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**INFERRING WORD-MEANING, MORPHEME-BASED, AND WORD-BASED  
SECOND LANGUAGE VOCABULARY TEACHING METHODOLOGIES**

A Thesis Presented

by

QINGLI 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

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INFERRING WORD-MEANING, MORPHEME-BASED, AND WORD-BASED  
SECOND LANGUAGE VOCABULARY TEACHING METHODOLOGIES

A Thesis Presented

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QINGLI LIU

Approved as to style and content by:

---

Zhijun Wang, Committee Chair

---

Zhongwei Shen, Member

---

Yuki Yoshimura, Member

---

Stephen Miller, Director  
Asian Languages & Literatures Program  
Department of Languages, Literatures & Cultures

---

William Moebius, Chair  
Department of Languages, Literatures & Cultures

## DEDICATION

To my supportive families Jinfeng and Shuyu

## ACKNOWLEDGMENTS

I would like to express my sincere appreciation to my advisor, Professor Zhijun Wang, and the members of my committee, Professor Zhongwei Shen and Professor Yuki Yoshimura not only for their guidance and support, but also for their encouragement and help throughout my master's program. They have been extremely generous and helpful to me. What I have learned from them will affect the rest of my life and the development of my career.

I also must extend heartfelt thanks to my immediate family. My work would not be as successful without their immeasurable support. I dedicate this thesis to them.

## **ABSTRACT**

### **INFERRING WORD-MEANING, MORPHEME-BASED, AND WORD-BASED SECOND LANGUAGE VOCABULARY TEACHING METHODOLOGIES**

**SEPTEMBER 2014**

**QINGLI LIU, B.A., NANJING NORMAL UNIVERSITY**

**M.A., UNIVERSITY OF MASSACHUSETTS AMHERST**

**Directed by: Professors Zhijun Wang**

Scholars have pointed out that there are two ways of processing information, which can be the theoretic support of teaching vocabulary: the bottom-up recognition process and the top-down recognition process. However, there is still no conclusion about which teaching method is more beneficial to second language vocabulary learning.

In our study, an experiment was conducted to compare the three teaching methods: the inferring word-meaning method, the morpheme-based teaching method, and the word-based teaching method. The results showed that students taught by the inferring word-meaning method outperformed both the students taught by the morpheme-based method and the word-based method in terms of word retention. The possible reason is that the inferring word-meaning section enabled students to pay attention to and spend more time on each word. On the other hand, the disadvantage of the inferring word-meaning method is that it might not be an efficient way to teach a large amount of new vocabulary because it requires sufficient time for students to get involved with the context and the discussion of guessing words. Another drawback is that textbooks are seldom designed for the purpose of inferring word-meaning from context, which means

that the teacher has to spend a substantial amount of time editing the dialogues or reading material from the textbook in order to give students more information to help them guess the meaning of each target word. For the morpheme-based teaching method and the word-based teaching method, there were no statistically significant differences observed. Students from both test groups achieved the same percentage of word retention.

Through the studies conducted in this paper, the inferring word-meaning method has been shown to be more effective than the morpheme-based method and word-based method, in terms of the retention rate of target vocabulary. In addition to continued efforts to investigate the effect of different teaching methodologies with regards to word retention, an important direction for future research would be to explore other aspects of vocabulary, such as the phonemic form, or correct context, etc.



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# **CHAPTER 1**

## **INTRODUCTION**

### **1.1 The Importance of Teaching Vocabulary**

Learning a second language (L2) includes learning numerous aspects of that language, such as vocabulary, grammar, pronunciation, composition, reading, culture, and even body language. Among them, vocabulary is perhaps the most important component in L2 ability. One of the first observations that L2 learners make in their new languages is that they need vocabulary knowledge to express meaning in that language. Wilkins (1972) pointed out “while without grammar very little can be conveyed, without vocabulary nothing can be conveyed”. For adults L2 learners, lack of vocabulary is regarded as the greatest source of problems (Green & Meara, 1995; Meara, 1980). Flaitz (1998), James (1996) and Folse (2004b) all demonstrated the phenomenon that at the end of some ESL courses in intensive programs, students expressed a strong desire for vocabulary instruction. Based on the results of the survey, scholars found out that “more vocabulary instruction” was ranked No. 2, when the scholars asked students their opinions on improving the ESL program. The No. 1 was “more opportunities to speak in class”. From the survey results, it is evident that L2 learners are eager to learn vocabulary, in order to express their thoughts effectively. That is to say, L2 learners know the importance of the acquisition of vocabulary and they consistently cite their lack of vocabulary knowledge as an area in which they are deficient. As Meara (1980) pointed out, L2 “learners themselves readily admit that they experience considerable difficulty with vocabulary, and once they have got over the initial stages of acquiring their second

language, most learners identify the acquisition of vocabulary as their greatest single source of problems". Krashen (1989) also noted that L2 learners do not carry grammar books with them but dictionaries.

However, traditional vocabulary instruction has received less attention in second language pedagogy than any of these other aspects, especially compared to grammar teaching. Folse (2004) noted that in the field of ESL teaching, exercises practicing vocabulary may be found in reading books, but such exercises are rarely found in grammar books, speaking books, listening books, or writing books in spite of the importance of vocabulary in these areas. He also argued that there might be a specific program or course that is designed to help second language learners to improve their grammar or speaking ability, but a course designed to expand students' vocabulary size is very rare. Richard (1976) noted that the "teaching and learning of vocabulary have never aroused the same degree of interest within language teaching as have such issues as grammatical competence". That is because L2 vocabulary did not put a position as high as grammar. Since the 1940s, when audio-lingual methods were generated in reaction to the weak oral output which resulted from grammar-translation, classroom vocabulary learning and teaching has been undervalued in the field of second language acquisition. L2 teachers conducted a variety of grammar drills while little vocabulary practices occurred. Even in more recent communicative methods, including its outgrowth natural approaches, vocabulary was not a primary concern, either. Although grammar was not as emphasized as before, the status of teaching vocabulary still remained low.

There is another reason that explains why teaching vocabulary has been undervalued. The acquisition of a second language was treated as a phenomenon

analogous to first language acquisition. As we know, a person naturally learns their first language, including vocabulary, by talking to people around them, reading novels, watching TV, etc. Thus, researchers assumed that vocabulary would take care of itself in L2 acquisition as well. In 1982, Krashen proposed that ESL teaching should replicate the L1 learning process and let students learn vocabulary naturally. As long as L2 learners have good learning habits, and exposure to the target language, vocabulary acquisition would eventually happen. Nagy and Anderson (1984) concluded that, for native speakers, “even the most ruthlessly systematic direct vocabulary instruction could neither account for a significant proportion of all the words children actually learn, nor cover more than a modest proportion of the words they will encounter in school reading materials”. Based on this point, they claimed that vocabulary acquisition does not need any kind of formal instruction.

The communicative approach to language teaching has concentrated on teaching functions of language in discourse, at the expense of teaching vocabulary, which has been de-emphasized. Proponents of this approach believe that second language acquisition proceeds similarly to first language acquisition vocabulary is acquired naturally from a communicatively meaningful context (Coady, 1993). According to Nunan(1991), advocates of the communicative approach believe that “one needs not understand every word in a spoken or written text for communication to be successful.” Lack of direct vocabulary instruction is rooted in the assumption that a reader is likely to guess the meaning of unfamiliar words from context.

Though the importance of direct vocabulary teaching has consistently been recognized in first language instruction, it is only gradually gaining attention in the field

of second/foreign language teaching (Akamatsu, 2008; Carter & McCarthy, 1988; Morimoto & Loewen, 2007; Nassaji, 2007; Wang Koda, 2007). Paul Nation (1982) cited a number of studies and concluded that almost all of the experiments comparing learning in context with learning word pairs (foreign word – English translation) have not produced results, which favor learning in context. Pitts, White, and Krashen (1989) conducted a study with adult L2 acquirers who were asked to read the first two chapters of the novel “A Clockwork Orange” (Burgess, 1972). Participants were then tested on their knowledge of 30 Russian slang words, called “nadsat”. Results showed that, there was some nadsat vocabulary acquisition through reading, but it was very small (6.4–8.1%). Paribakht and Wesche (1997) also conducted an experiment on two groups where participants were at the same English level. The first group was asked to read a selected passage and given explicit vocabulary instruction. After the teacher’s explanation, this group did vocabulary drills and exercises. The second group was asked to read the same passage but was not given any vocabulary instruction. And instead of vocabulary drills and exercises, this group was asked to read another passage, which contained the same target words. The results of the experiment showed that the first group appeared to master the target vocabulary better than the second one. In fact, almost all the experiments showed that a reading class with explicit vocabulary instruction is more effective than a class without. Thus, as Nation (1982) concluded, explicit vocabulary instruction is surely crucial to second language learning.

## **1.2 Vocabulary Teaching Methodologies in History**



Since vocabulary is very important to L2 learning, what can a foreign language teacher do to help students learn an L2 more efficiently? In other words, what kind of classroom instruction is more effective and beneficial to L2 learners in terms of vocabulary learning?

Wen (2008) pointed out that the most common way to teach and learn L2 vocabulary is through reading. Hulstijn (1992) investigated the relationship between extensive reading and vocabulary acquisition. His study results showed that the retention rate of word meanings in a true incidental learning task is very low. In other words, although comprehensive reading does facilitate L2 vocabulary acquisition, planned classroom teaching and interactive practice of target vocabulary can better facilitate L2 vocabulary learning. Paribakht & Wesche (1997) conducted an experiment on two groups of L2 learners at similar language levels. For the first group, the teacher highlighted the target words and adopted the cognitive teaching strategy. Students were asked to read a short passage and answer questions, which were related to the passage. Then, based on the passage, students completed vocabulary exercises, such as completing sentences and brainstorm. For the second group, students were asked to read the same passage and answer the same questions, but were not required to do any vocabulary exercises. Instead, students from the second group were asked to read another passage, which included all of the target words from the first passage. The results of the experiment showed that although there was vocabulary development for both groups of students, the first group of learners improved more significantly, indicated by their ability to use the target words in varying contexts, while students from the second group were less capable of using the target words in varying contexts. Consequently, a meaningful teaching instruction and

interactive activity can better facilitate vocabulary learning rather than learning words from extensive reading. Ellis & He (1999) also discovered that when an L2 learner has an opportunity to use new words to conduct meaningful communication or negotiation, the learning effect is much better than learning new words from input.

Many researchers (Coady, 1997; Gass & Selinker, 2011, etc) argued that the teacher's instruction has a very important effect on drawing students' attention to the target words so that eventually facilitates vocabulary learning. An L2 teacher should offer students a large amount of specific practices so that students will be able to focus on certain aspects, such as vocabulary comprehension and usage. When organizing classroom activities, two factors are extremely important. One is the amount of input materials. Sufficient materials and comprehensive input can facilitate learners' language ability as well as cognitive competence. The second factor is providing students opportunities to experience the process of dealing with different types of information, such as meaning, structure and function. For example, teachers should design activities that can teach students the relationship between a verb and a noun. Teachers can also give a concrete context in order to show students which situation is the most appropriate time to use a word. As a result, learners know how to use the word, and at the same time, know exactly in what context he should use it.

Before discussing the three teaching methods that this paper focuses on, an introduction of the communicative language teaching method is needed because this teaching method is adopted in our experiment, introduced and discussed later in this paper. The communicative language teaching method completely changed the direction of language instruction: the focus in language teaching changed to communicative

proficiency rather than the command of structures. This shift has been manifested in communicative language teaching, a broad term used to refer to many specific methods. Richards and Rodgers (1990) claimed that the goal of the communicative method is communicative competence and to develop procedures for the teaching of the four language skills that acknowledge the interdependence of language and communication. Stern (1981) also argued communicative methods have the common goals of bringing language learners into closer contact with the target language and of promoting fluency over accuracy. The type of classroom activities proposed in communicative language teaching also led to new roles in the classroom for teachers and learners. Learners now had to participate in classroom activities that were based on a cooperative rather than individualistic approach to learning. (Richards, 2006) Students had to become comfortable with listening to their peers in group work or pair work tasks, rather than relying on the teacher for a model. They were expected to take on a greater degree of responsibility for their own learning. Teachers now had to assume the role of facilitator and monitor. Rather than being a model for correct speech and writing and one with the primary responsibility of making students produce plenty of error free sentences, the teacher had to develop a different view of learners' errors and of her/his own role in facilitating language learning. In the teaching experiment in the later chapter of this paper, promoting the communication ability using target words is the main goal of classroom L2 vocabulary teaching. Thus, a variety of communicative activities are designed with explicit instructions in order to combine the word-infering strategy and morpheme-based teaching style.

## CHAPTER 2

### REVIEW OF THE LITERATURE

#### 2.1 Bottom-Up and Top-Down Cognitive Process

This paper is going to investigate two different vocabulary teaching methodologies: one is inferring word-meaning from context with teacher's explicit instruction, and the other is a morpheme-based or character-centered teaching method. The former is considered a top-down information processing strategy, and the latter is regarded as bottom-up cognizing processing. Both of them are based on the development of the schema linguistic model. In the 1980s, scholars such as Anderson and Pearson (1984) started to apply the new cognize model to language reading, and proposed bottom-up and top-down information processing strategies. They argued that text itself does not carry any meaning. A reader uses text to reconstruct his own thoughts. The bottom-up processing is evoked by the in-coming data. As the schemata converge into higher level, more general schemata, the top-level schemata become activated. This process is similar to how a house is built. First, one must get the necessary materials together, such as wood, nails, concrete, bricks, etc, and then start by building a foundation. Once a foundation is established, the rest of the house can then be constructed. When the bottom-up strategy is applied in L2 learning, students first establish a foundation, which means they usually learn vocabulary, grammar and patterns, and then move on texts, cultural topics or more comprehensive materials. Top-down processing, on the other hand, takes place when the system makes general predictions based on higher level, and then searches the input to fit into these partial schemas. In other words, it is more like holding the blueprints for a house, which contain all the information and required materials. If a person wants to

build a house, he first needs to find all of the necessary materials. In short, bottom-up cognitive process is a process of information reconstruction and top-down cognitive process is a process of information confirmation.

## **2.2 Top-Down Process & Interring Word-Meaning Method**

Coady (1979) argues that there are six types of information processing strategies that L2 learners use when trying to infer word-meaning from the context of target language: (1) Grapheme-phoneme; (2) grapheme-morphophoneme; (3) syllable-morpheme; (4) syntax; (5) lexical meaning; (6) contextual meaning. Based on his research, L2 learners start learning a language by using more form-oriented processing strategies, such as phoneme-grapheme correspondences and syllable-morpheme information, and gradually take advantage of more meaning-oriented strategies involving lexis and context, such as using context to infer word-meaning and acquire vocabulary. He noted that this process varies according to L2 learners' language levels. When L2 learners' language levels improve, and they are able to have a better understanding of the whole information of text, they start to infer an unknown word-meaning from the overall knowledge acquired from the context. That is to say, when L2 learners, who achieve a certain language level, are reading an authentic text, the top-down process is dominated. The L2 learner uses his own background information, as well as the information he acquires from the text, to infer the meaning of an unknown word, and confirm his guessing from the context.

### **2.2.1 A Case Study of English Learners**

Other scholars conducted similar research on how L2 learners infer word-meaning based on context. Thomas Huckin and Joel Bloch (1993) did a case study on three Chinese students who were studying English at an advanced level. The subjects were required to read an unedited English article and think out-loud in Chinese (which means that when the Chinese students were reading, they needed to vocalize their thoughts in order to let the researchers know what they were thinking, how they were understanding the text, and what opinions they were forming about the text in their first language if they met any unknown words. A process of translating these words from Chinese to English was conducted by professionals. The study showed that the subjects first studied the word form itself to see if they recognized any of its parts, such as suffix and root. If they did, they would generate a hypothesis as to what the word might mean; then they would generally use one or more context-based strategies to evaluate their hypothesis. If they did not recognize any part of the word at all, they would typically use context-based strategies to generate a guess. One important finding from the study is it indicated that the use of some collocating clue-words in the immediate context always lead to a successful guess of the target word's meaning.

A clue-word is a word that indicates the meaning of another word. It could be a preposition, a conjunction, an adjective, etc. For example, the word “consequently” indicates the first sentence is the reason for the second sentence. Thus, it helps the learners both to generate and to evaluate guesses.

On the other hand, most of the unsuccessful cases of word guessing resulted from misidentification of word forms. That is to say, the Chinese students were unable to determine the target word's part of speech.

There are two important findings from this study. First, as a foreign language teacher, it is important to assist students with finding clue-words and to help students improve their ability to identify clue-words while reading authentic foreign language texts. The teacher also needs to encourage students to use context clues to double-check word interpretations, even when they think they already know the word. In this experiment, the Chinese teacher used various ways to assist students to find out the clue-word. Please see Experiment section and Appendix for details information. Secondly, it is important to teach students how to use context to identify the part of speech of a word. In this experiment, the teacher adopted a series of strategies to help students determine if a word is a noun, verb, adjective, adverb, etc. Please see Appendix for more details.

### **2.2.2 A Case Study of Chinese Learners**

Chinese scholar Liu (2001) conducted an experiment on intermediate level learners studying the Chinese language to investigate the efficiency of inferring word meaning from context. The target words in his experiment were 发愁 (*fāchóu*, anxious), 即兴 (*jíxìng*, impromptu) and 正视 (*zhèngshì*, face). Only a small amount of students (37.5%, 31.3% and 10% respectively to 发愁, 即兴, and 正视) were able to infer the target words' meanings correctly. He explains that there are many factors which affect the ability of an L2 language learner to infer word-meaning from context. Among them, the structure of compound word, polysemy, context, and learners' language proficiency were highlighted by the investigation. However Xiao (2002), another researcher, analyzed the results of Liu's experiment and combined all of the correct and half-correct results into the category of "efficient", which largely increased correct rate to 50%,

37.6% and 60% respectively. He argued that the reason 正视 (*zhèngshì*, face) has a higher “efficient” is due to the higher frequency of 视 (*shì*, vision/look) in the Chinese Frequency List. Thus, he proposed that using characters or morphemes will facilitate inferring word-meaning from context.

Considering modern Chinese words are most compound words of two characters, Chen, Wang, and Cai (2010) also pointed out that knowing both characters from a Chinese word can facilitate to infer the meaning of unfamiliar words. For example, when facing this word 认知 (*rènzhī*, cognition), on the morpheme level, one usually considers 认 the meaning of know or identify and 知 the meaning of knowledge (noun) or know (verb). Thus, it is easier to understand the meaning of the entire word. Chen, Wang and Cai (2010) also demonstrated that knowing even one character from a Chinese word will also facilitate to infer the meaning of a word. They used 汽车 (*qìchē*, automobile) as an example. If one knows that 汽车 (*qìchē*, automobile) is a kind of 车 (*chē*, car) that used gasoline, then when one faces an unfamiliar word, such as 轿车 (*jiàochē*, sedan), even without knowing the meaning of 轿 (*jiào*, sedan), one could infer that this word also represented a kind of car, which would help the individual to learn this new word.

Moreover, Mcbride-Chang (2010) believes that knowledge of Chinese compounding structures can also help a learner to infer the meaning of an unknown word. According to the common categorizations adopted and taught in the educational system in Mainland China and agreed upon by mainstream linguists (e.g. Feng, 2009; Lü, 2006; Zhong, 1979), there are five sub-structures of Chinese compounds: (a) subordinate, (b) coordinative, (c) subject-predicate, (d) verb-object, and (e) verb/adjective-complement.



For example, the 地震 (*dìzhèn*, earthquake) has the subject-predicate structure. The first morpheme 地 (*dì*, earth) is the subject of the statement, and the second morpheme 震 (*zhèn*, quake) specifies the state of 地 (*dì*, earth). Thus, if one has the knowledge of subject-predicate compound words, it is easier to infer the meaning of the word 地震 (*dìzhèn*, earthquake). However, normally a beginning level or intermediate level Chinese learners are very unlikely to learn the knowledge of Chinese compounding structures. Thus, the strategy of analyzing a Chinese word structure can be only used in an advanced level.

### **2.2.3 Other Factors Influencing Inferring Word-Meaning**

Another factor that affects L2 vocabulary learning is the importance of a word. Sternberg (1987) points out that if a given unknown word is judged to be necessary for understanding the surrounding material in which it is embedded, the reader's incentive for figuring out the word's meaning is increased. If the word is judged to be unimportant to understanding what one is reading (or hearing), one is unlikely to invest any great effort in figuring out what the word means. The more incentive there is to learn a new word, the better the chances are that it will be acquired by the L2 learner.

Other linguistics studies also confirmed this finding. According to Hatch, Flashner, and Hunt (1986), learners recognized a gap (Hatch, Flashner, and Hunt refer to it as an 'empty box') in their knowledge. In the future, the learner may encounter (hear or read) the piece of linguistic information that they had previously lacked. Because the learners' gap was recognized during the previous experience, the linguistic information now being heard or read is 'salient' and has a greater potential for being acquired. As a result, when second language learners meet an unknown word that is salient during

reading, they have a stronger incentive to determine the word's meaning. In other word, the process of inferring word-meaning from context can lead to a stronger incentive, and it will thus result in more efficient vocabulary acquisition.

There are many other factors that may affect L2 vocabulary acquisition, such as types of text, word repetition, students' background knowledge, etc. However, most of the case studies or experiments are based on L2 reading which studied L2 vocabulary learning in a more incidental way. So here are the questions: how do L2 teachers apply the top-down information processing strategy in the L2 classroom? To what extend that inferring word-meaning from context will be beneficial to L2 vocabulary acquisition?

### **2.3 Bottom-Up Process & Morpheme-Based Teaching Method**

Acquisition studies of L1 derivational morphology in English showed that knowledge of morphological relationships among words allowed students to greatly expand their vocabulary by applying morphological principles. Stoller and Grabe (1993) examined the implications of L1 vocabulary research for L2, and concluded that in both LI and L2, students must be equipped with independent learning strategies that include, among others, an awareness of productive word families, stems, and meaningful affixes.

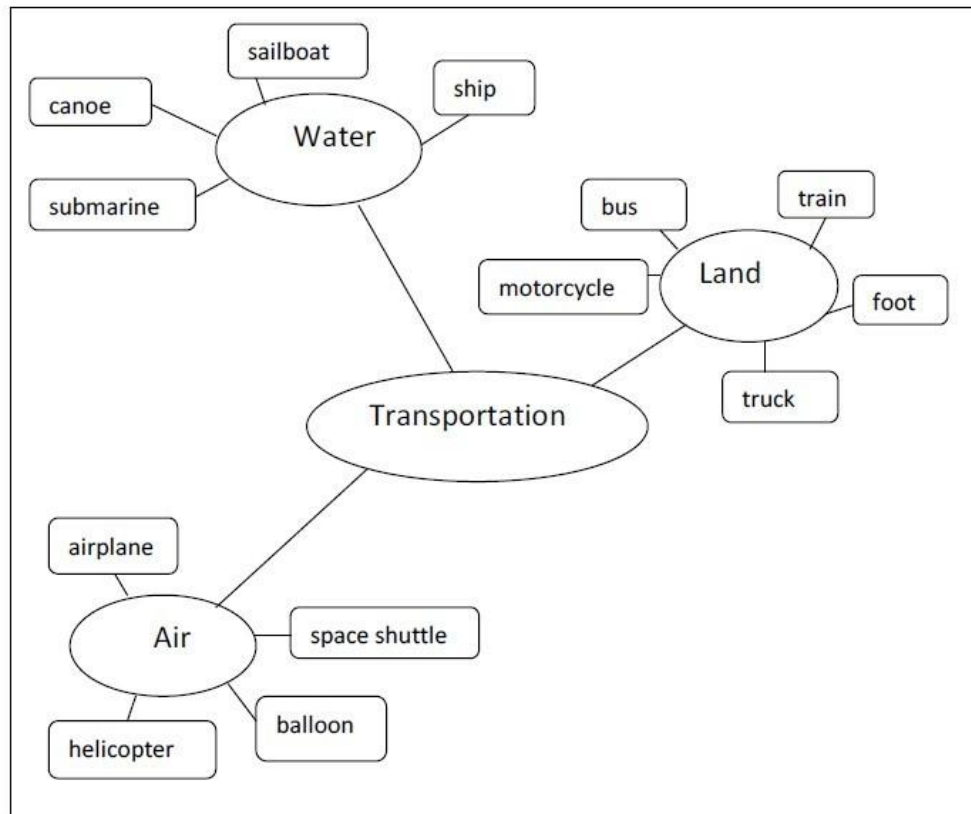
Morin (2003) found that second-semester L2 learners who focus on Spanish derivational morphology may derive immediate benefits in the area of production, and left open the possibility that at higher proficiency levels, there may also be benefits with respect to vocabulary size or receptive morphological knowledge. The study also suggested that first semester learners may not possess a formal proficiency adequate to use morphological analysis as a vocabulary-building tool as effectively as more advanced

learners. In the study of frequency of use and perceived and actual usefulness of second-language vocabulary strategies, Fan (2003) found that among 1,067 Hong Kong learners of English, the highest proficiency group used three strategies that involve derivational morphological analysis significantly more often than the middle- and low-proficiency groups in her study. These include looking at the part of speech of the new word to guess its meaning, looking at the meaning of the different parts of the new word to guess its meaning, remembering a word by breaking it down and analyzing prefix, root, and suffix.

### **2.3.1 The Semantic Network**

The semantic network (or semantic map), which is very popular in English language teaching, is very similar to Chinese morpheme-based instruction. According to Liu (1994), information stored in short-term memory is likely to be lost; whereas, information in long-term memory, which is usually processed at a deeper level, will be retained. He claimed that to process information at a deeper level often requires building connections between the new pieces of information and existing network of information. That is to say, in learning a concept, establishing semantic ties between this new concept with existing ones can promote understanding and retention of a concept. And a semantic method links all the “related ideas to form a network of information” and thus “is capable of providing meaningful experiences to a learner”. When semantic maps are used as a vocabulary teaching technique, a central word from the text is provided by the teacher. The key ideas together with new related vocabulary words are grouped and listed by categories. During discussion of the map, students become aware of the meanings of the new words, learn new meanings for the old words, and discover the relationships that

hold between the various vocabulary items and the ideas discussed and mapped (Hague, 1987; Johnson & Pearson, 1984). Here is an example:



**Figure 1: A semantic map of the word *transportation*.**

Semantic processing techniques such as semantic mapping are characterized by two processes: first, learners focus on the meaning of the new words under study; second, they integrate these new words into their existing semantic system and their previous experiences (Brown & Perry, 1991; Hague, 1987). The concept that new knowledge is more easily acquired when it can be related to previously existing knowledge is the core principle of schema theory (Carrell, 1984; Anderson & Pearson, 1984; Rumelhart, 1980). Coady (1993, p. 11) states that:

*Teaching vocabulary means teaching concepts, new knowledge. Knowledge of vocabulary therefore entails knowledge of the schemata in which the concept participates, and knowledge of the networks in which that word participates, as well as any associated words and concepts.*

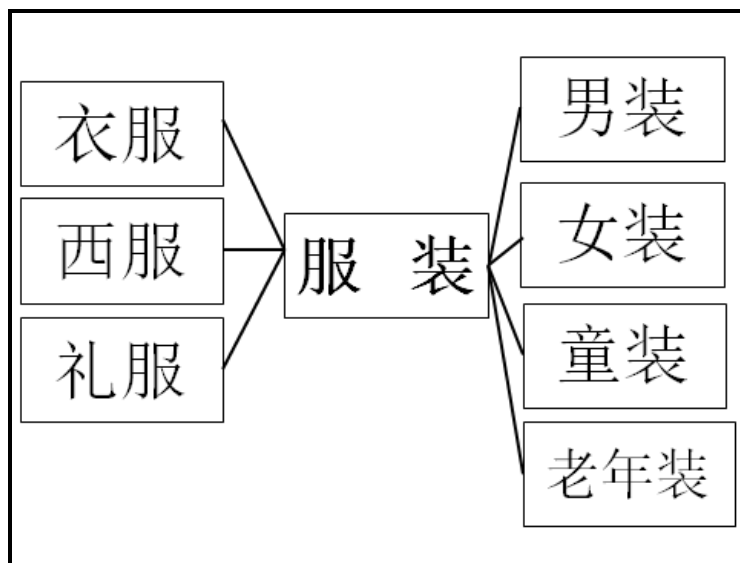
In sum, semantic mapping enables learners to understand the relationships among words by helping them use their prior knowledge since the right “interpretation of new information hinges on its congruency with the schemata currently activated” (Nassaji, 2007, p. 82). In addition to allowing learners to relate the new words and concepts to old schemata, semantic mapping also allows learners to visually see how new words and concepts fit into their already existing knowledge structure (Hague, 1987). “Individual pieces of information cannot exist in the mind on their own ... they have to be integrated into an organized and coherent global representation” (Nassaji, 2007).

### **2.3.2 The Characteristics of Chinese Characters**

Studies on the Chinese language are different from western research, as Chinese language employs characters instead of Latin letters. In Chinese, the smallest combination of meaning and phonetic sound is called a morpheme. Morphemes cannot be separated into any smaller combinations of meaning and sound; otherwise, it either means nothing or means something completely irrelevant to its original meaning. Usually, especially among second language vocabulary learning lists, each character is a morpheme, which contains an independent meaning. The variety of combinations of different morphemes results in Chinese vocabulary. As conjugation does not exist in Chinese, the concept of word family as in other languages does not exist. But in second language teaching, the idea of teaching the most basic meaning unit makes word families and Chinese morphemes similar to each other. Some Chinese scholars addressed the

method of teaching morphemes as character-centered teaching method. Jia (2001) pointed out the strategy for teaching Chinese morphemes is to teach mono-syllables at the beginning then combine mono-syllables into dual-syllables. It helps students to expand their vocabulary and gain a better understanding of Chinese morphology.

In Chinese, each morpheme has its own meaning, thus teachers can use the same meaning of each morpheme from different words to teach new words (Xiao, 2002). For example, a teacher who uses word-based teaching method will teach 服装 (*fúzhuāng*, clothes) as a word. That means the teacher will teach both 服 (*fú*, clothes) and 装 (*zhuān*, clothes) at the same time. However, a teacher who uses the morpheme-based method will teach 服 (*fú*, clothes) and 装 (*zhuān*, clothes) separately. The teacher might introduce 服 (*fú*, clothes) first, and then ask students to think about what other morphemes can be used together with 服 (*fú*, clothes), such as 衣服 (*yīfu*, clothes), 西服 (*xīfú*, suit), 礼服 (*lǐfú*, formal dress). The same teaching method will be used to teach 装 (*zhuān*, clothes), including 男装 (*nánzhuāng*, men's clothes), 女装 (*nǚzhuāng*, women's clothes), 童装 (*tóngzhuāng*, children's clothes), 老年装 (*lǎoniánzhuāng*, senior people's clothes) very easily. Eventually the teacher will put 服 (*fú*, clothes) and 装 (*zhuān*, clothes) together as a whole word 服装 (*fúzhuāng*, clothes). Please see figure 2.



**Figure 2: A semantic map of 服装 (*fúzhūāng*, clothes).**

### 2.3.3 Morpheme-Based and Word-Based Teaching Methods

The morpheme-based Chinese language teaching methods have been undervalued for years, compared to word-based approaches. For those scholars (Pan, 2010; Xu, 2010) who support the morpheme-based method, have the following arguments. First, back to the book of *Mashiwentong* (马氏文通), the Chinese language had focused on characters for over a hundred years. However, when the western linguistic researches were introduced to China, the morpheme-based research suddenly vanished. Instead, Chinese scholars started to focus on individual words (词, *cí*). Pan (2010) pointed out that western research theories were not supposed to be employed simply because they make sense for western languages. The Chinese language has many substantial differences from western languages. Trying to use western theories to explain Chinese would only make Chinese language research more complicated. Lü (1942) also commented “In European languages, words are used directly. The linguistics aims to find out morphemes from words.....However, on the contrary, in Chinese language what we have is

characters, and linguistics need to find out what words or phrases. The reason why we cannot have a clear and satisfactory definition of *ci* (word) is the concept of word does not exist in the Chinese language. Actually, when we discuss Chinese language grammar, it does not necessary to be related with *ci*.” Secondly, Lu (2011) believed that there are three specific characteristics of Chinese characters: Chinese characters themselves, the relation between characters and the Chinese language, and Chinese unique grammars. This tells us that any Chinese language research has to be established based on these three aspects.

For those scholars (Peng, 2010) who support word-based teaching methods, a main argument is that teaching single characters might mislead students. For example, when a language teacher is teaching 习 (*xí*, learn), if the teacher only points out that 习 means to learn, to acquire, to study, then students might make such a mistake as 习中文. Peng (2010) emphasized that words are directly used to speak and to express meaning, while characters are unable to carry on the responsibility of expressing meaning. Chen (2010) also argued that morpheme-based methods could be employed for teaching written Chinese, while word-based methods are better for spoken Chinese.

Pan (2010) also pointed out the relationship between morpheme-based methods and word-based methods. As this paper discussed before, the concept of a morpheme is not equal to a Chinese character. Usually it is, but for some words, such as 葡萄 (*pútáo*, grapes), a morpheme consists of two characters. This paper is going to use morpheme as the general name for the teaching method that focuses on Chinese characters, instead of characters. Pan (2010) argued that word-based methods do not consider characters an important position in the Chinese language. Instead, the word-based methods treat



characters only as writing markers and this is the biggest difference with morpheme-based methods. The target of word-based methods is the combination of phonetics and meanings, while morpheme-based methods add characters besides the phonetics and meanings. Thus, the problem is whether or not characters are necessary in linguistic research.

When the morpheme-based teaching methods are adopted in a Chinese class, individual morphemes with a strong ability to combine with other morphemes are the emphasis during the vocabulary teaching. The morpheme-based teaching methods were first employed in a textbook called *A Key to Chinese Speech and Writing*, by Zhang & Bai (1989). For example, a Chinese language teacher will teach 店 (*dìàn*, store) first, then expand students vocabulary by making a connection with other individual morphemes, such as 肉店 (*ròudiàn*, meat store), 鞋店 (*xiédiàn*, shoes store), 水果店 (*shuǐguǒdiàn*, fruit store), 食品店 (*shípǐndiàn*, food store). In the textbook, morphemes are introduced by their frequency of use. On the other hand, when word-based teaching methods are adopted, the students are encouraged to use the new words in sentences. Thus, the ability to construct sentences is emphasized in the class which uses word-based teaching methods.

Wang (2005) carried out a systematic experimental study on two classes of the College of International Chinese Studies of ECNU. The experiment lasted for a semester. In class A, morpheme-based teaching methods were used. 88 characters were taught and the order of their teaching is shown in Figure 3.

选	出	赞	手	体	适	俗	心	眼	老
难	而	合	专	经	顺	优	费	减	占
正	省	过	规	传	丰	周	亲	接	迷
时	交	风	浪	表	安	商	贪	随	理
招	发	相	土	用	冒	食	反	温	模
当	严	保	记	征	信	解	结	实	现
关	破	猜	自	流	坚	可	沉	健	值
祝	旅	化	缺	方	气	漫	揭	拜	恭
端	珍		口	原	景	推	故		

**Figure 3: The target characters and teaching order in class A**

Four or five words with each character were introduced to the students. While in class B, in which the same teacher used the word-based teaching methods, the same target words were taught to the students. The tests that Wang (2005) conducted were standard HSK tests. Through the initial, mid-term and final vocabulary proficiency test, it was concluded that the morpheme-based class enjoyed a bigger improvement in vocabulary than the word-based class. While Wang (2005) compared the scores of the two classes, he was only able to look at students' overall scores, not at how they performed on specific sections of the test, so it is not clear on what sections the morpheme-based class outperformed the word-based class.

## 2.4 Research Questions

This paper aims to compare and investigate the efficiency of the inferring word-meaning teaching method, morpheme-based method and word-based method. The research questions that this paper is going to discuss are:

1. Does the strategy of inferring word-meaning from context facilitate L2 vocabulary acquisition? Is the inferring word-meaning from context strategy more efficient than the morpheme-based or word-based teaching methods, with respect to word retention?
2. Comparing the morpheme-based method to the word-based method, which is more effective in facilitating L2 vocabulary retention?

## CHAPTER 3

### THE EXPERIMENT

#### 3.1 Participants

All the subjects were second-year intermediate level Chinese learners from the University of Massachusetts Amherst. In order to enroll in the intermediate level Chinese class, students must complete one year of Chinese class at the University of Massachusetts Amherst, or take a placement test to ensure that their Chinese level is suitable for the intermediate level. The requirements for the enrollment ensure that all students at the intermediate level have the same level of Chinese. As for the intermediate classes schedule, there are three discussion classes every Monday, Wednesday and Friday, and lectures every Tuesday and Thursday. The lectures are conducted by the same lecturer, and the discussion classes are taught by different teaching assistants. Each discussion class lasts for fifty minutes. In the semester, each individual topic was taught within a week, and all the classes followed the same schedule: Monday, Wednesday---vocabulary instruction and practice; Tuesday, Thursday---grammar instruction and practice; Friday---comprehensive activities and drills. In order to make sure all the subjects had as little background information as possible about what they were going to learn, the research experiment was conducted on a Monday. The experiment was conducted by the same teacher. All three discussion classes were given different instructions during the experiment. Please see *Procedure* for detailed information of the experiment.

The reason for choosing intermediate level Chinese learners is that inferring word-meaning requires L2 learners to have some basic target language reading ability, in order to make sure the subjects are able to understand the context given in the experiment. Coady (1979) demonstrated that there are six types of information processing strategies when L2 learners try to infer word-meaning from context of target language: (1) Grapheme-phoneme; (2) grapheme-morphophoneme; (3) syllable-morpheme; (4) syntax; (5) lexical meaning; (6) contextual meaning. Based on his research, L2 learners start learning a language by using more form-oriented process strategies such as phoneme-grapheme correspondences and syllable-morpheme information, and gradually take advantage of more meaning-oriented strategies involving lexis and context, such as using context to infer word-meaning and acquire vocabulary. He noted that this process varies according to L2 learners' language levels. When L2 learners' language levels improve, and they are able to have a better understanding of the whole information of text, they start to infer unknown word-meaning from the overall knowledge acquired from the context. Another study also demonstrates the same idea. Liu (2001) did an experiment on intermediate level Chinese learners to investigate the efficiency of inferring word meaning from context. The target words in his experiment were 发愁 (*fāchóu*, anxious), 即兴 (*jíxìng*, impromptu) and 正视 (*zhèngshì*, face). The results showed that there are many factors which affect the ability of a language learner to infer word meaning. Among them, learners' language proficiency was highlighted by the investigation.

### **3.2 Treatment Tasks**

Since the goal of the experiment is to compare the three different teaching methods, the treatment for each class was different.

### **3.2.1 Class of Inferring Word-Meaning**

As for the reading class, or inferring word-meaning class, due to the school class schedule, students were unable to receive instruction and practice on how to infer word-meaning before the experiment was conducted. Thus, the students were given a five-minute instruction of some of the strategies of inferring word-meaning from context at the beginning of the class. The strategies taught were based on the study of previous research (Coady, 1979; Liu, 2001; Hosenfeld, 1977; Van Parreren & Schouten-van Parreren, 1981; Bensoussan & Laufer, 1984; Huckin & Jin, 1987) as this paper has discussed before. In order to make it more clear, the strategies that a second language learner uses could be concluded in four aspects: part of speech, clue word, context, and importance of the word. Thus, the four main strategies emphasized during the five-minutes of instruction were:

1. What part of the speech is the unknown word?
2. Is there a clue word (such as a conjunction) or a word that might carry the similar meaning as the target word in the same sentence or even around the sentence?  
Does the target carry a positive meaning or a negative meaning?
3. Does your guess of the target word's meaning match the overall context? Does it make sense when you come back to that point after you finish reading all the material (if there is time left)?

As for the importance of the word, since students were very clear that the target words were the new vocabulary that they were going to learn, this experiment assumed that the students considered all the target words important to their reading. What is more, since the experiment was set as pair work, the students were eager to come up with the correct answers more quickly and accurately. Example sentences from the instruction are provided below:

我不吃肉,因为我是素食主义者。

*I do not eat meat because I am a vegetarian.*

The students were asked to infer the words 素食主义者 (*sùshízhǔyìzhě*, vegetarian). The students were familiar with all of the other words. First, students could easily find out that the word 素食主义者 (*sùshízhǔyìzhě*, vegetarian) is a noun because of 我是 (*wǒshì*, *I am*), which means I am and it is always followed by a noun. After that, the teacher encouraged the students to pay attention to the logic of the sentence. Thus, students were able to notice that it is a cause-effect complex sentence. So the teacher encouraged the students to think about what might be the reason why a person does not eat meat. Then a student gave the right answer.

Another example is given below:

游泳是我最喜欢的运动。我很享受游泳的时刻。

*Swimming is my favorite sport. I enjoy the moment of swimming very much.*

After analyzing the structure of the sentence, the underlined word 享受 (*xiǎngshòu*, enjoy) must be a verb. From 最喜欢 (*zuìxǐhuān*, favorite), the students were able to tell that the author had a positive attitude to swimming. Thus, the teacher guided the students to the conclusion that the underlined word must match the positive attitude, as

the word 最喜欢(*zuì xǐ huān*, favorite) had suggested. In other words, as 享受(*xiǎng shòu*, enjoy) is a verb with a positive attitude, students were able to determine that 享受 (*xiǎng shòu*, enjoy) means “enjoy”.

After the five-minutes of instructions, all the students were given the same selected texts from their textbook or passages designed by the instructor only for this group. The selected texts or designed passages contained all the target vocabulary, which were all underlined. All the other vocabulary was words that students had studied before. Students were randomly divided into pairs and they needed to both work on the texts or passages, trying to infer the meaning of each underlined word from the given context. They could write down the English translation on a sheet but they were only allowed to speak Chinese when discussing the meaning with their partners. All the students were encouraged to communicate with their partners. If there was a word that didn't belong to the target words and neither student in the pair was able to recall the meaning, the pair of students was given the English translation of the unknown word. Students were also given a list of the target words and were asked to write down their guesses, including the English translation of the words, and the parts of speech in the given sentences. The pronunciation of each word (pinyin) was provided on the list. This was the first stage of the experiment.

After the first stage, the teacher and the students went over the readings together, and only stopped when there was a target word. Then the explicit vocabulary instruction of the target word was given by the teacher. Students were encouraged to give answers and explain their thinking when they inferred the meaning from context before the correct translation was given. In the second stage, the explicit instructions included asking and



answering questions, pair work, an information gap game, describing a map, and other communicative activities. Due to the limit of class time, students did not read the materials again. This class was considered a top-down vocabulary learning process.

### 3.2.2 Class of Morpheme-Based Teaching Method

In this class, each word was taught explicitly by the instructor. The section of inferring word-meaning was omitted. Instead, the students were encouraged to come up with the related words they had already learned to the target word. For example, for the word 出发 (*chūfā*, set off), the students were able to come up with the words “出去 (*chūqù*, to go out), 出门 (*chūmén*, to leave), 发生 (*fāshēng*, to happen), 发展 (*fāzhǎn*, to develop), 发现 (*fāxiàn*, to find)”. After brainstorming, students were asked to decide the meaning of each character. Take 出发 (*chūfā*, set off) as an example again. The students believed that 出 meant “out,” and 发 meant “develop”. And that is why 出发 (*chūfā*, set off) has the meaning of “to set off”.

However, occasionally students were unable to recognize a character. In that case, the meanings of the characters were provided directly in English to the students. Then students used their own background knowledge to find out the meaning of the target word. Due to the nature of this experiment, the process of guessing a word’s meaning was not emphasized compared to the inferring word-meaning class. On the other hand, the relation between each character and the integrated word was focused. Take 报名 (*bàomíng*, to sign up) as an example. Students have learned both 报 (*bào*, to report) and 名 (*míng*, name). So the meaning of 报 (*bào*, to report) and 名 (*míng*, name) was emphasized at

the beginning. Students came up with the following words: 报纸 (*bàozhǐ*, newspaper), 报告 (*bàogào*, report), 名字 (*míngzì*, name), 有名 (*yǒumíng*, famous). Then the meaning of 报名 (*bàomíng*, to sign up) was provided: sign up. The process of putting all the information together to infer the meaning of 报名 was short and quick, as understanding each morpheme of a target word was the focus of the group.

After the discussion of each morpheme of a target word, the same communicative activities and games were conducted as in the inferring word-meaning class. Once a group of target words had been taught using the morpheme-based teaching method, a piece of short reading material was provided to the students in order to complete the bottom-up learning process.

### **3.2.3 Class of Word-Based Teaching Method**

As for the third class, or the word-based class, students learned vocabulary from explicit communicative instructions. The teacher presented words directly on PowerPoint with English translations next to them. The meaning of each morpheme was not mentioned, nor was the relationship between characters and the word. After students read each word, a few questions were asked and students were supposed to answer those questions using the target words. A model answer was presented on PowerPoint in order to help visual learners better understand the word meaning and usage. After that, the same communicative activities and games were conducted as in the other two classes. The same reading materials were provided as in the morpheme-based class.

Please see Table 1 for details information, including the treatment for three classes, immediate tests and posttests.

Table 1: Treatment for three classes.

	<b>Inferring Word-Meaning Class</b>	<b>Morpheme-Based Class</b>	<b>Word-Based Class</b>
5	How to infer word-meaning	Character Instruction	Words Instruction
10	Reading and		
15	Guess the meaning of target words	Words Instruction	
20	Questions related to the		
25	reading passage		
30	Words Instruction		More communicative activities
35			
40		Reading	Reading
45		Questions related to the	Questions related to the
50		reading passage	reading passage
<b>Immediate Tests</b>			
<b>Posttests (Two Weeks Later)</b>			

### 3.3 Assessment Tests

A pre-test was given in order to examine students had previous knowledge of the target words. There were twenty seven new words in total. On the test, the pinyin of each word was provided to students in case students knew a word only from the phonetic form.

Take the word 参加 (*cānjiā*, to participate) as an example. Both the characters 参加 and

the pinyin *cānjiā* were provided (Please see the Appendix C for the pre-test). Also, on account of the nature of the Chinese language, it is possible to guess meaning just from the characters. So the following instruction was given:

*Please write down GUESS next to the English translation if you are not sure about the meaning, and then try to guess it.*

Using this process, it was easier to assess whether a student already knew a word or not. For example, although the students have not learned the word 盒饭 (*héfàn*, box meal), many students guessed the meaning of 盒饭 (*héfàn*, box meal) correctly based on the two morphemes. Thus, the word 盒饭 (*héfàn*, box meal) has counted out of the target word list. The target word list was shortened to twelve words after the analysis of the results of the pre-test. In other words, none of the subjects had any previous knowledge of the twelve target words.

There was also an immediate test and a posttest after the classes were taught in the experiment. The immediate test was administered right after the class, to measure immediate learning effect of each target word. Students were given a list of the target words and were asked to write down the English meaning of each word (Please see Appendix D). Since all the classes were supposed to be vocabulary classes, the meaning of each word was emphasized, while the usage of a word was not focused on. On the other hand, due to the property of some words, it was unnecessary to determine if the subjects were able to use it in a sentence with the correct form, such the word 团 (*tuán*, group). Thus, as long as the students could write down the correct English translation, it was marked correct.

The posttest was administered two weeks after the classes were conducted. Students were given a piece of paper with the twelve target Chinese words. They were asked to write down the English meaning of each word, the part of speech, and pinyin of each word (Please Appendix E). However, students received one point when both the English meaning and part of speech were correct, no matter if the pinyin was correct or not.

## CHAPTER 4

### RESULTS AND DISCUSSION

#### 4.1 Results from the Immediate Tests

Since there were 11 target words in total, with 1 point given for each correct answer, the perfect score was 11. After the data of the immediate tests was collected, the mean and standard deviation of the immediate tests was calculated and is shown as in Table 1.

Table 2: The mean and standard deviation from the immediate tests.

	Mean	Standard Deviation
Inferring Word-Meaning Class	9.813	1.377
Morpheme-Based Class	9.286	1.496
Word-Based Class	8.875	1.642

As shown in Table 2, the inferring word-meaning class has the highest average score (9.8125), followed by the morpheme-based class (9.2857), and then the word-based class (8.875). In order to calculate the one-way analysis of variance (ANOVA), standard deviation was provided in Table 1, as well. The ANOVA result is shown in Table 3.

Table 3: ANOVA for immediate L2 word retrieval.

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>
Between Groups	4.936348	2	2.468174	1.137762
Within Groups	60.74107	28	2.169324	

\*  $p=0.3349 (>0.05)$

Since the p-value is bigger than 0.05, it indicates that no statistically significant differences were observed between classes. That is to say, all groups performed equally well on the immediate word retrieval tests after the 50-minute classes.

#### 4.2 Results from the Posttests

After the data from the posttests was collected, the mean and standard deviation was calculated and is shown in Table 4.

Table 4: The mean and standard deviation from the posttests.

	Mean	Standard Deviation
Inferring Word-Meaning Class	9.8	2.052
Morpheme-Based Class	7.714	3.729
Word-Based Class	6.714	3.536

As shown in Table 3, the mean of the inferring word-meaning class is still the highest: 9.8. The second highest mean is from the morpheme-based class: 7.71, followed by the word-based class: 6.71. Compared to the data from the immediate tests, the means of all the three classes have decreased. After submitting all the data to a one-way analysis of variance (ANOVA), the result is shown in Table 5.

Table 5: ANOVA for post L2 word retrieval.

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>
Between Groups	51.91527	2	25.95764	3.723431
Within Groups	181.2571	26	6.971429	

\*P=0.037847 (<0.05)

As shown in Table 5, a statistically significant difference (p-value = 0.037847) among the classes was observed. Thus, it is evident that students' ability of recalling the

target words was significantly different, as a result of using different vocabulary teaching methods.

#### 4.3 Research Question 1

Does the strategy of inferring word-meaning from context facilitate L2 vocabulary acquisition? Is the inferring word-meaning from context strategy more efficient than the morpheme-based or word-based teaching methods?

Although Table 5 proves that there is a statistically significant difference between each class, it does not indicate which group performs the best. Thus, a comparison of each class is necessary. Please see Table 6 for the Post Hoc (Scheffé) results from the inferring word-meaning class and the other two classes.

Table 6: Post Hoc Results from the posttests.

		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Word-Meaning	Morpheme	3.06667 <sup>*</sup>	1.11532	.036	.1715	5.9618
	Word	3.35238 <sup>*</sup>	1.11532	.021	.4573	6.2475
Morpheme	Word-Meaning	-3.06667 <sup>*</sup>	1.11532	.036	-5.9618	-.1715
	Word	.28571	1.30241	.976	-3.0951	3.6665
Word	Word-Meaning	-3.35238 <sup>*</sup>	1.11532	.021	-6.2475	-.4573
	Morpheme	-.28571	1.30241	.976	-3.6665	3.0951

As shown above, the p-value of the inferring word-meaning class and the morpheme-based class is 0.036 (<0.05), and the p-value between of the inferring word-meaning class and the word-based class is 0.021 (<0.05). The results demonstrate that the inferring word-meaning class has a statistically significant difference from the other two groups. Since the mean of the inferring word-meaning class is higher than the other two



groups, it is evident that the inferring word-meaning class outperformed both the morpheme-based class and the word-based class. In other words, students who learned vocabulary using the inferring word-meaning method had a higher rate of word retention than those who learned with the other methods. Thus, to answer the first research question: does the inferring word-meaning method facilitate second language vocabulary acquisition and is it more efficient than the morpheme-based or word-based teaching methods?, the results of the experiment indicate that the inferring word-meaning method does facilitate second language vocabulary acquisition, and it is more efficient than the other two teaching methods.

So why did using the inferring word-meaning teaching method result in students achieving a higher rate of word retention in the experiment?

Compared to the morpheme-based class and the word-based class, the inferring word-meaning class used a different approach: the addition of a word guessing section. It is clear that because of the extra word guessing section, the results of the experiment have a significant difference. Students from the inferring word-meaning class got more opportunities to deal with the target words than the word-based classes. In the inferring word-meaning class, students worked on determining the meaning of the target words with their partners. Students had to read the passage thoroughly, and analyze the part of speech of the words, which contributed to the students having a better understanding of and retention of the target words. For example, the sentence below was originally from the edited passage. Students were supposed to use the context and other strategies mentioned earlier in this paper to infer the word 深 (*shēn*, deep). Students were familiar with all of the other words.

可是丽莎没有游泳,因为海水太深了,她有点儿害怕。

*But Lisha didn't swim because the sea was too **deep** and she was a little afraid.*

According to the researcher's observation, the students read the sentences again and again, trying to find the relationship between each sentence. The researcher also noticed that students proactively read the target words many times and were eager to find out the meaning of the unknown word. When the answer was announced, students had to explain why they got it correct or incorrect. Throughout the process of inferring word-meaning with pairs, the students were totally immersed in these target words and were strongly motivated to study these words and try to determine their meaning.

Another situation shows that some students actually used the morpheme when they were trying to determine word-meaning from the context:

每个人都交了 800 元的旅行费。旅行费**包括**: 车费, 旅馆费和三餐。

*Everyone submitted 800 yuan as travel fee. The travel fee **includes**: transportation, hotel, and three meals.*

By discussing with each other and using the context of the sentences, the students from the inferring word-meaning class easily found out the meaning of 包括 (*bāokuò*, to include). During the process, the researcher noticed that some students used the meaning of 包 (*bāo*, bag) as a clue, which helped them to think of the English meaning “include.” This is a strategy that the teacher didn't introduce at the beginning of the class, but which some students figured out by themselves. At the end of the discussion, the students had to explain why they thought the meaning of 包括 (*bāokuò*, to include) was “include.” The following explanation section could be considered as the second time for students to strengthen their memory of the target words.

#### 4.4 Research Question 2

Comparing the morpheme-based method to the word-based method, which is more effective in facilitating L2 vocabulary retention?

As shown in Table 6, the p-value is 0.976, which is bigger than 0.05. That is to say, there is not a statistically significant difference observed between the morpheme-based class and the word-based class. In other words, the morpheme-based teaching method and the word-based teaching method do not make a difference for the long-term retention of Chinese characters.

One possible reason is that it is not that difficult for students to make connections between the target words and the known words. Take 分别 (*fēnbié*, separately) as an example. Students from the morpheme-based class came up with words 分开 (*fēnkāi*, separate), 分手 (*fēnshǒu*, break up), 别人 (*biérén*, others) and 别的 (*biéde*, others). The meaning of 分别 (*fēnbié*, separately) is related to 分开 (*fēnkāi*, separate) and 别人 (*biérén*, others). On the other hand, during the interview after class, more than half of the students from the word-based class mentioned that they were thinking about the related words when they were studying a new word. Thus, although the brainstorm section from the morpheme-based class seemed to enable students to spend time thinking about individual characters, students from the word-based class were possibly analyzing the morphemes on their own. That is possibly why the morpheme-based teaching method and the word-based teaching method resulted in the same retention rates.

#### 4.5 Advantages & Disadvantages of Inferring Word-Meaning Method

Besides the fact that the process of inferring word-meaning from context greatly facilitates the memorization of vocabulary, another reason that the inferring word-meaning class performed better in terms of word retention is that when students encountered the same target words again, they recalled the scene when they had previously tried to determine the meaning of the word with their partners. Consequently, it facilitates students to recall the meaning of each word.

Move over, the researcher noticed during the experiment that the students from the inferring word-meaning class were greatly engaged and motivated to study these target words, while the students from the morpheme-based class were not as engaged and motivated. The students' feedback also supports this observation. In the morpheme-based class, the students only mentioned it was different from the normal teaching style, with only a few students responding "I like it" or "your class is fun." However, the students from the inferring word-meaning class were very excited to tell the teacher that they "really like your teaching style" and "it makes me very eager to learn the new words". The idea of inferring word-meaning is actually very similar to the task-based approach. However, the task-based approach is still different from the inferring word-meaning teaching method. The following short paragraph from Ellis, Rod (2003) is the definition of task-based instruction:

*Task-based language learning (TBLL) ..... focuses on the use of authentic language and on asking students to do meaningful tasks using the target language. Such tasks can include visiting a doctor, conducting an interview, or calling customer service for help. Assessment is primarily based on task outcome (in other words the appropriate completion of real world tasks) rather than on accuracy of prescribed language forms.*

*There are six components of a task. They are: goals and objectives, input, activities, teacher role, learner role, setting.*

It is clear that the goal for students from the inferring word-meaning teaching approach is to find out the definition of a word, while the goal for the task-based approach is to practice using the target words or language in real world situations. Thus, the desired result of the inferring word-meaning method is the students determining the definition of a word and the result of the task-based approach is the students accurate and fluent use of a word in an authentic situation. The word-based class from the experiment described in this paper is considered a typical task-based class, which means all the vocabulary was taught in a task-based mode. Therefore, the results of this experiment indicate that for learning new vocabulary, in terms of word retention, the inferring word-meaning teaching method outperformed the normal task-based approach.

While the use of the inferring word meaning method outperformed the task-based approach, it is not without disadvantages. In the experiment, 25 words (among them 11 target words) were taught during the 50-minute lesson. However, based on the teacher's teaching experience and the class observers, 25 words is the maximum when the inferring word-meaning teaching method is adopted, since a significant amount of time should be provided for students' discussion and guessing of the target words' meanings. Thus, it might not be suitable for all Chinese classes, especially the intensive Chinese classes, which require a teacher to teach approximately 25 words or more during a 50-minute class. Moreover, there are few textbooks that use the inferring word-meaning method as a learning tool. So if a teacher wants to use the inferring word-meaning teaching method for

a group of words, he/she has to design new reading materials which contain sufficient context to enable students to guess the target words' meaning.

#### **4.6 Advantages & Disadvantages of Morpheme-Based Method**

According to the students' feedback, the morpheme-based teaching method is a good way to review words that students have learned before. But at the same time, it still has some disadvantages. During the morpheme-based class, students might face a small amount of words that contain a morpheme they never learned before. For example, the word 包括 (*bāokuò*, verb, include). Students had learned 包 (*bāo*, bag) as in 书包 (*shūbāo*, bag), 钱包 (*qiánbāo*, purse), 包子 (*bāozi*, a kind of Chinese food), 面包 (*miànbāo*, bread), etc. However, the students never learned 括 (*kuò*, to include) and so no one could brainstorm meanings of the character 括 (*kuò*, to include). This meant that students could only analyze the first character 包 (*bāo*, bag), and then try to guess the meaning when it was paired with 括 (*kuò*, to include).

Another example is the acquisition of 顿 (*dùn*, measure word for meals). It is just a single word and the students from the morpheme-based class had never studied the word before. Thus, the teacher had to just tell the students the meaning of the word 顿 (*dùn*, measure for meals), which is the same way of teaching as in the word-based class.

Consequently, it is evident that at least one of the disadvantages of the morpheme-based teaching method is that it is inapplicable when a character or morpheme is unknown to the second language learners. Comparatively, the inferring word-meaning

teaching method can be used in any situation as long as the context is well-edited and informative for the second language learners.

#### **4.7 Advantages & Disadvantages of Word-Based Method**

One of the advantages of teaching Chinese vocabulary using the word-based method is that this method enables students to treat each word as entirety. In the experiment, the teacher did not spend extra class time analyzing the characters or words themselves. The usage and application of each word was the main task. For example, when the teacher was teaching 出发 (*chūfā*, to set off), after the pinyin and the English translation of 出发 (*chūfā*, to set off) were given, an activity was conducted: describe Christopher Columbus's trip based on the pictures shown on the PowerPoint. Thus, the students obtained more opportunities to practice the word 出发 (*chūfā*, to set off). So it is possible that second language learners will benefit more from the word-based teaching method when sentence patterns are involved.

However, the results of the experiment indicated that in terms of word-retention, the word-based teaching method and the morpheme-based teaching method did equally well. In other words, analyzing the individual morphemes of each word and practicing using a word in a sentence have the same effect with regard to long-term word memorization.

#### **4.8 The Limitations of the Study**

The results of the experiment came from three classes. The number of students for each class was uneven, especially the morpheme-based group (number of students: 9) and

the word-based class (number of students: 7). The number of students is too small to represent the general teaching effect resulting from using a different teaching methodology.

Another important factor that would affect the results of the experiment was that there was not enough time to infer word-meaning during class for the participants. Due to the limit of class time, all the subjects from the inferring word-meaning group had about less than five minutes to negotiate 10 words' meanings with their partners. Consequently, the inferring word-meaning teaching method takes much more class time than other teaching methods. As for the immediate test and the posttest, due to the course schedule, there wasn't time to check students' knowledge of the target words in an oral format in order to test students' fluency. Only those students who didn't have another class stayed talked about what they thought about the experiment. Although some valuable information was discovered, it would be better if the researcher could interview each of the students individually and give them a formal oral test of the target vocabulary.



## CHAPTER 5

### CONCLUSION

Many researches have been conducted to investigate ways of teaching second language vocabulary. This paper compared three different teaching methodologies on Chinese language: the inferring word-meaning teaching method, the morpheme-based teaching method, and the word-based teaching method. The statistic result is shown in Table 7.

Table 7: The overview of both immediate tests and posttests results.

Combination of Classes	Significant Difference	
	Immediate Tests	Posttest
Inferring Word-meaning Class Morpheme-Based Class	Not Observed	<b>Observed</b>
Inferring Word-meaning Class Word-Based Class	Not Observed	<b>Observed</b>
Morpheme-Based Class Word-Based Class	Not Observed	Not Observed

Students taught by the inferring word-meaning teaching method outperformed both the students taught by the morpheme-based teaching method and the word-based teaching method in terms of word retention. The possible reason is that the section of inferring word-meaning enabled students to use their background knowledge to make

connection with other words, and to read the given materials in details, and to discuss with other students in order to infer the correct meaning of each target word. Moreover, the interview after class showed that students were very motivated and eager to learn the vocabulary, because the process of inferring word-meaning is new and fun ways to learn vocabulary to students. On the other hand, the disadvantage of the inferring word-meaning method is that it might not be an efficient way to teach a large amount of new vocabulary because it requires sufficient time for students to get involved with the context and the discussion of guessing words. Another drawback is that textbooks are seldom designed for the purpose of inferring word meaning from context, which means that the teacher has to spend a substantial amount of time editing edit the dialogues or reading material from the textbook in order to give students more information to help them guess the meaning of each target word. For the morpheme-based teaching method and the word-based teaching method, there were no statistically significant differences observed. Students from both test groups achieved the same percentage of word retention. However, the inadequate number of students in each class, lack of oral test after the tests treatment and insufficient time for inferring word-meaning may have contributed to the difference in the retention rate of new vocabulary retention.

Teaching vocabulary using the inferring word meaning method is a promising new teaching method which, through the studies conducted in this paper, has been shown to be more effective than the morpheme-based method and word-based method, in terms of the retention rate of target vocabulary. In addition to continued efforts to investigate the effect of inferring word-meaning with regards to word retention, an important

direction for future research would be to explore other aspects of vocabulary, such as the phonemic form, etc.

## APPENDIX A

### THE LIST OF TARGET WORDS

分别: *fēnbié*, respectively

出发: *chūfā*, to set out

深: *shēn*, deep

分享: *fēnxiǎng*, to share

报名: *bàomín*, to sign up

参加: *cānjiā*, to participate

团: *túán*, group

包括: *bāokuò*, to include

交通: *jiāotōng*, transportation

门票: *ménpiào*, admission ticket

旅客: *lǚkè*, tourists

顿: *dùn*, measure for meal

## APPENDIX B

### READING PASSAGE

放寒假的时候张天明和丽莎想去云南玩。张天明在报纸上看见了旅行团的广告。广告上说，去云南玩一共 1888 元，包括交通费，门票费和一天三顿饭。所以旅客不用自己花钱坐车或者买门票，也不用担心吃饭的问题。张天明和丽莎觉得很方便，所以赶紧打电话报名参加了这个旅行团。张天明在南京，丽莎在北京，所以张天明从南京出发，丽莎从北京出发，分别坐火车和飞机到云南。云南的风景非常美丽。天明和丽莎照了很多照片。天明甚至在海里游泳，可是丽莎没有游泳，因为海水太深了，她有点儿害怕。云南人山人海，旅客特别多，挤得不得了。张天明每天写博客，上 facebook，把照片放在网上，来和朋友们分享云南美丽的风景。

During the winter break, Zhang Tianming and Li Sha wanted to travel around Yun Nan. Zhang Tianming saw the advertising of travel **group** on the newspaper. The advertising said that it cost 1888yuan to travel in Yun Nan. **Transportation** fee, **admission** fee, and three **meals** per day were all **included**. Thus, travellers didn't need to spend money on transportation or buying tickets. Travellers also didn't need to worry about meals. Zhang Tianming and Li Sha thought it would be very convenient, so they **signed up** immediately. Zhang Tianming was in Nanjing, and Li Sha was in Beijing. So Zhang Tianming **set off** from Nanjing, and Li Sha set off from Beijing. They took train and airplane to Yun Nan **respectively**. The scenery of Yun Nan was very beautiful. Tianming and Li Sha took lots of pictures. Tianming even swam in the sea, but Li Sha did not. Because the sea was too **deep**, she was kind of afraid. There were many people in

Yun Nan, especially tourists, and it was very crowded. Zhang Tianming wrote blogs every day. He got on Facebook and put pictures online, in order to **share** the beauty of Yun Nan with his friends.

## APPENDIX C

### PRE-TEST

Write the English translation if you know the meaning of this word. Please write down a GUESS if you are not sure about the meaning and try to guess it. Thank you!!

- fēnbié  
1. 分别  
chūfā  
2. 出发  
měilì  
3. 美丽  
liú  
4. 留  
shēn  
5. 深  
fēnxiǎng  
6. 分享  
zhī  
7. 之  
bàomíng  
8. 报名  
cānjiā  
9. 参加  
tuán  
10. 团  
bāokuò  
11. 包括  
jiāotōng  
12. 交通  
ménpiào  
13. 门票  
lǚkè  
14. 旅客  
yìng  
15. 硬

- zhěntóu  
16. 枕头  
ruǎn  
17. 软  
guān  
18. 关  
dùn  
19. 顿  
héfàn  
20. 盒饭



## APPENDIX D

### IMMEDIATE TEST

Please write down the English meaning and pinyin of each word. Please also write down the property of each word, such as a verb, noun, adjective, etc.

1. 分别
2. 出发
3. 深
4. 分享
5. 参加
6. 报名
7. 团
8. 包括
9. 交通
10. 门票
11. 旅客
12. 顿

## APPENDIX E.

### POSTTEST

Please write down the English meaning and pinyin of each word. Please also write down the property of each word, such as a verb, noun, adjective, etc.

1. 分别
2. 出发
3. 深
4. 分享
5. 参加
6. 报名
7. 团
8. 包括
9. 交通
10. 门票
11. 旅客
12. 顿

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