐ shì*, represents abstract concepts such as position, number, and relationship by symbolism. The traditional representation of characters in this category include 一 for 'one', 二 for 'two', 上 for 'up', and 下 for 'down'. Some of the concepts and thoughts cannot be described by pictograms. By adding a symbol to the pictogram to denote the intended meaning is the characteristic of characters in this category. Other examples include 刃 for blade of knife，本 for 'root'，末 for 'end'，and 寸 for 'inch'.

The third type is 转注 *zhuǎn zhù*, which is translated sometimes as "associative transformations", "turn to explain" or "mutually explaining". Characters in this category

17

extend the meaning of a character to a related concept and differ only slightly from the second type through type or degree of abstraction. Example characters include 老 and 考.

The fourth category is referred to as "associative compounds", "compound ideographic" or "compound indicative" 会意 *huì yì*. Characters in this category are made up of two or more existing characters on the basis of their semantic values into a single unit representing a new meaning. One example is the character 明 *míng*, meaning 'bright'. It is made up of characters 日 *rì* 'sun' and 月 *yuè* 'moon'. Other examples include：

尖: 小 (xiǎo) + 大(dà) = 尖(jiān)   歪：不(bù) + (zhèng)正 = 歪(wāi)

small + big = pointy   not + up right = tilted，

劣：少(shǎo) + 力(lì) = 劣(liè)   尘：小(xiǎo) + 土(tǔ) = 尘(chén)

lesser+strength=lessor quality/strength，   small + soil = dust

The fifth type of Chinese characters is "borrowed"假借 *jiǎ jiè*. Characters in this category are borrowed from the previous categories and are products of a character utilization method. They are created with the intention in using other characters that have the same sound or similar sound to present a different meaning and pronunciation.   An example is 来 *lái* 'wheat' for *lái* 'come'.

The sixth category of characters is "picto-phonograms", "semantic-phonetic compound" or "phonetic compound" 形声*xíng shēng*. The characters in this category are made up of a semantic and phonetic component. The position of the semantic and phonetic component is not fixed. The semantic component indicates the meaning category of the character and the phonetic component indicates the sound of the character at the time of creation. Examples include the character for mother妈*mā*, which is made up of the semantic radical 女 'female' and phonetic radical 马*mǎ*; 猫, which is made of semantic radical 犭 'animal' and phonetic radical 苗*miáo*; the character for thoughts想 *xiǎng*, which is made up of semantic radical 心 'heart' and phonetic radical 相*xiāng*; and the character for berries莓méi, which is made up of semantic radical 艹 'grass' and phonetic radical每*měi*. Historical language development has imposed changes to the sound of the Chinese language; therefore, the function of the phonetic component is not dependable. It is estimated that over 80% of Chinese characters belong to this category (Hannas, 1997; Hu, 2008). Other types of categorization of characters have also been proposed by scholars in China[2].

---

[2] For details see pg 13-16 in 胡文华. 2008. 汉字与对外汉字教学. 学林出版社.

According to the character's physical structures, they can be divided into the categories of integral characters and compound characters. An integral character is made up of only one component, as in the characters 人 *rén* 'person' and 小 *xiǎo* 'small'. On the other hand, compound characters are made up of at least two components, as in characters 笑 xiào 'laugh' and 哭 kū 'cry' (Shen, 2005).

According to the character spatial structure, compound characters have been organized into four different categories. The first category of characters is left-right structure characters 左右结构, such as 晚 *wǎn*，她 *tā*，服 *fú*，们 *mén*. The second category is top-bottom structure characters 上下结构, such as 草 *cǎo*，字 *zì*，家 *jiā*，笔 *bǐ*. The third category is half-enclosure structure characters 半包围结构, such as 友 *yǒu*，右 *yòu*，在 *zài*，病 *bìng*. The fourth category is enclosure structure characters 全包围结构, such as 国 *guó*，因 *yīn*， 回 *huí*，图 *tú* (Fan, 2010). Another proposal of compound character structural categorization divides compound characters into 8 different kinds: the up down structure 上下结构 ：菜 *cài*，思 *sī*，李 *lǐ*；up-middle-down structure：上中下结构: 曼 *màn*，舅 *jiù*，宫 *gōng*; left-right structure 左右结构： 休 *xiū*，打 *dǎ*，朝 cháo; full enclosure structure 全包围结构：国 *guó*，团 *tuán*，园 *yuán*; two side enclosure structure 两面包围结构：病 *bìng*，尼 *ní*，庞 *páng*; the

passing through structure 穿插结构：乘 *chéng* ，爽 *shuǎng* ， 巫 *wū*; the Pin structure

品字结构：品 *pǐn* ，森 *sēn* ，众 *zhòng* (Hu, 2008).

D. *Pianpang* 偏旁

In ancient times, the left part of the character that has more than one component is

called pian 偏 and the right part is called pang 旁. The constituents that make up a

compound character are called graphic components-*Pianpang* (Qiu, 2000). The concept

of *Pianpang* is also used in characters with other graphic structures. Components can

appear on the upper, lower, left, right, inside, outside, corner, and middle in a multi-

component character and all these components can also be collectively called *Pianpang*.

The analysis of *Pianpang* components is for the purpose of character instruction and used

theories from *Liu Shu* 六书 as guiding principles. Most of the produced components

contain different levels of information that give indication to the character's

pronunciation or meaning. There are about 1480 common components for character

construction (Li, 2008).

E. *Bujian* 部件

Other contrary, a 部件 *Bujian* is a character component segment (Fan, 2010) and

is referred to as perceptual units, which "plays a visual role in compound characters

because it is a visually integral unit and is separated by a visible diminutive space from

other units. The perceptual units within a radical do not provide semantic or phonetic

indication to a compound character" (Shen & Ke, 2007). *Bujian* analysis is for the

purpose of computer encoding; therefore, does not follow consistent principles. It is

simply a dissection of the character shape. Even integral characters like 羊 'sheep' and

衣 'clothes' are to be dissected into different *Bujian*. Some components could be

dissected into two or more *Bujian*. Therefore, about half of the *Bujian* are not real

characters and contain no meaning or pronunciation information (Li, 2008).

F. Stroke 笔画

Strokes 笔画 are the smallest units in the Chinese writing system and are formed

of dots and lines. A stroke in a Chinese character corresponds to no phonetic, semantic,

or syntactic features. They are the basic building materials for semantic and phonetic

radicals (Shen, 2005; Qiu & Zhou, 2010). One stroke is a mark that is made with a single

continuous motion of the pen (Anderson, 1979). There are two sets of strokes. One is

the basic form and the other is their variant. Scholars in the TCFL hold different

opinions regarding the number of basic strokes. Some proposed that there are six; some

advocated either, and some stated five (Hu, 2008). Character strokes have been reduced

due to the character simplification process. The average stroke number in simplified

characters that are listed in 《简化字总表》is 5.7 (Hu, 2008). However, a character can

contain as small as one stroke and as many as sixty four strokes, but such high number

stroke characters rarely occurs in daily speech. It has been suggested that knowledge of

these basic stroke forms is an important part of the knowledge base required for learning

Chinese handwriting because they will lead to proper construction of Chinese characters

(Law, Chung, and Ko, 1998). The following is a list of important strokes that is provided

in the first textbook of the Integrated Chinese textbook series (Liu, Yao, and Bi, 2010).

Table 2: List of Important Strokes

C. Basic Strokes

The following is a list of basic strokes:

Basic stroke	Chinese	Pinyin	English	Examples
1. " 丶 "	点	diǎn	dot	小，六
2. " 一 "	横	héng	horizontal	一，六
3. " 丨 "	竖	shù	vertical	十，中
4. " 丿 "	撇	piě	downward left	人，大
5. " 乀 "	捺	nà	downward right	八，人
6. " ㇀ "	提	tí	upward	我，江
7. " 乛 "	横钩	hénggōu	horizontal hook	你，字
8. " 亅 "	竖钩	shùgōu	vertical hook	小，你
9. " 乚 "	斜钩	xiégōu	slanted hook	戈，我
10. " 𠃌 "	横折	héngzhé	horizontal bend	五，口
11. " 乚 "	竖折	shùzhé	vertical bend	七，亡

CHAPTER V

THE PRESENT STUDY

A: Student Oriented Studies Conducted in Home Country

In the Chinese term 教学 jiāo xué, which is translated as "teacher and student,

education, teaching, school teaching, instruction, schooling, and pedagogy" (Dict online

dictionary) , defines the concept as an educational enterprise that makes up of two sides,

one is to teach 教 and one is to learn 学. More research seems to focus on the teaching 教

side of the 教学 enterprise than the learning 学 side (Ling, 2007). Researchers agree that

students' views on character learning should be considered and given more attention.

While many teaching strategies were proposed and claimed by scholars to facilitate

character learning in the classrooms, not enough was known about what learners

themselves perceive as effective in learning characters. Understanding students'

perceptions is important because they will reveal what method best fit their language

level and help teachers understand more about their developmental stages. Therefore, it

is important to carry out research that is learner oriented (Wang & Leland, 2011).

In recent years, there has been an increase in the number of studies and research

on students' character learning strategies, process, and related topics regarding character

acquisition. This practice indicates a shift in the research focus from how to teach to how

learners learn. However, the amount of research that has been done in the students'

native country is not as great compared to research that has been done of students that

studied in China. As the Chinese language becomes more prevalent in the international

stage, it has been suggest that it is necessary to carry out studies on character acquisition among students who are studying in their home countries (Ding, 2011).

B. Significance of Analysis of Characters in Textbooks

Moreover, It has been suggested that analysis of Chinese characters provides educators and researchers with structural knowledge about Chinese characters and with pedagogically relevant character components to be selected for teaching and learning Chinese characters. However, most of the component analysis studies examined Chinese characters from dictionaries or corpus data and rarely have studies investigated characters from beginning level textbooks. Therefore it is important to investigate and classify the characters beginning learners see in their textbook to enable educators to build better models of character teaching and learning pedagogy (Fan, 2010).

As it was mention earlier, searches suggested that Bushou knowledge is helpful for character learning. However, the student perspective on whether or not *Bushou* knowledge is helpful for learning character is missing. This study aims to provide a students perspective.

C. The Study Plan

The current study is made up of three parts. In the first part, characters and *Bushou* information presented in the first year textbooks used in this particular program where the students study will be classified and analyzed. The purpose is to gain a better understanding of the students' character learning task and the available *Bushou* information.

The second part is a survey that aims to a). understand students' perception of the difficult level of memorizing characters, b). understand the students' perceived and actual acquisition of *Bushou* that appear in characters in their first year textbook, c). understand their perception of the level of helpfulness of *Bushou* in their character learning, d). find out whether or not students would like to receive specific *Bushou* related information and instruction in class, and lastly, e). solicit student suggestions on how teachers can better help them with characters learning.

The third part of the study is a *Bushou* test. Because at the time the study was conducted, the subjects in group one had not finished studying all the chapters in textbooks for the first year curriculum, the *Bushou* test only consists of randomly selected *Bushous* that appear in characters from the ten chapters in the first textbook for the first year curriculum. The *Bushou* test aims to reveal the students' actual *Bushou* acquisition situation to answer question b in part two.

Based on the information collected from the study, in the end, a suggestion regarding whether or not the teaching and learning of *Bushou* should be incorporated will be made.

D. Questions This Study Attempts to Answer

1. What are students' perceptions of the difficult level of memorizing characters?

2. Do students understand the concept of *Bushou*?

3. How much *Bushou* knowledge do students think they have and how much do they actually know?

4. What are the students' perceptions of the level of helpfulness of *Bushou* in their character learning?

5. Do students want to receive specific *Bushou* related information and instruction in class?

6. What do students want from teachers can better help them with character learning?

E. Participants and Research Setting

54 students from an Intensive elementary Chinese 2 (group 1) and 34 students from an Intensive Intermediate Chinese 2 (group 2) in a Chinese program at a public university in the New England area were invited to participate in the study. Students were informed in advance that this study is voluntary and anonymous and that their grade will not be impacted by either their decision to take part in the study or their performance in the study. The students all had previous experience learning Chinese, either formally or informally in different settings. All the participants signed a consent form before the start of the study. The participants were told in the consent that the main purpose of this study is to provide the researcher insight into their character studying habits.

At the time the study was conducted, students in group 1 had finished studying all 10 lessons in the Integrated Chinese level 1 part 1 textbook and were studying lessons from the Chinese level 1 part 2 textbook published by Cheng & Tsui. Students in group 2 had finished studying all the lessons in the Integrated Chinese Level 1 Part1, Level 1 Part2, and Level 2 Part 1textbooks. After taking out the students that preferred not to take part in the study, the ones who dropped out in the middle of the study, and the ones

that did not complete all parts in the study, 40 surveys are collected from group 1 and 28 surveys are collected from group 2.

Each week, students in both groups are required to attend a 75 minute long lecture on both Tuesdays and Thursdays and a 50 minute language discussion, which focuses on language drill practice, on Mondays, Wednesdays, and Fridays. The lecture classes are taught by a full time instructor while discussion sessions are facilitated by 3 different graduate teaching assistants with various backgrounds in teaching Chinese as a second language. The study was not an evaluation of the teachers of the course. The hope is that the results of this study could provide this program's administrators a student perspective toward character instruction and character learning, and possibly leads to a detail look into the importance of *Bushou* knowledge and the possibilities of incorporating the teaching of *Bushou* into the first year language curriculum as one of the main teaching/learning tasks.

F. Procedure

The survey was given first. Students on the same language level received the survey on the same day. After all the surveys were collected, the students were given the radical test at the beginning of their discussion section a week later. The survey and the *Bushou* test were both facilitated by either researcher or by the discussion teacher. A small number of students were given permission to complete the either the survey or *Bushou* test at home. Students completed the *Bushou* test outside of the classroom were told not to look up the correct answers. The test and survey of the study are both in paper format. Seven students in group 1 who were absent on the day the *Bushou* was given.

28

These seven students completed the *Bushou* test a little later than the rest of the students in the same group.

CHAPTER VI

RESULTS AND ANALYSIS

A. Part 1: characters and *Bushou*

All the characters[3] from Lesson 1 to Lesson 20 are organized in the following 8 structures: left-right左右结构, up-bottom上下结构, half-enclosure半包围结构, single独体字, enclosure全包围结构, up-middle-bottom上中下结构, left-middle-right左中右结构, special特殊结构 [4].

1. Characters in Lesson 1- Lesson 20

The data collected showed that from Lesson 1 to Lesson 10, there are 157 characters that are of left-right structure. 85 characters are of up-bottom structure. 36 characters are of half-enclosure structure. 72 characters are single characters. 5 characters are of enclosure structure. 10 characters are of up-middle-bottom structure. None are of left-middle-right structure, and 1 character falls into the special structure category. In total, there are 366 individual characters that are presented in the vocabulary lists in 10 lessons.

---

[3] All the characters from the main vocabulary lists in each chapter are included. Proper nouns and location words that appear after the main vocabulary list as well as characters that have the same form but with different pronunciation are omitted.

[4] The selection of character structures and the identification of character *Bushou* and *Bushou* meanings in the study are based on the following dictionary. 现代汉语模范字典, 许嘉璐 Beijing : Zhongguo she hui ke xue chu ban she, 2000.

From Lesson 11 to Lesson 20, 173 characters are of left-right structure. 93 characters are of up-bottom structure. 47 characters are of half-enclosure structure. 74 characters are single characters. 5 characters are of enclosure structure. 7 characters are of up-middle-bottom structure. 1 character is of left-middle-right structure, and none belongs to the special structure category. In total, 400 individual characters are presented in the vocabulary lists from L11 to L20.

Four polyphones appear in Lesson 1 to 10. After taking them out (便 pián/ biàn, 得 de/ děi, 觉 jiào/ jué, 乐 lè/ yuè) the characters that are of left-right structure are reduced to 155; the characters that are of up-bottom structure are reduced to 92; and the characters that are single characters are reduced to 69. The total number of non-repeating characters from Lesson1 to L10 is 362.

Some of the characters that have already appeared in the first 10 lessons appear in different word forms in the vocabulary lists from lesson 11 to lesson 20. After taking out all these characters, the number of none-repeating new characters in each structure category in lesson 11 to L20 is reduced significantly. The left-right structure characters are reduced to 126; the up-bottom structure characters are reduced to 60; the half-enclosure structure characters are reduced to 31; the single characters are reduced to 32; the enclosure structure characters are reduced to 2; the up-middle-bottom structure characters are reduced to 6; the left-middle-right structure and special categories remain unchanged, 1 and 0. The total new characters that appear in L11 to L20 are reduced to 258.

The percentage of characters falls into each character structural category is similar in both L1 to L10 and L11 to L20, with the largest number of characters fall into the left-right structure. Among the 620 characters that appear in L1 to L20, 83.4% of them are compound characters and 16.6% of them are single characters.

Table 3: L1 to L20 Character Structures and Percentage

Character structure汉字结构	L1 to L10	Percentage %	L11 to L 20	Percentage %	Total character in L1-L20	Percentage %
Left right 左右结构	155	42.8	126	48.8	281	45.3
Up bottom 上下结构	84	23.2	60	23.3	144	23.2
Half enclosure 半包围	36	9.9	31	12	67	10.8
Single 独体字	71	19.6	32	12.4	103	16.6
Enclosure 全包围	5	1.4	2	0.8	7	1.1
Upper middle bottom 上中下	10	2.8	6	2.3	16	2.6
Left middle right 左中右	0	0	1	0.4	1	0.2
Special 特殊	1	0.3	0	0	1	0.2
Total characters	362	1	258	1	620	1

2. *Bushou* 部首 **in Lesson 1 to Lesson20**

In the 362 characters that appear in lesson 1 to lesson10, there are 94 different *Bushou*. 42 of them （儿,耳,白,冫,卜寸,父,匚,高,戈,革,弓,工,黑,户,黄,火,见,斤,老,糸,母,目,牛,丿,气,欠,色,山,彡,士,十,食,手,厶,冖,瓦,彐,辵,音酉,隹）only appear once. 14 of them （贝,厂,耂,立,门,矢,衤,钅,丨,覀,穴,乙,子,走）appear twice. 10 （广,禾,灬,巾,钅,田,夕,页,礻,足）appear 3 times. （9 刂,阝,亠,冂,扌,彳,王,心,忄）appear 4 times. 5 （八,夊,口,木,月）appear 5 times. 5（艹,人,土,又,竹）appear 6 times. 1（冫）appears 7 times. 2 （女,日）appear 8 times. 2（宀,纟）appear 9 times, 1（辶）appears 10 time, 2 （亻,讠）appear 14 times. 1（口）appears 21 times.

96 different *Bushou* appear in characters from Lesson 11 to Lesson 20. 50 （贝,匕,比,鼻,卜,臣,车,歹, 刂,大,癶,耳,非,自雨,又,衤,弋,乙,一,页,穴,夕,辛,小,土,父,戈,工,灬,户, 卩,巾,金,己力,皿,糸,鸟,牛,片,青,犬,犭,肉,身,尸,手,纟,彳）appear once. 22 （八,艹,刀,方,广,囗,禾,钅,目,女,人,舌,石,礻,王,心,忄,酉,止,舟,爪,疋）appear 2 times. 6（火,亠,日,饣,羊,足）appear 3 times. 7 （冫,疒,厂,十,辶,竹,走）appear 4 times. 2 （阝,米）appear 5 times. 4 （宀,夊,口,月）appear 6 times. 1 （辶）appears 7 times. 1（木）

appears 8 times. 1 （亻 ）appears 10 times. 1（氵 ）appears 11 times. 1（扌 ）

appears 15 times.

From lesson 1 to lesson 20, there are 133 different *Bushou* in total. 56 （白匕瓦

小辛比鼻彐一臣车寸歹大癶弋辶音雨隹儿匚非高革弓黑自黄见 阝斤金己老力皿母鸟

片丿气欠青犬犭 肉色山彡身士食厶冖）appear only once. 24 （卜刀耳方父戈工户艹

立门纟牛舌矢石手丨覀止舟爪疋子）appear 2 times. 7 (贝目田穴羊乙酉) appear 3

times. 8 （疒火灬巾门礻 夕页）appear 4 times. 10 （冫 刂广禾钅 米饣 十彳衤 ）

appear 5 times. 6 （厂王心忄 走足）appear 6 times. 5 （八宀口土又）appear 7 times.

2 （艹人）appear 8 times. 3 （女纟 竹）appear 10 times. 3 （夂日月）appear 11

times. 1 （木）appears 13 times. 1（宀）appears 15 times. 1 （辶 ）appears 17 times.

2 （氵辶 ）appear 18 times. 1 （扌 ）appears 19 times. 1 （亻 ）appears 24 times, and 1

（口 ）appears 27 times.

B. Part 2: Survey

1. Level of Difficulty in Memorizing New Characters

When students were asked to rate how hard it is to memorize new characters on a

scale of 1 to 10, 1 being very easy and 10 being very hard, the average of rating of

students in group 1 is 5.95. The average of rating of students in group 2 is 4.46.   In

group 1, over 2/3 of the students rated the difficulty level 6 or higher, where as only 1/3 of the students in group 2 gave a 6 or higher rating.

Table 4: Level of Difficulty in Memorizing New Characters

How hard is it to memorize new characters? (1-very easy, 10-very hard)											
	1	2	3	4	5	6	7	8	9	10	Average
Group 1 (40)	1	2	5	2	2	9	11	4	2	2	5.97
Group 2 (28)		3	6	6	6	3	3	1			4.46

2. Perceived *Bushou* Knowledge

When participants were asked if they have obtained enough knowledge about the *Bushou* from their Chinese classes, in group 1, 10% of participants stated they have obtained 75-100% of all the *Bushou* knowledge from class; 22.5% of participants stated they obtained 50-75% of *Bushou*; 30% of participants stated they have obtained 25-50% ; and 37.5% of participants stated that they have only obtained 0-25%.

In group 2, 10.72% of participants stated they obtained 75-100% *Bushou* knowledge from class; 42.86% of participants stated they have obtained 50-75%; 28.57% of participants stated 25-50%; and 17.86% of participants stated 0-25%.

Table 5: Perceived *Bushou* Knowledge

Have you obtained enough knowledge about the *Bushou* from your Chinese classes?			
% of *Bushou* obtained	**Student Response**		
	Group 1	**Group 2**	**Difference**
75-100%	10%	10.72%	0.72%
50-75%	22.5%	42.86%	20.36%
25-50%	30%	28.57%	1.43%
0-25%	37%	17.86%	19.14%

3. Textbook Character Orthography

In the survey, 3 images were presented. All of them are snapshots of different character graphic information that are presented in introduction section of the first textbook. The 3 images include general information about the basic Chinese *Bushou* [5]; a list of basic strokes with Chinese character, pinyin and English transcription; and the introduction of the 6 different stroke orders with accompanying character examples. When students were asked if they have seen the pictures, about 82% of participants in group 1 stated that they have seen the pictures. 15% stated that they have never seen them. 1 student was not sure. On the other hand, about 71% of students in group 2 stated that they have seen the pictures. 25% stated that they have not seen the pictures. 1 student did not provide an answer for this question. When asked if the information presented in the pictures is useful for beginning Chinese learners and if the information

---

[5] The term 'radical' is used in the Introduction section of the students' first textbook. To avoid confusion, the term 'radical' was used in both the survey and test to denote *Bushou*.

should be introduced or discussed in class, 97% students in group 1 think the information is useful and 95% of them think that the information should be introduced and discussed in class. In group 2, 97% students think the information is useful and 97% students think that the information should be introduced and discussed in class. The results showed that not all the participants have read the Chinese character orthography information presented in the textbook introduction section, which means these students had minimal to no reliable orthographic awareness prior to their first formal contact with Chinese characters in the classroom. The results also showed that the majority of participants in both groups regard Character orthographic information to be important for first year Chinese learners and should be introduced in class.

4. Students' perception of the helpfulness of *Bushou* in learning characters

When students were asked specifically whether being more familiar with *Bushou* will be helpful for learning/memorizing Chinese characters, in group 1, 22.5% students stated that it is extremely helpful where as 46.4% students in group 2 rated it as extremely helpful. 37.5% students in group 1 stated that it is helpful and 39.3% is observed in group 2. 32.5% of students rated it as slightly helpful in group 1 and the corresponding rating is 10.7% in group 2. 7.5% students in group 1 stated that it is not helpful at all and no student in group 2 chose this response. 1 student in group 2 did not provide an answer for this question.

Table 6: Students' Perception of *Bushou's* Helpfulness in Learning Characters

Q: Do you think being more familiar with *Bushou* will be helpful in learning/memorizing Chinese characters?			
	Group 1	**Group 2**	**Differnce**
Extremely helpful	22.5%	46.4%	23.99%
Helpful	37.5%	39.3%	1.89%
Slightly helpful	32.5%	10.7%	19.89%
Not helpful at all	7.5%	0	7.5%

The results showed that Chinese learners in their second year of study perceive semantic radicals to be more helpful in the process of learning or memorizing Chinese characters. In general, the majority of students in both groups think that being familiar with *Bushou* is helpful for learning characters in various levels. Students in groups 2 might have better radical (both semantic and phonetic) perception skills and that they actively employ radical knowledge in character learning tasks, which also explains the reason why students in group 1 perceive memorizing characters to be more difficult than students in group 2. Students in group 1 are in their second semester of learning Chinese, therefore, their exposure to Chinese characters is shorter than students in group 2, who are in their 4th semester. Students in group 1 might know of the 'radicals' but they might still lack the ability to actively utilize radical information in character learning. It is possible that they are still largely relying on rote memorization when it comes to remembering characters.

5. Students' attitudes toward receiving more instruction on *Bushou*

When the participants were asked specifically whether they wish to receive more instruction/information about radicals in their classes, in group 1, 80% of students stated yes and 20% stated no. In group 2, 78.57% of participants are in favor of receiving more instruction on *Bushou* while 21.43% rejected the idea. The result showed that the majority of students in their first year and second year of learning Chinese recognize the importance of *Bushou* and wish to receive more in-class instruction or information on *Bushou*.

Table 7: Students' Attitudes toward receiving more Instruction on *Bushou*

Do you wish to receive more instructions/information about *Bushou* in your Chinese Classes?			
	Student Response		
	Group 1	**Group 2**	**difference**
Yes	80%	78.57%	1.43%
No	20%	21.43%	1.43%

6. Students' definition of *Bushou*

When students were asked to briefly describe their understanding of Chinese *Bushou*, 37 out of 40 students in group 1 and 27 out of 28 students in group provided an answer.

Responses from group 1

1. Placing the word in a category

2. Each radical has a meaning and by combining radicals we can make more complex words
3. To help gain an understanding of the word. i.e. 扌 meaning a physical action
4. They group characters by rough category
5. Sometimes to help with meaning; can also help the process of memorization
6. the separate radicals have separate meanings and when put together they can make other words such as 好 hao3, a girl nv3 女 and a boy 子 zi3 （儿子） are good together。
7. They can be considered the "root" of the character and help to indicate the meaning. For example, the radical 口 can be found in 吃 which makes sense because 口 is "mouth".
8. Base of characters
9. They are building blocks for characters that sometime help describe the meaning of character
10. To indicate what the characters meaning is
11. They are structures for each character
12. To have a quick understanding on what the certain character means
13. To understand a subject (a part of the character)
14. They suggest the meaning of a character
15. To understand a little background as to what the character is related to such as bing 冰 relating to "water" since "ice" is made up of water.
16. They bring meaning to a word/or what the word is related to; such as 海 meaning sea. The 氵 radical relates the sea to "water".
17. So you know what the word means even if you don't know it. 讠 －speech? I think.
18. Imply meaning to the word
19. To form characters
20. An informal alphabet of sorts. Helps understand why characters are written how they are
21. Structure/meaning of characters
22. To modify the meaning of a character
23. They can help you derive meaning from the whole character
24. Know characters better
25. Some of them have to do with meaning(扌)。 Some have do with sound (巴).
26. Meaning classifying character sets
27. They are basic components of characters that have their own meaning, and so they give meaning of the characters.
28. Giving some meaning or pronunciation clues
29. Contribute to the meaning of the character
30. To understanding the breakdown of characters and tones
31. Dictionaries
32. A way of identifying characters to look them up, and to give you a clue as to the meaning. For example, I know that characters with 讠 might have something to do with talking.
33. How to pronounce the word and to understand meaning by its relation

34. The foundation base of a character?
35. To describe meaning of relation
36. Basic components about the character
37. Most of Chinese characters are similar to Japanese ones. So I don't have to remember them again
38. Sound or meaning

The notion that *Bushou* has something to do with character meaning was brought up in 24 responses. The categorization function of *Bushou* was mentioned in 4 responses. Interpretation of *Bushou* as simple structural units that make up compound characters was evident in 10 responses. The facilitating effect of *Bushou* in character acquisition and memorization process was expressed in 2 responses. *Bushou* was treated as phonetic components in two responses, which might indicate students are not able to distinguish the concept of semantic and phonetic components. In some cases, it is true that a *Bushou* can also serve as phonetic component in a character when it a appears in a different location, as 火 *huǒ* in 灯 *dēng* and 伙 *huǒ*, where 火 is the *Bushou* in 灯 but the phonetic component in 伙. But I do not think this is the reasoning behind these responses, considering how little character graphic information they possess in their current learning stage. The results showed that students in group 1 have a mixed understanding of the function of *Bushou*. However, the majority of them seem to know *Bushou* is somewhat related to the meaning of the whole character.

Reponses from Group 2

1. For context and semantics (recognizing characters)
2. To show what the word is related to so that we can understand the character better
3. to form different characters that may be related to each other
4. to help build characters and better understand Chinese
5. Describes the meaning
6. I have no idea
7. To show what the word is related to

8. To show one about the relationships between the characters and the meaning
9. The radicals have meanings themselves. They help to recognize/unify/organize characters with similar meanings that contain the same radicals. Also can help figure out meaning of characters
10. Classification
11. I think it helps organize characters into types and gives you an idea of meaning
12. Never learned about radicals
13. They can symbolize different elements (water, air, fire, etc.)
14. It is like the definition of what the characters about, the context.
15. They are structural constituents that often convey meaning. Especially in traditional sense of the terms in question. (that is what I think we should talk about relational radicals.)
16. Categorizing words to make them relate their meanings. Ex: 氵 in 河
17. They are used to show relationship between words and objects
18. I don't know enough to say. 女 Women 子 child 好 good? Women are good + child are good
19. sound and meaning
20. Aid in meaning
21. They have to do with meaning of the character as opposed to the sound the characters make
22. Giving meaning to the word/character
23. Connected to the meaning of the words.
24. To display a general meaning of the word 氵 =water so …海 ocean and 湿 wet both have to do with water, so they have the same radical
25. Phonetic + semantic understanding/meaning of words.
26. Giving each character a foundation or category
27. Giving more meaning to the appearance of a character and helping unfamiliar readers understand the general meaning of a text containing unknown characters.

The notion regarding *Bushou* has something to do with meaning in various ways and levels were mentioned in 18 responses. The *Bushou*'s categorization function was pointed out in 5 responses. The perception of *Bushou* as structural units that make up individual characters were mentioned in 4 responses. *Bushou* being treated as phonetic components was found in 2 responses. One response explicitly stated that *Bushou* help better understand Chinese. Two students do not know anything about *Bushou*. Again, the results showed that there is no unity in the students' understanding of *Bushou*. A lower percentage of responses in group 2 made reference to the meaning association

42

between *Bushou* and characters. Students in group 2 did no better than students in group 1 when asked to articulate their own understanding of *Bushou*. The scattered responses collected from both groups are good indications that students have no formal knowledge to base on when they were asked to formulate a definition of *Bushou* in their own word, which might imply that there is a lack of *Bushou* instruction in the classroom.

7. Students Suggestions

When students were asked how teachers could help them with learning Chinese characters, they provided the following suggestions.

In group 1, the main themes of the suggestions provided were:

    Teaching and learning radicals
    Correct stroke order
    Reviewing old characters
    Frequent character writing practice
    Slower class pace
    Character breakdowns and character components
    Online character game
    How to use dictionary
    Go over difficult character and teach how to remember them
    Smaller class size

In Group 2, the main themes of the suggestions provided were:

    Teaching and learning of radicals
    Stroke and stroke order
    Character practice
    Teach character memorization skills
    More reading
    Character breakdowns and components

Students in group 1 brought up 10 factors that they thought would have an impact on their character study, ranging from the teaching of character structural components to the smaller class size. The teaching and learning of radicals suggestion had the highest

occurrence. In group 2, 6 different kinds of factors were observed and the teaching and learning of *Bushou* also had the highest occurrence.

C. Part 3: *Bushou* Test

The *Bushou* test contains 51 *Bushou*. Four *Bushou* are from the list of *Bushou* that are provided in the introduction section in the first year textbook and 47 of them appear in characters from Lesson 1 to lesson 10. Among these 51 *Bushou*, 28 of them can serve as stand alone characters. The majority of these *Bushou* appear at least in three different characters from L1 to L10. All the *Bushou* are selected from the introduction chapter to L10 in the *Integrated Chinese Level 1 Part 1* textbook. These 10 chapters were covered in the participants' first semester of Chinese study and the participants all have various degrees of exposure to these *Bushou* through their chapter vocabulary at the time that test was given. In the test, students were being asked to try their best to write down the meaning of the *Bushou* that they have seen or to write down what they think these *Bushou* are related to. The 51 *Bushou* were presented in a simple table with 3 columns and 52 rows. The first column contains all the *Bushou*. The middle column provides space for students to write down the meaning or what they think the *Bushou* is related to. The last column is for students to write down example characters that they remember seeing the corresponding *Bushou* in.

The *Bushou* knowledge test mean accuracy rate for group 1 is about 26.52% and for group 2 is 41.86%

Table 8: *Bushou* Test Result 1 (continued onto next page)

Bushou in decreased frequency	Group 1 Correct responses	% of students with correct response	Group 2 Correct responses	% of students with correct response
口	30	75	24	85.7
讠	7	17.5	9	32.1
亻	27	67.5	24	85.7
氵	0	0	2	7.1
纟	1	2.5	7	25
宀	10	25	11	39.3
日	31	77.5	24	85.7
女	34	85	28	100
氵	23	57.5	24	85.7
竹	6	15	7	25
又	11	27.5	7	25
十	8	20	19	67.9
艹	7	17.5	13	46.4
目	31	77.5	26	92.9
木	18	45	19	67.9
囗	6	15	6	21.4
夂	0	0	1	3.6
八	8	20	10	35.7
忄	6	15	14	50
王	13	32.5	10	35.7
彳	0	0	2	7.1
扌	11	27.5	15	53.6
冂	0	0	0	0
亠	2	0.05	1	3.6
刂	5	12.5	14	50
阝	1	2.5	1	3.6
足	4	10	11	39.3
衤	9	22.5	6	21.4
页	2	5	1	3.6
夕	4	10	3	10.7
田	11	27.5	17	60.7
牟	2	5	5	17.9
巾	0	0	1	3.5
灬	11	27.5	9	32.1
走	13	32.5	20	71.4
子	17	42.5	12	42.9
穴	2	5	1	3.6

亻	11	27.5	15	53.6
礻	1	2.5	0	0
门	13	32.5	20	71.4
皿	3	7.5	4	14.3
隹	1	2.5	2	7.1
目	12	30	13	46.4
丁	19	47.5	18	64.3
弓	4	10	11	39.3
寸	4	10	2	7.1
耳	12	30	13	46.4
大	31	77.5	25	89.3
小	28	70	27	96.4
力	11	27.5	17	60.7
衣	11	27.5	20	83.3

The result showed that as a whole, students in group 2 out performed students in group 1 on the majority of the tested *Bushou*, which proved that the longer students study the Chinese language and being exposed to characters the more advantage they have when it comes to *Bushou* identification tasks. Students in group 1 outperformed students in group 2 only in the following 6 *Bushou*: 礻, 页, 又, 穴, 礻, 寸.

The *Bushou* in the chart above are arranged in frequency order from high to low. The results showed that higher frequency *Bushou* do not guarantee a higher correct response rate from either group. However, the average correct response rate for *Bushou* that are also stand alone characters was higher than the average of the *Bushou* that are not single characters in both groups by over 50%. Students in group 1 performed poorly on the following *Bushou*, 辶 10[6], 纟 9, 夊 5, 彳 4, 冂 4, 宀 4, 阝 4, 页 3, 钅 3, 巾 3, 穴 2, 礻 2, 贝 2, 隹 1, 讠 14, 竹 6, 艹 6, 囗 5, 忄 4, 刂 4, 足 3, 夕 3, 弓 0, 寸 1, with less than 20%

---

6 Number of characters this *Bushou* appears in

participants correctly identified their meaning. On the other hand, students in group 2

seemed to struggle with the meaning of the follow *Bushou* 辶 10, 夂 5, 彳 4, 冂 4, 亠 4,

阝 4, 页 3, 巾 3, 穴 2, 礻 2, 隹 1, 寸 1, 夕 3, 纟 3, 贝 2. Less than 20% of participants in

both groups corrently identified 辶, 夂, 彳, 冂, 亠, 阝, 页, 巾, 穴, 礻, 隹, 寸, 夕, 纟 and 贝.

As we can see, the number of *Bushou* that students in group 2 had trouble with all appear

in the list of *Bushou* that students in group 1 did not do so well on.

Some students provided characters in which the *Bushou* appears in, either as the

semantic radical or a sub-component, but failed to identify the radical's meaning. For

example, some students wrote down 过 or 远 for the *Bushou* 辶, 药 for 艹, 室 or 宿 for 宀

etc., but were not able to identify their meaning. Some students were attempting to guess

the meaning of *Bushou* from the meaning of the characters that the *Bushou* appear in.

For example, a student wrote down 刚才 as the character that he remembers containing

the *Bushou* 刂 and the meaning that he wrote down for this *Bushou* is 'time'. Similar

examples include:

忄 - speed 快	子 - character，字	夕 - a lot/amount 多
纟 - red，红	竹 - wait / pen 等笔	艹 - name，董
隹 - who，谁	木 - measure word，本	礻 - electric，视
冂 - questions，问	巾 - handsome，帅	寸 - past，过
走 - together，起	月 - friend，朋	土 - place，地
目 - self，自		

Students in both groups used this method but a higher percentage of such definitions were observed from participants in group 1. The fact that these students correctly provided an example character for the corresponding *Bushou* showed that these students are conscious about the existence of *Bushou* in the whole character but they could not comprehend their function and do not have the ability to activate *Bushou* information when processing whole characters.

Another situation that was prevalent in both groups was that students provided characters examples that do not contain the target *Bushou*. These provided character examples contain parts that are similar to the appearance of the target *Bushou*. For example, 青, 喜, 让 were given as examples for 土. Other examples included:

日 - 眼	刂 - 帅	贝 - 视
氵 - 冰	目 - 春	弓 - 考 , 起
田 - 油	礻 - 祝福	艹 - 喜
宀 - 穿	衤 - 衫	小 - 恭

In the *Bushou* test, students provided all the character examples from memory. The results showed that students in both groups seemed to be confused with character parts that are similar in appearance. If students had better *Bushou* knowledge, they might make fewer mistakes in character production tasks.

1. Students' *Bushou* Knowledge: Perception versus Reality

Table 9: *Bushou* Test Result Two

Percentage of *Bushou* obtained	Student *Bushou* test result		
	Group 1	**Group 2**	**Difference**
75-100%	2.5%	3.57%	1.07%
50-75%	5%	32.14%	28.14%
25-50%	42.5%	39.29%	3.21%
0-25%	50%	25%	25%

Table 10: Perceived Bshou Acquisition VS. Actual *Bushou* Acquisition

Percentage of *Bushou* obtained	Student Response			
	Group 1		**Group 2**	
	Perceive	**Actual**	**Perceive**	**Actual**
75-100%	10%	*2.5%*	10.72%	*3.57%*
50-75%	22.5%	*5%*	42.86%	*32.14%*
25-50%	30%	*42.5%*	28.57%	*39.29%*
0-25%	37%	*50%*	17.86%	*25%*

The results showed that students in both groups overestimated their acquisition of *Bushou*. In reality, in group 1, 50% of students know less than 25% of *Bushou* in the test. 42.5% of students acquire about 25 to 50% of *Bushou*. 5% of them know 50 to 75%, and only 2.5% reach the 75-100% range. Progress was observed in *Bushou* acquisition among students in group 2. In group 2, 25% of students acquire 0-25% of *Bushou*, which is significantly smaller than the percentage of group 1 students in that range. About 39%

students still remain in the 25-50% range, which is similar to the percentage of students in group 1. Over 32% of students know 50-57% of *Bushou*, which is a significant increase compared to the percentage of students from group 1 in that range. A little over 1% of students jumped from the 50-75% acquisition range to the 70 to 100% range. The result showed that as a whole, students made progress with *Bushou* knowledge in their second year of study but the progress was not dramatic. These progress might also be accidental.

CHAPTER VII

DISCUSSION

A. Question 1. What are students' perceptions of the difficult level of memorizing characters?

The result showed that first year learners perceive memorizing new characters to be more difficult. Second year students' average perceived difficulty level in memorizing new characters is lower than that of the first years' by 1.51 point. No student in the second year level rates memorizing new characters to be either very easy or very hard. However, such observation is evident among first year students. It might be that as students' proficiency level increases, they develop more skills for character learning, therefore, results in a better and realistic perception towards the task of character learning. It is also believed even though students were not taught explicit radical knowledge, frequent exposure to or encounters with character radicals and frequency of occurrence of printed characters might contributes positively to the students' degree of orthographic awareness development (Fan, 2010), which may aid in the task of character acquisition for second year students. The average higher rating in character memorization difficulty by first year Chinese learners might be that these first year students did not speak the Chinese language prior to their studies. They did not have the experience of engaging in the Chinese language mindset. Unlike native Chinese speakers and learners that have been learning Chinese for a long period of time and are familiar with thinking in Chinese and with the information that are imbedded in characters; foreign students who just start to learn characters, each character is like a maze. Another reason might be that beginning learners have no prior knowledge of how the Chinese characters are constructed. So when

it comes to memorizing new characters, they can only employ rote memorization until they begin to understand that there are some principles that can be applied to help them learn the characters that are based on the character construction principles. Without specific training, it is hard for these foreign students, especially beginners, to clearly remember how each character is written (Hu, 2008; Everson, 2007).

In a study that was intended to understand the patterns of the students' character acquisition situation, character writing materials from students in a beginner Chinese class were analyzed and the results indicated that most students think that characters are hard to memorize and easy to forget. Characters that are deemed difficult to memorize are not characters with the most strokes. It is the characters that with unclear structural components. The following kinds of characters are deemed to be difficult to memorize by the learners in the study (Gao, 1990).

Type1: characters with similar components and with many horizontal strokes.
Type 2: characters with the same pronunciation
Type 3: uncommon characters that have many components
Type 4: characters that have no association between their shape and meaning

A group of French students who participated in the summer language program hosted by the Beijing Foreign Language School were surveyed and the data collected showed that less than half of the students were interested in characters and the majority of the students think that characters are hard to learn. The difficulties that students experience with characters are around character structures, character forming components, and the disconnection between character shape and their pronunciation (Ding, 2011).

Another insight to one of the factors that contributes to the students' struggle with characters is the lack of the language environment outside of the classroom. Native

Chinese students that study in their home country have a chance to practice reading on a daily basis. However, in a typical university setting, as soon as Western learners step out of the Chinese classroom they lose the language reinforcement environment. In addition, the traditional pedagogical techniques of character instruction without a system that can help them take advantage of the structure of the Chinese character writing system is seen as the main reason that many foreigners perceive learning Character to be a daunting task. Similar sentiments was expressed regarding the problematic teaching practices not devoting enough effort into helping students on how to systematically acquire characters. Scholars pointed out that the most common practice in TCFL is spoken and written chinese are taught side by side to beginners, which results in characters not being chosen systematically and learned according to their structural compositions; rules that govern the writing of Chinese characters being ignored; and ultimately both chaotic teaching and learning process of characters (Li, 2008; Everson, 2007; Zhang, 2002).

It has been suggested that the importance of characters does not receive the deserved position in the TCFL practices might also be a factor that contributes to the students struggle with characters. For a long time, teaching methods used in classrooms for TCFL are adopted from common practices that are used for teaching of Indo-European languages. Modern Chinese linguistics in China was built upon the foundation of the Western linguistics; and Chinese syntax is formed within the frame of Western syntax. According to Western linguistics and syntax, the script of a language is only a set of writing symbols, thus does not belong in the language category. When speaking of the important elements of a language, linguists often only focus the attention on the phonetics, lexicon, and grammar; which if employed in the studies of the Chinese language, would

totally exclude the most important element in the Chinese language: Chinese characters. Even in present date, the mainstream teaching methods in TCFL classrooms still possess some unfavorable characteristics: some classrooms are not able to distinguish the colloquial style language and the written style language; some only treat 词 word and 句子 sentences as the fundamental units in their teaching; some exclude characters and treat characters as an unimportant element in the process of TCSL, etc. (Lü, 1999).

The different writing system between Chinese and English is commonly recognized as the main contributing factor. Chinese is linguistically different to English thus is more challenging for native-English speakers when compared to other Western European languages. One of the major contributing factors is the non-alphabetic nature of the Chinese writing system. In languages whose writing systems are alphabetic, learning to write generally corresponds with learning to speak. In alphabetic-phonetic languages, the systematic mapping of sound to symbol makes phonological activation a more reliable means of word recognition compared with semantic recognition strategies. Almost from the beginning of study, acquisition and improvement of writing skills and of speaking skills can easily and strongly reinforce another. But in the case of Chinese, such a link is broken. The task of learning to read and write Chinese is radically different from languages with alphabetic writing systems. (Williams & Bever, 2010; Fan, 2010; Dew, 2007). Letters in alphabetic languages represent sounds but characters in ideographic languages represent meanings. The number of letters and morphemes in alphabetic languages is usually limited but the number of characters in the ideographic language of Chinese is huge. Learners of alphabetic languages who master the sound of letters can decode the sound of a word without even knowing its meaning. On the

contrary, the meaning and sound of each Chinese has to be learned individually.

Learning to write, pronounce, and to memorize the meaning of each character is

challenging and exhausting for a learner (Tse, Marton, and Ki, 2007). It has also been

noted that character characters are unique among writing systems used today. Texts

written in other languages shows repetition of a limited number of discrete signs, but if

several lines of a Chinese character text is scanned, very few repeats will be found.

Characters do not decompose feature by feature according to the sounds they represent.

They cannot be consistently relied on to give the same pronunciation because many

characters have multiple readings. Some characters with very different shapes may have

identical pronunciations. Some symbols seem to resemble pictures but the meanings

ascribed to them generally have no connection with what they appear to represent

(Hannas, 1997).

B. Question 2. Do students understand the concept of *Bushou*?

Students' understanding of the concept of *Bushou* is fragmented in both groups.

Some students understand that *Bushou* has something to do with the meaning of a

character; some perceive *Bushou* to be solely structural units; some thought that *Bushou*

are phonetic components that give hints to the pronunciation of the characters; some

pointed out that their function is to categorize characters, etc. The partial understanding

of the concept of *Bushou* collected from both groups is a good indication of students

having no formal knowledge to base on when they were asked to formulate a definition

of *Bushou* in their own word, which implies that *Bushou* instruction might be insufficient

or lacking in the classroom.

C. Question 3. How much *Bushou* knowledge do students think they have and how much do they actually know?

When participants were asked if they have obtained enough knowledge about the *Bushou* from their Chinese classes, in group 1, 10% of participants stated they have obtained 75-100% of all the *Bushou* knowledge from class; 22.5% of participants stated they obtained 50-75% of *Bushou*; 30% of participants stated they have obtained 25-50% ; and 37.5% of participants stated that they have only obtained 0-25%. In group 2, 10.72% of participants stated they obtained 75-100% *Bushou* knowledge from class; 42.86% of participants stated they have obtained 50-75%; 28.57% of participants stated 25-50%; and 17.86% of participants stated 0-25%.

Students in both groups overestimated their acquisition of *Bushou*. The overestimation might imply that students in general recognize the importance of *Bushou* knowledge and they thought they ought to have a higher level of understanding of *Bushou*, which is often no the case. In reality, in group 1, 50% of students know less than 25% of *Bushou* in the test. 42.5% of students acquired about 25 to 50% of *Bushou*. 5% of them know 50 to 75%, and only 2.5% reached the 75-100% range. Progress is observed in *Bushou* acquisition among students in group 2. In group 2, 25% of students only acquired 0-25%, which is significantly smaller than the percentage in group 1. About 39% students still remain in the 25-50% range, which is similar to the percentage of students in group 1. Over 32% of students know 50-57% of *Bushou,* which is significantly more than the percentage of students in group 1. A little over 1% of students jumped from the 50-75% acquisition range to the 70 to 100% range. The result also showed that students make progress with *Bushou* knowledge in their second year of study but the progress was not dramatic.

D. Question 4. What are the students' perceptions of the level of helpfulness of *Bushou* in their character learning?

In group 1, 22.5% of students stated that it is extremely helpful where as 46.4% of students in in group 2 rated it as extremely helpful. 37.5% of students in group 1 stated that it is helpful and 39.3% is observed in group 2. 32.5% of students rated it as slightly helpful in group 1 and the corresponding rating is 10.7% in group 2. 7.5% students in group 1 stated that it is not helpful at all where as no student in group 2 chose this response.

About 92% of students in group 1 perceive *Bushou* knowledge to be helpful for character learning to various levels and 100% of students in group 2 think that *Bushou* knowledge is helpful for character learning. Chinese learners in their second year of study perceive semantic radicals to be more helpful in the process of learning or memorizing Chinese characters. Students in groups 2 might have better component (both semantic and phonetic) perception skills and that they actively employ component knowledge in character learning tasks, which also explains the reason why students in group 1 perceive memorizing characters to be more difficult than students in group 2. Students in group 1 are in their second semester of learning Chinese, therefore, their exposure to Chinese characters is shorter than students in group 2, who are in their 4th semester. Students in group 1 know of the existence of *Bushou* but they still lack the ability to utilize *Bushou* information or make component association to aid the character learning task. It is possible that they are still largely relying on rote memorization when it comes to remembering characters.

E. Question 5. Do students want to receive specific *Bushou* related information and instruction in class?

The majority of students in the first year and second year of Chinese study would like to receive specific *Bushou* related information and instruction in class. 80% of first year students wish to receive more formal *Bushou* related instruction or information from their language class. About 78% of second year students wish to receive more formal *Bushou* related instruction or information from their language class. The students' response might imply that at large, students are still struggling with the task of character learning and they are in search of a key to conquire this task. Moreover, some students in this study believe that there are tricks that native Chinese speakers use in character learning and that teachers should share with them these tricks in the classroom. As it was found in the study, students have limited understanding of the concept of *Bushou* and its function. Their request for in class *Bushou* instruction might not be driven by the notion that teaching *Bushou* could direct the character teaching task toward a more systematic path, but rather solely based on their perception of Bushou being the withheld tricks that they long for.

F. Question 6. What do students want from teachers can better help them with character learning?

Students in group 1 suggested that teaching *Bushou* in class, showing correct stroke order of new characters, reviewing old characters, moving at a slower pace in class, teaching components that make up the characters, spending more time to explain difficult characters, providing more target character writing practices, having access to online character game, teaching them how to use a Chinese dictionary, and having a smaller class size would help them positively in their character study.

Students in group 2 also wanted *Bushou* to be taught in class, stroke and stroke orders be shown in class when learning new characters, and character practices to be

emphasized. Some wanted teachers to show them skills to memorize characters and to

show them how characters are made up of different components. The most frequently

voiced suggestion in both groups is the teaching of *Bushou* knowledge in class. The

second most frequent suggestion was that teachers should teach how characters are made

up. The students' reponses to this question showed that students in their first and second

year of Chinese study are not able to process characters based on their components. They

recognize that characters are made up of different parts but they do not have the

component knowledge to aid them in dissecting the characters, which is perceived by

students to be a helpful method to learn characters. The responses also showed that

students develop different perceptions as in what is helpful for their character study when

characters are not taught systematically and some might not really be helpful.

CHAPTER VIII

CONCLUSION

In the textbook that was used in the students' first semester of Chinese study, general information about *Bushou* and 40 basic *Bushou* with their meaning and example characters are provided in the introduction section. The importance of learning these radicals is emphasized three times in a short paragraph. "The character learning process will be more effective and easier if one knows well the basic components of Chinese characters"; "by knowing the radicals and other basic components well, you will find recognizing, remembering and producing characters much easier"; "Everyone should know them well when starting to learn characters" (Liu, Yao, and Bi, 2010). It is quite obvious that the authors of this series of textbooks strongly recommend the study of radicals and believe that radical knowledge would reduce the difficulty that students will encounter when learning characters.

In a traditional Chinese classroom in China, students were first taught simple characters and some of which can also act as structural parts in compound characters. In this situation, even though teachers do not explicitly point out the structural parts in compound characters, students can use these simple characters as building blocks to acquire new characters, thus making the character acquisition task less difficult. In contrast, in textbooks that are designed for Second Language Learners the characters are selected and presented based on the order in which grammar points, communication skills, and themes that are presented in the book, which means relatively complicated characters are often introduced in a first year language course (Taft & Chung, 1999; Fan, 2010). The result from the character analysis in this study echoes such findings. This study

found that the majority of characters that appear in the first year textbooks the students use are compound characters. The majority of first year students do not have formal knowledge of character structural components prior to their study, if character structural parts are taught in class these students are left alone to take on the task of character learning and are fated to struggle with characters.

Component knowledge has facilitating effect for character memorization and reproduction because if a compound character can be perceived as organized chunks, the encoding and decoding time, as well as the memory space required for each character will be reduced (Shen & Ke, 2007). In fact, students in the current study also stated that knowing character breakdowns and components is helpful for the character study. Teaching students all the components in a college level, 4-month-long, intensive Chinese language course is also unachievable. What should be taught then? It has been found that after ignoring tonal differences, only a small portion of phonetic components gives reliable cues to the pronunciation of characters in modern Chinese. On the contrary, even though not all compounds containing *Bushou* are morphologically transparent, the reliability of *Bushou* cueing the meaning of compound characters is relatively higher (Shen & Ke, 2007). Studies also found that *Bushou* are used more repetitively in different characters and their number in Chinese is much smaller than the number of phonetic components (Qiu & Zhou, 2010). Other scholars stated that at the beginning learning stage it might be easier to conceptually understand the construction of characters and connect character meanings with frequently used *Bushou* because Chinese characters have pertinent semantic information directly embedded within the character (Williams,

61

2013; Wang & Leland, 2011). The findings favor the teaching of *Bushou* (semantic radical).

Shifting the focus back to the results shown in this study, only 133 *Bushou* appear in the 20 chapters in the first year textbooks and 33 of these *Bushou* also appear as new vocabulary in the lesson vocabulary lists. Subtracting the 33 from the original number, there are only 100 *Bushou* that appear in the first year textbooks. This number is relatively small and teaching these100 *Bushou* over the course of two semesters seems to be an achievable task. Moreover, some of these *Bushou* (寸，羊，火，木，米，夕，方，月，户 etc.) also appear as phonetic radicals in compound characters, therefore, learning these *Bushou* will also help students build phonetic component consciousness.

It has been recommended that teachers need to be open to the different proposed approaches in character instruction to incorporate practices that are beneficial to the actual needs of the students (Lam, 2011). The study found that the majority of both first year and second year students perceive *Bushou* knowledge to be beneficial for learning characters. The majority of them also expressed that they would like more in-class instructional time to be spent on the task of learning and teaching *Bushou*. Teaching *Bushou* will meet the needs of the students. In addition, it is proven that the characteristics of character and methods for character memorization that are introduced by the teacher during character teaching will naturally resurface when students read characters (Hu, 2008). If *Bushou* is taught in class, students will very likely utilize them in learning characters.

Therefore, if the textbooks, student population, teaching style, and guiding principles remain unchanged in this program where the study is conducted, the teaching and learning of *Bushou* should be emphasized and treated as one of the main teaching and learning objectives in the program's first year Chinese language curriculum.

BUSHOU FROM L1 TO L10

Radical 部首 1-10	Frequency 频率	Radicals	Frequency	Radicals	Frequency
1. er 儿	1	33. shi 食	1	65. yi 礻	3
2. er 耳	1	34. shou 手	1	66. zu 足	3
3. bai 白	1	35. si 厶	1	67. er 阝	4
4. bing 冫	1	36. tbg 冖	1	68. dao 刂	4
5. bu 卜	1	37. wa 瓦	1	69. gao 亠	4
6. cun 寸	1	38. xue 彐	1	70. jiong 冂	4
7. fu 父	1	39. yin 廴	1	71. shou 扌	4
8. fang 匚	1	40. yin 音	1	72. sr 彳	4
9. gao 高	1	41. you 酉	1	73. wang 王	4
10. ge 戈	1	42. zhui 隹	1	74. xin 心	4
11. ge 革	1	43. bei 贝	2	75. xin 忄	4
12. gong 弓	1	44. chang 厂	2	76. ba 八	5
13. gong 工	1	45. lao 耂	2	77. fan 夂	5
14. hei 黑	1	46. li 立	2	78. Guo 囗	5

15. hu 户	1	47. men 门	2	79. mu 木	5
16. huang 黄	1	48. shi 矢	2	80. yue 月	5
17. huo 火	1	49. shi 衤	2	81. cao 艹	6
18. jian 见	1	50. shi 饣	2	82. ren 人	6
19. jin 斤	1	51. shu 丨	2	83. tu 土	6
20. lao 老	1	52. xi 覀	2	84. you 又	6
21. mi 糸	1	53. xue 穴	2	85. zhu 竹	6
22. mu 母	1	54. yi 乙	2	86. shui 氵	7
23. mu 目	1	55. zi 子	2	87. nv 女	8
24. niu 牛	1	56. zou 走	2	88. ri 日	8
25. pie 丿	1	57. guang 广	3	89. bao 宀	9
26. qi 气	1	58. he 禾	3	90. si 纟	9
27. qian 欠	1	59. huo 灬	3	91. zze 辶	10
28. se 色	1	60. jin 巾	3	92. ren 亻	14
29. shan 山	1	61. jin 钅	3	93. yan 讠	14
30. shan 彡	1	62. tian 田	3	94. kou 口	21
31. shi 士	1	63. xi 夕	3		
32. shi 十	1	64. ye 页	3		

BUSHOU FROM L11 TO L20

Radicals 部首 11-20	Frequency 频率	Radicals	Frequency	Radicals	Frequency
1. bei 贝	1	38.tu 土	1	75.ri 日	3
2. bi 匕	1	39.xiao 小	1	76.shi 饣	3
3. bi 比	1	40.xin 辛	1	77.yang 羊	3
4. bi 鼻	1	41.xi 夕	1	78.zu 足	3
5. bu 卜	1	42.xue 穴	1	79.bing 冫	4
6. chen 臣	1	43.ye 页	1	80.bing 疒	4
7. che 车	1	44.yi 一	1	81.chang 厂	4
8. dai 歹	1	45.yi 乙	1	82.shi 十	4
9. dao 刂	1	46.yi 弋	1	83.yan 讠	4
10. da 大	1	47.yi 礻	1	84.zhu 竹	4
11. deng 癶	1	48.you 又	1	85.zou 走	4
12. er 耳	1	49.yu 雨	1	86.er 阝	5
13. fei 非	1	50.zi 自	1	87.mi 米	5
14. fu 父	1	51.ba 八	2	88.bao 宀	6
15. ge 戈	1	52.cao 艹	2	89.fan 夂	6

16. gong 工	1	53.dao 刀	2	90.kou 口	6
17. huo 灬	1	54.fang 方	2	91.yue 月	6
18. hu 户	1	55.guang 广	2	92.zze 辶	7
19. jie 卩	1	56.guo 囗	2	93.mu 木	8
20. jin 巾	1	57.he 禾	2	94.ren 亻	10
21. jin 金	1	58.jin 钅	2	95.shui 氵	11
22. ji 己	1	59.Mu 目	2	96.shou 扌	15
23. li 力	1	60.nv 女	2		
24. min 皿	1	61.ren 人	2		
25. mi 糸	1	62.she 舌	2		
26. niao 鸟	1	63.shi 石	2		
27. niu 牛	1	64.shi 衤	2		
28. pian 片	1	65.wang 王	2		
29. qing 青	1	66.xin 心	2		
30. quan 犬	1	67.xin 忄	2		
31. quan 犭	1	68.you 酉	2		
32. rou 肉	1	69.zhi 止	2		
33. shen 身	1	70.zhou 舟	2		

34. shi 尸	1	71.zhua 爪	2		
35. shou 手	1	72.zhu 疋	2		
36. si 纟	1	73.gao 亠	3		
37. sr 彳	1	74.huo 火	3		

SURVEY QUESTIONS

1. From the scale of 1 to 10, how hard is it to memorize new characters ? (1 very easy; 10 extremely hard)

Please circle one number: 1-extremely easy   2   3   4   5   6   7   8   9   10-extremely hard

2. Do you think being more familiar with **semantic radicals** (ex, 扌，氵，口，etc.) will be helpful to you in learning/memorizing Chinese characters?

   A. Extremely helpful   B. helpful   C. slightly helpful   D. not helpful at all

3. Do you think you have obtained enough knowledge about the **semantic radicals (扌，氵，口)** from your Chinese classes?

   A. Know about 75% to 100% of the semantic radicals that we have encountered so far
   B. know about 50% to 75%
   C. know about 25% to 50 %
   D. know about 0% to 25%

4. Do you wish to receive **more instructions (more information)** on/ about **semantic radicals (扌，氵，口)** in your Chinese class?

   Yes ／ No

5. What do you think Chinese radicals are for? (please briefly describe your understanding)

6. Please read the information contains in the following images and then answer question 7, 8, 9, 10

Image 1

B. Basic Chinese Radicals

Although there are more than fifty thousand Chinese characters in existence, one only needs to know two or three thousand to be considered literate. Mastering two or three thousand characters is, of course, still a rather formidable task. However, the learning process will be more effective and easier if one knows well the basic components of Chinese characters. Traditionally, Chinese characters are grouped together according to their common components known as "radicals" (部首, bùshǒu). The 214 "Kangxi radicals" have been the standard set of radicals since the publication of the great *Kangxi Dictionary* (康熙字典, Kāngxī Zìdiǎn) in 1716, although some contemporary dictionaries, which treat simplified characters as primary forms, have reduced that number to 189. By knowing the radicals and other basic components well, you will find recognizing, remembering and reproducing characters much easier. Knowing the radicals is also a must when using dictionaries that arrange characters according to their radicals. The following is a selection of forty radicals that everybody should know well when starting to learn characters.

Image 2

C. Basic Strokes

The following is a list of basic strokes:

Basic stroke	Chinese	Pinyin	English	Examples
1. " 丶 "	点	diǎn	dot	小 , 六
2. " 一 "	横	héng	horizontal	一 , 六
3. " 丨 "	竖	shù	vertical	十 , 中
4. " 丿 "	撇	piě	downward left	人 , 大
5. " 乀 "	捺	nà	downward right	八 , 人
6. " 丶 "	提	tí	upward	我 , 江
7. " ㇇ "	横钩	hénggōu	horizontal hook	你 , 字
8. " 亅 "	竖钩	shùgōu	vertical hook	小 , 你
9. " ㇂ "	斜钩	xiégōu	slanted hook	戈 , 我
10. " ㄱ "	横折	héngzhé	horizontal bend	五 , 口
11. " ㄴ "	竖折	shùzhé	vertical bend	七 , 亡

Note: With the exception of the "tí" stroke (which moves upward to the right) and the "piě" stroke (which moves downward to the left), all Chinese strokes move from top to bottom, and from left to right.

Image 3

D. Stroke Order

Following is a list of rules of stroke order. When writing a Chinese character, it is important that you follow the rules. Following the rules will make it easier for you to accurately count the number of strokes in a character. Knowing the exact number of strokes in a character will help you find the character in a radical-based dictionary. Also, your Chinese characters will look better if you write them in the correct stroke order!

1. From left to right   （川，人）

2. From top to bottom   （三）

3. Horizontal before vertical   （十）

4. From outside to inside   （月）

5. Middle before two sides   （小）

6. Inside before closing   （日，回）

7. Have you seen the pictures before: Yes   No

8. Do you think the information presented in the pictures is useful for beginning Chinese learners?   Yes / No

9. Should the information presented in the pictures be introduced/discussed in class? Yes / No

10. Do you have any suggestions on how teachers can better help you with learning Chinese characters?

APPENDIX D

BUSHOU TEST

The following pages contain a list of Chinese character radicals that you have or have not seen before.

Please:

> 2. Try your best to write down the meaning of the radicals that you circled or to write down what the circled radicals are related to.

> 3. Provide example character(s) that contain the radical.

Radicals	Meaning/what it is related to	Example (examples)?
1 亻		
2 八		
3 刂		
4 辶		
5 力		
6 又		
7 囗		
8 口		
9 土		
10 夕		
11 木		

12 大		
13 女		
14 子		
15 寸		
16 小		
17 工		
18 王		
19 弓		
20 阝		
21 忄		
22 艹		
23 宀		
24 扌		
25 日		
26 月		
27 氵		
28 亠		
29 灬		

30 田		
31 目		
32 彳		
33 礻		
34 冂		
35 纟		
36 耳		
37 衤		
38 衣		
39 页		
40 讠		
41 贝		
42 走		
43 足		
44 ⺮		
45 钅		
46 门		
47 隹		
48 夂		

49 巾		
50 𠂉		
51 穴		

Group 1. (31 students provided a response)

1. I think teaching radicals is a very good idea
2. Explain more about radicals and other words a character appears in
3. Explain the breakdown of characters-the different portions, sound (is existent) and meaning; go over radicals and different components.
4. I think that the teachers are doing a good job at helping us learn the characters
5. For me the best way to really, truly learn a character is to use and read it often when I read and write sentences and paragraphs. If I don't revisit a new character after just learning, I tend to forget it.
6. More emphasis on character workbook
7. Sometimes I am so focused on learning new characters that I can forget how to write the old ones. I think we should review past characters every now and then so that in the process of learning new characters I don't lose the past characters we have learned.
8. It would be very helpful to break down each character and learn the radical meanings so when we see a character we don' know we could guess.
9. Going over difficult characters in class, and maybe helping us remember them by giving us tricks
10. Personally I like the style of the discussions teaches more compared to the lecture. The reason for that is though we only have 50mins vs. 75 minutes lecture, I feel like I still learn more from the discussion because it moves at a moderate speed and the material presented to us is clearly presented and easy to understand, oppose to the lecture where the material feels…..(need to check this later)
11. Practice writing it more times
12. How to write the characters in the correct order
13. I didn't think it is up to the teachers whether or not students know how to write Chinese characters. It is up to the student, whether or not they want to put the effort into learning how to write characters properly.
14. Make classes smaller so there is no one left behind. Focus more on sentence structure, grammar, and meaning than the memorization of how to write the words/characters.
15. Nope, I am satisfied with the course
16. Review new vocab words/characters, emphasize stroke order in class, quizzes on characters/stroke order, and relate learned characters to new ones.
17. Correct stroke order faster and makes them easier to remember, you can memorize certain parts first
18. I think it is important to know how to write the character correctly, but it would be good if we could also work on penmanship, because the way we are writing characters now is not how Chinese people really write them (our characters look elementary)
19. Go slower
20. I think that stroke order should be more emphasized in class. It is hard to practice

character writing in a large class but I think that character practice at least in the intro level classes would be helpful.
21. I am not sure. I just know that it is extremely hard for me to learn them
22. Maybe have quizzes on character strokes. Quizzes on radicals and their meaning
23. I think that it would be good to have lessons on the radicals an how to look stuff up in a Chinese dictionary. Maybe if there was a link in the course page to an animated got characters website of something like that
24. In Chinese 110, my teacher gave us a sheet of paper with all f the basic radicals and told us to learn them on our own. I think it would have been better to go over them(radicals) at some point in class, or learn them as new vocabulary words used them
25. Slow down. There is a lot of information but so little time is spent on the understanding of characters and how they are made up. Because a lot of the time without the information on the previous page or previous exposure they are all the same at first sight.
26. Whenever we come across a new radical mention it for a second and show stroke order just so we knew
27. Give more information on what context certain radicals show up in
28. Make online character games
29. Yes, radicals help out a lot.
30. Going over radicals and memorizing them could be helpful
31. Make them write more in the sentence (frequently).

Group 2. (18 responses were provided)

1. teach radical's meaning in beginning Chinese
2. they can teach us how to write the stroke for the words and also teach us how to memorize the words
3. have more speaking practice
4. continue using radicals in higher level Chinese
5. just radicals more, then relating them to different characters
6. reading more in class from book/powerpoint.
7. during the beginning it is very important to understand stroke. It is good to have character workbook at first.
8. Go over stroke order more often, they never really do. So I usually don't
9. Honestly we should spend more time learning the rich etymology of the character themselves. ie. What they look like, what those parts mean and how we should consider their use in the language (proper syntax/pragmatics)
10. Breaking apart the characters and dissecting their meanings make it very helpful. It also sticks and stands out in our memory more
11. Explain the meaning of more radicals and phonetic characters
12. Stroke order and radicals should be focused on
13. I think radicals and stroke order should be a huge focus for beginning Chinese learners because it will help in the long run. Also, keep bring it back each year as review
14. I think that practicing speaking in class is more important, we can learn the stroke

orders on our own]
15. Explain radicals more because they often have meanings associated with the character they are in. ex:餐厅，"餐" is a complicated character, but it is easier to remember when you realize "食"shi2 (food) exists inside it. (top of 餐)+食=餐. It is easier because it flows that food "食" would be available at a dinning hall "餐厅".
16. Providing use with worksheets that help us use the characters multiple times, using the meaning in different contexts (paired with other characters)
17. Discuss the radicals more and make sure dominant or common radicals are thoroughly understood.
18. A little more focus on radicals and their meaning would be helpful.

BIBLIOGRAPHY

Anderson, O. (1979). *The radicals of the Chinese script: Traditional and new: A teaching aid.* Studentlitteratur Curzon Press.

Chen, QL. (1968). 部首讲解. 台南: 标准出版社.

Chen, Y.P., & Marshall, J.C. (1996). What are the functional rothographic unites in Chinese word recognition: The stroke or the stroke patter?. *The Quarterly Journal of Experiental Psychology, 49*(A.4), 1024-1034.

Defrancies, J. (1984). *The Chinese language fact and fantasy.* Honolulu: University of Hawaii Press.

Dew, J. (2007). Language is primary, script is secondary: The importance of gaining a strong foundation in the language before devoting major efforts to character recognition. In Guder, A. et al. Editor (Eds.), *The Cognition, Learning and Teaching of Chinese Characters.* Beijing: Bejing Language and Culture University Press.

Ding, A. (2011). 法国中学生汉字学习情况调查与分析. 汉字文化.

Du, L. (2004). 系联法对外汉字教学研究. 西南民族大学学报.

Everson, M. (2007). Developing orthographic awareness among CFL Learners: What the research tells us. X. Jiang & Y. Wan, (Eds.) *The Cognition, Learning and Teaching of Chinese Characters*. Beijing: Bejing University.

Fan, H. (2010, January 1). Developing orthographic awareness among beginning Chinese language learners: Investigating the influence of beginning level textbooks. *ProQuest LLC*.

Feldman, L., & Siok, W. (1999). Semantic radicals contribute to the visual identification of Chinese characters. *Journal of Memory and Language*, *(40)*, 559-576.

Gao, W. (1998). 从汉字在第二语言学习中的问题看汉字教学. 吕必松 (Ed.) 汉字与汉字教学研究论文选.

Hanban. 2014. In hanban.org. Retrieved July 10, 2014, from http://www.hanban.org/confuciousinstitutes/node_10961.htm

Hannas, W. C. (1997). *Asia' orthographic dilemma.* Honolulu: University of Hawaii Press.

Ho, C., Ting, T., & Ng, W. (2003). A "radical" approach to reading development in Chinese: The role of semantic radicals and phonetic radicals. *Journal of Literacy Research, 35*(3), 849-878.

Hu, W. H. (2008). 汉字与对外汉字教学. 学林出版社.

Ke, C. (1996). An empirical study on the relationship between Chinese character recognition and production. *The Modern Language Journal, 80*(3), 340-349.

Lam, H. (2011). A critical analysis of the various ways of teaching Chinese characters. *Journal of Foreign Language Teaching, 8*(1), 57-70.

Law, N., Ki, W. W., Chung, A. S., Ko, P. Y., & Lam, H. C. (1998). Children's stroke sequence errors in writing Chinese characters. *Reading and Writing: An Interdisciplinary Journal, 10*(3-5), 267-292.

Leong, C., Tse, S., Loh, K., & Ki, W. (2011). Orthographic knowledge important in comprehending elementary Chinese text by users alphasyllabaries. *Reading Psychology, 32*(3), 237-271.

Li, DS. (2008). 关系对外汉字教学全局的几个问题. 暨南大学华文学院学报.

Li, J.H., & Li, K.S. (2005). 部首对于汉字认知的意义. 世界汉语教学.

Li, Q. (2004). 对外汉语汉字教学综观. 中国人民大学.

Ling, V. (2007). Studies on L2 acquisition of the Chinese script published in America. A. Guder, J. Xin, & Y. Jiang, (Eds.), *The cognition, learning and teaching of Chinese characters* (pp. 51-83). Beijing: Bejing Language and Culture University Press.

Liu, Y.H., Yao, T., & Bi, N.P. (2010). *Integrated Chinese (*3th ed.*).* Boston: Cheng & Tsui Company, Inc.

Lü, B.S. (1999). 汉字教学与汉语教学. 汉字与汉字教学研究论文选.

Orthography. 2014. In *Merriam-Webster.com.* Retrieved Jul 8, 2014, from http://www.merriam-webster.com/dictionary/orthography

Qiu, X. (2000). *Chinese Writing*. （G. Mattos & J. Norman, Trans.). New Haven: Birdtrack Press. (Original work published 1988).

Qiu, Y., & Zhou, X. (2010). Perceiving the writing sequence of Chinese characters: An ERP investigation. *Neuroimage 50*(2), 782-795.

Shen, H. (2005). An investigation of Chinese character learning strategies among non-native speakers of Chinese. *System*, *33*, 49-68.

Shen, H., & Ke, C. (2007). Radical awareness and word acquisition among nonnative learners of Chinese. *The Modern Language Journal*, *91*(1), 97-111.

Simon, W. (1959). *How to study and write Chinese characters*. London: Lund, Humphreis and Company Ltd.

Taft, M., & Chung, K. (1999). Using radicals in teaching Chinese characters to second language learners. *Psychologia*, *42*, 243-251.

Tsang, Y., & Chen, H. (2009). Do position-general radicals have a role to play in processing Chinese characters?. *Language and Cognitive Processes*, *24*(7/8), 947-944.

Tse, S., Marton, F., Ki, W., & Ka Yee Loh, E. (2007). An integrative perceptual approach for teaching Chinese characters. *Instructional Science: An International Journal Of the Learning Sciences,* 35(5), 375-406.

Wan, Y.X. (2012). 略论汉语拼音和汉字在对外汉语教学中的位置和关系. 世界汉语教学.

Wang, J., & Leland, C. H. (2011). Beginning students' perceptions of effective activities for Chinese character recognition. *Reading in a Foreign Language, 23*(2), 208-224.

Williams, C. (2013). Emerging development of sementic and phonological routes to character decoding in Chinese as a foreign language learners. *Reading and Writing*, *26*(2), 293-315. DOI 10.1007/s11145-012-9368-5

Williams, C., & Bever, T. (2010). Chinese character decoding: A semantic bias?. *Reading and Writing*, *23*(5), 598-605. DOI 10.1007/s11145-010-9228-0

Xie, T. (2014, Jun. 4). *Universities, Colleges and Schools Offering Chinese Courses*. Retrieved June 4, 2014, from http://www.csulb.edu/~txie/programs.htm

Ye, L. (2011). Teaching and learning Chinese as a foreign language in the United States: To delay or not to delay the character introduction.

Zhang, P.P. (2002). *The most common Chinese radicals.* Bejing: Sinolingua Press.

教学. 2014. In *Dict.cn.* Retrieved May 8, 2014, from
    http://dict.cn/%E6%95%99%E5%AD%A6