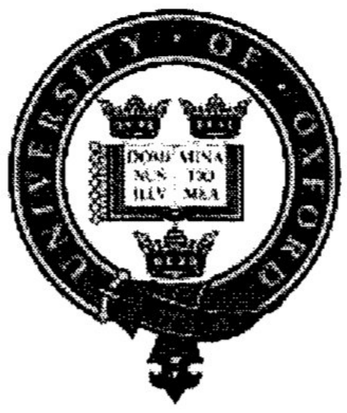
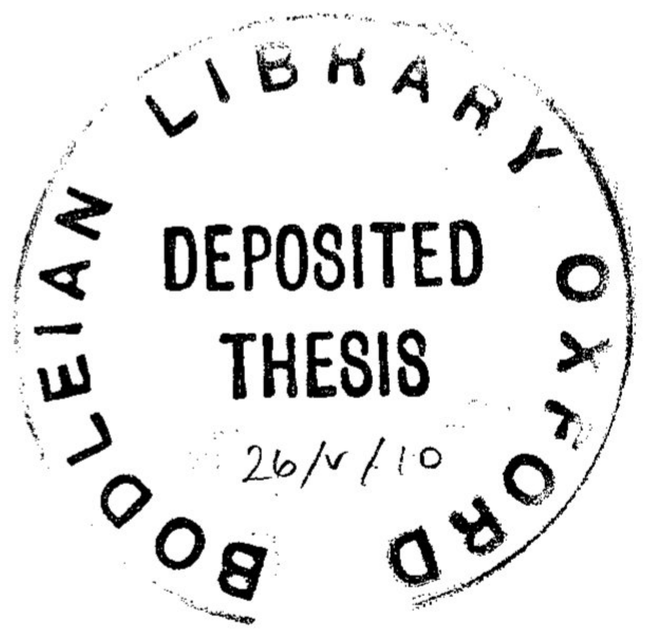


Teacher Codeswitching in a Communicative EFL Context:

Measuring the Effects on Vocabulary Learning



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ABSTRACT

This study is focused on exploring the possible impact of the teacher's use of codeswitching on learners' second language vocabulary learning and judicious use of the mother tongue in second language classroom. Previous studies attempted to observe classroom codeswitching or hypothesize theoretically the possible effect of codeswitching on second language learning, rather than *empirically* testing its effects. While most studies examining classroom codeswitching behaviors indicate a wide range of teacher L1 use, one of the most important functions of L1 is to clarify the meaning of unfamiliar lexical items. A brief review indicates a clear gap in the literature on the exploration of the link between vocabulary learning, listening comprehension, meaning negotiation and form-focused instruction. In this way this study attempts to fill the gap by examining the role of codeswitching in vocabulary learning when learners are presented with listening materials and encouraged to interact with the teacher and negotiate meaning of the listening materials and new vocabulary without disrupting the communicative orientation of the lessons.

One hundred and seventeen first-year English-majors in a Chinese university were randomly assigned into three groups: the codeswitching group, in which codeswitching was used by the teacher to explain English vocabulary, that is, the teacher provided Chinese equivalents for the English target words; the non-codeswitching group, which received lessons without the teacher's switching to Chinese, in other words, the teacher provided English information for the English target words; and a control group. During the two-month experiment, vocabulary and listening comprehension scores on pretests, immediate posttests and a delayed posttest were collected and analyzed statistically. Lexical episodes of the teacher-students interactions were collected through classroom observation. Thus, a mixed method research design was employed in this study.

Results show that it is in fact beneficial to focus on form on lexical items in a communicative language classroom. The students' vocabulary learning was better facilitated by the teacher's use of codeswitching for short term learning. However, this advantage disappeared when long term learning was considered. Further analysis shows the students with the lowest prior lexical knowledge and who have difficulties in understanding the listening passages benefited most from the teacher's codeswitching use in the short term, but the students with the highest prior lexical knowledge retained more words from the teacher's provision of L2 information in the long term. Qualitative analysis of the teacher's lexical input and the students' reactions during the lexical episodes of the teacher-students interactions supports the above results and provides further insights into the teacher's decision-making.

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LIST OF ABBREVIATIONS

CS	codeswitching
EFL	English as a Foreign Language
ESL	English as a Second Language
FFE	Form-focused episodes
FFI	Form-focused instruction
FonF	focus on form
L1	First Language
L2	Second Language
NCS	non-codeswitching
NST	native speaker teacher
NNST	non-native speaker teacher

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INTRODUCTION

This chapter will briefly introduce the research topic by first addressing my personal experience and interests in this research. Then it will provide a brief rationale for the research, followed by an outline of its main aims. An overview of the structure of the whole thesis will finally be presented.

1. Setting the scene

While presenting in an academic conference for a group of DPhil students and researchers in the field of second language learning and teaching, I first asked the audience how many of them were non-native speakers of English? Most of them raised their hands. Then I asked them to recall the English language classrooms in their own countries where they learned English from non-native speaker teachers and asked them whether their teachers, who shared the same native language as them, had ever used their native language in the second language classroom. The answer was a unanimous 'yes', irrespective of which native language the members of the audience spoke. In spite of the diversity of their first languages and the different levels of English language education, the advanced level non-native speakers of English in this group had all experienced English language classrooms in which their mother tongue was used. This poses the question as to whether the use of mother tongue in the English language classroom was the consequence of a pedagogical decision made by their non-native English speaker teacher?

Contemplating my own experience of being an English language teacher at university level in China for over six years, I often encountered situations where I hesitated to use Chinese to explain certain English words and terms. For example, when explaining the phrase 'a square peg in a round hole', the words 'square' and 'peg' are obviously the words which should be tackled first. But how to explain 'square'? I

could simply provide a Chinese equivalent '正方形的', which might save both my time and the class time. However, I could not bring myself to do so, thinking that using any Chinese in the English classroom might be perceived as a sign of my own incompetence in using English in addition to harming the students' language learning. Rather, I looked the word up in the dictionary carefully and provided the students with an English definition 'a shape with four equal sides and four corners that are all right angles'. A greater amount of time was spent on providing the definition in comparison with a Chinese equivalent, but a pertinent question is how well some students understood the meaning of the definition and mapped it onto the concept? If the students had difficulties with the English explanation, I would either try to provide another explanation in English or turn to the Chinese equivalent for help. Even more time was then spent on this particular word so that less time was focused on the meaning of the text as a whole.

My teaching experience is a typical one, probably typical of that of tens of thousands of non-native English university teachers in China. Does the 'English Teaching Syllabus' at university level proscribe the use of the mother tongue Chinese? In practice, there are no such written statements in any syllabus of English language teaching in higher education in China. In Chinese universities, there is a distinction between English-major students and non-English-major students. English-major students are the ones who study English as their main subject in the department of English at university level; non-English-major students are the ones who study subjects other than English at university level, with English taken as a subsidiary but one which is compulsory. Due to the two different levels of English study, there are accordingly two respective syllabuses. The new edition of the 高等学校非英语专业大学英语教学大纲 (College English Teaching Syllabus for Non-English-majors at Universities) did not mention any prohibition on using the mother tongue, but only stated 'to encourage teachers to use English'. However, the new edition of the 高等学校英语专业英语教学大纲 (English Teaching Syllabus for English-majors at Universities) does not mention any classroom language use.

However, the prevailing belief of both teachers, students and English language class assessors in Chinese universities is that English teachers whether teaching English-major or non-English-major students should use as much target language as possible in their classroom, and students should be encouraged to use as much target language as they can. A greater use of mother tongue is believed to reflect a lack of proficiency in using the target language. The more Chinese teachers use, the less competent and qualified they are perceived as English teachers at university level. It is understandable that Chinese students regard the English classroom as the only English language environment available to them and long for an English-only classroom. The English language teachers and class assessors who have received English language teaching methodology training learnt from the related literature on second language learning that the target language should be used as much as possible and do not recognise the pedagogical value of mother tongue use in the second language classroom.

However, with non-native speakers comprising 80% of English language teachers in the field throughout the world (Canagarajah, 2005), in the second language classroom where non-native speaker teachers share the same mother tongue with their students, should these non-native speaker teachers be denied the option of using their mother tongue? Should the mother tongue only be used as a last resort? While non-native speaker teachers were always regarded as inferior to native speaker teachers, could those non-native speaker teachers who have two languages at their disposal make judicious use of their mother tongue in the second language classroom in order to facilitate students' second language learning? Would judicious use of their mother tongue impede learners' language learning?

2. Rationale

To address the question of the pedagogical value of the judicious use of mother

tongue, firstly a review of the second language research literature on the debate on classroom CS is required.

Codeswitching in naturalistic settings has been defined by many bilingual researchers in various ways. Poplack (1979/1980) stated that 'codeswitching is the alteration of two languages within a single discourse, sentence or constituent'. Gumperz (1982: 59) defined codeswitching as 'the juxtaposition within the same speech exchange of passages of speech belonging to two different grammatical systems or sub-systems'. Li Wei (2000: 16) referred to codeswitching as the cases 'when a bilingual talks to another bilingual with the same linguistic background and changes from one language to another in the course of conversation'. In spite of the diversity of formulations, the essence of naturalistic codeswitching is the same, and it has been widely accepted in naturalistic settings as an indicator of bilingual competence rather than a deficiency.

The use of codeswitching in a second language classroom environment for second language users has always been contentious. Firstly, the use of codeswitching in naturalistic and second language classroom settings differ from each other in that classroom codeswitching is both message- and medium-oriented focusing on both language learning and communication, whereas CS in naturalistic settings pertains only to language use. Secondly, according to Krashen's (1982) Comprehensible Input Hypothesis and Long's (1983) Interaction Model, sufficient comprehensible input and interaction with both teachers and peers through use of the target language will lead to acquisition of the target language, and introducing the mother tongue or increasing its use will inevitably deprive learners of exposure to the target language. Moreover, the teachers' use of codeswitching in the second language classroom could be deemed reminiscent of the grammar-translation teaching method which has been widely criticized.

Many studies either observed CS use in the second language classroom or theoretically debated the use of L1 in the second language classroom. While a number

of empirical studies in second language research have shown that the mother tongue is widely used to varying extents by both second language teachers and learners within various second language settings, different views were held towards the use of L1 in the L2 classroom. Some maintain that the target language should be exclusively used in the L2 classroom, whereas others acknowledge the existence of L1, but prescribe ways to avoid using L1. Some researchers argue for the positive role of codeswitching use in the second language classroom. Cook (2001: 102) defined codeswitching by second language users as 'going from one language to the other in mid-speech when both speakers know the same two languages'. He also suggested that codeswitching may be inevitable in the classroom 'if the teacher and students share the same languages and should be regarded as natural' (Cook, 2001: 105). Turnbull (2001) argued that there is indeed a place for the teacher to use the students' L1 in second language and foreign language teaching. Macaro (2005) held the view that teachers can use codeswitching in the second language classroom as both a communication and a learning strategy.

The same is true of the literature in the Chinese EFL research context. By reviewing the related research, Guo Minghua (2002) outlined the positive effects of using mother tongue Chinese in English language learning and teaching at a theoretical level. Zhao Xiaohong (1998: 21) demonstrated in an empirical study on teacher talk and student talk through classroom observation and interview that the mother tongue is used as one of the ways to explain difficult words and sentences in the English language classroom. Another similar study by Liu Jiarong and Jiang Yuhong (2004) reported that the teacher switched to Chinese in an English classroom when students experienced difficulty in comprehension and communication. Moreover, Kong Huifang and Zhang Ping (2005) found that there was only a two to five per cent use of mother tongue in a second language classroom, and this low usage of the mother tongue was deemed to have a positive effect on an English-major classroom. However, these researchers all advocated cautious use of the mother tongue and asserted that the mother tongue should not be overused. It seems that many second language

researchers have argued for a positive role for CS use in the L2 classroom, but there is a dearth of empirical studies examining the effects of its use on learners' language learning.

3. Research aims

While most present studies attempt to observe use of the mother tongue by teachers or theoretically argue for the positive role of CS use within the second language classroom environment, few studies have examined the actual impact or the judicious use of the mother tongue on learners' second language learning in the second language classroom. An empirical study on the impact of a teacher's use of codeswitching on learners' learning of the second language could help to fill a major lacuna in the literature.

Due to the manifold aspects of second language acquisition, far more diverse than can be examined in a single thesis, specifically learners' vocabulary learning will be examined in this study as one aspect of second language learning. Meanwhile, the judicious use of CS in the second language classroom necessarily means that vocabulary is the by-product of a meaning-oriented learning context rather than de-contextualized learning targets. How could vocabulary as the by-product of a meaning-oriented learning context be learned? The literature on form-focused instruction suggests that students' attention could be drawn to the lexical items without disrupting the communicative orientation of the lesson. Thus, listening activities will be employed in this study as part of a meaning-oriented learning environment.

This research therefore aims to examine the possible impact of the teacher's judicious use of the mother tongue on learners' second language vocabulary learning in a listening-mediated learning context through lexically-oriented, form-focused instruction. Thus, the effectiveness of lexically-oriented form-focused instruction and

teacher's use of CS in the communicative second language classroom on learners' second language vocabulary learning can be explored. The pedagogical value of the judicious use of the mother tongue could thus be assessed.

4. Operationalizing the terminology

In this study, there are some terms which should be defined at the outset. L1 refers to the first language, the native language, or the mother tongue, and these terms are used interchangeably in this study. L2 refers to the second language. For the samples in this study, Chinese is the mother tongue, the native language and the L1 and English is the second language, the L2. Although English language learning and teaching in China is an EFL context, rather than an ESL one, English is named in this study as a second language in comparison with Chinese as the first language.

It should also be pointed out that codeswitching and L1 use are similar but also different. L1 use describes a general feature of using L1 in the L2 classroom, but CS sets a 'judicious' or 'optimal' boundary to the use of L1. This study examines one type of L1 use, that is, a type of limited L1 use which conforms to the syntactic constraints of the L2 in a communicative language classroom and which is intended to be beneficial to students' vocabulary learning. In this context, the use of Chinese should not violate the grammatical rules of English as the target language and serves the pragmatic function of providing lexical explanation. However, bearing this difference in mind, the term 'L1 use' or 'use of L1' and 'codeswitching' are used in this study synonymously. Further discussion of the feature of CS and L1 use in this study is presented in the Discussion Chapter. The purpose of this study is then to explore the judicious or optimal use of L1 use through the lens of classroom CS in the L2 classroom and its effects on L2 learning.

5. Thesis overview

This introduction chapter sets the scene for this research by raising the issue of judicious use of L1 in the second language classroom and outlining in detail the research aims for this study.

Chapter one comprehensively reviews the literature both theoretically and empirically related to the issue of CS use and lexical development in second language learning, including naturalistic CS, social-cultural perspective, input, interaction, and output, classroom CS, vocabulary learning and so on, with questions for this study subsequently being formulated.

Chapter two first provides a review of the research methods available in both educational settings and second language classroom settings, followed by an in depth presentation of research methods used in this study, for example experiments, sampling, instruments, and tests.

Chapter three analyzes the quantitative data from the students' listening comprehension and vocabulary learning scores and reports the findings in relation to the research questions.

Chapter four analyzes the qualitative data of the lexically-oriented episodes of teacher-student interactions and reports the related findings which lend further support to the findings of the quantitative analysis and the understanding of the teaching and learning process.

Chapter five discusses both quantitative and qualitative findings of this study, together with the previous theoretical and empirical literature in relation to the research questions.

The final conclusion chapter provides a comprehensive overview of the thesis with a summary of the findings, their significance, the limitations of this study,

recommendations for further research, and its pedagogical implications for language practitioners and policy-makers.

CHAPTER ONE Literature Review

1.1 Introduction

In this part of the paper, all the literature related to this study will be reviewed. Naturalistic codeswitching as an indicator of bilingual competence will be presented through syntactic and pragmatic perspectives. While codeswitching behavior in naturalistic settings is only concerned with language use rather than language learning, the socio-cultural perspective on second language learning will also be reviewed in relation to the role of L1 use. Then, we will examine classroom codeswitching by second language users in the second language classroom.

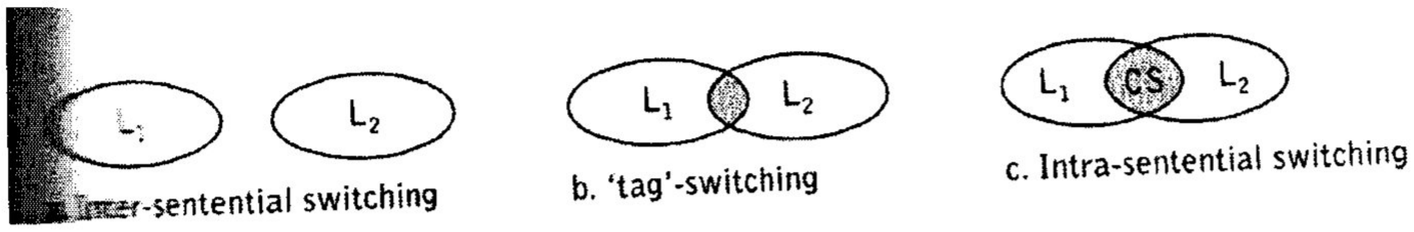
Although codeswitching use is not a contentious issue in naturalistic settings, its use in the second language classroom has been the subject of protracted debate. This issue is explored by demonstrating the gap between what second language theories say of language use in the classroom and what empirical studies on actual language use in the classroom have revealed. Therefore, this study is going to contribute to the debate by exploring the potential pedagogical value of codeswitching towards learners' second language learning. One particular aspect of learners' second language learning process, namely vocabulary learning, will be examined in this study. Related research literature in the area of second language vocabulary learning will be then reviewed after a series of language processing and bilingual lexical representation models are presented. The role of L1 will be examined with reference to the existing vocabulary learning literature.

In addition, listening comprehension will be employed in this study as a mediating activity for examining vocabulary learning. Finally the aim of this study will be outlined in relation to gaps in the related literature, and research questions being examined in this study will be finally presented.

1.2 Naturalistic codeswitching

Codeswitching behavior among bilinguals in naturalistic settings has been widely researched (Poplack, 1979/1980; Romaine, 1995; Myers-Scotton, 1988; Myers-Scotton and Jake, 1995; Li Wei, 2000a,b; Bialystok, 2001). Codeswitching is an extremely common practice among bilinguals and takes various forms. Romaine (1995: 121) distinguished two approaches to the study of codeswitching in bilingualism. While the *grammatical perspective* is primarily concerned with accounting for the linguistic constraints on codeswitching, the *pragmatic framework* assumes that the motivation for switching is basically stylistic and that codeswitching is to be treated as a discourse phenomenon which cannot be satisfactorily handled in terms of the internal structure of sentences. As early as the 1980s, Poplack (1979/1980: 255) put forward the following representation of bilingual codeswitching grammars and three types of codeswitching were identified (see Figure 1.1). Intra-sentential switching is regarded as a more complex or 'intimate' type since a code-switched segment, and those around it, must conform to the underlying syntactic rules of the two languages, which bridges constraints and links them together grammatically. There are some examples of Cantonese-English bilinguals' intra-sentential codeswitching, taken from Li Wei, Milroy and Pong (1992: 201). For example, 'Ngo dei xi xi dou (we always) KEEP IN CONTACT'. Another, less 'intimate' type, tag-switching, is characterized by relatively more tag switches and single-noun switches. For example, by inserting a tag into an otherwise unaffected utterance, 'Ni dou di heo seng zung yi yem zeo (The teenagers here like to drink), I MEAN.' Inter-sentential switching involves a switch at a clause or sentence boundary, where each clause or sentence is in one language or another. For example, 'Zou peng you wui (she can be my friend), BUT NOT A WIFE'. Cook (2001a: 104) reported that about 84 per cent of switches within the sentence are isolated words, roughly 10 per cent are phrases, and the remaining 6 per cent are switches for whole clauses.

Figure 1.1: Bilingual codeswitching grammars (Poplack, 1979/1980: 255)



The syntactical constraints on the occurrence of codeswitching have been extensively researched. According to Poplack (1979/1980), there are two main restrictions where switching can happen: a) *the free morpheme constraint* claims that codes may be switched after any constituent in the discourse provided that the constituent is not a bound morpheme; b) *the equivalent constraint* prescribes that code-switches tend to occur at points in the discourse where juxtaposition of L1 and L2 elements does not violate a syntactic rule of either language, i.e. at points around which the surface structures of the two languages map onto each other. However, in the study by Clyne (1987), the validity of the constraints was tested against data in a corpus derived from 640 German-English and 200 Dutch-English bilinguals in Australia. The data affirms the equivalence principle, but only if it is accepted that the syntax of the two language systems may have already converged through transference, even when it is violated by syntactic convergence at the point of codeswitching. In addition, Myers-Scotton and Jake (1995), extrapolating from the model of Myers-Scotton (1993), provided further elaboration and extensions for the Matrix Language Frame Model. For them, central to their discussion of intra-sentential codeswitching, where the grammars of the two languages are in contact, is the claim that the two languages involved do not participate equally. One language, which they call the Matrix Language, is more dominant in ways crucial to language production, in that it sets the grammatical frame in the unit of analysis. The other language(s) is referred to as the Embedded Language. Both languages are "on" at all times during bilingual production and the difference is a matter of activation level.

While the above discussion of codeswitching is from the syntactic or grammatical

perspective, many researchers have addressed codeswitching through sociolinguistic approaches. Blom and Gumperz (1972) introduced the dichotomy between situational and non-situational or transactional and metaphorical codeswitching in characterizing the multi-functionality of code-switches. While transactional switching comes under the heading of the type of switching most commonly discussed as being controlled by components of the speech event like topic and participants, metaphorical codeswitching concerns the communicative effect the speaker intends to convey. Gumperz (1982) has suggested that linguists look at codeswitching as a discourse mode or a communicative option which is available to every bilingual member of a speech community on much the same basis as switching between styles or dialects is an option for the monolingual speaker. Furthermore, Myers-Scotton (1993) elaborated a model of codeswitching based on the notion of 'markedness' in order to explain the social significance of language choice. Auer (1988) offered a conversation analytic approach to examine the language alteration of Italian migrant children in Germany, and concluded that the sociolinguistic situation of second-generation Italian migrants is still unstable and this uncertainty directly corresponds to the social mobility of the Italian 'communities'. In addition, Li Wei, Milroy and Pong (1992) illustrated codeswitching and language choice from a social network perspective through the example of a bilingual Chinese community in Britain. Foley (1997: 333) considered the use of two languages as a social marker and 'an index of the relative social relationship between speakers'. Despite the diverse contexts of these different studies, codeswitching has been widely examined through a pragmatic perspective.

This wide body of research on the various aspects of naturalistic codeswitching indicates its important role in bilingual development. The findings from Poplack (1979/1980), who attempted to account for codeswitching behavior through the incorporation of both functional and linguistic factors into a single model, provide strong evidence that codeswitching is a verbal skill requiring a large degree of linguistic competence in more than one language, rather than solely a defect arising from insufficient knowledge of one or the other. He clearly concluded that

'codeswitching, then, rather than representing deviant behavior, is actually a suggestive indicator of the degree of bilingual competence' (Poplack, 1979/1980: 256). Li Wei (2000b: 17) also argued that 'codeswitching involves skilled manipulation of overlapping sections of two (or more) grammars, and that there is virtually no instance of ungrammatical combination of two languages in codeswitching, regardless of the bilingual ability of the speaker'.

The above review on naturalistic codeswitching shows that codeswitching has been widely accepted in naturalistic environments as an indicator of bilingual competence. However, the research on naturalistic codeswitching has focused on the languages used in naturalistic settings rather than on bilingual learners' language learning. Bilinguals' using their first language and second language in their speech indicates their skillful manipulation of both languages in order to communicate competently in a naturalistic environment. Although some bilingual children sometimes codeswitch to fill a lexical gap, which might indicate a weak grasp of the lexical items in one language, they also employ codeswitching as a compensation strategy for successful communication. But what function may their first language (L1) play in the learners' second language (L2) learning process? Cook (2001a: 103) argued that 'bilingual codeswitching …… is an ordinary fact of life in many multilingual societies. It is a unique feat that L2 users are capable of that no monolingual can ever achieve'. However, in the L2 classroom, where both non-native-speaker teachers and L2 learners are emerging as classroom bilinguals, in what way does classroom CS resemble naturalistic CS? As classroom CS will be further explored later, it is worth looking at what related theories suggest about the role of L1 in second language learning process.

1.3 Socio-cultural perspective on L2 learning

While the last section focuses on naturalistic codeswitching, which is more concerned with language use than language learning, the socio-cultural perspective in this

section will provide us with more insights into learners' second language learning. Evidence was found that L1 use is effective in promoting students' second language learning. Since the mid-1980s following on from Vygotsky's (1986) *Thought and Language*, Frawley and Lantolf began to investigate the potential application of socio-cultural theory to second language acquisition (Frawley, 1985; Frawley and Lantolf, 1984). This area of research then flourished in the mid-1990s with the work of many second language researchers within a variety of second language learning areas (McCafferty, 1994; Donato and McCormich, 1994; Platt and Brooks, 1994; Aljaafreh and Lantolf, 1994; Lantolf and Pavlenko, 1995 for a review). Numerous journal articles and handbooks were subsequently published in the early 21st century with a review from Lantolf (2006). Many studies have stated the effectiveness of L1 use in students' second language learning.

It is out of the scope of this study to review in depth all these studies, but the wealth of literature is testament to the great contribution of socio-cultural theory to second language learning and teaching, and those studies relating to the role of L1 will be reviewed here. A brief theoretical summary is necessary at this point. Vygotsky's central theoretical claim is that human mental activity arises as a consequence of the functional system formed by our biologically specified mental capacities and our culturally constructed symbolic artifacts. *The Zone of Proximal Development* (ZPD) refers to the domain of knowledge or skill where the learner is not yet capable of independent functioning but can achieve the desired outcome given relevant scaffolded help. Vygotsky defined ZPD as 'the difference between the child's developmental level as determined by independent problem solving and the higher level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers' (Vygotsky, 1978:86). The transfer of functions from the social or inter-psychological domain to the cognitive or intra-psychological plane occurs within the ZPD. According to Vygotsky, language serves to mediate human activity both on the inter-psychological plane in the form of social speech (and/or writing) and on the intra-psychological plane in the form of

private speech (and/or writing). Private speech is directed to oneself for the purpose of planning for and guiding oneself through a variety of tasks. With regard to the inter-psychological realm, researchers have investigated how the language of the expert and of learners best serves the goal of moving the learner through his or her ZPD to the point where the learner becomes self-regulated in the performance of some task. According to Wood, Bruner and Ross (1976), *scaffolding* serves as a metaphor for the interaction between an expert and a novice engaged in a problem-solving task and involves the expert taking control of those portions of a task that are beyond the learner's current level of competence, thus allowing the learner to focus on the elements within his or her range of ability. Stone (1993: 170) pointed out that 'a persisting limitation of the metaphor of scaffolding relates to the specification of the communicative mechanisms involved in the adult-child constituting the scaffolding'. Thus, 'it is within the ZPD that scaffolding occurs or that semiotically mediated interactions lead to development' (Anton and DiCamilla, 1998: 319). Meanwhile, according to Rommetveit (1985) and Wertsch (1985) intersubjectivity is achieved when interlocutors share some aspect of their situation definitions, that is, when individuals working in collaboration define the objects, events and goals of a task in the same way.

While scaffolding and semiotically mediated interactions with experts and peers could move learners through their ZPD, a number of studies have researched on the role of L1 during this process. Auerbach (1993: 20) claimed that the use of L1 'reduces anxiety and enhances the affective environment for learning, takes into account sociocultural factors, facilitates incorporation of learners' life experiences, and allows for learner-centered curriculum development'. Brooks and Donato (1994) investigated how speaking during a two-way information-gap task collaboratively influences and builds a shared social reality between the participants. Three specific instrumental functions of speaking were analyzed, that is, speaking as object regulation, as shared orientation and as goal formation. What is of interest for the purpose of this current study is that learners' L1 was used widely through the three functions of speaking. For

example, metatalk, a talk about the task at hand and the discourse that constitutes the task during small group work, especially among lower proficiency level learners. This was explained in terms of Vygotskyan theory. Since metatalk serves to promote verbal interaction and is one type of verbal metacognition, in his theory metacognition is semiotically constructed primarily through language. These statements which should be explicitly made in the students' native language 'in fact serve to enable the learners to establish control of the discourse and the task by explicitly commenting on their linguistic tools used in its construction' (Brooks and Donato, 1994: 268). The same is true for the other two speaking functions. By using their first language, orientational talk serves to focus joint attention on the problem to be solved and relates to how a task will be carried out; moreover learners sometimes need to speak in order to externalize the goal or end-result of their activity. These findings show that when learners interact verbally during a task, they do more than simply encode and decode messages about the topic at hand. They attempt to control the problem-solving task actively by constructing it verbally and orienting themselves to the language and task demands. Thus, this communication focuses more on how through speaking individuals maintain their individuality and create a shared social work during communicative activity by using their L1. However, although this study acknowledges the role of L1 during learner-learner interaction in information-gap tasks, the researchers cautiously concluded that 'we (they) are not suggesting that the use of L1 during L2 interactions is to be encouraged necessarily' (Brooks and Donato, 1994: 268).

The communication that ultimately leads to development within a learner's ZPD must not only achieve the functions of scaffolding but also establish and maintain levels of intersubjectivity without which scaffolding, and therefore the learner's development, may be precluded (Antón and DiCamilla, 1998: 319). The social and cognitive functions of L1 were overtly examined by Antón and DiCamilla (1998). Their paper attempts to demonstrate how various features of the L1 used by the participants play a strategic cognitive role as the subjects jointly attempt to perform their assigned tasks,

specifically in scaffolding and in establishing intersubjectivity and externalizing inner speech as is necessary to perform the task, achieve their goals and thus realize levels of potential development. They examined the social and cognitive functions of L1 use in the collaborative speech of L2 learners who engaged in a writing task in the L2 classroom. The inter-psychological and intra-psychological functions of L1 use were analyzed in terms of scaffolding, intersubjectivity and private speech. Finally, the researchers concluded that as a critical psychological tool, the use of L1 'enables learners to construct an effective collaborative dialogue in the completion of meaning-based language tasks by performing three important functions: construction of scaffolded help, establishment of intersubjectivity, and use of private speech' (Antón and DiCamilla, 1998: 337). Although this study has limitations such as a lack of information on the task itself and related issues, it provides evidence for the positive role of L1 through a socio-cultural dimension.

'Using the L1' was identified by Villamil and De Guerrero (1996) as one of the five mediating strategies used by the collaborating students in their examination of the discourse of Spanish-speaking university students who engaged in peer revision of L2 writing. Two other strategies also made extensive use of the L1, that is, 'scaffolding' and 'the use of private speech'. According to Villamil and De Guerrero (1996: 60), 'the L1 was an essential tool for making meaning of text, retrieving language from memory, exploring and expanding content, guiding their action through the task, and maintaining dialogue'.

All the above studies reviewed demonstrate the role of L1 in second language learning through socio-cultural perspectives, mainly via Vygotsky's theory. The inter-psychological and intra-psychological functions of L1 use were achieved by learners' verbalizing the L1 to help with focusing joint attention on problems and establishing intersubjectivity and shared social work with other learners. However, they examined many kinds of activities between learner-learner interactions. Learners were providing scaffolding help for their peers to help them internalize their inner

speech and achieve inter-subjectivity. Then, if Vygotsky's theory that the language of the expert and of learners best serves the goal of moving the learner through his or her ZPD holds true, would second language teachers, as experts, be able to provide such scaffolding support for learners by switching to learners' *native* language? Could there be a positive role of the teacher's using L1 in the second language classroom?

1.4 Input, interaction and output

Having reviewed the naturalistic codeswitching in relation to language use and the role of L1 from a socio-cultural perspective in relation to second language learning, let us now turn to existing SLA theories examining how a second language is acquired by learners from a more psycholinguistic perspective. Krashen's Input Hypothesis (1982) should be first expounded in detail. Krashen (1982: 23) stated that: 1) the Input Hypothesis relates to acquisition, not learning; 2) we acquire by understanding language that contains a structure slightly beyond our current level of competence (*i+1*); 3) when communication is successful, when the input is understood and there is enough of it, *i+1* will be provided automatically; 4) production ability emerges, it is not taught directly. For him, such a comprehensible input containing *i+1*, which is a bit beyond the acquirer's current level with a low or weak affective filter, is the only causative variable in second language acquisition. However, this model instantly drew trenchant critiques. What does 'comprehensible' actually mean? If learners understand the input, is it a kind of comprehension or acquisition? How can learners take the '1' from the roughly-tuned input? Is it worth instructing at all? As Vygotsky (1978) argued that the language of experts and peers could help learners move through their ZPD, could 'i+1' happen automatically without this scaffolding help? Gregg (1984: 94) argued that 'each of Krashen's hypothesis is marked by serious flaws: undefinable or ill-defined terms, unmotivated constructs, lack of empirical content and thus of falsifiability, lack of explanatory power'. McLaughlin (1987: 56) pointed out overtly that 'Krashen's theory fails at every juncture' and summarized a series of central problems with the theory. Moreover, Mitchell and Myles (1998: 38) pointed out that

'Krashen's claim is somewhat circular: acquisition takes place if the learner receives comprehensible input, and comprehensible input is claimed to have been provided if acquisition takes place'.

As many second language researchers also cast doubt on Krashen's Input Hypothesis, Long contributed greatly to this area of research. Will comprehensible input with a low affective filter be the only causative factor for acquisition? Long (1981) found that standard language and Foreigner Talk (NS talk to NNS: native speakers talk to non-native speakers) are different in such three areas as phonology, lexis and syntax. During Foreigner Talk, NS modify their input to achieve better communication. However, is modified input sufficient for acquisition to take place? In Long's (1981) study of modified input and modified interaction 32 pairs (16 NS-NS and 16 NS-NNS) engage in six speaking tasks. While NS converse with NNS, modified input (eg. shorter T-units length, fewer S-nodes, reduced type-token) and modified interaction (eg. more confirmation checks, more comprehension checks, more clarification checks, more self repetitions) facilitate better communication, which in turn lead to acquisition. Later Long (1983) proposed his Interaction Hypothesis Model. Acknowledging Krashen's claim that comprehensible input may lead to acquisition, Long argued that it is modifications negotiated in interaction that result in comprehensible input which, in turn, makes acquisition possible. That is, in contradiction to Krashen's Input Hypothesis, Long emphasized the significance of interaction. When learners experience problems in communication, they take the opportunity to negotiate solutions to these problems with experts which may help their comprehension and in turn acquisition. Based on the previous studies, Long (1985) put forward the concept of 'Meaning Negotiation', which was originally dubbed 'modified interaction'. During meaning negotiation, learners or speakers may use such communicative strategy questions as clarification requests, 'Can you repeat...?' or 'Do you mean...?'; confirmation signals or checks, 'It's a kind of horse, right?'; comprehension checks, 'Do you understand?' or 'Does that make sense to you?'. In other words through meaning negotiation, both learners and speakers

achieved better comprehension which in turn makes acquisition possible.

Many empirical studies have been conducted to provide evidence for this interaction hypothesis model. Pica and Doughty (1985) made further investigations on the quality of input and interaction in communicative language classrooms through a comparison of teacher-fronted and group activities. While teacher-fronted activities restricted the amount of negotiation time per individual student, they do involve more grammatical input to the students. On the other hand, while group work did offer students many opportunities to practice using target language and receive feedback on their communicative effectiveness, they restricted the amount of grammatical input available to the classroom learners. In this case, hardly any significant difference was present in the results. However, they find relatively little negotiation in both activities, because of one-way communication tasks, that is, one-way tasks do not facilitate negotiation of the message, while two-way information exchange among participants may foster a greater level of negotiated modification in the classroom. The influence of this task variation on meaning negotiation was further discussed in Gass and Varonis' 1985 study.

As to the direct relationship between negotiation and comprehension, evidence can be found in Pica, Young and Doughty (1987). They investigated the approaches of 16 NNS of English to a task presented by a NS under two input conditions: premodified input, in the form of modification by decreased complexity and increased quantity and more redundancy; and interactionally-modified input, with opportunities for negotiation with the NS without linguistic premodification. The results support the claim that interactional modifications do facilitate comprehension.

When it comes to the effect of meaning negotiation on second language acquisition, Ellis, Tanaka and Yamazaki (1994) reported two classroom studies, based on the same design, which investigated the effects of modified interaction on comprehension and vocabulary acquisition among seventy-nine and one hundred and twenty-seven high

school students of English in Japan. Three kinds of input were given to the treatment group: unmodified input, premodified input and interactionally modified input. The main results show that the interactionally-modified input achieved not only better comprehension but also more acquisition of new words. This study does show a relationship between modified interaction and second language acquisition, but it should be noted that only vocabulary acquisition is achieved, not second language acquisition in general, and grammar in particular. The role of interaction in acquisition of lexical items will be reviewed in the vocabulary acquisition section.

In order for learners to comprehend, is it sufficient for teachers simply to modify their input and interaction? In order for learners to acquire new language, is it sufficient for learners simply to comprehend? According to Swain (1985), in order for acquisition of a second language to occur, learners must also use the language in production. According to Swain's Comprehensible Output Hypothesis (1985), three main functions can be achieved by output. One is that it provides the opportunity for meaningful use of one's linguistic resources. Through output during meaning negotiation learners are pushed to use alternate means to convey their message. In this case, the new linguistic resources may be practiced in meaningful situations. Moreover, output provides the opportunity to test out means of expressions and see if they work well in real situations. Finally, using the language in output may force the learners to move from semantic processing to syntactic processing. That is, when a learner comprehends a language, he may just understand its meaning without processing its syntactic structure. And production of the language provides this opportunity.

Taken all the above discussions together, in order to acquire a second language, it is not sufficient to provide learners with comprehensible input, and it is also not sufficient for learners to be involved in modifying the input and interaction through meaning negotiation with teachers or peers, but learners should also use the language in oral production. All these three aspects are indispensable to second language

acquisition. These discussions all imply that the target language should be used exclusively in the second language classroom in order for acquisition to occur, by both teachers providing comprehensible input and negotiating meaning with students and providing feedback in the target language, and students using the target language in production. These researchers do not go as far as to call for the exclusion of L1 from the second language classroom, but the implication is that the use of L1 is not related to second language acquisition and the exclusive use of target language is vital to acquisition. However, what language is actually used in the second language classroom? It should be noted that, those studies focusing on the role of interaction and meaning negotiation mainly involve English native speakers or native speaker teachers, which restricted the possibility of learners' interacting with them in learners' L1, and which also ignored the issue of the widespread existence of non-native speaker teachers in the L2 classroom, especially in the EFL context. L1 use and classroom CS are particularly contentious issues in the L2 classroom. Moreover, while these researchers advocate the focus on meaning and negotiation of meaning, is it worth focusing on *form*? And, if so, to what extent should we focus on *form*? The NST and NNST debate and the issue of *focus on form* will be further discussed later in the vocabulary learning section. The L1 use and CS in the L2 classroom will then be examined in the following section.

1.5 Codeswitching and L1 use in L2 classroom

The use of codeswitching by bilinguals is not contentious in naturalistic settings. There is a role for L1 from a socio-cultural perspective among L2 learners. The Comprehensible Input, Interaction, and Output Hypothesis all imply an exclusive use of the target language. However, L1 use in the second language classroom has been a perennial bone of contention among theorists of second language learning. Both empirical studies and theoretical arguments will be presented in this section examining L1 use in the L2 classroom. The effects of L1 use on L2 learning will then be explored.

Empirical studies on L1 use

This section is going to review some empirical studies on language use in the second language classroom, with a pedagogical perspective to language use being presented first. Although approaches and methods have varied in the degree of importance they assign to the role of the L1 in teaching and learning a second language, the prevailing tide against the use of L1 was mainstream in 20th century language teaching methodology, especially when Communicative Language Teaching methodology dominated, to the extent that exclusive or maximal use of the target language has been the orthodoxy among language teachers and a bedrock of educational policies in many countries. However, there are notable exceptions such as those methods which actively create links between L1 and L2 originating from the New Concurrent Method (Jacobson, 1990), where teachers switch from one language to another at key points according to particular rules, and Community Language Learning (Curran, 1976), where students at the beginners' level talk to each other spontaneously in the L2 via the mediation of the L1. This debate on language use in the second language classroom has rumbled on for years without reaching a consensus. Second language teachers, the non-native language practitioners in particular, either try their best to use as much target language as they can and ban their students from using their mother tongue, or in most of the cases they feel guilty in using the mother tongue in their classrooms (Macaro, 2001b). The teachers then have recourse to L1 when encountering difficulties in expressing in L2. But is there any intrinsic pedagogical value in switching to L1 in the L2 calssroom? Since the mid-1980s when Guthrie (1984, cited in Martin, 1996: 128) identified five such communicative functions for switching to the first language as for the purposes of translation, clarification and checking comprehension, for giving procedures and directions, and for acting as a 'we-code', a number of empirical studies have been conducted to explore language use in the second language classroom by both teachers and students. Borrowing from Macaro (2000), the revised table (Table 1.1) is a brief compendium of these empirical

studies, each classified in terms of the research context, data collection methods, philosophical beliefs and actual language use of both teachers and students.

Table 1.1: A review of empirical studies on language use

	Study description	**L2 learning context**	**Data collection instruments**	**Teachers' purposes of L1 use**	**Teachers' actual L1 use**	**Learners' language use**	**Conclusion**
Kharma and Hajjaj 1989	Evaluates the use of MT in teaching a L2	English L2 Arabic L1 Secondary	Questionnaires; Classroom observation; interviews	Explanation of complex lexical items; speeding up the teaching/learning process	93% teachers actually use L1; 20% of classroom time on using L1	95% students actually use L1	Systematic and purposeful use of L1
Franklin 1990	Investigates the problems and prospects of teaching in target language	Scotland, Secondary	Postal questionnaire	Discipline; explanations of grammar; discussing language objectives; teaching background	3% to 88% of L1 use for different classroom activities		Difficulty in using target language, and resorting to ways of increasing the amount of its use
Duff and Polio 1990	Indicates actual FL use in the FL classroom	13 languages in a university in US	Observations Questionnaire Interviews	Explanations of grammar; speeding up the teaching/learning process	0% to 90% of L1 use	71% to 100% students favor the current amount of L1 use by teachers	Perceived L1/L2 difference, departmental policies determining teachers' language use
Polio and Duff 1994	A qualitative analysis of teachers' L1 use in a previous study	6 out of the 13 university FL classrooms in US	Observations; questionnaires; interviews	Unknown vocabulary explanation; Classroom administration; grammar; comprehension			Use of L1 is inevitable and solutions provided for more TL use
Hird 1996	Examines the use of group work in EFL teaching	an English literature class in China	Observations			1/3 Chinese; 2/3 English;	five functions of CS by learners were distinguished
Macaro 1997	A substantial study of target language	Secondary England	Questionnaire Interview	Giving instructions; building relationships with pupils;	Average total per hour: Experienced teacher 23.14;		Advocating the judicious use of the mother tongue

	use by teachers		Classroom observation	giving definition/translation; both message and medium oriented	Beginner teacher 23.58; Student teacher 27.57		in the L2 classroom
Swain and Lapkin 2000	Examines learners' L1 use in tasked-based L2 learning	French immersion classes at the grade 8 level	A dictogloss task and a jigsaw task			use L1 for moving the task along, focusing attention, and interpersonal interaction	Lower-achieving students with greater need to use L1; judicious use of L1
Macaro 2001	Analyses 6 student teachers' CS	South of England; Secondary school Learning French	Classroom observation; Interviews	Procedural instructions; classroom control	From 0% to 15.2% of L1 use (mean 4.8%)		No correlation between teacher use of L1 and student use of L1
Rolin-Ianziti and Brownlie 2002	Investigates teacher use of L1	French teaching in a university of Queensland in Australia	Classroom observation; interviews	Translate; comment about forms; manage the class	From 0% to 18.15% of L1 use (mean 8.8%)		Positive effect of CS as strategy
Arnfast and Jorgensen 2003	Demonstrates how learners' CS may develop into a bilingual competence	American and Polish learners of Danish	Audio-recording of their conversation			Learners' CS as communicatio n, learning and social	There is reason to teach learners how and when to CS

						negotiation strategy	
Levine 2003	Student and instructor beliefs on language use	Across US and Canada universities	2 questionnaires on Internet	Greater L1 use for communicating about grammar or usage and tests or assignments	80% to 100% reported use of TL	Students used less TL than instructors did	3 language use tenets were distinguished
Liu Jiarong and Jiang Yuhong 2004	Teacher talk and student talk	English majors in Chinese universities	Classroom observation	Lighten the cognitive load and relieve anxiety and mental pressure; achieve social equity			Effective use of Chinese
Kong Huifang and Zhang Ping 2005	Features of teacher talk and students' preference	English majors in Chinese universities	Classroom observation, Questionnaire	Recourse to L1 to help with students' comprehension	3%-5% teacher use of L1		Maximal use of target language
Lierbscher and Dailey-O'Cain 2005	Qualitative analysis of learner CS	Advanced learners of German in Canada	Classroom observation			Learners CS for discourse-related and participant-related functions	Positive effect of CS
Guo 2007	Teacher CS patterns and functions, students' strategies towards teacher CS use	Non-English majors in Chinese universities	Classroom observation; stimulate recall interviews	Provide L1 translation for L2 words; give information and instruction	20% teacher use of L1		Effective use of Chinese

From the above tabular format empirical studies it can be seen that since the 1980s there has been a proliferation of research on the use of L1 in the second language classroom. However, there is not a coherent research agenda. All these studies have been carried out with different aims. Some examined teachers' L1 use while others focus on learners. Franklin (1990) attempted to discover the problems and prospects of teaching in the target language. Polio and Duff (1994) provided a qualitative analysis on the functions and contexts of teachers' L1 use, so did Macaro (1997; 2001b) and Rolin-Ianziti and Brownlie (2002). Kong Huifang and Zhang Ping (2005) reported the amount of teacher's use of native language while examining the features of teacher talk as a whole in the second language classroom. Guo (2007) recently examined teacher's CS patterns and functions in the EFL classroom and learners' strategies towards teachers' CS use. In a different approach, Hird (1996) and Swain and Lapkin (2000) examined the learners' L1 use in task-based second language learning. Lierbscher and Dailey-O'Cain (2005) also provided a qualitative analysis of learners' codeswitching. Arnfast and Jorgensen (2003) further demonstrated how learners' codeswitching may develop bilingual competence. In addition, there are still some which focused on both in their studies (Kharma and Hajjaj, 1989; Duff and Polio, 1990; Levine, 2003; Liu Jiarong and Jiang Yuhong, 2004).

A variety of L2 learning contexts have been examined, involving secondary school settings and university language classrooms, with different languages as target languages. Kharma and Hajjaj (1989), Franklin (1990), and Macaro (1997; 2001b) all examined the language use in secondary schools. Others mostly involved second language learners in university settings in different countries. For example, Guo (2007) recently examined the teacher's CS in English classrooms in a Chinese university setting, focusing on non-English majors in particular. Kong Huifang and Zhang Ping (2005) and Liu Jiarong and Jiang Yuhong (2004) examined English-majors in a Chinese university setting.

Different data collection methods were used in these studies. Classroom observation,

interviews and questionnaires were most commonly used to examine the language use in the second language classroom. While Kharma and Hajjaj (1989), Duff and Polio (1990) have employed all these three data collection methods, the other studies employed only one or two of them. Guo (2007), based on classroom observation, conducted stimulated recall interviews afterwards.

For those studies which have examined teachers' language use, a varied amount of L1 was found in different L2 learning contexts. Some studies (Franklin, 1990; Duff and Polio, 1990) reported a fairly large amount of L1 use in the classroom but with a wide range. Franklin (1990) reported that from 3% to 88% of L1 was used in the classroom by second language teachers. Duff and Polio (1990) reported the L1 use of from 0% to 90%. The wide range of L1 use in Duff and Polio's study was probably due to the fact that as many as 13 different target languages were examined in their study where perceived L1/L2 differences and departmental policies were found to have determined teachers' language use. However, a less wide range of L1 use was found in the study by Rolin-Ianziti and Brownlie (2002) which reported the L1 use of from 0% to 18.15% and by Levine (2003) which reported from 0% to 20%. Around 20% of L1 use was found in the studies of Kharma and Hajjaj (1989), Rolin-Ianziti and Brownlie (2002) and Levine (2003) in different L2 learning contexts. In contrast the least reported L1 use (mean=4.8%; range=0%-15.2%) was found by Macaro (2001b) who examined only six student teachers' French lessons in a secondary school in England, probably due to the fact that the six teachers are actually trainee teachers who held a view of maximum target language use. As Macaro (2001b: 545) noted himself, 'none of the student teachers in the sample mentioned the possible value of making L1/L2 associations at either a semantic level or at a morphosyntactic level in order to store, process, or retrieve language from long term memory'. In Chinese settings the smallest reported L1 use by teachers was found by Kong Huifang and Zhang Ping (2005), where only 3%-5% of Chinese was used among the total teacher talk. More teacher CS (53.8%) was found in a study by Liu Jiarong and Jiang Yuhong (2004), compared with students CS (46.2%). Guo (2007) reported that around 20% of L1 use

was found for two university EFL teachers. It can be seen that a great variety in the amount and range of L1 was reported in these empirical studies. However, this diversity of L1 use is not surprising due to the various data collection methods used in different L2 learning contexts.

Teachers have been found to use L1 for a variety of purposes as well, from class control to grammar and vocabulary explanation. In a study by Kharma and Hajjaj (1989), 93% of the teachers spent around 20% of classroom time on using L1 in the classroom in order to explain complex lexical items and speeding up the teaching and learning process. Similarly, Duff and Polio (1990) found the teachers in their study used a wide range of L1 in explaining grammar and speeding up the teaching and learning process. In Franklin's study (1990), L1 was used differently in different classroom activities. Teachers mostly used L1 in explaining grammar, discussing language objectives and teaching background, while they used the least amount of L1 in organizing the classroom and giving activity instructions. Levine (2003) also reported the teachers' L1 use in discussing grammar and tests or assignments. Macaro (1997; 2001b) and Rolin-Ianziti and Brownlie (2002) all found that teachers use L1 to manage the class and give procedural instructions. In the Chinese context, Kong Huifang and Zhang Ping (2005) reported that teachers' resort to L1 to help with students' comprehension. Liu Jiarong and Jiang Yuhong (2004) stated two purposes of L1 use: lightening the cognitive load and relieving anxiety and mental pressure; achieving social equity by changing from authorative tone to a more intimate relationship with students, from a serious atmosphere to a humorous one. Guo (2007) reported the teacher's CS use as mainly providing L1 translation for L2 words, giving information and instruction, and so on.

Different conclusions were reached by the researchers. While Kharma and Hajjaj (1989) advocated the systematic and purposeful use of L1 in the second language classroom, Frankin (1990) and Polio and Duff (1994) noted the inevitable use of L1 and provided solutions to promote more target language use. Macaro (1997)

advocated the judicious use of L1. No correlation was found in the study by Macaro (2001b) between teacher use of L1 and student use of L1. Teacher use of L1 does not necessarily lead to student use of L1. Rolin-Ianziti and Brownlie (2002) further pointed out the positive effect of codeswitching as a strategy for teachers to improve teaching and learning. In a Chinese context, while Kong Huifang and Zhang Ping (2005) still argued for the maximal use of target language, Guo (2007) and Liu Jiarong and Jiang Yuhong (2004) all stated the effective use of Chinese in the EFL classroom.

Finally, in terms of learners' language use, Kharma and Hajjaj (1989) reported that 95% of the students actually used L1 in their second language classroom. In the study of Hird (1996), who observed a small group discussion of only four students, L1 was used during one third of the time. By contrast, some (Swain and Lapkin, 2000; Arnfast and Jorgensen, 2003; Lierbscher and Dailey-O'Cain, 2005) reported the positive benefits of learners' using L1 as a strategy for a variety of functions. Swain and Lapkin (2000) reported that learners use of L1 for moving the task along, focusing attention, and interpersonal interaction. Lierbscher and Dailey-O'Cain (2005) found learners codeswitching for discourse-related and participant-related functions, such as indicating changes in their orientation towards interaction, envisioning the foreign-language classroom as a bilingual space and bilingual community of practice. Arnfast and Jorgensen (2003) also found that learner codeswitching functioned as a communication, learning and social negotiation strategy. In a Chinese EFL context, Liu Jiarong and Jiang Yuhong (2004) reported that students switched to Chinese to avoid social embarassment, avoid losing 'face' of the other students, alleviating mental pressure when encountering difficulties in expressing in English, and relieving the anxiety and shortening social distance. It can be seen that these studies reach a consensus that there is no harm for learners to use L1 and the use of L1 actually promotes their language learning.

In summary, there was a broad research agenda, which led to diverse findings in terms

of the amount and functions of L1 use in the L2 classroom. The incoherent agenda resulted from different learning contexts, that is to say, different national language policies, different course objectives, and mainly teachers' different perceptions and decision-making regarding language use. Due to the diversity of L2 learning contexts, data collection instruments and research aims examined, any conclusions can only be tentative. However, the above reviewed empirical studies all show in common that L1 is actually used to varying extents in the second language classroom by both teachers and learners within a variety of contexts and for different purposes. This diversity of L1 use at least strengthens the inevitable existence of L1 in the L2 classroom. However, it should also be pointed out when the amount of L1 use exceeds a certain limit beyond a threshold level, it is then beyond the 'judicious' boundary of L1 use in that the focus of the lessons is no longer communicative in the target language. Moreover, while learners' L1 use was generally reported to be effective in improving their learning, different views were held on teachers' L1 use, which again indicates the contentious nature of teachers' L1 use in the L2 classroom, and also informs the necessity of examining the actual effects of teacher's use of L1 on learners' second language learning.

Theoretical perspectives on L1 use

In addition to these empirical studies on the actual language use in the second language classroom, many SLA researchers have put forward arguments rather than conducting empirical studies in the debate on L1 use in the second language classroom. Some authors who are convinced about L2 exclusivity, to wit Krashen and Terrell's Natural Approach (1988), strongly advocate the exclusive use of L2 for sufficient comprehensible L2 input for L2 learners to acquire the language. Chambers (1991: 27) referred to the theoretical basis for the statement made by the Department for Education and Skills (DfES) on exclusive L2 that this does 'not seem to be controversial', and attempted to suggest some practical ways of increasing the use of the foreign language for both teachers and pupils at the secondary school level. She

further concluded that 'when this is achieved, teachers can feel confident that they are giving their pupils a proper chance to acquire the language in classroom conditions' (Chambers, 1991: 31).

Other authors acknowledge the inevitable existence of L1 use, but strongly promote the use of target language. Franklin (1990) pointed out the practical difficulty of teaching through the medium of target language and attempted to resort to a new teaching methodology which may help increase the amount of target language use by teachers. Py (1996) pointed out that learners' recourse to L1 may serve various functions, and this 'recourse to L1 when encountering problems' actually shows the inability of using target language exclusively and asking L1 for help passively. Polio and Duff (1994: 322) also acknowledged the inevitable recourse to L1 use, but held the view that when given L1 'the students consequently miss useful opportunities to process communicative TL input, to practice new TL structures thoroughly in nonmechanical ways, and also to express and resolve comprehension problems in the TL'.

However, many authors have argued for the intrinsic pedagogical value of L1 use by both teachers and students in the second language classroom. Auerbach (1993: 9) asserted that the exclusive use of English in teaching ESL 'is rooted in a particular ideological perspective, rests on unexamined assumptions, and serves to reinforce inequities in the broader social order', and provided some evidence indicating that L1 together with bilingual options are not only effective but necessary for adult ESL students. Atkinson (1987) declared that the role of the L1 in monolingual classes has often been ignored in the discussion of methodology and teacher training. Atkinson (1993: 2) further argued that 'the prevalence of assumptions about the ideal nature of 100% target language has much more to do with currently fashionable notions and terminology in contemporary language teaching than with hard fact'. Harbord (1992) presented arguments for using the L1 in the classroom such as regarding L1 use as a learner-preferred strategy, and an efficient use of time. Butzkamm (2003) proposed

ten maxims for the functions of mother tongue use, such as helping pupils gain confidence and paradoxically becoming less dependent on their mother tongue, promoting more authentic, message-oriented communication, and providing richest source for building cross-linguistic networks, and so on. Macaro (2000) comprehensively explored the issue of target language use and Macaro (2005) claimed CS as a communication and learning strategy in the L2 classroom.

In addition, Cook (1999) argued that the prominence of the native speaker in language teaching has obscured the distinctive nature of the successful L2 user and created an unattainable goal for L2 learners, and recommended that L2 users be viewed as multi-competent language users rather than as deficient native speakers. This view provides positive arguments for L1 use in the classroom rather than portraying it as a negative problem to be solved. Moreover, with regard to teacher's L1 use, Cook (2001b) suggested that it is time to open a door that has been firmly shut in language teaching for over 100 years, namely the systematic use of the L1 in the classroom. He presented the reasons for avoiding the L1 use in the classroom with detailed counter-arguments against them, and listed ways of using L1 positively in teaching, such as teacher using L1 for conveying meaning of words or sentences, as metalanguage for explaining grammar, managing the classroom, giving instructions for teaching activities and so on.

Meanwhile, the judicious use of L1 by teachers was further examined by Turnbull (2001) who agrees with Cook (2001b) that there is indeed a place for the teacher to use the students' L1 in SL and FL teaching, and he also highlighted some pitfalls of relying too extensively on the L1, and called into question what 'maximize' really means in terms of an optimal or acceptable amount of TL and L1 use by teachers. Turnbull (2001: 537) noted that:

> *official guidelines that encourage teachers to use the TL create positive pressures for teachers, encouraging them to speak as much TL as possible. In addition to official guidelines, teacher educators must help teacher candidates and practicing*

teachers make principled decisions about the judicious use of the L1, while maximizing their TL use.

Turnbull and Arnett (2002) called for future research to determine what maximum use of TL means in terms of quantity and qualities and in terms of when it is acceptable or effective for teachers to draw on L1.

But what theoretical views do teachers hold? Macaro (1997; 2001b) proposed three theoretical positions on the issue of target and native language use of the teachers in the second language classroom.

1) The Virtual Position maintains that there is no pedagogical value in L1 use and can be excluded from the FL classroom as long as the teacher is skilled enough.
2) The Maximal Position also claims that there is no pedagogical value in L1 use, but perfect teaching and learning conditions do not exist and therefore teachers have to resort to the L1.
3) The Optimal Position finds some pedagogical value in L1 use, and some aspects of learning may actually be enhanced by use of the L1, and therefore there should be a constant exploration of pedagogical principles regarding whether and in what ways L1 use is justified.

The positions of most authors reviewed in this section can also be neatly slotted into these three categories along the continuum of exclusive use of L2 and the pedagogical use of L1. However, if we were to take the optimal position, the question is what does 'optimal' exactly mean for language practitioners? Macaro (2005: 71) proposed that 'when codeswitching was kept at a level below 10% there was no significant increase in the learners' use of L1 in the whole group interaction'. Moreover, he argued that transaction determines the intent of the bilingual teachers in their discourse. 'If the transactional intent is to communicate via the L2, the code-switch will not push the amount of L1 use above the threshold level' (Macaro, 2005: 72). He further provided some counter-arguments, reaching the conclusion of the positive effect of codeswitching.

In Chinese EFL research, a theoretical argument for the positive role of L1 was put forward by Guo Minghua (2002). He argued that Chinese can be positively used in

the following two ways in the EFL classrooms in China: helping with students' comprehension; fostering students' communicative linguistic competence as a communicative strategy by using Chinese to organize sentence structures and express opinions.

Apart from these arguments, there is hardly any empirical research exploring the actual effect of teachers' use of codeswitching on learners' second language learning. The following section critically reviewed several empirical studies which attempted to examine the effects of L1 use on L2 learning.

Effects of teachers' L1 use on learners' L2 learning

In terms of the possible effects of teachers' L1 use on learners' second language learning, Kaneko (1992) attempted to explore the relationship between teachers' L1 use and students' uptake at the end of the lessons by asking them to fill in uptake questionnaires on what they have learned through the lesson. 23 Japanese EFL classes of about 24 students each taught by six different teachers participated in the study. There was no statistically significant difference in the amount of L1 used in the different classrooms. Correlation analysis of the total time spent using L1 and students' uptake token indicates the two factors were negatively related. That is, the more the L1 was used, the less the uptake of students was. However, there are questions surrounding the validity of this study, namely, could the uptake questionnaire really reflect what learners have learned? Moreover, no demographic description was provided of the sample school and classes, the topic of the lessons and teachers' different teaching styles. In spite of these pitfalls, this is truly a pioneer study on the effect of teachers' L1 use on learners' uptake. It provides evidence for using L1 in the classroom and evidence for using the L1 word translation for L2 words within an L2 mainly classroom. Teacher L1 and L2 mixed speech was found to be important for student vocabulary and grammar uptake, and L1 was used mainly by teachers in spontaneous speech to explain about the L2 and to manage the class.

One recent exploratory work exploring the effect of teachers' CS on students' second language learning with regard to learners' vocabulary learning is that of Meng (2006). In this Master's thesis, he measured the effects of teacher's CS on learners' acquisition of unknown English lexical items during the comprehension of a written text. One hundred and fifty nine Chinese high school students were assigned either to a code-switch condition, a second language definition condition or to a condition in which whey were given both L1 equivalents and L2 definitions. Different results were found for two different passages. No significant difference between groups was found for Text 2. In the immediate posttest for Text 1, the students performed significantly better when receiving vocabulary explanations either in English or both English and Chinese than Chinese-only, but no significant difference was found in the long term for any of these three instructional approaches. A relationship was found between the instructional approach and the way the vocabulary was tested. However, the lack of a baseline group limited the generalizability of the results and it is not clear whether students picked up those lexical items naturally or through other means. Moreover, the condition in which both L1 equivalents and L2 definitions were provided for the students actually biased the other two conditions by providing additional information without considering the time issue. In addition, a lack of qualitative analysis on the actual lexical input provided by the teacher for the three conditions weakens the results. The English group also received contextualized examples of the target words, which were extra lexical input for these students. So did the group receiving both English and Chinese information. Finally, the method of measuring and testing the vocabulary could be improved because there is a question of whether the researcher was actually testing what the learners have been taught.

Another latest work on the effect of teacher's L1 use in L2 vocabulary learning was conducted by Liu (2008) in a Chinese EFL context, by comparing two conditions, namely the teacher's providing the English-only explanation for unknown words and expressions and providing both the English explanation and the Chinese translation

for unknown words and expressions. As predicted, the group who received explanations in both languages outperformed the group who only received English explanations in the posttest. The effect of L1 use as a means of semantization, especially for adult Chinese EFL learners, was then concluded by Liu (2008: 68):

> *...for College English teaching, instead of running the risk of confusing or misleading students whose English proficiency are neither high nor too low while trying to minimize the use of Chinese, the teacher should be encouraged to use the interlingual strategies (such as the bilingual method, both English explanation and Chinese translation) as a quick and efficient means of the new word's initial semantization.*

Although the effect of L1 use in the L2 vocabulary learning was confirmed by the above study, it should be borne in mind that there are many limitations in its study design and data analysis process. Firstly, no demographic description for the two groups was reported in the paper. Although a vocabulary pretest was conducted to ensure that there was no significant difference between the two groups, the validity of the sampling procedure cannot be ensured, which further undermines the validity of the intervention. Secondly, it is not clear as to what kind of English explanations were provided for both groups or whether both groups received the same English explanations. Thirdly, the provision of explanations in both languages would clearly result in better results than those in only one language as one group was exposed to additional lexical input. Fourthly, the time spent in both groups was not considered at all as a result of which one group who performed better might have received much longer lexical input than the other group. Finally, as 'the researcher picked out 60 words or expressions that may be unknown to the subjects' (Liu, 2008: 66), and for both groups statistical analysis of the posttest with regard to group difference should take into consideration the influence of their pretest scores by using Analysis of Covariance rather than the independent sample T-test analysis alone.

It seems that these three empirical studies on the effect of teacher's L1 use contained many limitations in terms of research methodology due to the complexity of the L2

classroom and L2 vocabulary learning. More rigorous empirical research is required in this context to avoid all the limitations of the above studies. This thesis intends to contribute to this part of the literature by empirically examining the effect of teachers' CS on the second language learners' vocabulary learning.

The review of this section on the actual language use in the second language classroom reveals that L1 is widely used in the classroom by both teachers and learners and arguments for the pedagogical use of L1 were provided by many SLA researchers as well. There is a discrepancy between what theories have outlined and the reality in the classroom: L1 plays a vital and indispensable role in the second language classroom. If we were to take the optimal position, how could the pedagogical value of codeswitching be empirically examined in the second language classroom? As the three reviewed empirical studies focused on the effect of teacher's L1 use on L2 learners' vocabulary learning, what aspects of learning shall be examined for this thesis?

1.6 Vocabulary learning

It is impossible to resolve the debate on classroom codeswitching outright due to the variety of variables. There is a need to focus on one aspect of classroom learning at a time. In this study I will take a look at one particular aspect of second language learning, that is, vocabulary learning. Future studies may for example examine grammar development. It is almost a universal law that every study on vocabulary learning must begin by explicitly proclaiming the importance of vocabulary in second language learning and teaching. Meara (1980) long ago considered vocabulary as a 'neglected aspect of language learning' and called for more related research. Candlin (1988: iii) asserted that 'the study of vocabulary is at the heart of language teaching in terms of organization of syllabuses, the evaluation of learner performance, and the provision of learning resources'. Thus a line of research on second language vocabulary learning in this vein has gradually accumulated. In addition to the

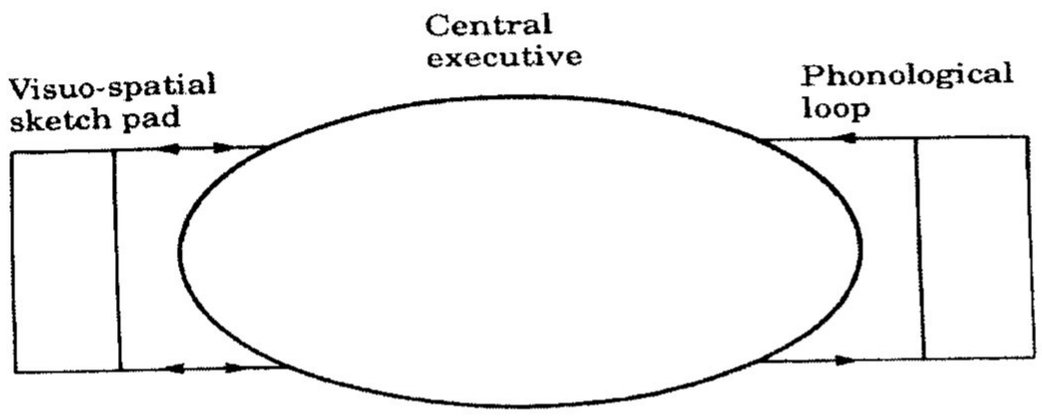
importance of vocabulary in L2 learning, studies on language use in the L2 classroom also reported the L1 use by both the teacher and students on lexical items. For example, Guo (2007), who examined the oral interaction between teachers and their students in Chinese university EFL classrooms, found that most of the teacher's CS was for medium-oriented lexical explanations.

This study explored the possible effect of teacher's CS on second language learners' vocabulary learning in order to examine the pedagogical value of L1 on second language learning. This section will briefly review the existing body of research on vocabulary learning in relation to the role of first language conducted over the past decade before highlighting a lacuna in the literature and outlining the aims of this study in the context of vocabulary learning. At the outset a series of models on language processing will provide some theoretical insights on the role of L1 and vocabulary learning.

Models of language processing

The links between short-term memory and language have been established since the 1980s through models of working memory (Baddeley, 1986; 1990; Gathercole and Baddeley, 1993). Baddeley (1990) pointed out that working memory is involved 'in the temporary processing and storage of information' before any information could be stored and retrieved in long-term memory. Working memory consists of a central executive that controls how information is transmitted around the system, and visual and phonological systems that temporarily process and retain the information appropriate to their modes. The phonological system then has a phonological store that can hold information for about 2 seconds and an articulatory loop that recycles information back through the store to extend its life by repeating information over again (see Figure 1.2).

Figure 1.2: Baddeley's working memory model (Baddeley, 1990: 71)



From the above model, it can be seen that working memory capacity is related with both the phonological store which in turn depends on the articulation of sounds and the visual input of a language. Through evidence from neuropsychological, developmental, and experimental studies, Gathercole and Baddeley (1993: 45) pointed out that phonological working memory contributes directly to the learning of new words, and 'the ease of learning new words seems to be limited by the adequacy of an individual's phonological memory skills'. Moreover, Papagno and Valentine and Baddeley (1991) used articulatory suppression to explore the role of the phonological loop system of working memory in the acquisition by adults of foreign language vocabulary, and concluded that phonological loop component of working memory plays an important role in foreign language vocabulary acquisition. Ellis and Sinclair (1996: 236) have reviewed a considerable body of evidence that phonological factors are involved in vocabulary acquisition and found that participants encouraged to rehearse foreign language utterances are better than both silent controls and participants who are prevented from rehearsal by articulatory suppression during learning involving comprehension and translation of foreign language words and phrases; and also in the acquisition of the foreign language forms of words and phrases. Meanwhile, there is also some interaction with the written mode of language, as due to their different writing systems speakers of different languages hold visual information in their visuo-spatial sketch-pads over different time spans.

However, it is necessary to be aware of the limitations of working memory in that both the phonological loop and visuo-spatial sketch-pad are 'what can impede or

facilitate coding and processing in working memory and storing and retrieval in and from long-term memory' (Macaro, 2005: 74). It is clear that only a certain amount of information can be stored in the phonological store and visuo-spatial sketch-pad and even less of this information in the working memory can be further transferred and kept in long-term memory for retrieval. In addition, people generally process a second language less swiftly than their first. 'The restrictions on the learner's ability to speak the language are caused just as much by memory limits as by the difficulty of the syntax, vocabulary, and so on' (Cook, 2001a: 85). Thus, when there is a profusion of L2 information awaiting processing, a question that arises is what is the best way to lighten the cognitive load of the working memory in order to efficiently process and store as much information as possible? Would it be possible for learners' native language to play a role in this cognitive process? Kern (1994), who considered the multifaceted role that mental translation plays in L2 reading in his study, presented and illustrated how translation can serve to alleviate the comprehension obstacles for readers of L2 texts in comprehending L2 reading texts caused by inefficient processing and memory bottlenecks. According to Kern (1994: 449), 'translation may reduce the load placed on cognitive resources in at least two ways'. Firstly, his readers translated less familiar L2 words into more familiar L1 words to optimize their short-term retention; secondly, once words were translated into L1 form, they were more effectively combined into meaningful propositions by means of L1 chunking processes and the readers' comprehension processes may proceed much as they do in the L1. Although readers' use of translation was found to be influenced by their proficiency levels, that is, readers in the low ability group reported using translation most frequently, this study reveals that words stored as discrete units in working memory place a burden on memory capacity and use of L1 could ease working memory constraints and consolidate meaning in the long term memory. Moreover, with regard to CS use in the L2 classroom, Macaro (2005: 74) argued that 'a code-switch can reduce the selective attention dedicated to a single communication breakdown, freeing up working memory capacity to work on the meaning of larger chunks of input', thus lightening the cognitive load problems in working memory.

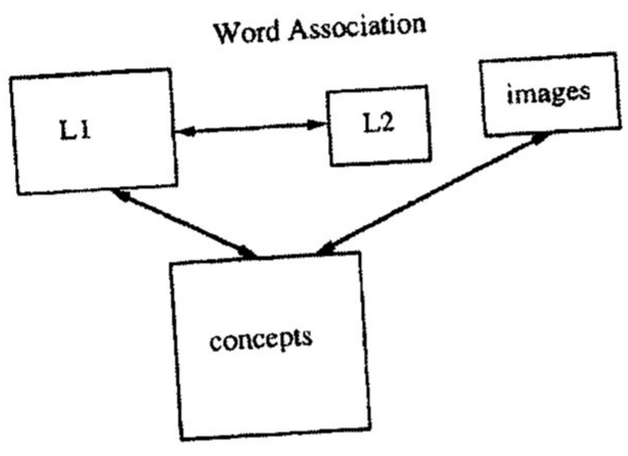
In addition to the role of L1 in lightening the cognitive load in working memory and freeing up capacity for processing larger chunks, more evidence on the role of L1 comes from the bilingual lexical representation research. The view that a relationship may exist between the ways a new language is learned and bilingual memory organization and processing has long been acknowledged since the mid-twentieth century. How vocabulary is stored and retrieved in the brain of a bilingual will certainly shed light on second language learners' vocabulary learning.

De Bot, Cox, Ralston, Schaufeli and Weltens (1995) summarized two basic hypotheses for the model of the bilingual lexicon. The Interdependency Hypothesis maintains that information is stored in a single semantic memory representation with language-specific 'tags', while the Independency Hypothesis posits that the two languages are stored separately in memory. To test these hypotheses, their study examined the extent to which the lexical representations of bilinguals are influenced by three factors, namely cognateness, level of proficiency and visual versus audio mode of presentation. The findings did not fully support either hypothesis as the researchers acknowledged themselves that, 'the models presented in the literature so far need extra validation by additional auditory-based experiments' (De Bot et al, 1995: 18).

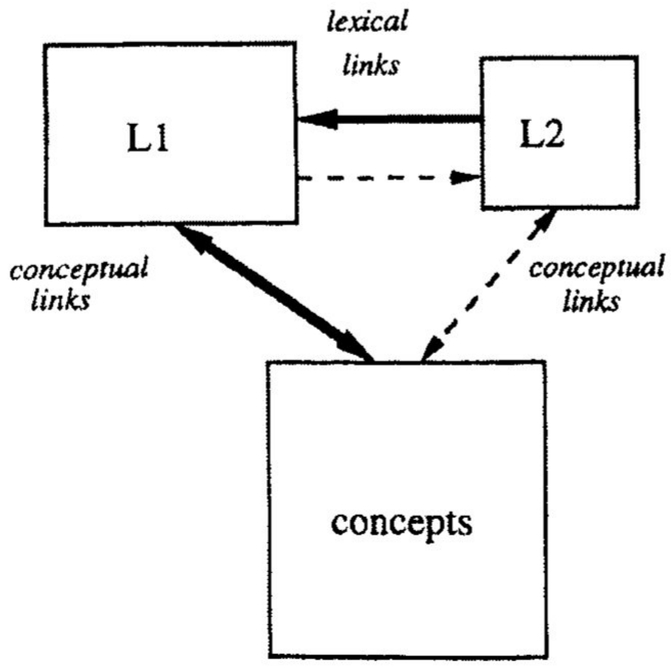
Other second language researchers (Potter, So, Von Eckhardt and Feldman, 1984; Chen and Leung, 1989; Kroll and Curley, 1988; Kroll and Stewart, 1994) proposed three models for the structure of bilingual lexical representation (see Figure 1.3). The Word Association Model proposes that the L2 words representations are connected directly with those of the corresponding L1 words, and L2 words only gain access to concepts indirectly through L1 mediation. In contrast, the Concept Mediation Model maintains that there are no direct links between languages at the lexical level, but both lexicons are connected to common semantic representations, that is, not only L1 words but also L2 words gain access to conceptual memory directly. The third model,

the Hierarchical Model of bilingual memory, revised by Kroll and Stewart (1994), combines the two proposals and brings in the influence of the level of learners' language proficiency. The links between the lexicons and the conceptual store are bi-directional and differ in strength. Strong links exist between the L1 lexicon and conceptual memory, in contrast the link from the L2 lexicon to the conceptual system remains relatively weak such that even with highly fluent bilinguals. Novice language learners would rely more exclusively on lexical level links.

Figure 1.3: Diagrams on bilingual lexical models (Kroll and Stewart, 1994)



Hierarchical Model of Lexical and Conceptual Representation in Bilingual Memory



A series of studies have been conducted to test the hypothesis of the language proficiency levels and the lexical and conceptual systems. De Groot and Hoeks (1995) provide evidence for the impact of L2 proficiency level on the bilinguals' lexical organization, claiming that the better one knows a language the more direct the links between the L2 lexical form and its meaning representation. Kroll, Michael and Sankaranarayanan (1998) tested this hypothesis by comparing the performance of L1 English speakers learning French as L2 with the performance of highly fluent English-French bilinguals in two tasks: word naming in which they had to read aloud words presented in the language they appeared, and word translation which required translating the words presented into the other language. Results show that differences in the naming latency and accuracy for the two languages decreased as individuals became more proficient. Kroll, Michael, Tokowicz and Dufour (2002) examined the process of lexical access for both L1 and L2 during L2 acquisition by comparing the performance of less and more fluent bilinguals in language production tasks that required simple word naming or single word translation. Results show that learners become faster at naming words in L2 and translating words from one language to the other with increasing L2 proficiency.

However, the Hierarchical model was challenged by Altarriba and Mathis (1997), whose findings reveal the role of conceptual information in L2 processing, that words in L2 are represented both lexically and conceptually very early in the process of acquisition, and that novice bilinguals have both a lexical representation and a conceptual representation of their 'new' language; which is not entirely supported by the model of Kroll and Stewart (1994), for which, the conceptual link is not yet available for a newly bilingual person. However, it should be borne in mind some limitations in the study of Altarriba and Mathis (1997). For example, monolinguals in the acquisition phase of the study experienced a 'recency effect' and the use of the 15-minute intervening tasks including various reading comprehension questions and mathematic problems during the experiment was not justified.

Some studies claim that even experienced learners found it difficult to learn the L2 words without activating the corresponding L1 word. In the study by Lotto and De Groot (1998), word-learning appears a more effective means to acquire vocabulary in an L2 than picture-learning, at least when the learners are relatively experienced FL learners. In fact, the word-learning in this study just refers to L1 translation or equivalents. As Lotto and De Groot (1998: 56) pointed out, 'when experienced FL learners start to learn vocabulary in yet another FL, learning will be most successful if the new vocabulary is associated with the corresponding L1 words'. In addition, the study of Hermans, Bongaerts, De Bot and Schreuder (1998), who gave picture cues to Dutch advanced learners of English, found that even these learners found it difficult to go straight to the L2 word without first activating the Dutch word.

Nevertheless, these bilingual lexical models do provide insights into how bilinguals store and retrieve L1 and L2 lexicon. No matter whether there is a direct link between L2 lexicon and its concept and how strong the link is, both language lexicons share the same concept and a link between the L2 lexicon and the concept should be well established for the lexical information to be stored and retrieved. The next question is how L2 language learners store and develop the L2 lexical knowledge? For L2 learners, the conceptual knowledge of a word has already existed through their L1, how could L2 lexicon be linked to pre-existing concepts?

A series of studies by Jiang (2000, 2002, 2004a, b) add to further knowledge on vocabulary learning models for L2 learners in instructed classroom settings. Jiang (2000) proposed a psycholinguistic model of vocabulary acquisition in L2 instructional settings. Based on Levelt's (1989) model, Jiang (2000: 48) argued that the internal structure of the lexical entry in L1 contains two components: the lemma and the lexeme. The lemma contains semantic and syntactic information about a word, for example, word meaning and part of speech, and the lexeme contains morphological and formal information, for example, different morphological variants

of a word, spelling, and pronunciation (see Figure 1.4). Compared with the lexical entry in L1 acquisition, there are two practical constraints for L2 learning, particularly classroom L2 learning, that is, the poverty of input in terms of both quantity and quality, and the presence of an established conceptual/semantic system with an L1 lexical system closely associated with it. He then proposed three stages of lexical development in L2 (See Figure 1.5). At the first stage, a lexical entry is established for an L2 word, but it only contains formal specifications and a pointer. At the second stage, an L2 entry is a combination of L2 formal information (in the lexeme) and the semantic and syntactic information of its L1 translation (in the lemma). The integration of L2 information other than formal specifications is realized at the third stage.

Figure 1.4: Internal structure of lexical entry (Jiang, 2000: 48)

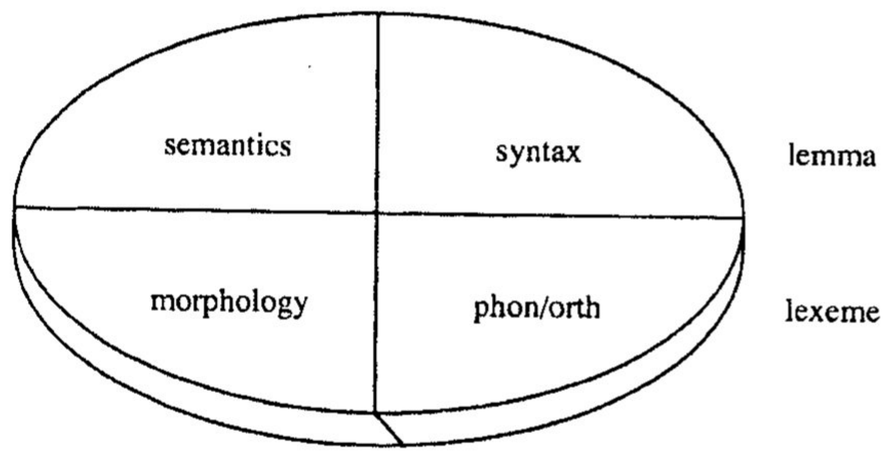
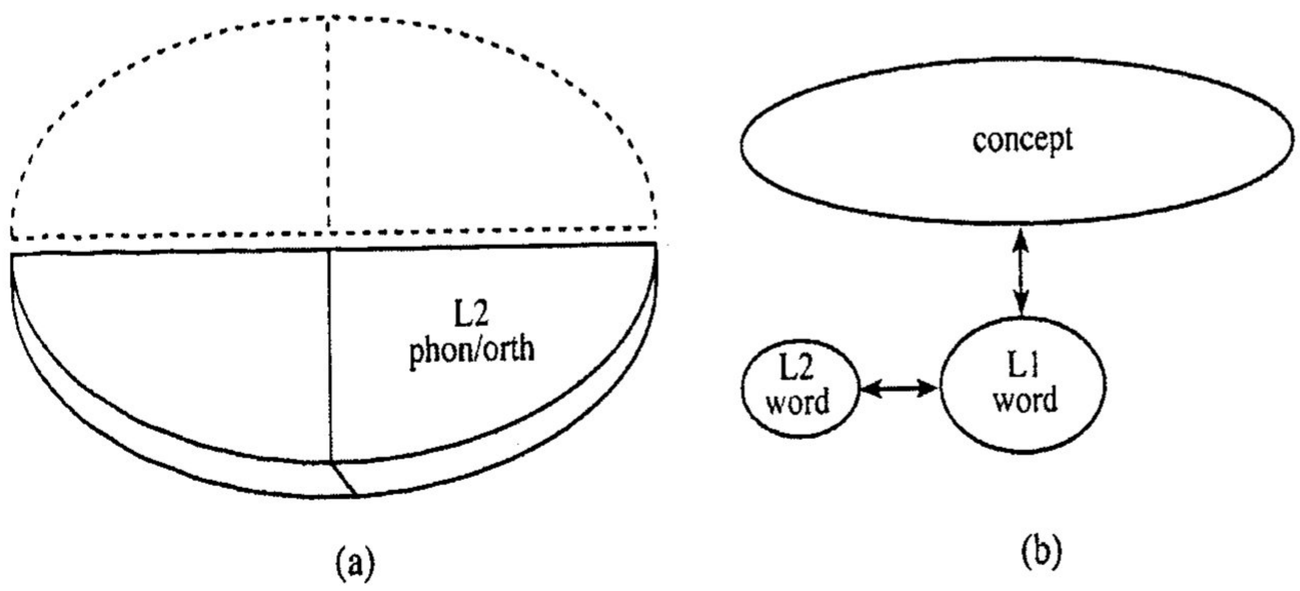
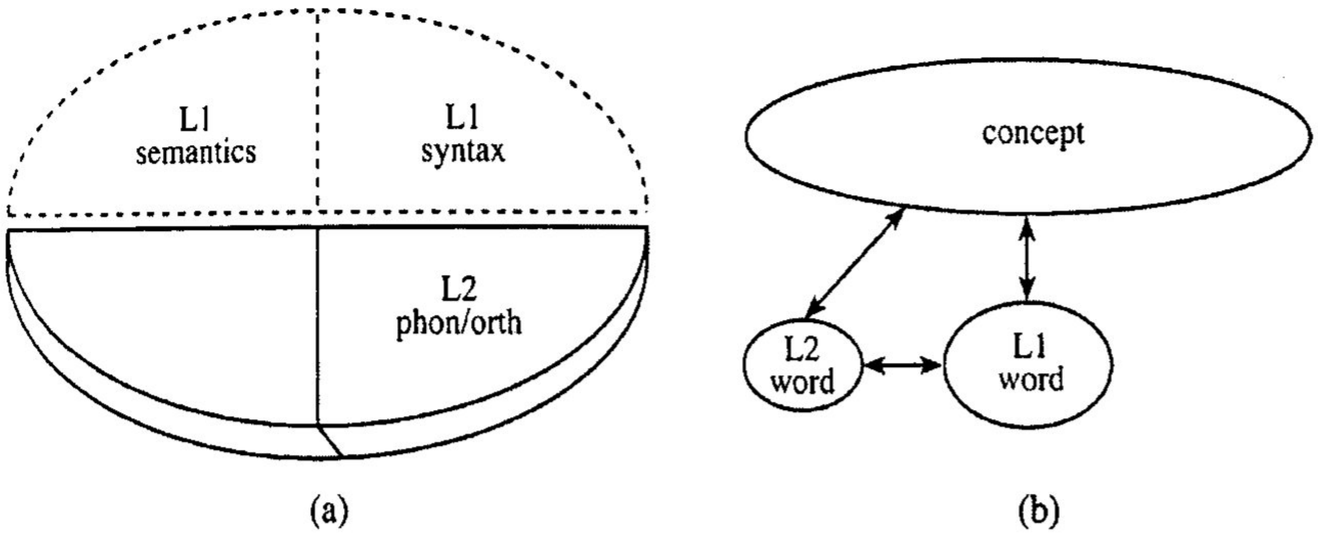


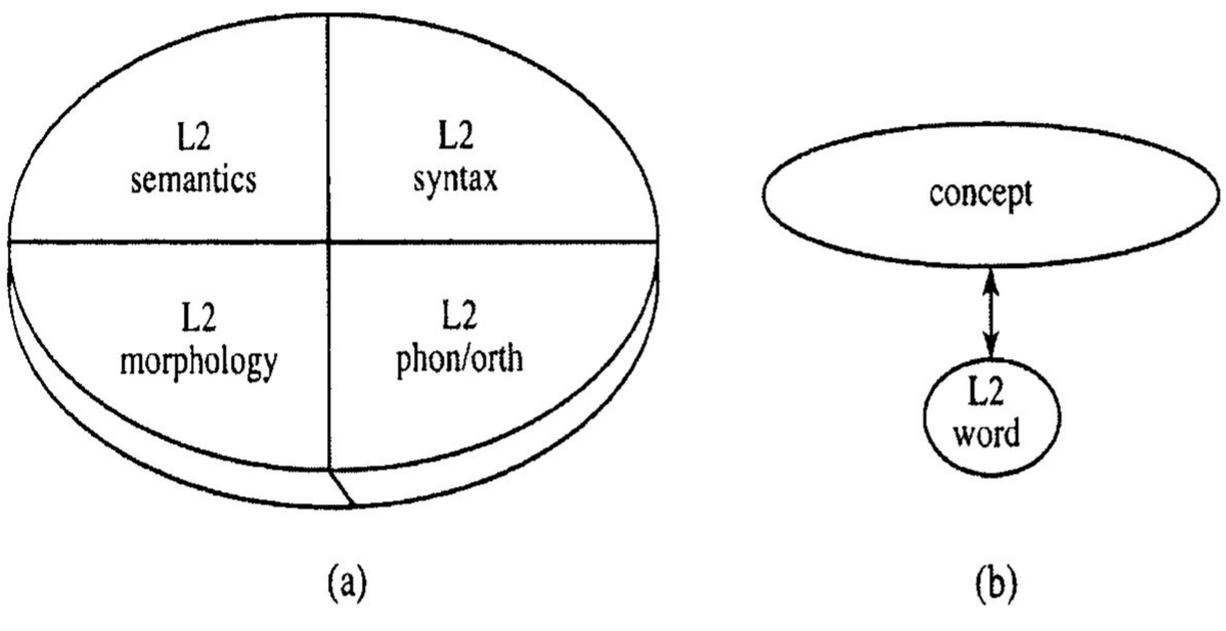
Figure 1.5: Three stages of L2 lexical representation and processing (Jiang, 2000: 51-53)



Lexical representation (a) and processing (b) in L2 at the initial stage of lexical development in L2



Lexical representation (a) and processing (b) in L2 at the second stage



Lexical representation (a) and processing (b) in L2 at the third stage

Jiang (2000) proposed and argued for the three-stage model of lexical development in instructional L2 learning. Empirical studies came later in Jiang (2002, 2004a, 2004b). Chinese-English bilingual adult speakers were compared with English-native speakers in Jiang (2002) to examine the proposition that L2 lexical forms are often mapped to the existing semantic content of their L1 translations rather than to new semantic specifications of their own, by performing two semantic judgment tasks in which they had to determine the degree of semantic relatedness of English word pairs (experiment 1) or to decide whether two English words were related in meaning (experiment 2). The non-native speakers, not the native speakers, were found to provide higher rating scores on or respond faster to L2 word pairs sharing the same L1 translations than to L2 word pairs that do not, which provided strong evidence of the presence of L1 semantic content in L2 lexical entries. Jiang (2004a) replicated the study of Jiang (2002) to investigate semantic transfer in L2 learning in a different ESL

population, Korean ESL speakers, who were asked to perform a semantic judgment task in which they decided whether or not two English words were related in meaning. The Korean ESL speakers responded to the same-translation pairs significantly faster than to the different-translation pairs whereas no such same-translation effect was found among native speakers of English, which was taken as evidence for the presence of L1 semantic structures in L2 lexical representations and their continued involvement in L2 processing.

These research findings from Jiang demonstrated the mediated role of L1 in the lexical development of L2 adult ESL learners. As acknowledged by Jiang (2004b: 104), 'the mapping onto the pre-existing L1 translation or meaning, or semantic transfer, is likely to occur as far as there is an existing word or concept that is similar in meaning to the target word, no matter what strategies are used by the teacher to convey the meaning of the new word'. With regard to the implications of the lexical development to vocabulary teaching, Jiang was reluctant to acknowledge the inevitable role of L1 in L2 lexical instruction in his early works. When Jiang (2000) first presented the three-stage lexical development model, he proposed two general vocabulary teaching approaches. One is word association approach, where the meaning of an L2 word is 'told' to the learners by means of providing its L1 translation. However, he commented that this approach 'does not emphasize the provision of contextualized input, at least initially, and is more likely to encourage the learner's tendency to rely on L1' (Jiang, 2000: 70). The other approach is the contextualized approach which emphasizes providing contextualized exposure to new words, mostly through reading, and encourages the inference of meaning from context.

No teaching implications were mentioned in the study of Jiang (2002). However, in Jiang (2004a: 426), the role of L1 as a means of helping learners understand the meaning of new words or semantization was overtly discussed. Three general categories of semantization strategies were classified:

Intralingual strategies involve the use of linguistic means of the target language such as synonyms, definitions, or linguistic contexts. Interlingual strategies utilize the L1 in the form of a bilingual dictionary, cognates, or L1 translation equivalents, often associated with word lists. Extralingual strategies make use of pictures, objects, physical contexts, and other multimedia aids.

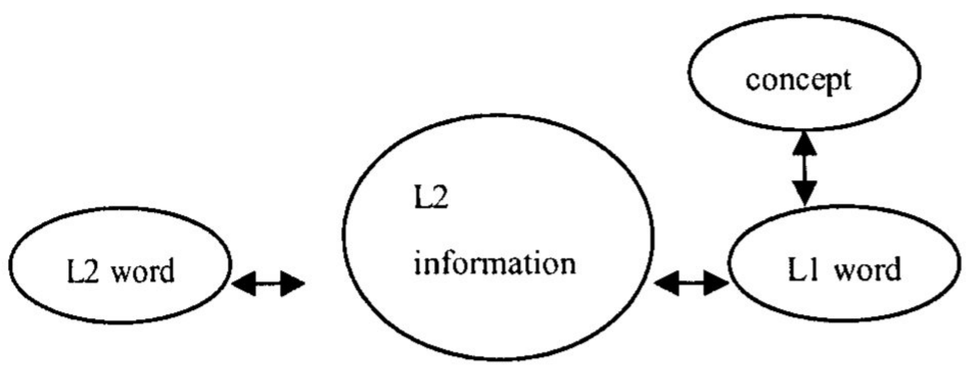
Although intralingual strategies sound more 'pedagogically correct' as they abide by principles of communicative language teaching or comprehensible input and interlingual strategies are easily connected to the grammar translation method, Jiang (2004a: 426) argued that 'there is already compelling evidence showing that it is not necessary or desirable for learners to avoid using the L1 for semantization', and 'there is no reason not to use L1 as a means of semantization or as a tool for checking and validating learners' understanding of word meaning', and 'avoiding the L1 is neither practical nor desirable in adult L2 acquisition' (Jiang, 2004a: 427).

However, advocating not avoiding the use of L1 does not necessarily acknowledge the effective role L1 could play in adult L2 vocabulary learning in instructed settings. Moreover, according to Jiang (2004a: 426), 'whether it is by means of pictures, definitions, contexts, or L1 translations, when the meaning of a L2 word is understood, it is the pre-existing meaning or concept that is activated and mapped to the word form'. However, we do not know which means is more effective in the form-meaning mapping process. Although Jiang (2004a: 427) also cautiously concluded in the end that 'we can encourage teachers to use interlingual strategies as a quick and efficient means of initial semantization, so that more time and attention can be devoted to helping facilitate the transition from one stage to another', there is indeed in need of empirical evidence to support the effective role of L1 in this semantizing process.

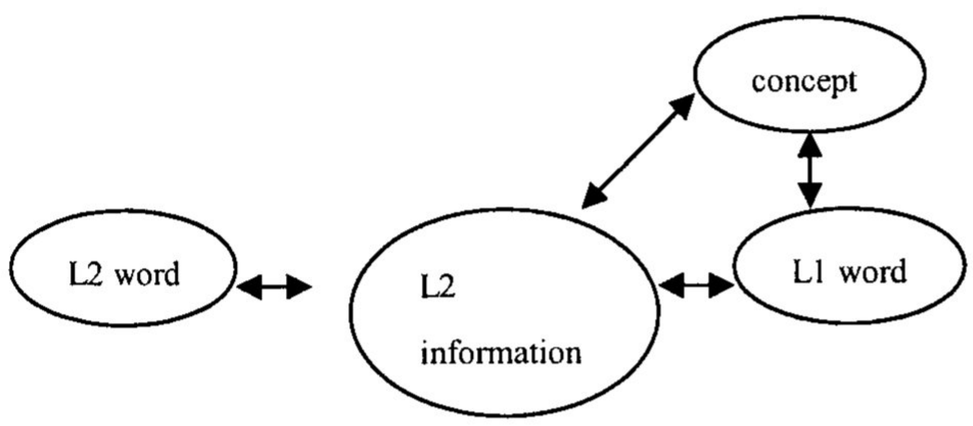
The intralingual and interlingual strategies could be further examined by looking back at the three-stage lexical development model Jiang (2000, 2002, 2004a, b) proposed. As the model reveals that L1 translation is an inevitable path for L2 lexicon to be

linked to its concept, the provision of L1 equivalents would consolidate this mapping process, especially at the initial stages. However, what kind of lexical development process would learners experience if L2 synonym or definition was provided? Additional steps have to be taken in order for the meaning of an L2 word to develop. According to Jiang's model, when an L2 synonym or definition is provided, the route of its mapping the meaning of the target word to its form all depends on which lexical development stage that the synonym or the words in the definition are in. If they are in the final integration stage, that means the synonym or the words in the definition have already directly and strongly linked to the L2 concept, the L2 new word could be linked to its concept via the synonym or definition. If they are in the L1 lemma mediation stage, where the transferred lemma information links L2 words and concepts directly and mediates L2 use, the L2 word will then be linked to its concept via the transferred lemma information which links L2 synonyms or words in the definition and their concepts. If they are in the first word association stage, where the lexical entry contains only their form specifications and a pointer that links them to their L1 translation, the L2 word will then have to travel a long journey in order to get it linked to its concept via the synonym or words in the definition through the L1 lemma mediation stage for them and the integration stage for them. It can be noticed that the more established the meaning of the L2 synonym or definition, the quicker the link between the L2 new word and its concept will be; the less embedded the link, the slower it will be. Figure 1.6 illustrates the lexical development model with provision of L2 information. Following this model (Figure 1.6), as Jiang mentioned, it will be very difficult to reach the final stage for L2 learners and it can then be predicted that the low-proficiency learners would benefit more from the L1 translation as it takes them shorter time to establish the form-meaning mapping for the L2 new words. If the L2 synonym or definition is provided, it is likely for these learners to have difficulty with establishing the link for this L2 information to their concepts before the L2 word could be linked to its concept via this L2 information in the synonym or definition. Empirical evidence is necessary to provide some answers for the above problems.

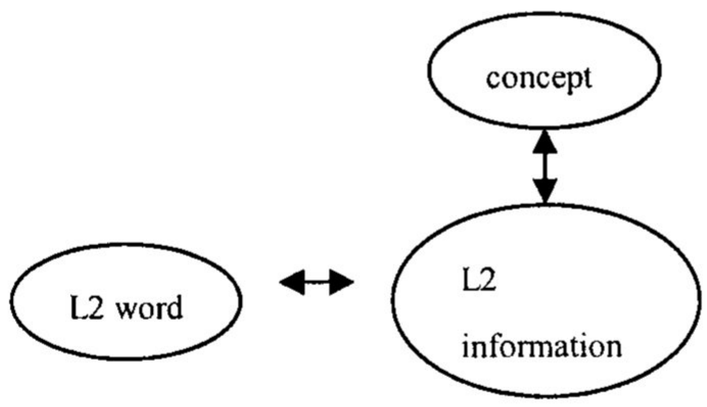
Figure 1.6: Lexical development model with the provision of L2 information (adapted from Jiang, 2000)



Lexical processing in L2 at the initial stage



Lexical processing in L2 at the second stage



Lexical processing in L2 at the third stage

Another question to be addressed is that of the semantic mismatch between the L2 new word and the L2 synonym or L1 translation due to the cross-linguistic semantic transfer between the two languages.

Further evidence was found in Jiang (2004b) for incomplete semantic development in adult L2 learning. Chinese ESL speakers were asked to complete sentences with pairs of English words that are not distinguished in the participants' L1, such as *criterion*

and *standard*, both of which in Chinese means *biaozhun*. They showed high error rates in the sentence completion test. The overall accuracy rate was 65%, compared to native speakers' 94%. He then pointed out that semantic restructuring is necessary in order for the learners to use L2 words correctly. According to Jiang (2004b: 118), two conditions have to be met in order for the semantic restructuring process to take place:

> *(1) There is an indication of a mismatch between an L2 word and its L1 translation in meaning. Such an indication can be explicit, as in the form of overt correction from an instructor or interlocutor. Or it can be less direct, e.g. in an expression of confusion on the part of an interlocutor, or any other sign of unsuccessful communication.*
> *(2) Information is available regarding exactly how the L2 word is semantically different from the L1 concept. This information may come from direct correction and explanation, or from context.*

However, the needed indication of semantic mismatch is often unavailable to an L2 learner for various reasons. Jiang (2004b: 121) concluded that 'natural exposure alone may not provide enough impetus for semantic restructuring and development…I'd like to argue in this context that instructional intervention has an important role to play in helping learners overcome plateaus in semantic development'. He further pointed out effective semantics-oriented vocabulary instruction depends on a clear understanding of the similarities and differences between both languages in terms of both individual words and the overall semantic/lexical system, which contributes to the advantage of the non-native speaker teacher over the native-speaker teacher. He argued that analysis on the semantic differences between the two languages will help learners understand how concepts are lexicalized differently in different languages and thus facilitate their semantic restructuring process. However, it is still yet to be known for practitioners about what kind of activities could be designed to fit into this awareness-raising of the semantic mismatch and how could these activities be implemented in a communicative language classroom.

The bilingual lexicon model proposed by Kroll and Stewart (1994) should be distinguished from the three-stage lexical development model developed by Jiang

(2000, 2002) in that their analysis was focused on different participants. Kroll and Steward (1994) examined the mental lexicon of bilinguals and how the L1 and L2 lexicons were linked to concepts, whereas Jiang developed an incremental lexical development model for L2 learners. However, all in all, the bilingual lexicon models and the three-stage lexical development model for adult L2 learners indicate an inevitable mediated role of L1 in the L2 lexical development, and a means of helping learners understand the meaning of new words in the lexical processing of L2 vocabulary development, which in turn provides unequivocal support for the current study's aim of exploring the pedagogical value of L1 by comparing the provision of L1 equivalent and L2 information as the meaning of new words.

Incidental and intentional vocabulary learning

Having examined the bilingual lexical representation models and the incremental lexical development model for L2 learners in providing insights into the role of L1 in the L2 lexical processing development, this part of the paper is going to review empirical research on second language vocabulary learning.

Ellis, N. (1995) proposed four hypotheses for L2 vocabulary learning:

> *1) The strong implicit hypothesis, which claims that the meaning of a new word is 'acquired totally unconsciously as a result of abstraction from repeated exposures in a range of activated contexts'.*
> *2) The weak implicit hypothesis, which holds that vocabulary is mostly learnt subconsciously but at least some conscious 'noticing' of a new word has to take place.*
> *3) The weak explicit hypothesis, which argues that we cannot be taught all the L2 words we know but we can teach ourselves by selectively attending to lexis and using a variety of strategies to infer its meaning from context.*
> *4) The strong explicit hypothesis, maintaining that the application of a range of strategies is a necessary condition of acquisition: noticing the new word; attempting to infer the meaning from context; consolidating via repetition and association.*
>
> (summarized by Macaro, 2003: 71-72)

Together with these hypotheses on the implicit-explicit continuum of vocabulary

learning is another widely discussed and researched debate on incidental and intentional vocabulary learning. When learners are focused on comprehending meaning rather than on the explicit goal of learning new words, incidental learning is often regarded as occurring, that is, as a by-product of the learner being engaged in a listening, reading, speaking or writing activity. There has been a long discussion over the intentional and incidental learning (Krashen, 1989; N. Ellis, 1994; Schmidt, 1994; Paradis, 1994). Hulstijn (2003) provided an overview of the empirical literature, in particular of the L2 vocabulary literature, for the terms used in the area of psychology and L2 learning. He pointed out that both learning require some attention and processing. In terms of the intentional learning, 'attention is deliberately directed to committing new information to memory', whereas for incidental learning, 'the involvement of attention is not deliberately geared toward an articulated learning goal' (Hulstijn, 2003: 361). With regard to L2 vocabulary, most empirical studies examined the intentional condition where the participants were informed beforehand that they would be tested as well as the incidental condition where the participants did not know in advance about the vocabulary task. Wesche and Paribakht (1999) pointed out that, in experimental psychology, the critical factor distinguishing incidental from intentional learning conditions is that subjects in the incidental condition are not told they will be subsequently tested on given material or skills, whereas, in the intentional condition, they are told. However, since learners may have their own intentions that underlie the instructions they are given, difficulties with the incidental versus intentional distinction arise. Retention rates under intentional learning conditions are found to be on average higher than under incidental conditions. Long-term retentions of new vocabulary normally require frequent exposure or rehearsal, regardless of the conditions under which new words have initially been encountered. Hulstijn (2003: 365) also pointed out the methodological issues in these incidental and intentional vocabulary-learning studies, such as the difficulty of controlling for time on task, controlling for the pre-knowledge of target words by pretest, the use of delayed posttest in the design, and so on.

While summarizing certain advantages over direct instruction, Huckin and Coady (1999) pointed out many important questions which remained unanswered regarding the fact that incidental learning of vocabulary is still not fully understood then. After a review of the literature, they noted that 'incidental learning is not entirely "incidental", as the learner must pay at least some attention to individual words'. As Ellis, N. (1995) proposed in the four hypotheses for L2 vocabulary learning, different degrees of selective attention determines different types of vocabulary learning. Huckin and Coady (1999: 190) claimed that 'the amount of attention and the amount of learning varies according to a number of factors, including context, type of attention, and task demands'. Hulstijn (2001: 275) further examined the theoretical, methodological and pedagogical issues of intentional and incidental L2 vocabulary learning, and summarized that:

> *the labels incidental and intentional learning no longer reflect a major theoretical distinction. It is the quality and frequency of the information processing activities (i.e. elaboration on aspects of a word's form and meaning, plus rehearsal) which determine retention of new information, far more than the question of whether learners are forewarned of an upcoming retention test or the question of whether they process lexical information without or with the intention to commit it to memory.*

Schmidt (1990), dealing with the role of consciousness in second language learning, proposed that the subjective experience of 'noticing' is the necessary and sufficient condition for the conversion of input to intake. Schmidt (1993: 217) further addressed this issue by examining incidental and intentional learning, attention and noticing, and implicit and explicit learning, concluding that 'target language forms will not be acquired unless they are noticed, and one important way that instruction works is by increasing the salience of target language forms in input so that they are more likely to be noticed by learners'. Moreover, some researchers (Ellis, N., 1994, 1995; Robinson, 1995; Huckin and Coady, 1999) also confirmed the role of consciousness in second language acquisition, claiming that vocabulary learning requires attention to both meaning and form. It can be concluded then that while deriving meaning from

the context with the help of dictionary and glosses learners should also pay certain levels of attention to the new words in order to acquire them. The issue of drawing learners' attention to the meaning and form of lexical items will be discussed in detail in later sections.

Rather than continuing the debate between incidental and intentional vocabulary learning, many important issues relating to the implicit-explicit or incidental-intentional continuum of vocabulary learning, including inferring from the context, vocabulary strategy use, meaning negotiation, and form-focused instruction, will be discussed in the following sections respectively.

Learning vocabulary from context

Since Sternberg (1987, cited in Knight 1994) claimed that most vocabulary is learned through context and that students with higher verbal ability can correctly guess at the meaning of unknown words, many empirical studies have emerged researching on whether vocabulary is learned from context and whether learners could make correct inference of the meanings of new words from the context. By using an authentic Spanish text Knight (1994) examined whether vocabulary was best learnt by deriving meaning from context. The results reveal that all participants learnt more new words when exposed to them in context than when they were not exposed to the context, and this difference remained when tested two weeks later. Moreover, high-verbal-ability students learnt more words from context than low-verbal-ability students. The high and low verbal grouping was based on their American College Test (ACT) verbal scores. While her study provides evidence of the benefit of deriving the meaning of words from context, students' L1 verbal scores were found to have an influence on this process.

However, contrary findings come from Prince (1996), who again examined the role of context by comparing context and translation. His study involves two groups (context

and translation) and two conditions (learning condition and recall condition). Evidence against the use of context was found: both advanced and weaker learners recalled words better in the translation condition than with the context condition. His study also involves language proficiency and found that more advanced learners had a higher rate of correct answers than the weaker group in whatever learning condition. The direction of translation seemed to influence the weaker group more than the advanced and the weaker group produced more correct responses from L2 to L1 than from L1 to L2. However, Prince (1996: 486) attributed the low performance of the weaker group in the context condition to 'the inability of the weaker group to transfer knowledge' which 'represents a clear limit to the usefulness of their otherwise impressive ability to learn words with their translations'. However, it should be borne in mind that his study and Knight's (1994) study have different criteria for dividing their participants into different proficiency groups. And most importantly, while Knight (1994) examined the effectiveness of learning from context by examining whether to provide learners with context or not, Prince (1996) examined whether words were in sentences or were provided with L1 equivalents.

Another similar study was from Hulstijn (1992) who also examined the advantage of context by comparing the retention of inferred word meanings when L2 learners were required to infer the meaning of unknown words using the information contained in the context and given word meanings when learners were provided with the meaning of unknown words immediately in the form of L1 translation or synonym in L2. Mixed results were found in the five experiments in the study. Experiment I shows that when the meanings of the targets were given retention was better than when the meanings had to be inferred. Retention of the inferred meanings was higher than the retention of the given meanings on both incidental tests in experiment V. Since all the five experiments have employed different types and numbers of participants with different aims, it was not possible to compare their results. However, the researcher reminds us that although incidental vocabulary learning did occur, retention of word meanings in a true incidental learning task was very low indeed. In addition, 'it has

the inherent risk that learners will make wrong inference, and hence learn wrong meanings' (p.118). It can thus be seen that learners do have the problem of inferring correct meanings from the context, especially those low-ability learners.

This raises the question as to what would happen if learners were provided with opportunities to verify the inferred meanings. A more recent study by Mondria (2003) compared the meaning-inferred method and meaning-given method. By meaning-inferred method, this study means that learners infer the meaning of unknown words form the context, subsequently verify the meaning with the aid of a word list, and finally memorize the meaning. Thus, it involves not only the process of inferring from context, but also the process of verifying the inferred meanings and memorizing them. In contrast, the meaning-given method in the study refers to the condition that the meaning of unknown words is given in the form of a translation and involves only the process of memorizing. Surprisingly, the meaning-inferred method leads to a similar level of retention as the meaning-given method, but the former is considerably more time-consuming and therefore less efficient. Moreover, although each separate stage of the meaning-inferred method leads to retention, the learning effect of memorizing is greatest.

It can be seen that vocabulary learning could occur by deriving meaning from the context, but this process is influenced by many factors such as the proficiency level of the learners and the context itself. Further evidence comes from the study by Frantzen (2003), who examined the factors affecting how second language Spanish students derive meaning from context by using an intact, unmodified natural text. While the most common strategy reported by students was using the context to derive meanings, the use of context was also the overwhelming strategy reported when they did not correctly infer a word's meaning. The findings of this study confirm that vague and ambiguous contexts do not reliably lead readers to correct meanings of target words. A combination of contextual factors, individual factors, and textual factors were found to contribute to the fact that learners are often not directed to correct interpretations of

unknown words presented in context. In addition, the process of inferring meaning from the context itself is not sufficient enough for vocabulary to be acquired, and more processes such as verifying conjecture with additional attention and intentional memorizing by the learners are vital as well.

Although some contradictory findings were produced by the studies reviewed above, these findings indicate that vocabulary learning could occur via deriving the meaning from the context, but many factors influence the process of inferring meaning. In terms of time and energy, providing learners with the meanings either in L1 translation or L2 synonym for memorization is superior to meaning inferring from the context.

The role of dictionary and glosses

Since the context itself is not sufficient for vocabulary learning to occur, some researchers attempted to explore the use of dictionary as an additional de-contextualized source. Knight (1994) explored the dictionary access as one of her independent variables, and confirmed the role of dictionary use in L2 vocabulary learning. In her study, those participants with dictionary access scored highest in both words learning and reading comprehension. Those who had dictionaries as well as the context learned most vocabulary. Although in this study there are some methodological problems such as the difference of time on task, the type of dictionary used, these findings have clear pedagogical implication that dictionary use should be encouraged, and students should be informed on how to use dictionary effectively. In terms of learner preferences, Nation (2001) reported that attitudinal surveys indicate that bilingual dictionaries are the preferred option for most learners, suggesting a preference for being provided with an L1 equivalent.

The use of glosses is another way of providing additional information on new words for better learning. While concluding that incidental vocabulary learning through

reading does indeed take place but only incrementally and in small quantities, Hulstijn, Hollander and Greidanus (1996) explored whether the reoccurrence of unknown words, in combination with the provision of information concerning their meanings such as the use of marginal glosses and dictionary, would increase the likelihood of incidental vocabulary learning. While the results again demonstrate that incidental vocabulary learning during reading does occur, the marginal glosses group had the highest scores overall. Further, Jacobs, Dufon and Hong (1994) investigated L1 and L2 glosses as their effect on comprehension and vocabulary learning for L2 learners and measured learners' attitude toward glosses. While no significant differences were found between scores of L1 and L2 glosses, the gloss conditions (either L1 or L2) were better than no gloss. Learners declared themselves to have a preference for both L1 and L2 glosses if they could not understand the words in L2 glosses. Watanabe (1997) investigated the influence of three types of input modification on incidental learning of foreign language vocabulary by reading: appositives in the text; marginal glosses; multiple-choice margin glosses. While there were no statistically significant differences in the mean scores between glosses in the margin and multiple-choice glosses, both gloss groups scored much higher than the control group and appositive group. This finding provides positive evidence for the effect of adding marginal glosses to a passage as a way of enhancing vocabulary learning through reading. In addition, students in the appositive condition understood the explanations through the appositives but they failed to connect the explanations to the target words and therefore failed to learn, which implies that language acquisition cannot be expected unless students notice the form, understand its function, and establish form-function mapping between them. Linking back to Vygotskyan theory, the scaffolding help from experts (teachers in this context) could help learners quickly establish a form-meaning mapping between the target words and their explanations.

These studies provide compelling evidence that marginal glosses could enhance vocabulary learning. With regard to the relative effectiveness between L1 and L2 glosses, Oskarsson (1975) examined the role of mother tongue in learning foreign

language vocabulary by comparing the relative effectiveness of monolingual glosses where students were given the foreign language as explanations for unknown words and bilingual glosses where the words were explained in the native language. The posttests showed that the bilingual glossaries resulted in significantly better learning than the monolingual glossaries. Oskarsson (1975: 31) then concluded that 'introducing the native language had beneficial rather than adverse effects on acquisition. Obviously the dictum that the native language should be altogether subordinated to the foreign language does not hold good in the case of vocabulary learning'. However, some studies (Jacobs et al., 1994; Yoshii, 2006) found no significant difference between L1 and L2 glosses at all in their studies. Some even revealed contradictory results. Miyasako (2002) examined the effectiveness of multiple-choice glosses and single glosses and L1 and L2 glosses. Multiple-choice and single gloss types did not differ in their effect on vocabulary learning, but the L2 gloss groups (either multiple-choice or single) were found to outperform the L1 counterparts. With regard to students' proficiency levels, this study also found that L2 glosses tended to be more effective for higher-proficiency level learners whereas L1 glosses were more effective for lower-proficiency learners.

While exploring different types of glosses, the above studies confirmed the role of gloss use in helping learners with their vocabulary learning in addition to deriving meaning from the context. In a way, although no consistent results were found as to the relative effectiveness between L1 and L2 glosses, the role of L1 was addressed in that both the dictionary and glosses involve the L1 equivalent to the L2 words or L2 definitions or synonyms. The question as to whether to provide learners with glosses in which language types still remains unresolved.

This section shows that, in addition to learning vocabulary from the context, dictionary or glosses act as additional de-contextualized sources for learners to enhance their vocabulary learning. However, would all these be sufficient for learners to acquire new vocabulary? While externally the context and dictionary or glosses

may help learners with their vocabulary learning, what could or should learners themselves do in order to improve the learning process? Could the use of some explicit learning strategies benefit their vocabulary learning?

Explicit learning strategies

Second language researchers on the research area of learning strategies (Oxford, 1990; O'Malley and Chamot, 1990; Graham, 1997; Grenfell and Harris, 1999; Macaro, 2001a) argue that learners' effective use of vocabulary learning strategies can result in better learning. There is a general agreement that the most successful learners use strategies regularly and in combination (Sanaoui, 1995; Lawson and Hogben, 1996; Macaro, 2001a). The question is what are the most effective strategies for learning vocabulary and how to combine them for the most effective use?

In the study of Lawson and Hogben (1996), the interview data from 15 women memorizing 12 Italian nouns shows that there was a strong tendency for those students employing many strategies for word learning to recall more word definitions than those students employing fewer strategies. Similarly, Gu and Johnson (1996) investigated how different learners combine different strategies and how this affects their learning outcome by involving a large number of 850 second-year non-English majors at a university in China as participants in a lengthy questionnaire. In their findings, Readers and Active Strategy Users, the best groups of students, used a variety of metacognitive regulation strategies, including guessing, dictionary work, note-taking, and contextual encoding of new vocabulary with strong self-initiation; while Passive Strategy Users strongly believed in memorization and used visual repetition as the most used strategy. Gu (2003) then further examined two successful EFL learners at the same university in depth to determine how they handled vocabulary learning during and after reading a text similar to their intensive reading textbook passages in class. The results show that although both are successful learners in different ways, they all demonstrated high levels of self-initiation and selective

attention and employed a wide range of vocabulary learning strategies, which provide further evidence for the features of successful strategy use.

Another wide-ranging study on the effectiveness of strategy training was carried out by Macaro (2001a), who compared the performance of the experimental groups receiving strategy training in memorization with the comparison groups. The findings that the experimental groups outperformed the comparison group in a simple vocabulary test provide further evidence that a range of strategies improves learning. A more recent and even larger scale study on vocabulary strategy use of 1,067 Hong Kong Chinese students was conducted by Fan (2003), focusing on the relationship among frequency of use, perceived usefulness, and actual usefulness of L2 vocabulary learning strategies. The high-scoring group planned vocabulary learning actively and used significantly more often both guessing and dictionary strategies in learning new words; the less proficient group depended much more on repetition and association strategies in their learning.

In spite of the fact that these studies have employed a variety of strategy grouping criteria, from the above reviewed studies on L2 vocabulary strategy use it can still be seen that guessing and dictionary use are effective strategies for L2 learners to employ for better learning, which further confirmed the role of context and dictionary in L2 vocabulary learning. So what type of dictionary do learners prefer to use? Would one with the L1 equivalent be preferred rather than one with the L2 definitions? These doubts raise the untouched question of what role learners' first language plays while they employ these effective strategies, for example note-taking or dictionary use. Inconclusive evidence of the use of L1 comes from Gu (2003). His study on the two successful Chinese students' vocabulary learning reveals that they put down L1 equivalent for the meaning of new words instead of English definition on their vocabulary notebook. However, there is no further illustration of this point by the researcher.

In relation to the role of L1, keyword strategy is fundamental to this literature. Advocated by Atkinson (1975) and reviewed by Beaton, Gruneberg and Ellis (1995), the keyword method involves using interactive imagery to link the sound of a word in one's native language (the keyword) to the sound of some foreign word which has to be learned. Different from the bilingual lexical model, where there is one concept only and L1 and L2 words are connected through this concept, the keyword strategy combines two concepts through orthographical or phonological ways. A large number of studies have shown that this technique is beneficial in enhancing the retention of foreign words. The study by Beaton et al. (1995), which is based on a single case study of a 47-year-old male university lecturer with a ten-year follow-up, shows that where large amounts of vocabulary have been learned in a short period of time using the keyword method, this vocabulary can be recalled several years later either on demand or after comparatively little time spent in revision. Moreover, although only ten words were memorized and tested in the study of Avila and Sadoski (1996), they did show empirically the superiority of the keyword method. However, the study by Van Hell and Candia Mahn (1997) produced contradictory results showing that rote rehearsal is more effective than the keyword method, especially for experienced FL learners. While they regard one reason for the benefits of rote rehearsal as the phonological coding involved in repetition, it has to be noted that the students in the study were given the keyword rather than generating it themselves, which might have restricted the function of keyword method. However, the researchers still proclaimed the effectiveness of the keyword method in their study (p.525; 538). In addition, the studies of Lawson and Hogben (1998) and Sagarra and Alba (2006) provide further evidence for the effectiveness of keyword strategy.

In spite of the inconsistent results on the efficacy of the keyword method and certain limitations of using this method on a limited amount of words, this method does show the indispensable role of L1 in learning an L2 word. The idea of the keyword method is to better learn the L2 word by constructing a visual or verbal image to connect the L2 new word with its meaning. The question is, if learners were provided with an L1

translation of the new word within a communicative language learning context and the opportunity of deeper processing and forming a connection between the concept and the meaning of the new word, would it result in better vocabulary learning?

Meaning negotiation and L2 vocabulary learning

While the focus of research attention is on what learners themselves could do in order to acquire second language vocabulary by learning implicitly through deriving meaning from the context and making full use of the dictionary or glosses in the margin of the reading texts as well as explicitly employing effective learning strategies, it should be noted that there is also a body of research examining the role of interaction between teacher and learners in the second language classroom or among learners on their acquiring L2 vocabulary. It is true that learners can pick up a new word as they read or listen to a text. Nevertheless, learners need to bring in their selective attention explicitly in order to deeply process the word and eventually acquire it. Another way to help them process the word is by negotiating the meaning. This section is going to review briefly the literature of meaning negotiation in relation to vocabulary learning.

According to Pica's (1994) review of the topic, since the end of 1970s, when Hatch (1978) made a 'pivotal and indelible mark' on the field of SLA through her papers on language learning and interaction, the importance of interaction in language learning became a major focus of debate and discussion therein. Interest in language-learner interaction in general and negotiation in particular preceded her in many disciplines, but what made her research unique was her notion that interaction could also be used as a basis for examining the linguistic and cognitive features of the L2 learning process. In early 1980s, the work of Long (1981, 1983, 1985) enriched and guided this research by proposing 'interactional modification', that is, by giving clarification requests and comprehension checks better comprehension could be achieved. According to the review article by Pica (1994), negotiation is a specific type of

interaction, which is used to characterize the modification and restructuring of interaction that occurs when learners and their interlocutors anticipate, perceive, or experience difficulties in message comprehensibility, by repeating a message verbatim, adjusting its syntax, changing its words, or modifying its form and meaning in a host of other ways. Some reviewers (Macaro, 2003) have acknowledged that negotiation of meaning is far more likely to be of lexical items than grammatical morphology. Many researchers then attempted to examine the role of interaction and meaning negotiation in vocabulary learning.

Ellis and Tanaka and Yamazaki (1994) investigated the listening comprehension and L2 word meanings acquisition of three groups: baseline group, premodified group, and interactionally-modified group. The results show that the interactionally-modified group, which is the only group who interacted with the teacher, was exposed to more input than the other two groups and thus comprehended the directions in the listening task more fully. Both the premodified group and interactionally modified groups outperformed the baseline group in all three vocabulary tests significantly, which demonstrated both short- and long-term advantages in vocabulary acquisition when learners had access to modified input. But most importantly, the interactionally-modified input resulted in better comprehension and led to more new words being acquired than premodified input. These findings provide clear evidence that access to meaning negotiation through interaction with teachers promotes not only comprehension, but also vocabulary acquisition. Ellis, R. (1995) also examined the effect of different types of input on vocabulary learning, and found that the mean scores for the interactionally-modified input group where learners negotiated with the teacher over the task were higher than those for the premodified input group and unmodified input group in all three tests.

While modified input which involves meaning negotiation proved to result in better learning, some researchers further examined the role of modified output on vocabulary learning. Foster (1998), in her study of examining language production,

comprehensible input and modified output, found that the dyad setting, coupled with the obligation to exchange information, was the 'best' for language production, negotiations and modified output. Ellis and He (1999) examined empirically the incidental acquisition of word meanings of three groups: premodified input group, interactionally-modified input group, and modified output group. The overall results indicate that the modified output group where two students interacted with each other on an information-gap task achieved higher comprehension and vocabulary acquisition scores than either of the input groups in all comprehension and vocabulary recognition and production tasks.

Rather than comparing which is the best way to learn vocabulary, it is better to ask what can be done in order to better learn a word. In addition to modified input, if there is opportunity to negotiate the lexical form and meanings of these words with teachers, it will help with learning. If there is opportunity to use the words in production, it will help with learning as well. In addition, what should be mentioned is the students' attention to the linguistic elements of the lexical forms during the meaning negotiation. What is of interest here is the interactionally-modified input involves the teacher drawing students' attention to linguistic elements and providing comprehensible input through negotiation. Another line of research on *focus on form* provides important insights into understanding learners' vocabulary learning in that the teacher's drawing students' attention to *form* for lexical items could enhance students' learning the meanings of these lexical items. That is, if *focus on form* could be beneficial to learners' vocabulary learning, it can then be concluded that it is worthwhile for teachers to draw students' attention to lexical items in order to grasp these words. Then the effectiveness of teacher's use of CS can be examined as one way of drawing students' attention to both form and meaning of the lexical items by teacher's switching to learners' L1. The examination on the efficacy of teacher's judicious use of L1 can therefore be achieved through lexically-oriented focus on form instruction.

Then does the teacher's instruction work? Can teachers help with drawing students'

attention to these lexical items? How could teachers draw students' attention to the form and meaning of lexical items? It should also be pointed out that all these studies on meaning negotiation involve teachers' interacting with students in L2. But this poses the question as to whether students' L1 can play a role in this interaction process? The following section reviews the related literature on *focus on form* and its effectiveness in students' language learning.

Focus on form and L2 vocabulary learning

Since Krashen (1980, 1982) claimed that formal instruction results in learning, informal exposure leads to acquisition and can provide the only source of comprehensible input for acquisition, there have long been doubts as to whether second language instruction could make a difference. Long (1983: 374) reviewed the related research findings and concluded that 'there is considerable evidence to indicate that SL instruction does make a difference', when compared with naturalistic exposure. The effects of instruction hold 1) for children as well as adults, 2) for intermediate and advanced students, not just beginners, 3) on integrative as well as discrete-point tests, 4) in acquisition-rich as well as acquisition-poor environments. The main focus of L2 instruction then shifted 'from a whether-or-not to a what-type issue, what type of L2 instruction are most effective for promoting second or foreign language learning'. Fruitful research has been carried out revolving around this issue.

Long (1991) put forward a term '*focus on form*'. According to Long (1991: 45), 'a syllabus with a focus on form teaches something else --- biology, mathematics, workshop practice, automobile repair, the geography of a country where the foreign language is spoken, the cultures of its speakers, and so on --- and overtly draw students' attention to linguistic elements as they arise incidentally in lessons whose overriding focus is on meaning, or communication'. Long (1997) further overtly classified three options of L2 instruction types. *Focus on forms* lessons consist principally of work on the linguistic items; *focus on meaning* lessons, represented by

Krashen and Terrell's Natural Approach, are purely communicative, in which learners are presented with gestalt, comprehensible samples of communicative L2 use; *focus on form* refers to 'how attentional resources are allocated, and involves briefly drawing students' attention to linguistic elements (words, collocations, grammatical structures, pragmatic patterns, and so on), in context, as they arise incidentally in lessons whose overriding focus is on meaning, or communication, the temporary shifts in focal attention being triggered by students' comprehension or production problems'.

Meanwhile, Spada (1997: 73) proposed the term form-focused instruction (FFI) to characterize a wider range of instructional types that concur with theories on the role of consciousness and attention in L2 learning, and referred to it as 'pedagogical events which occur within meaning-based approaches to L2 instruction but in which a focus on language is provided in either spontaneous or predetermined ways'. As to the differences between the two terms FFI and *focus on form*, both Long (1997) and Doughty and Williams (1998) distinguished the term FFI with the term '*focus on form*'. FFI, according to Long (1997), refers to 'any pedagogical technique, proactive or reactive, implicit or explicit, used to draw students' attention to language form', whereas *focus on form* only refers to 'those form-focused activities that arise during, and embedded in, meaning-based lessons; they are not scheduled in advance, but occur incidentally as a function of the interaction of learners…'. Doughty and Williams (1998: 4) further concluded that '*focus on form* entails a focus on formal elements of language, whereas *focus on forms* is limited to such a focus, and focus on meaning excludes it', and coined an acronym *FonF*, whose intended meaning is focus-on-form instruction. Such related issues as the theoretical foundations and pedagogical implications of focus on form were further examined in their book by many L2 researchers. Ellis, R. (2001: 1) pointed out that FFI is used to 'refer to any planned or incidental instructional activity that is intended to induce language learners to pay attention to linguistic form'. Ellis, R. (2001: 17) identified three types of FFI: *focus-on-forms* which is characterized by a primary focus on form and intensive

treatment of preselected forms; *planned focus-on-form* which implies that the primary focus of class is on meaning, with intensive treatment of preselected forms; and *incidental focus-on-form* which involves primary attention to meaning but distribute attention to a wide range of forms that have not been preselected.

It is out of the scope of this study to review further the various terminology on *focus on form* and form-focused instruction. It is accepted in this thesis that Long's (1997) definition of *focus on form* as 'those form-focused activities that arise during, and embedded in, meaning-based lessons; they are not scheduled in advance, but occur incidentally as a function of the interaction of learners' should be extended to any planned or incidental form-focused activities that arise during, and embedded in, meaning-based lessons. That is, Spada's (1997: 73) definition of form-focused instruction as 'pedagogical events which occur within meaning-based approaches to L2 instruction but in which a focus on language is provided in either spontaneous or predetermined ways' fits the nature of this study better, thus representing all the meanings of the term 'focus on form', 'form-focused instruction', FFI, FonF, which are mentioned in this thesis.

Spada (1997) reviewed 30 classroom and laboratory research studies on the effects of FFI in SLA and supported the view that FFI is beneficial to SLA and explicit FFI may be particularly effective in L2 classrooms which are communicatively-based and/or where the L2 is learned via subject-matter instruction. Another review study was carried out by Norris and Ortega (2000), employing systematic procedures for research synthesis and meta-analysis to summarize findings of 49 experimental and quasi-experimental investigations into the effectiveness of L2 instruction published between 1980 and 1998. Results show that focused L2 instructional treatments consistently outperformed a range of control, comparison or baseline conditions by an average of nearly one standard deviation unit, by all accounts a large and convincing magnitude of effect. That is, focused L2 instruction results in large gains over the course of an intervention. In terms of the relative effectiveness of different types and

categories of L2 instruction, findings suggest that treatments involving an explicit focus on the rule-governed nature of L2 structures are more effective than treatments that do not include such a focus. These two major review articles came to a similar conclusion on acknowledging the effectiveness of FFI on L2 learning, and explicit focus on form in particular.

However, most of the studies reviewed in the two articles were on grammatical structures and seldom on vocabulary. DeKeyser (1998: 43) argued that 'it is rather uncontroversial that pronunciation is relatively immune to all but the most intensive forms-focused treatments, whereas large amounts of vocabulary can be acquired with very little focus on form … However, although focus on form may not be necessary for vocabulary and may not be sufficient for pronunciation, the issue is more complex in the area of morphosyntax'. The question then follows: Is it possible to focus on form on lexical items? Does a focus on form on lexical items in L2 instruction with a communicative orientation make a difference to learners' vocabulary learning?

Many researchers argued for the focus on form on lexical items. Haastrup and Henriksen (2001: 76) argued for the obvious potential for including lexis in the 'focus on form' movement, 'focus on form within lexis should supplement the predominantly grammatical focus on form that is the current norm'. Laufer (2005a: 244) argued that 'comprehensible input is insufficient for acquiring much of the L2 grammar, is also true for vocabulary…comprehensible input is insufficient for acquiring vocabulary, and consequently Focus on Form is an essential component of instruction'. Laufer and Girsai (2008: 695) firmly stated that 'the notion of FFI was developed in the context of grammar learning, but it can be extended to vocabulary as well. Thus, learners' attention can be drawn to lexical items (single words and multi-word units) within a communicative task environment if these lexical items are necessary for the completion of a communicative, or an authentic language task'.

If the focus on form is an essential component for acquiring vocabulary, what does

'*form*' imply? Does it only refer to the form of the lexical items? In reality, it implies all aspects of the lexical item, not only the lexical form of the word, but also the form-meaning connections, the pronunciation, the collocation, and so on. Ellis et al. (2001: 419) argued that '...when the pronunciation of an isolated word becomes the focus, in many cases attention to form involves consideration of the meaning (function) that a particular form conveys'. Hill and Laufer (2003: 89) promoted the examination of the various aspects of vocabulary, such as the word's pronunciation, orthography, grammatical category, meaning, and semantic relations to other words.

It is now vital to examine the effectiveness of form-focused instruction on vocabulary learning. Doughty and Williams (1998: 212) claimed that 'it is likely that focus on form can enhance lexical acquisition. And there is mounting evidence that, in the acquisition of lexical items, as with that of grammatical structures, some interaction is helpful'. Indirect empirical evidence for the efficacy of FFI for lexical learning comes from many earlier studies on vocabulary acquisition. Laufer and Girsai (2008: 695) argued that those earlier studies such as dictionary use, negotiation of meaning in the input or output, writing original sentences, computerized exercises etc, could be classified as Focus on Form 'since they entailed attention to vocabulary during communicative tasks'. For example, Knight (1994) compared the difference in vocabulary gains between allowing the students to look up words in the dictionary or not. The dictionary use draws students' attention to vocabulary while completing communicative tasks, which leads to better vocabulary gains in the following vocabulary tests. Laufer and Girsai (2008: 695) concluded that 'the overall conclusion of these studies is unambiguous: form-focused instruction, both of FonF and FonFs kinds, is beneficial to vocabulary learning'.

More direct evidence for the efficacy of FFI on vocabulary learning can be found in those studies on form-focused tasks or activities. Theoretically, Laufer (2005a, b; 2006) argued for the relevance of both FonF and FonFs to L2 vocabulary learning. Although more research should be done to examine Laufer's defense on FonFs which

is beyond the scope and interest of this study, these papers by Laufer acknowledged strongly the role of FonF in L2 vocabulary learning and the indispensable incorporation of a focus on form component in L2 vocabulary instruction.

Empirically, Hill and Laufer (2003) examined the effectiveness of three types of vocabulary tasks: meaning-oriented task, form-oriented comprehension task, form-oriented production task. The two form-oriented tasks resulted in a higher number of acquired words than the meaning-oriented task. Meanwhile, Laufer (2003) examined vocabulary gains from reading and from word-focused tasks which included completing given sentences, writing original sentences, and incorporating words in a composition. It was concluded that if a word is practiced in a productive word-focused task, its meaning had a better chance to be remembered than if the word is encountered in a text; even when it is noted and looked up in a dictionary.

The effectiveness of form-focused activities in an L2 classroom was also examined by De La Fuente (2006). He explored the differential effects of two types of pedagogical approaches (PPP lessons --- Presenteation, Practice, Prodction and TBLT lessons --- task-based language teaching) on L2 oral productive vocabulary acquisition of word meanings and forms. He also explored any differential effects on acquisition of L2 word meanings and morphological aspects in two types of L2 vocabulary task-based lessons: one incorporating an explicit, teacher-generated focus-on-forms component (TBEF) in the production activities and the other one without it (TBNEF). Task-based lessons with a built-in, planned focus on form seem to be more effective than the one without the focus on forms component and the PPP lessons, due to the fewer opportunities for targeted output production and retrieval that PPP lessons offer, and to its inability to effectively focus students' attention on targeted forms. TBLT lessons can provide more opportunities for the negotiation of meaning and output production. It can benefit from an explicit focus-on-forms component when we want to foster not only acquisition of the words' basic meaning, but also of important formal aspects of words.

One recent study which also focused on the effectiveness of FFI activities is Min (2008), who compared the effectiveness of reading plus vocabulary-enhancement activities (RV) and narrow reading (NR) on vocabulary acquisition and retention among EFL secondary school students in Taiwan. The RV group read selected texts and practiced various vocabulary exercises such as matching and blank-filling; The NR group read selected texts and read thematically related supplemental materials. Results show that the RV group demonstrated significantly more knowledge about the target vocabulary than the NR group on the acquisition and retention tests. It was then concluded that reading plus focused vocabulary exercises are more effective and efficient than the narrow reading approach in enhancing target vocabulary acquisition and retention among EFL secondary students.

The effect of explicit contrastive analysis and translation activities on the incidental acquisition of single words and collocations was examined by Laufer and Girsai (2008), by comparing three instructional conditions: meaning focused instruction involving tasks which did not require attention to the target items; non-contrastive form-focused instruction involving text-based vocabulary tasks which focused on the target items; a contrastive analysis and translation group which was assigned text-based translation tasks from L2 to L1 and L1 to L2 plus the teacher's provision of contrastive analysis of the target items and their L1 translation options. The contrastive analysis and translation group significantly outperformed the other two groups on all the tests. However, it should be borne in mind that the vocabulary test format actually favors the contrastive analysis and translation group who already got used to the text-based translation tasks and the L1 translation options for the target words. In spite of this limitation, what is more interesting here is that while form-focused instruction resulted in learning about 50 percent of passive new vocabulary and 27 percent of active vocabulary on both the immediate and delayed tests, the meaning focused instruction group learnt almost no vocabulary.

Despite the various degrees of focusing on form in these studies, they all positively show the successful integration of form-focused instruction in the vocabulary tasks or activities in the L2 classroom and their effectiveness in L2 vocabulary learning. However, contradictory results were reported by Mason and Krashen (2004), who probed into the question as to whether form-focused vocabulary instruction was worthwhile by comparing vocabulary growth in English as a foreign language through hearing a story with a combination of a story and supplementary activities designed to specifically focus students on learning the new words in the story. The story-only group spent only 15 minutes listening to a story; the other story-plus study group spent 85 minutes hearing the story and doing supplementary activities. The students took a vocabulary pretest, first posttest, second posttest, and delayed posttest 5 weeks later by providing a Japanese definition for each English word on the list. The story-plus study group was found to be significantly better than the story-only group. In terms of efficiency, calculations of words learned per minute revealed that the story-only group learned words more efficiently in both first posttest and delayed posttest. It was then concluded by the researchers that additional focus on form by means of traditional vocabulary exercises is not as efficient as hearing words in the context of stories. However, such a conclusion should be treated with caution. The nature of the different treatment in this study was problematic. As the researchers acknowledged themselves, 'the subjects in the story-only condition were told which words were target words and were clearly focused on form. The comparison was thus one of more versus less focus on form' (Mason and Krashen, 2004: 183). Moreover, it is not clear how valid the calculation of words learned per minute is.

These studies examined the effectiveness of form-focused vocabulary instruction with different degrees of focus on form with different tasks. Although a variety of results were obtained, these studies all more or less examined the more versus less focus on form. In addition to these form-focused tasks or activities, is there any other way to focus on form? During meaning negotiation what role do teachers play in drawing students' attention on linguistic forms?

A number of studies investigating both grammatical and lexical elements in the form-focused episodes (Ellis et al, 2001; 2002; Basturkmen et al, 2002; Loewen, 2005; Williams, 2001) come to a similar conclusion on the successful and effective integration of attention to form in a communicative language classroom, and also examined various methodological options of attending to form. These form-focused episodes all involve both reactive and preemptive focus on form. The preemptive focus on form can be initiated by both teachers and students. Ellis et al. (2002) claimed that reactive focus on form involves the treatment of learner errors. Teachers can negotiate meaning conversationally using either requests for confirmation or requests for clarification. A request for confirmation typically involves the teacher repeating the problematic utterance with or without reformulating it. A request for clarification is typically used when the teacher does not have a clear idea of what the students have said. Pre-emptive focus on form consists of attempts by the students or the teacher to make a particular form the topic of the conversation even though no error (or perceived error) in the use of that form has occurred. Ellis et al. (2002: 429) listed a range of principal focus on form options. Ellis et al. (2001: 310) concluded that 'teachers and students appeared to be able to navigate in and out of focusing on aspects of the code while keeping the overall orientation to message intact'.

There are both advantages and disadvantages of teacher-initiated and students-initiated focus on form. Various results have been achieved as to the effectiveness of teacher-initiated and student-initiated focus on form. Ellis et al. (2001) reported a higher and more successful uptake in student-initiated focus on form than in teacher-initiated focus on form. Williams (2001) found that whether the language related episodes began with feedback on error from the teacher or with a learner requesting assistance, the learner was about equally likely to remember the form in focus. However, Alcon (2007) concluded that teacher's pre-emptive lexically-oriented FFEs promotes learners' noticing and subsequent use of vocabulary items. Alcon (2007) examined the effectiveness of teachers' incidental focus on form on vocabulary

learning. Among the seventeen 45-minute audio-recorded teacher-led conversation, incidental lexically-oriented focus on form episodes were selected and analyzed in terms of reactive FFEs and teacher initiated or learner-initiated pre-emptive FFEs. Out of the 459 FFEs, over half was on lexical problems. The teacher triggers more lexically-oriented FFEs, although the difference between teachers' and students' FFEs was not significant. The teacher's involvement in pre-emptive lexically-oriented FFEs seems to direct learners' selective attention to vocabulary items, which results in learners' noticing and subsequent use of vocabulary items. As this study is exploratory and descriptive in nature, the author called for more descriptive and experimental research on the teachers' incidental focus on form in communicative language classrooms and in different learning environments. In another recent descriptive study by Zyzik and Polio (2008), the teacher's preemptive focus on form was found to be common, and almost exclusively limited to vocabulary with only one exception relating to grammar. With regard to the instructor's attitudes toward incidental focus on form, they were well aware of 'their use of English to draw attention to difficult vocabulary, and preemptive attempts to explain certain lexical items' (Zyzik and Polio, 2008: 63). One instructor expressed this during one of the stimulated recall sessions: 'I was thinking that they wouldn't understand the word desafiantes. That's why I translated it twice and I am writing it down in Spanish. I don't write down in English, I write down in Spanish'.

Although various results have been reached by these studies, it should be borne in mind that Ellis et al. (2001) and Williams (2001) investigated both grammar and vocabulary elements in the form-focused episodes, whereas Alcon (2007) and Zyzik and Polio (2008) examined solely lexically-oriented form-focused episodes. Despite the debate on the efficacy of both ways of focus on form, teachers were found to be able to successfully draw students' attention to lexical form through various tasks in a communicative language classroom. In addition to addressing students' queries on linguistic forms, the teacher could also interrupt the flow of a communicative activity to raise a specific form to attention. Ellis et al. (2002: 431) addressed the teacher's

role in focusing on form during communicative language lessons, and claimed that 'if focus on form is as important as has been claimed, it would seem to require the interventions of the teacher'. However, the effectiveness of teacher-initiated form-focused instructions on vocabulary learning is yet to be confirmed. Thus this study will aim to contribute by examining both the implementation of teacher's drawing students' attention to lexical items, while still keeping the primary focus of the lesson as communicative and the effectiveness of this type of teacher preemptive lexically-oriented focus on form in a communicative language classroom.

Summary on vocabulary learning

In this section literature on vocabulary acquisition, as one particular aspect of learners' second language learning, was reviewed in relation to the role of L1. A series of language processing and bilingual lexical models and even models for L2 lexical development were first outlined and provided theoretical insights into the role of L1 in L2 vocabulary learning. Due to the limitations of working memory, which could allow only a certain amount of information to be stored in the phonological store and visuo-spatial sketch-pad, L1 could play an important role in lightening the cognitive load of the working memory and freeing up capacity for larger chunks processing. Research on bilingual lexical representation models indicates that L1 has to be activated for bilingual learners to form a link between L2 lexicon and the conceptual system and novice language learners would rely more exclusively on the link between L1 lexicon and conceptual memory. Moreover, the three-stage L2 lexical development model confirms the crucial role of L1 in adult L2 vocabulary learning in instructed settings, especially during the initial stages.

Then the literature of empirical research on L2 vocabulary acquisition research was discussed with reference to learning vocabulary from context, the role of dictionaries and glosses, learners' use of vocabulary strategies, the role of interaction in vocabulary learning, and form-focused instruction. While incidental-intentional and implicit-explicit learning could no longer reflect a major theoretical distinction in

understanding L2 vocabulary learning, some attention and noticing should be paid to lexical items in order for learners to acquire them. Vocabulary learning could occur by learners deriving meaning from the context, but this process was influenced by many factors such as the proficiency levels of learners and the context itself and learners often guessed wrong meanings of new words. Providing learners with meanings either in L1 translation or L2 synonym was found to be superior to meaning inferring. Learners were then provided with dictionaries or glosses, which proved to be effective for enhancing their vocabulary learning. However, no consistent results were found on the relative effectiveness between L1 and L2 glosses. In addition to the external resources, learners could also make use of learning strategies to improve their vocabulary learning. Keyword strategy as one type of vocabulary learning strategies was found to be particularly effective in learning L2 words by using interactive imagery to link the sound of a word in one's L1 to the sound of L2 word. Moreover, the literature on interaction and meaning negotiation in relation to vocabulary learning reveals that having the opportunity to negotiate meaning through interaction with teachers could promote vocabulary learning. Students' attention can be drawn to lexical items during meaning negotiation. The question is, while studies on meaning negotiation involve teachers' interaction with students in L2, could students' L1 play a role in this interaction process? Furthermore, the line of research into focus on form provides important insights into the impact on students' vocabulary learning of the teacher's drawing students' attention to lexical items with the primary focus of the lesson as meaning-focused in a communicative language class. The main question again is whether learners' L1 can play an effective role in this focusing on form on lexical items in order to promote their learning of these vocabularies in a communicative language classroom.

1.7 Listening comprehension activities and L2 vocabulary learning

In order to examine the effectiveness of focusing on form on lexical items in a meaning-oriented communicative language classroom and also examine the possible

effective role of L1 in this process, a reading or listening comprehension activity needs to be chosen in order to provide a meaning-oriented environment. That is, students could either read a text or listen to a passage for comprehension of meaning, then teacher interacts with students by negotiating the meaning of the texts. Difficult lexical items could be explained by the teacher in this interaction process.

Listening comprehension, as an important part of the second language learning process, has been widely researched (Vanderplank, 1988, 1993; Rubin, 1994; Thompson and Rubin, 1996; Tsui and Fullilove, 1998; Vandergrift, 1997). Looking through the above reviewed empirical studies on vocabulary acquisition, vocabulary learning via reading texts has been widely researched. For example, Guo (2007), who explored oral interaction between teachers and their students in Chinese university EFL classrooms, involved the extensive English reading lessons.

However, studies on vocabulary learning associated with listening tasks are rare. Those studies which examined interaction and meaning negotiation involve modified input and interaction between teachers and students without real listening comprehension activities for learners to listen to. Moreover, other few studies on listening comprehension and vocabulary learning could not fit into the interactive nature of this current study. For example, Toya (1993: 6) in her unpublished thesis investigated the effect of the form of explanation in modification of listening input on L2 vocabulary learning. She noted that 'the purpose of providing explanation (towards any difficult words that came up in class in the target language) is to facilitate students' understanding of the words and hopefully, foster their learning'. Thus, two types of modifications of listening input, explicit and implicit, were investigated in contrast to unmodified or baseline condition. Take the word 'investigate' for example, explicitly, 'investigate means to try to find more about something'; implicitly, '… investigate the sea …… that is, we have more ways to find out about the sea …'. Finally, the explicit modification of listening input resulted in a significant better performance over the other two on the immediate posttests, although

this superiority disappeared on the delayed posttests. She attempted to examine different types of modifications on listening input and their effect on vocabulary learning. However, the different types of listening input were manipulated beforehand so that learners listened passively without interaction with the teacher.

Therefore, it can be seen that while many studies have been conducted through reading comprehension activities, there are few studies looking at listening comprehension activities. Moreover, compared with reading, listening comprehension activities have the following advantage over the reading ones, that is, the time that the listening texts are exposed to learners could be better controlled compared with a reading activity where learners browse the reading text at their own leisure.

In all, for the purpose of this study, listening will be chosen as the interactive activity in the communicative language classroom for learners to acquire new vocabulary. In addition, the listening activities will involve meaning negotiation between teachers and students. While students listen to listening passages, the teacher will act as a mediator to help students understand the listening materials and new words.

1.8 Native speaker teacher and Non-native speaker teacher

There have long been debates between native speaker teacher (NST) and non-native speaker teacher (NNST), and NST has always been regarded as superior to NNST due to the grasp of their native language. However, how many NNSTs are there in the field of teaching English in the world? Canagarajah (2005) pointed out 80% of the English teachers in the world are NNSTs. Although some started to take up teaching positions in English-speaking countries in the ESL field, many of these teachers are providing English instructions in EFL contexts due to the difficulty of getting into the field of ESL contexts and the increasing numbers of EFL learners in those countries. For example, China has made English a compulsory subject from Grade 3 onwards. According to the latest available statistics, about 220 million students were enrolled in

primary, secondary and tertiary level in China (China Facts and Figures 2002). Medgyes (1994: 63) once asked that 'how can teachers and students be expected to use English exclusively, when both of them are non-native speakers of English and share the same mother tongue? How can anyone be forced to engage in a pretentious game where the number one rule is: 'Behave like some you are not'?' It is then necessary here to review studies comparing NST and NNST in order to examine the role of NNST in English language teaching.

Medgyes (1992), as the first study comparing the NST and NNST, surveyed 220 teachers working in 10 countries by questionnaire about their perceptions on the differences between natives and non-native language teachers in terms of their language competence and teaching practice. The results show that 68 percent of the respondents did perceive differences, which were closely related to linguistic issues. However, Medgyes (1992: 346) concluded that 'natives and non-natives stand an equal chance of achieving professional success'. Natives would not necessarily surpass their non-native colleagues owing to their native proficiency in English. He further listed six assets that non-natives possess over the natives as language teachers. That is, 1) only non-natives can serve as imitable models of the successful learner of English; 2) non-natives can teach learning strategies more effectively; 3) non-natives can provide learners with more information about the English language; 4) non-natives are more able to anticipate language difficulties; 5) non-natives can be more empathetic to the needs and problems of their learners; 6) only non-natives can benefit from sharing the learners' mother tongue. It can be noticed from these six assets that two of them are the 'only' ones, that is to say, the unique advantage of non-natives is their being the models of the successful learners of English and their sharing the learners' mother tongue. At the same time, the unique advantage of natives is their linguistic superiority over non-natives. As Medgyes (1992: 348) concluded, the ideal native is the one who has achieved a high degree of proficiency in the learners' mother tongue and the ideal non-native is the one who has achieved near-native proficiency in English. Medgyes (1994) then strengthened his above view

in the book 'The Non-native Teacher'. Due to the limitation of both the sample size and the lack of classroom observation in the above survey, Arva and Medgyes (2000) revisited the claims by analysing differences in teaching behaviour between native and non-native teachers on the one hand and on the other comparing their stated behaviour with their actual behaviour through ten video-recorded language lessons and ten follow-up interviews with the recorded teachers. The respective merits of natives and non-natives were confirmed again in this study.

Cook (2005: 47) argued that 'the starting-point for language teaching should be the recognition that the second language (L2) user is a particular kind of person in their own right with their own knowledge of the first language (L1) and the L2, rather than a monolingual with an added L2'. He (2005: 57) pointed out the pros and cons of native and non-native speaker teachers from the L2 user perspective: a. non-native speaker teachers provide models of proficient L2 users in action in the classroom; b. non-native speaker teachers present examples of people who have become successful L2 users; c. non-native speaker teachers often have more appropriate training and background; d. non-native speaker teachers may have the disadvantage of lesser fluency etc. While acknowledging the multicompetence of L2 users, Cook (2005: 59) also examined the role of L1 in language teaching by non-native speaker teachers who share the same mother tongue with the learners.

Some researchers (Brutten, 1981; McNeill, 1992; McNeill, 2005) examined both teachers' and students' indications of vocabulary difficulty. According to Brutten (1981), although the data supported the contention that the same proportion of teachers and students considered the words to be difficult, there was no perfect agreement, that is, the students were somewhat more likely to indicate word difficulty than were the teachers. While Brutten's study was based on ESL learners and teachers in the USA, McNeil (1992) examined the perceptions of a group of EFL teachers and students in Hong Kong. However, different results were found in McNeill's study. The perceptions of vocabulary difficulty of the non-native speaker teachers of English are

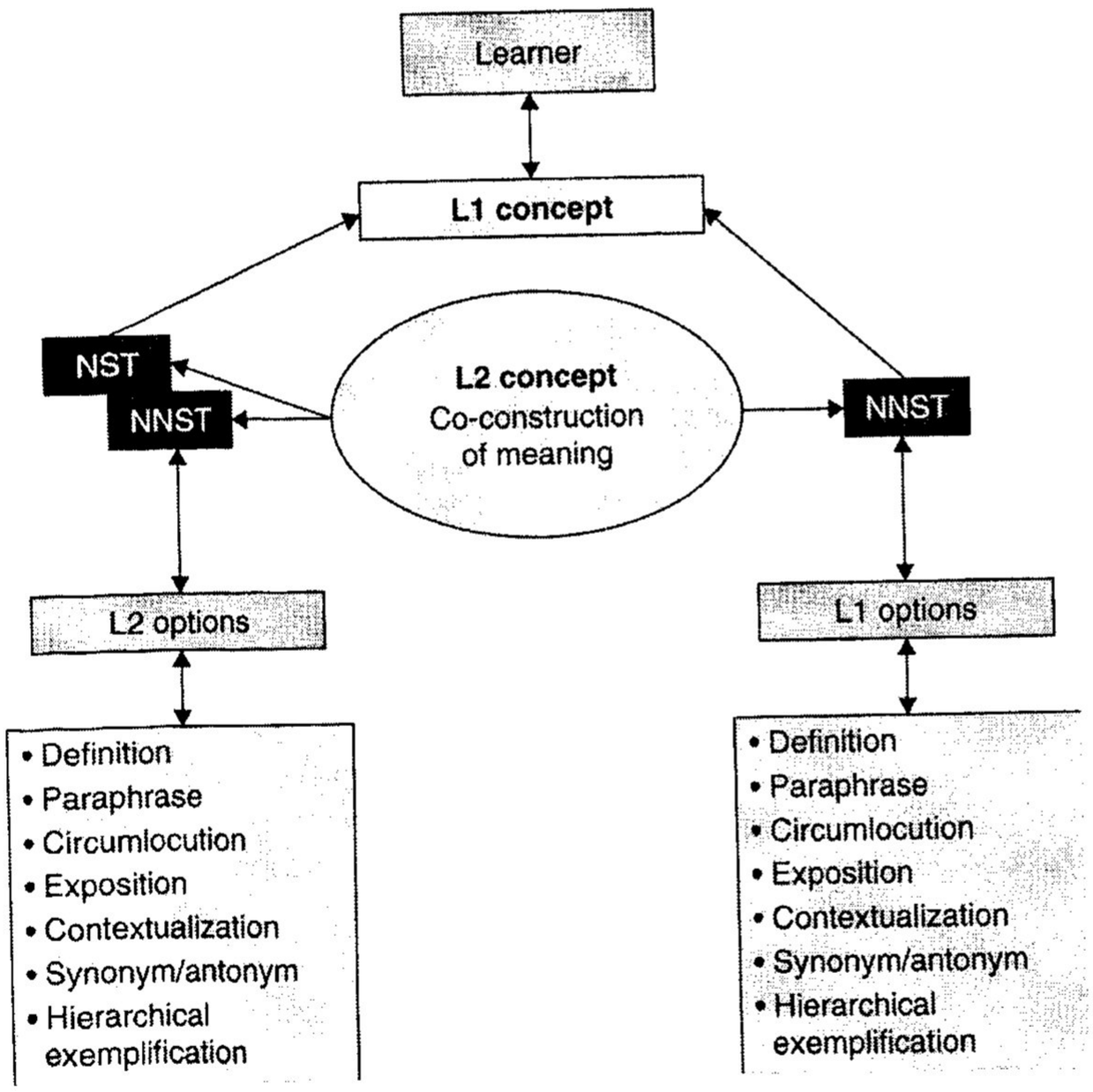
not necessarily shared by their students as they tend to be interested in the semantic rather than the lexical value of the vocabulary and lack a principled approach to dealing with pre-taught vocabulary in connection with reading texts. McNeill (2005) then took a step further and examined both the native and non-native speaker teachers' sensitivity to language difficulty from a learner's perspective by predicting learners' vocabulary difficulty in reading texts. NNSTs were found to be more successful than NSTs at predicting learners' vocabulary difficulties in reading texts. As McNeill (2005: 123) concluded, 'ESL teachers who speak the same L1 as their students are generally more accurate in identifying sources of lexical difficulty in reading texts than teachers whose mother tongue is English and who are not familiar with the students' L1'.

Some researchers (Brutt-Griffler and Samimy, 1999; Liang, 2002; Mahboob, 2004; Moussou and Braine, 2006) examined perceptions of students towards ESL teachers in ESL teaching contexts. Students' perceptions of these non-native English teachers could shed more light on understanding their strengths and weaknesses in the eyes of their students. In terms of EFL contexts, Cheung and Braine (2007) investigated the attitudes of university students in Hong Kong towards their NNS English teachers through questionnaire and interviews. Positive attitudes were found generally. NNS teachers' strengths are: ability to use students' mother tongue in teaching; effective pedagogical skills; knowledgeable in English language; positive personality traits. NNS teachers' shortcomings are: examination-oriented teaching approach; over-correcting students' work; limited use of English. In terms of the role of mother tongue, it was regarded as one of the strengths by the students in this study, as expressed by one student in the interview data: 'My NNS English teacher from Form 1 to Form 3 was a good teacher. She explained everything clearly to us. If we had problems, she tried to solve our problems and explained in Cantonese. I believed a good teacher was like this' (Cheung and Braine, 2007: 265). Moussu and Llurda (2008) presented a thorough review article on non-native speaking teachers of English by compiling and classifying research conducted during the last two decades regarding linguistic, pedagogical, and educational issues related to NNS ESL/EFL

teachers and student teachers. As most research on NNSs has heavily relied on teacher self accounts by means of narratives, surveys, or interviews, the authors called for more classroom observation based studies.

In terms of the L2 vocabulary instruction, Macaro, Guo, Chen and Tian (2009) proposed a model of Teacher as Dictionary and Dictionary Designer, during which the NNSTs actually have two languages at their disposal, L1 and L2, which corresponds with what the above reviewed studies have shown in terms of the non-native speaker teacher's use of the mother tongue.

Figure 1.7: Teacher as dicationary (Macaro et al., 2009: 131)



The above Figure 1.7 shows that both monolingual and bilingual teachers have such options for explaining L2 words as providing a definition, synonym or antonym, paraphrasing, circumlocution, exposition and contextualization. However, NNSTs can

employ these options for vocabulary explanation in both Chinese and English. Linking back to Jiang's three-stage L2 lexical development model, which reveals an indispensable role of learners' L1 in establishing links between L2 word and its concepts in the process for teachers and students to co-construct the meaning of L2 new words, NNSTs then have the advantage over NSTs by being able to employ both language types.

Since one advantage of the non-native teachers of English is their sharing the learners' mother tongue, is there any pedagogical value in using the learners' mother tongue in the L2 classroom? This study thus explores the possible value of the judicious use of L1 by the non-native speaker teacher in explaining L2 vocabulary in an L2 classroom on students' actual vocabulary learning.

1.9 Aims of study

As reviewed in the literature, this thesis serves as an exploratory study examining the effectiveness of a lexically-oriented focus on form, the effectiveness of teacher's CS on learners' L2 vocabulary learning and the pedagogical value of codeswitching in the second language classroom. Since there is a lack of literature on the exploration of the link between vocabulary acquisition, listening comprehension, and meaning negotiation, this study attempts to fill this gap by examining the role of lexically-oriented focus on form and teacher codeswitching use in learners' vocabulary learning while learners were presented with listening materials and encouraged to interact and negotiate meaning with teacher of the new words in a meaning-oriented communicative language class.

In this study, students' attention was drawn to both form and meaning of the target words by the teacher during the interaction with students in a listening comprehension class whose focus is meaning-oriented and communicative. Along the line of research studies which revealed the important role of L1 on vocabulary learning, for the

purpose of this study, teacher's switching to Chinese as a way of drawing students' attention on lexical items was examined, compared with the teacher's providing L2 information for the lexical items.

1.10 Research questions

The following research questions will be primarily examined in this paper:

1. Is it beneficial to focus on form for lexical items during a predominantly communicative activity or to focus only on meaning in terms of the learners' receptive vocabulary learning?

2. Is the learners' receptive vocabulary learning better facilitated by the teacher's use of codeswitching or by providing L2 information?

In order to explore further the factors related to the learners' vocabulary recall, the following three research questions will also be examined. There are other confounding variables in the classroom which might be related to the students' receptive vocabulary learning as the dependent variable. Three of these variables will be the focus of analysis: the prior familiarity with the target words, the learners' general proficiency levels, and the posttest listening comprehension scores. Moreoever, to the researcher's knowledge, very few studies on vocabulary learning in the second language research area have ever examined the students' confidence level while providing meanings for new words. This study then also aims to examine the relationship between the learners' confidence level in the meanings they provided for the target words and the accuracy of these meanings. Furthermore, due to the teacher's lexical treatment in the two different languages, the type of language the learners prefer to use while providing meanings for the target words is also of interest in this thesis. Further information related to these research questions will be expounded in the following chapters.

3. How do prior familiarity with the target words, general proficiency level and listening comprehension scores relate to the learners' vocabulary recall?

4. How confident were the learners with the meanings they provided during the vocabulary tests?

5. Which type of language did the learners prefer to use while providing meanings during the vocabulary tests?

CHAPTER TWO Methodology

In this chapter, quantitative and qualitative approaches to educational research in general and second language research in particular, will be reviewed, followed by a detailed illustration of the research methods employed in this study.

2.1 Literature on research methods

2.1.1 Quantitative and qualitative approaches

In the field of educational research, it has long been acknowledged that research is not only concerned simply with methods, but also with views of understanding the world. Different perspectives of understanding the nature of social phenomena, the very foundations of knowledge and the relationship between human beings and their environment may well lead to different approaches to social research. Regardless of the ontological and epistemological stances underlying social science, which are beyond the reach of this paper to expound in detail, the methodological designs and data-collecting strategies available in educational and second language research will be reviewed here.

In the area of educational research, whether to use qualitative or quantitative research is always an issue for researchers to consider. As to the classification and definition of these two research methods, many researchers have developed positions based on their own perspectives. Best and Kahn (1989: 89) argued, 'quantitative research consists of those studies in which the data concerned can be analysed in terms of numbers... Research can also be qualitative, that is, it can describe events, persons and so forth scientifically without the use of numerical data'. Blaxter and Hughes and Tight (1996: 60) noted that 'quantitative research is, as the term suggests, concerned with the collection and analysis of data in numeric form... Qualitative research, on the

other hand, is concerned with collecting and analysing information in as many forms, chiefly non-numeric, as possible'. However, Robson (2002: 5) proposed the concept of fixed and flexible ways of labeling research design, because for him flexible design itself 'may well make some use of methods which result in data in the form of numbers as well as in the form of words'. He depicted the fixed research design as having a very substantial amount of pre-specification about what you are going to do, and how you are going to do it, which should take place at the outset. Flexible design is flexible in the sense that 'such less pre-specification takes place and the design evolves, develops and unfolds as the research proceeds' (Robson, 2002: 5).

In spite of the myriad ways of addressing the two primary research approaches in education, their relative merits have also been widely debated in recent years among educationalists, and also social science researchers. While some regard them as entirely separate and debate as to whether one of them is more appropriate, many others combine the two. Best and Kahn (1989: 90) pointed out that 'both types of research are valid and useful. They are not mutually exclusive. It is possible for a single investigation to use both methods'. Hammersley (1992: 159) argued that 'the distinction between qualitative and quantitative is of limited use and, indeed, carries some danger'. Punch (1998: 245) maintained that 'a reasonable decision in any study might be to combine the two approaches'. Robson (2002: 6) also expressed his view that 'many of these differences (flexible and fixed designs) are more apparent than real and that there can be advantages in combining qualitative and quantitative approaches'. Methodological justification for bringing both together is provided by Bryman (1988) in order to capitalize on the strengths of the two approaches and compensate for the weaknesses of each approach.

Mixed methods research is the term standing for research that integrates quantitative and qualitative approaches within a single project. According to Creswell and Plano Clark (2007), a formative period of mixed methods research started in the 1950s when various writers took tentative steps to lay its foundations. Although there are

arguments against combining the two, based on methods of research and epistemological issues, the mixing of the two provides researchers with mutually illuminating quantitative and qualitative data, and a better understanding of a phenomenon. Hammersley (1996) proposed three approaches to mixed methods research: triangulation, the use of one to corroborate the findings of the other; facilitation, the use of one to aid research of the other; complementarity, the use of two research strategies in order that different aspects of an investigation can be dovetailed. Bryman (2008: 603) further summarized various ways of combining quantitative and qualitative research.

The quantitative and qualitative approaches are similarly addressed and debated by second language researchers. Van Lier (1988; 1990) characterizes applied linguistic research in terms of two parameters: an interventionist parameter concerning the extent to which the researcher intervenes in the environment and a selectivity parameter involving the degree to which the researcher prespecifies the phenomena to be investigated. After reviewing the literature on the issues associated with language research in late 1980s, Nunan (1992: 20) argued that 'while the distinction between qualitative and quantitative research is simplistic in many ways, it does represent a real, not an ostensible, distinction'.

However, other second language researchers advocate the combination of both. Chaudron (1988) distinguished four traditional approaches to second language classroom research: the psychometric approach, the interaction analysis approach, the discourse analysis approach and the ethnographic approach, but he also argued for the mutual dependency of these approaches along the continuum of quantitative and qualitative approaches. Chaudron (1988: 13) stated that 'in the survey of L2 classroom research that follows, the reader will recognize a continuous give-and-take between the successes and failures of quantitative or qualitative approaches to portray and explain adequately the processes and products of classroom interaction'. Seliger and Shohamy (1989: 114) also stated that 'we have tried to present these differences

[qualitative and quantitative] along a continuum rather than as an either/or choice for the researcher'. Allwright and Bailey (1991: 68) pointed out that 'second language classroom researchers are calling for judicious selection and combined approaches rather than rigid adherence to one approach over another'. Mackey and Gass (2005: 164) further stated that these two research types are by no means dichotomous. '... these two research approaches should not be viewed as opposing poles in a dichotomy, but rather as complementary means of investigating the complex phenomena at work in second language acquisition'.

These above second language researchers have all called for the combination of research methods in order to understand the operation of second language classroom as a highly complex environment. Dornyei (2007: 24) in his book of *Research methods in Applied Linguistics* referred to the mixed methods research as an emerging third research approach which involves different combinations of qualitative and quantitative research either at the data collection or at the analysis levels. Dornyei (2007: 45) listed four important value for mixed methods research: increasing the strengths while eliminating the weakness, multi-level analysis of complex issues, improved validity, and reading multiple audiences. He also pointed out the weakness of mixing the two methods, such as the methodological skills of the researchers to handle both quantitative and qualitative data, the diversity of the possible combinations of different methods, and so on. However, he believed that 'in most cases a mixed methods approach can offer additional benefits for the understanding of the phenomenon in question' (Dornyei, 2007: 47), and 'can broaden the scope of the investigation and enrich the researcher's ability to draw conclusions' (Dornyei, 2007: 186), and help classroom researchers to 'understand the intricate tapestry of classroom events' (Dornyei, 2007: 176).

Thus, as these above researchers have suggested, it is sensible to conceive the two primary research approaches along a continuum and combine the two in mixed methods research in different ways and levels according to various research aims.

Regarding the two main research questions in this study, a mixed methods research design was employed, combining both quantitative and qualitative approaches. Leaving aside the discussion on the two approaches, the specific methods for collecting the quantitative and qualitative data available to this study and carrying out qualitative data analysis are more of the main concern here.

2.1.2 Research methods of this study

With respect to the methods of collecting both quantitative and qualitative data, many of the strategies available in educational research could be combined in second language research. In addition, the distinctive nature of second language classroom entails the frequent employment of multiple methods and techniques for the understanding of the complexity of second language teaching and learning. In terms of the strategies employed in each approach, quantitative research usually covers a range of true experimental, quasi-experimental and non-experimental designs, while qualitative research concentrates on such three main traditions as case studies, ethnographic studies and grounded theory studies. Instead of expounding in detail on and comparing the educational research and second language research methods, the following methods for collecting quantitative and qualitative data and dealing with qualitative data available to this study will be illustrated in detail.

2.1.2.1 Experimentation

Under Robson's guidance regarding choosing a research strategy, 'a fixed design strategy calls for a tight pre-specification before you reach the main data collection stage' (Robson, 2002: 87). However, given that a wide range of true experimental, quasi-experimental and non-experimental strategies are available in fixed or quantitative research designs, which should be used in this study? Punch (1998: 74) argued that 'there is a continuum of quantitative research designs, where the true experiment is at the left hand end, and the non-experiment at the right hand end, and

the quasi-experiment in between'. Robson (2002: 110) pointed out that experimentation is a research strategy involving

- *The assignment of participants to different conditions;*
- *Manipulation of one or more variables (called 'independent variables') by the experimenter;*
- *The measurement of the effects of this manipulation on one or more other variables (called 'dependent variables'); and*
- *The control of all other variables*

According to Robson (2002: 114) a critical feature of true experiment is the random allocation to experimental conditions. While a true experiment involves random assignment of participants into groups, a quasi-experiment works without random assignment.

Although there are practical and ethical problems in achieving randomization, it allows the researcher to proceed on the assumption that equivalent groups are achieved for each experimental condition and 'provides a defense against the possibility that any change in a dependent variable is caused not by the independent variable but by differences in the characteristics of the two groups' (Robson, 2002: 115). Cohen, Manion and Morrison (2000: 213) argued that 'randomization, then, ensures the greater likelihood of equivalence, that is, the apportioning out between the experimental and control groups of any other factors or characteristics of the subjects which might conceivably affect the experimental variables in which the researcher is interested'. Within second language research field, Mackey and Gass (2005: 146) stated that 'randomization is usually viewed as one of the hallmarks of experimental research'.

Eight key features of a 'true' experiment were recently listed by Cohen, Manion and Morrison (2007: 275): one or more control groups; one or more experimental groups; random allocation to control and experimental groups; pretest of the groups to ensure parity; posttest of the groups to see the effects on the dependent variable; one or more

interventions to the experimental group(s); isolation, control and manipulation of independent variables; non-contamination between the control and experimental groups. The authors further listed nine variants of the 'true' experimental design, one of which was employed by the current study - the pretest-posttest one control and two experiment design (see Table 2.1).

Table 2.1: The pretest-posttest one control and two experiment design (Taken from Cohen et al., 2007: 279)

Experimental 1	*RO1*	*X1*	*O2*
Experimental 2	*RO3*	*X2*	*O4*
Control	*RO5*		*O6*

That is, the participants are randomly allocated to each of two experimental groups and one control group. Experimental group 1 receives intervention 1 (X1) and experimental group 2 receives intervention 2 (X2), but the control group does not receive any intervention. Pretests and posttests are conducted to measure changes in individuals in the two experimental groups.

However, while the 'true' experimental design with the randomization seems ideal for examining the effect of the independent variable on the dependent variable, in a 'real' second language classroom, a highly complex environment where many factors operate simultaneously, 'how do we know that what actually happens in a program matches its official description? Is a grammar-translation program actually doing grammar translation and not functional skills?' (Chaudron, 1988: 29). Dornyei (2007) pointed out that scholars tend to be surprisingly vague about the validity of the quantitative research. An experiment has internal validity only if the outcome is a function of the variables that are measured, controlled or manipulated in the study. What measures would be taken to 'supervise' the appropriate implementation of the different treatment?

As one of the four traditional approaches to second language classroom research

proposed by Chaudron (1988: 28), the psychometric approach 'involves comparison of the effects of specific instructional programs or methods on student learning outcomes, as measured by standardized proficiency tests or instruction-related achievement tests'. However, Chaudron (1988: 29) pointed out the weakness of the psychometric approach to classroom interaction research in that the researchers using this approach usually fail to do qualitative observations on the classroom processes, but only examine their different effects on the learning outcome without ensuring these classrooms are really doing what they are supposed to do. In a review of methods comparison studies, Beretta (1989) argued that virtually all of them fail to include classroom observation as a component of the evaluation. Unless care is taken to validate the distinctions made in the classification by method or program, any results in favor of a given type are meaningless. That is to say, both a context-process and a process-product component are essential to the design of such research.

It can then be seen that classroom observation is indispensable to ensure the appropriate implementation of any treatment to different experimental groups. Regarding the main research questions in this study, an experimental design with randomization seems appropriate to examine the effect of the teacher's use of CS on the learners' vocabulary learning. At the same time, classroom observation is also vital to collect qualitative data on examining and understanding the process of the experiment in the 'real' second language classroom.

2.1.2.2 Classroom observation

There has been general agreement about the value of direct observation of classrooms in educational research. Observation enables the researcher to gather data on the physical setting, the human setting, and the interactional setting, e.g. the interactions that are taking place, formal, informal, planned, unplanned, verbal, non-verbal, etc. (Cohen, Manion and Morrison, 2007: 397). Observation 'provides direct information rather than self-report accounts' (Dornyei, 2007: 178).

Different approaches to observations have been classified by different researchers. Robson (2002: 310) referred to participant observation as an essentially qualitative style, structured observation as a quantitative style, and unobtrusive observation as non-participatory in the interests of being non-reactive. Cohen et al. (2007) classified three main kinds of observations: highly structured, semi-structured, unstructured, and argued that the kind of observations available to the researcher lie on a continuum from unstructured to structured. From a particular perspective of classroom research, Croll (1986) has broadly presented two approaches to classroom observation, systematic observation and unsystematic observation. Moreover, Hopkins (2002) classified four approaches to class observation: open observation, focused observation, structured observation, and systematic observation.

Leaving aside the controversy over the various ways of classifying observational method, these approaches actually all lie along the continuum from unstructured to structured, from unsystematic to systematic. On one extreme, unstructured or unsystematic observation is about hypothesis-generating. The researcher is far less clear on what to look for and just go into a situation and observe what is taking place before deciding on its significance of the research. Croll (1986: 1) stated that 'the observer attempts to arrive at an understanding of the meaning of social relations and social processes in the classroom for the subjects being observed and conveys this, typically by means of field-notes and verbatim accounts of selected episodes rather than by quantitative analysis'. On the other extreme, structured or systematic observation is about hypothesis-testing. The researcher knows in advance what to look for and uses the observational data to conform or refute the hypothesis decided before. Croll (1986: 1) referred to it as 'the process whereby an observer or a group of observers devise a systematic set of rules for recording and classifying classroom events'. Structured observation could generate numerical data, which in turn facilitate the making of comparisons between settings and situations to be noted or calculated (Cohen et al., 2007). Coding schemes are commonly used as the predetermined

categories for the structured observations.

Researchers have listed the pros and cons of using observations. Robson (2002: 310) provided a summary for the advantages and disadvantages of observations. One of the major advantage of observation as a technique is its directness, that is, getting at 'real life' in the real world. However, a major issue is concerned with the extent to which an observer affects the situation under observation. It involves methodological problems as to what extent an observer gets involved, and ethical problems as to whether the observed are aware of being observed. Cohen et al. (2007) provided a comprehensive list of cautionary comments on using observations, such as the selective attention of the observer, selective memory of the observer, the number of observers, the problem of inference, and so on.

One way to solve some of the problems of using observations is to use videos to collect 'second-hand' observation data. 'Compared with traditional observation, these media offer the advantage of repeated access' (Flick, 1998: 137). Cooper and Schindler (2001: 375) also argued that observation can be indirect, requiring recording devices, such as video cameras. The use of video-recording is also acknowledged by second language classroom researchers. Chaudron (1988: 20) stated the analysis of a video or audiotaped record of the class by the 'not real-time' observation. Dornyei (2007: 183) recently argued that 'video recording has provided a technology that might be considered ideal for classroom research as it can replace the need for real-time coding'. Despite the problems of video-recording in classrooms, such as blind spots where a fixed camera can only see part of the entire class, and the distraction caused by the camera, the advantages of video recording are compelling. It can help us uncover the subtle reality of classroom life and can be used as a helpful ancillary to audiotaping.

The appropriate research technique should always be determined by the particular problem being studied. The aim of the classroom observation in this study is to

methodologically ensure that appropriate treatment has been implemented for different experimental groups by analyzing the lexically-oriented episodes of the interaction between the teacher and the students over the target words and comparing the teacher's lexical input for the two experimental groups. The lexical episodes of teacher-students interaction is then the unit of analysis, and a set of categories should be developed for the comparison between the two experimental groups over the lexical input. The researcher then needs to have a sort of 'structure' before the observation. In this way, a more structured observation seems appropriate for the purpose of this study. However, at the same time, the other aim of the classroom observation in this study is to understand the teacher's decision-making on the lexical input and the students' reactions through qualitative analysis on the teacher-students interactions. There is no coding structure which could guide this analysis or lead to any quantification. It is then more understanding than testing. Therefore, it is less structured from this perspective. It is then inappropriate to generalize the nature of the observations as either structured or unstructured in this study. Depending on the various aims of the classroom observations, the specific observation varies according to different needs.

2.1.2.3 Discourse analysis and conversation analysis

As classroom observation is employed in this study to collect qualitative data on teacher-students interactions, the next question is how to analyze the qualitative data. Discourse analysis evolves from a variety of disciplines and has been employed widely in a broad scope, such as sociology, philosophy, linguistics and anthropology in the 1960s and 1970s. It is beyond the scope of this paper to review systematically these origins of discourse analysis. Nevertheless, a look at the approaches to discourses analysis proposed by different researchers will shed light on analyzing the qualitative data in this study.

Discourse analysis was regarded by Fairclough (1992: 4) as 'a method of language

analysis which is both theoretically adequate and practically usable for studying social and cultural change', by synthesizing language studies and social theory. He argued that the concept of discourse is three-dimensional, 'any discourse event (i.e. any instance of discourse) is seen as being simultaneously a piece of text, an instance of discursive practice, and an instance of social practice'. His contribution here is his summary of the approaches to discourse analysis. He distinguished two groups of approaches to discourse analysis according to the nature of their social orientation to discourse – non-critical and critical approaches. 'Critical approaches differ from non-critical approaches in not just describing discursive practices, but also showing how discourse is shaped by relations of power and ideologies, and the constructive effects discourse has upon social identities, social relations and systems of knowledge and belief, neither of which is normally apparent to discourse participants' (Fairclough, 1992: 12). The non-critical approaches to discourse analysis are: the framework for describing classroom discourse in Sinclair and Coulthard (1975); ethnomethodological work in 'conversation analysis'; the model for therapeutic discourse in Labov and Fanshel (1977); and a recent approach to discourse analysis developed by social psychologists Potter and Wetherell (1987).

Based on the findings of a research project examining the linguistic aspects of teacher-pupil interaction, Sinclair and Coulthard (1975) developed their own system of analysis, which has been widely cited for their descriptive system of analyzing the discourse in the L1 classroom. They drew upon Halliday's (1961) units in systematic grammar, distinguished five units of ranks in classroom discourse – lesson, transaction, exchange, move, act. That is, a lesson is made up of transactions, which are made up of exchanges, and so on. They pointed out that the structure of each exchange is 'expressed in terms of Initiation (I), Response (R), Feedback (F); moves are coded across the page with three main columns for Opening, Answering, and Follow-up' (Sinclair and Coulthard, 1975: 50).

In the historical overview for discourse analysis, compared with British discourse

analysis represented by Sinclair and Coulthard (1975) at the University of Birmingham, conversation analysis by American discourse analysis was dominated by work within the ethnomethodological tradition, which emphasizes the research method of close observation of groups of people communicating in natural settings.

Conversation analysis has been described by many researchers as an approach to discourse analysis. According to Fairclough (1992: 17), conversation analysis is an approach to discourse analysis, which has been developed by a group of ethnomethodologists who adopted an interpretative approach to sociology with a focus upon everyday life as a skilled accomplishment and the methods people use for producing it. 'Conversation analysis contrasts with the Sinclair and Coulthard approach by highlighting discourse processes, and correspondingly giving more attention to interpretation as well as production'. Conversation analysts have produced accounts of various aspects of conversation: conversational openings and closings; how topics are established, developed and changed; how people tell stories in the course of conversations; how and why people 'formulate' conversations. They work on turn-taking, how conversationalists alternate in taking turns at speaking and adjacency pairs such as question-and-answer or complaint-and-apology. Schiffrin (1994) defined discourse as a particular unit of language and a particular focus on language use, introduced six approaches to discourse analysis – speech act approach, interactional sociolinguistics approach, ethnography of communication, pragmatic approach, conversation analysis, variationist approach. Schiffrin (1994: 12) described conversation analysis as one approach to discourse analysis, focusing on sequential structures in conversation and paying little attention to linguistic categories of sound, structure, or meaning.

Conversation analysis has been widely employed in the field of bilingual interaction. Following Auer's (1984) call for a conversation-analytic approach to codeswitching, questioning the way in which the meaning of codeswitching was understood, many bilingual researchers have applied conversation analysis approach to bilingual

interaction research (Sebba, 1993; Stroud, 1992; Auer, 1998). Li Wei and Milroy (1995) applied this approach to Cantonese-English codeswitching. 'The CA approach to codeswitching has broken new ground and provided us with the mechanisms to examine and understand bilingual conversationalists' procedures of locally creating and interpreting the meaning of code-switching' (Li Wei, 1998: 173). The CA approach to bilingual interaction has been criticized for neglecting aspects of the wider social context and being observed with the details of its materials. Fighting against some of the criticisms towards CA, Li Wei (2002) highlighted the potential contributions of CA to the study of bilingual interaction, described it as 'a theory of a different kind, an ideology and a world view that cannot be overlooked, trivialized, or dismissed' (Li Wei, 2002: 177). Li Wei (2005: 388) further advocated a dual-level approach bringing together both CA and RC (Rational Choice) analysis which would 'help to extract factors that can deepen our understanding of the way bilingual speakers use their linguistic and interactional resources and achieve a richer, more interesting, but still relevant explanation'.

Researchers in the area of applied linguistics and second language acquisition also reviewed discourse analysis and conversation analysis. McCarthy (1991) claimed the important role of discourse analysis for language teachers and wrote on discourse analysis and speaking, writing, vocabulary, and so on in the language classroom. In conversational analysis, 'the emphasis is not upon building structural models but on the close observation of the behaviour of participants in talk and on patterns which recur over a wide range of natural data' (McCarthy, 1991: 6). He then depicted discourse analysis as 'a backdrop to research in Applied Linguistics, and second language learning and teaching in particular' (McCarthy, 1991: 7).

As mentioned, four traditions in second language classroom research were distinguished by Chaudron (1988) – psychometric, interaction analysis, discourse analysis, and ethnographic research. While the psychometric tradition, concerned with product outcomes, is the most 'quantitative' in approach, the ethnographic research is

a more 'qualitative' and process-oriented approach to the study of interaction. The interaction analysis focuses on the observational schemes for classroom interaction, but the discourse analysis tradition arose from a linguistic perspective, an attempt to analyze fully the discourse of classroom interaction in structural-functional linguistic terms. For Chaudron (1988: 44), 'second language classroom researchers have not employed such a comprehensive discourse analytical scheme in their studies but ...have usually limited themselves to specific areas of discourse'. He listed a variety of discourse analytical units with identifiable linguistic structure or serving specific functions, such as utterance, turn, T-unit, communication unit, fragment, repetition, expansion, clarification request, comprehension check, confirmation check, repair, model. However, Chaudron's way of analyzing the four research traditions was criticized by Nunan (1992: 3), 'while Chaudron's aim of attempting to transcend the traditional binary distinction is a worthy one, it could be argued that discourse analysis and interaction analysis are methods of data collection rather than distinct research traditions in their own right. In fact, these methods can be (and have been) utilized by researchers working in both the psychometric and ethnographic traditions'.

Further advocates of discourse analysis are McCarthy, Matthiessen and Slade (2002: 56), who pointed out that 'discourse analysis enables applied linguists to analyse and understand real language data, for example, texts written by first and second language learners, or recordings of the spoken output of second language learners, or of the interaction between teachers and learners or among learners themselves in classrooms'. They listed those approaches to discourse analysis that have the greatest relevance to applied linguistics and language education, such as the conversational analysis originated in sociology, the systematic functional linguistics and critical discourse analysis from linguistics, and so on. Consistent with other researchers, the conversation analysis is regarded as one approach to discourse analysis. It is concerned with the detailed organization of everyday interaction because it offers a particularly appropriate and accessible resource for sociological enquiry. It favors fine-grained analyses, often of quite short stretches of conversation.

While some researchers agree on the role of conversation analysis as one approach to discourse analysis, others regard them both as approaches to classroom interaction analysis. Nunan (1992) compared discourse analysis, interaction analysis, and conversation analysis. '...the distinction is by no means clear-cut, and in many instances, the distinction is one of emphasis rather than distinct categories' (Nunan, 1992: 159). He distinguished between the different analytical methods in terms of four different factors: firstly, the means whereby the data have been collected; secondly, the mode of language which is admitted into the analysis; thirdly, whether the researcher brings to the analysis a predetermined set of analytical categories; and finally, whether the focus of attention is essentially linguistic or non-linguistic. He presented a table distinguishing the characteristics of these analyses.

Table 2.2: Distinguishing characteristics of discourse, conversation, and interaction analysis (Nunan, 1992: 161)

	Discourse analysis	**Conversation analysis**	**Interaction analysis**
Method of generating	invented elicited naturalistic	naturalistic	elicited naturalistic
Mode	spoken written	spoken	spoken
Type of analysis	categorical	interpretive	interpretive
Unit of analysis	linguistic	non-linguistic	both linguistic and non-linguistic

A more important role of conversation analysis in analyzing L2 classroom interaction was stated by Seedhouse (2004; 2009 forthcoming). He listed several research methodologies for their different portrayals of L2 classroom interaction – observation or coding schemes on the description and analysis of L2 classroom interaction from the 1960s, discourse analysis from the 1970s, ethnography, and conversation analysis from the 1990s. Although discourse analysis does have several advantages as a methodology, Seedhouse (2004) suggested that discourse analysis cannot portray the

flow of the interaction because it is essentially a static approach which portrays interaction as consisting of fixed and unidimensional coordinates on a conceptual map. Seedhouse (2009 forthcoming) further pointed out that 'in discourse analysis, interaction is translated into functions and this diverts attention from the minute linguistic detail in which the complex, reflexive relationship between pedagogy and interaction is manifest'. The overall picture of L2 classroom interaction which emerges from discourse analysis methodology consists of successions of sequences like the IRF pattern, which has a tendency to conceal the complexity of the interaction and to homogenize it. He argued that 'a full-scale and explicit discourse analysis model of the organization of L2 classroom interaction has never been published'. Whereas, for him, the conversation analysis, a multi-disciplinary methodology emerging in the 1990s with 'highly detailed system of transcription' and its 'ability to portray the multi-layered complexity of interaction', 'encapsulates the perspective of interaction as action (why that) which is expressed by means of linguistic forms (in that way) in a developing sequence (right now)'. A conversation analysis methodology sees the L2 classroom as 'a very complex, dynamic and fluid interactional environment'.

It is beyond the scope of this thesis to explore in depth the principles of discourse analysis and conversation analysis. Nevertheless, it is accepted that they are widely used in the studies of applied linguistics and second language research.

As far as this study is concerned, an analysis of the qualitative data of the lexical episodes of teacher-student interactions provided by classroom observation aims to provide methodological evidence for any quantitative findings by ensuring that appropriate implementation of the different treatments in the different experimental groups, and to provide further insights into the teacher's lexical input and their decision-making during the interaction process.

Rather than analyzing the IRF sequential patterns of the interaction, this study focused

on the types and numbers of the teacher's form-focused lexical input and the decision-making on the basis of Macaro et al.'s (2009) model of explanatory options for new words available to both NST and NNST. The context where the target lexical items situated and the students' reactions were also taken into account. In this sense, the analysis employed in this study tends more to conversation analysis as depicted by Seedhouse (2009 forthcoming) which stresses the dynamic interactional environment.

However, at the same time, the unique feature of the qualitative analysis in this study is the recourse to the use of quantification and categorization in comparing the lexical input tokens in the two experimental groups. Due to the large size of the interaction episodes of lexical focus-on-form for each experimental group and for the sake of the comparison between the two experimental groups of the teacher's lexical input and the student's reaction, instead of taking an in-depth conversation analysis for each interaction episode, this study goes beyond the conversation analysis for each episode and quantified the types and tokens of the teacher's lexical information options.

The type and token ratio has been widely used in the second language research to count the frequency of words. Chaudron (1988: 72) stated that 'the most common measure used in investigation of vocabulary simplicity is the ratio of number of different words to number of words produced'. According to Nation (2001), the way to count every word form in a spoken or written text, even though the same word form occurs more than once, is called 'tokens'; the way to count every word form excluding those same word forms occurring more than once is called 'types'. The concept of type/token can be applied to the context of this study in that the comparison between the two experimental groups becomes feasible through analyzing the tokens and types of the teacher's lexical input for the target words. The quantification of the qualitative conversation analysis based on the analysis model of Macaro et al. (2009) thus makes the comparison between the two experimental groups plausible and feasible.

2.1.2.4 Questionnaire

Among the variety of ways of addressing the two primary research designs in educational research, the survey fits into the quantitative design, as Robson (2002: 230) describes the typical central features of surveys as 'the use of a fixed, quantitative design; the collection of a small amount of data in standardized form from a relatively large number of individuals; the selection of representative samples of individuals from known populations'. Although most surveys involve the use of a questionnaire carried out either by telephone, by post or in person, they are not necessarily restricted to the use of questionnaires, such as observational or interview surveys.

'Questionnaires are printed forms for data collection, which include questions or statements to which the subject is expected to respond' (Seliger and Shohamy, 1989: 172). Conducting a questionnaire is a popular way of gathering quantitative information. It can provide a relatively simple and straightforward approach to the study of attitudes, values, beliefs and motives. It can also save time in reaching large numbers and in analyzing responses if closed questions are used. Dornyei (2007: 115) depicted questionnaires as very versatile, 'they can be used successfully with a variety of people in a variety of situations targeting a variety of topics'.

Just as every research technique has its advantages and disadvantages, so there are some limitations of using a questionnaire. Munn and Drever (1990: 5) pointed out that 'the information collected tends to describe rather than explain why things are the way they are' and 'the information can be superficial'. Dornyei (2007: 115) further stated that questionnaire 'usually results in rather superficial data'. The weakest aspect of questionnaires is the fact that the items need to be sufficiently simple and straightforward to be understood by everybody, thus it is unsuitable for probing into an issue deeply.

'The important thing is to weigh up the advantages of a particular method in relation to the research questions you want to ask and the claims about your findings you want to make' (Munn and Drever, 1990: 11). Bearing in mind the pros and cons of using questionnaire as a research method, and considering the current research questions, the questionnaire is used to elicit learners' background information in this study.

2.2 The current study design

Having briefly reviewed the related literature on research methods in educational and second language research, the current study design was then devised based both on the particular research aims and research questions for this current research and previous research related to this topic. In this section, the overall research design and its justifications for the current study will be briefly presented first, followed by detailed illustration.

2.2.1 Overall research design

As reviewed in the literature, this study is going to fill the gap in the literature by examining the role of codeswitching in learners' vocabulary learning during listening-mediated tasks. Although few empirical studies have been carried out on this topic and thus few previous reference on the exact topic can be consulted, there are some studies in the area of vocabulary acquisition research which may shed light on the design of this study.

As reviewed in the literature, a series of studies carried out by Ellis and his colleagues focused on examining the role of interaction and meaning negotiation on vocabulary learning during listening comprehension tasks. Ellis and Tanaka and Yamazaki (1994) employed a quasi-experimental design in their study. The participants were grouped into two treatment groups and one control group based on the equal proficiency level between these groups, who took pretest, posttest and follow-up test on vocabulary

learning and listening comprehension. The effect of interaction and meaning negotiation, as an independent variable, on listening comprehension and vocabulary acquisition, as dependent variables, was then examined. Another similar but small scale study was conducted by Ellis, R. (1995), who examined the role of interaction and meaning negotiation by two treatment groups only. Ellis and He (1999) further examined empirically the incidental acquisition of word meanings of three treatment groups. Although these studies all successfully achieved their research aims, one common limitation in their research design was the lack of randomization of experimental groups. Although the participants' proficiency levels were controlled by the researchers, other extraneous variables were not taken into consideration.

The above studies on interaction and vocabulary learning during listening comprehension shed light on the design of this study. However, they did not involve the role of codeswitching or L1 use. Guo (2007), who in his doctoral thesis observed teachers' use of codeswitching in the second language classroom, found that the two teachers in his study who taught English to two different levels of students both inevitably codeswitched in their lessons and strongly called for an empirical study examining the role of teachers' use of codeswitching on second language learners' vocabulary acquisition.

One of the few recent empirical studies examining the effect of codeswitching was carried out by Meng (2006) for his Master's thesis in the Department of Education of the University of Oxford. The effects of teacher CS use on learners' acquisition of unknown English lexical items during the comprehension of a written text were examined. Participants were randomly assigned into two different conditions, that is, the L1 Equivalent Condition where the teacher provided L1 equivalents for the target words, the Definition Condition where the teacher provided L2 definitions for the target words. A third group was an intact class, the Definition Plus L1 Equivalent Condition, where both L2 definitions and L1 equivalents were provided. Although an experiment with randomization was employed in his study to examine the effect of

CS use on learners' vocabulary learning, the study has some limitations. The intact class group actually received both types of information, the definition and L1 equivalent. The lack of a baseline group thus limited the results. Moreover, the limited numbers of target words did not allow for further analysis and made it difficult to generalize on the basis of his study. The issues raised from these previous studies will be addressed in this study.

A similar problem arises in another recent work on the effect of teacher L1 use in L2 vocabulary learning by Liu (2008) in a Chinese university EFL context. Liu (2008) compared two conditions, the teacher's providing English-only explanations for unknown words and expressions, and providing both English and Chinese explanations for the unknown words. It is not surprising that the group receiving explanations in both languages outperformed the other English-only group. Thus, it can be seen that a study comparing English-only with Chinese-only is necessary. Another baseline group which does not receive vocabulary explanation is also indispensable.

In light of these previous studies and the research methods available, in order to answer the main research questions in this study, the research aims of this study are as followed:

- The teacher's codeswitching in an EFL classroom as an independent variable should be manipulated to examine its possible impact on the dependent variable, learners' vocabulary learning. An experimental design should then be adopted involving two experimental groups, one receiving the treatment of teacher's use of CS, the other receiving the treatment of teacher's providing L2 information, without switching to L1.
- A predominant focus on the negotiation of meaning should be maintained in the class. While the teacher assisted with the students' vocabulary learning by focusing briefly on lexical form and meaning, the primary focus of the lesson

should be the comprehension of the listening texts.

- To control for the effects of focus on form there will be a control group for which the focus of lessons is entirely on meaning, without the teacher's focus on form on lexical items.
- The samples should be randomly allocated into two treatment groups and a control group in order to make some level of generalization to the population possible.
- All the possible extraneous variables should be controlled as much as possible, but nevertheless the study should resemble a real classroom as much as possible.
- The study should be longitudinal for an effect to take place and be examined.
- Classroom observation is vital to provide qualitative data as methodological evidence for the experimental findings and as evidence for further understanding the teacher-students interactions over lexical focus on form.

In light of the above research aims, this study was designed on the whole as follows, with illustrations of the justifications for decision-making.

1) All the participants were removed from their normal classroom and randomly allocated into three groups, two experimental groups and one control group. One experimental group received the teacher's use of codeswitching while explaining the English lexical items, that is, the teacher provided Chinese equivalents for the English target words; the other experimental group received the teacher's explanation on the English target words exclusively in English without switching to the students' mother tongue, that is, the teacher provided English information for the English target words. The control group did not receive any lexical focus on form from the teacher but listened to the same listening texts with listening comprehension questions and also received listening strategy training.

2) The random allocation was based on pre-stratification according to the diverse

English proficiency levels of the participants, in order to ensure that each group contains similar number of students with different proficiency levels.

3) The two experimental groups received the same lessons except for the treatment on vocabulary explanation, that is, the same listening passages, the same comprehension questions, providing meanings for the same target words, but different ways of presenting the meanings of the target words.

4) The teacher focused the lesson on the comprehension of the listening texts by asking general comprehension questions and interacting with students. When a target word cropped up, the teacher stopped the flow and drew the students' attention to the form and meaning of the target words.

5) In an attempt to resemble a genuine language classroom, the teacher not only explained those words that were new to all the students, but also those that were new to only some students if these words were important words and crucial for comprehension of the whole listening texts. Thus, the target words included totally unfamiliar words and also words that some students already knew but others did not.

6) The teacher as a 'dictionary designer' (Macaro et al., 2009) made planned decisions before the lesson on which words to explain and how to explain them. The teaching plans were designed accordingly for each listening passage. Meanwhile, the teacher also made unplanned decisions during the lessons on providing additional lexical input when the students encountered comprehension difficulties.

7) In order to ensure that appropriate implementation of the different treatments were provided for different experimental groups, and any quantitative findings from the experiment was due to the different treatments, the lessons were video-recorded and the lexical episodes of the interaction between the teacher and the students in the two experimental groups on the target words were extracted from the classroom

observation, and were analyzed both categorically and interpretively.

8) The measurement of the effects of the independent variable on the dependent variable was achieved by pretests, posttests and delayed posttest on the participants' vocabulary learning during a longitudinal research process for two months. The control group took part in the pretest and delayed posttest, but not the immediate posttest. This decision-making was based on the guidelines of a genuine classroom and the specific circumstances of this study. The students in the control group could hardly infer any of those target words just by listening to the passage containing those words twice and focusing their attention on comprehension of the texts and listening strategies training. It was then considered unethical to administer such a vocabulary test to them at the end of each session.

9) Both experimental groups and the control group were personally taught by the researcher. Pragmatically, it would be very unlikely to find a qualified teacher with both the time and commitment to conduct this experiment. Even if a volunteer was willing to teach, it would be costly, and time-consuming to train him or her to carry out the experiment. In the event, the researcher had over six years teaching experience at the university and, more importantly, understood the literature and research design of the experiment. It might be argued that both groups cannot receive the same instructions except the treatment from the researcher as a result of the possible bias of the researcher over one group. However, this was unlikely and to mitigate against such an eventuality the teaching plans for both groups for each lesson were examined and discussed by the researcher and a group of experienced teachers before conducting the research. Moreoever, as assistant teacher sat in the classroom to observe each lesson during the training sessions, and all the lessons were both audio- and video-taped for future qualitative analysis between the two experimental groups.

10) All the lessons were video-taped and further qualitative analysis focused on the lexical input of the teacher for the two experimental groups and the teacher's

decision-making.

11) The treatment session was conducted once a week and the study lasted for around two months, which was a suitable period of time for such a study to be carried out in the context of a Chinese university due to the university calendar and the students' preparation for the final term exams.

12) A questionnaire was administered at the end of the experiment, in order to elicit the students' background information.

The above issues will be further addressed in greater detail later in this chapter and the corresponding justification for the decision-making will also be further illustrated in detail.

2.2.2 Sampling

2.2.2.1 Choosing the sample

The target population of this study was first-year English-language-majors in Chinese universities. First year university students were most suitable for the purposes of this study in that they had reached a stage whereby it was theoretically possible for them to be instructed exclusively in English pertinent to their level. Having completed high school education after around eight years of English study they attained a certain level of English proficiency and were ready to begin intensive English study from September. By the time of the study, they were more or less accustomed to classroom instructions exclusively or predominantly in English.

Due to the limitations of access and resources, however, the sampling frame was restricted to one particular type of university in Shandong Province in China. Although the students in this university were enrolled from most of China's provinces

based on the national university entrance exam, their enrolment scores were lower than the top universities in China but higher than the bottom tier. Thus, for the purposes of generalisation, any potential findings of this study could necessarily only be applied to universities which enroll students of a similar level.

There were 120 first-year English-major students from the four classes in the Foreign Languages Department of this university, who were approximately 19 years old, enrolled in this university in early September 2007 and began their intensive English-major study after a short one-week period of military training on the university campus. As they were studying English as their degree subject, they took English-major related compulsory and intensive courses for around 20 hours each week, including ten sessions of Basic English Course taught by Chinese lecturers, Extensive Reading Course, and Listening and Speaking Courses taught by foreign teachers. At the end of September before the main study began, the students were gathered together and informed of the research project and related information on participation. An informed consent letter (see Appendix 1) was distributed to them, and those who approved of the participation in the study signed their names. Finally, a sample size of 117 students who agreed with the participation took the listening comprehension test and a pretest on vocabulary. Although there were drop-outs during the study and some students were absent from several posttests later on, there were over 90 students who participated in all the tests and this drop-out rate was considered normal for such a longitudinal study. In addition, any statistical analysis related to each particular posttest could still be taken, without being influenced by this random absence of participants.

2.2.2.2 Allocating the sample to the conditions

The 117 participants were stratified first based on their proficiency levels and then randomly allocated into three groups, two experimental groups and one control group. In this study, random allocation was both plausible and feasible. Random allocation

was employed because of the following concerns. Firstly, these participants were from four different classes, and each class was taught by different teachers although the same types and numbers of courses were taken. Due to the different characteristics of teaching styles and other influences from different teachers, participants from one class may then differ from the other ones. Secondly, in addition to teacher impact, each class has formed its own study atmosphere as a group. Some may be quite extroverted while others may be quieter but hard-working. The teacher and class difference could then be eliminated by random allocation. Thirdly and most importantly, the participants' diverse English proficiency level as a potential extraneous variable should be controlled for the experiment process. Thus, in order to take into account all these possible confounding variables, the participants were stratified first into different proficiency levels, and were then randomly assigned into three groups.

The stratification was based on the combined scores of several exam scores, the general English proficiency scores, the general listening comprehension scores and a pretest on the target vocabularies. Compared with designing a general proficiency test and administering the test to the participants of this study, the national university entrance English exam, a nation-wide English general proficiency test which was administered by the authorities would be suitable for the purpose of this study. Learners' university entrance English exam scores were acquired from the university administration. However, only two-thirds of the students' scores were finally obtained from the university by the time the study started. Thus the participants were asked to report their own English scores in the university entrance exam while performing a pretest. However, their self-reported ones were different from those scores which were provided by the university. Doubts on the reliability of the self-reported scores from the participants themselves arose. Moreover, the university entrance exam had been taken about two months before they entered the university and three months by the time the study began. The two months' summer holiday might be too long a period for the scores to be still valid for the current study. Thus, another set of

university-wide English proficiency exam scores right after their entering the university in early September was considered appropriate in this context. This English proficiency test was taken by all the first-year students who were newly enrolled to the universities within the whole province. It was a widely recognized assessment of the freshers' general English proficiency level, administered by the provincial authority every year. This test included various testing items on students' reading and writing skills and their grasp of English vocabulary and grammar. Finally, this set of scores was acquired from the university authority and taken as a control of their general English language proficiency level.

Considering the fact that this set of general English proficiency scores did not entail a section on listening skills and the current study would be mediated by listening tasks, a general listening comprehension test was administered to the participants together with a vocabulary pretest before the main study, in order to control the participants' general listening comprehension levels.

In addition, recall that the target words include those within a range of different familiarity levels to the students in the study, the participants' different prior knowledge of these words was likely to influence their learning new vocabulary later in the training sessions. Pretest I which covered almost half of the target words was hence also administered to the participants before the main study.

In this way, a stratified random allocation based on the combination of all these scores can ensure a relatively even distribution of the students with different general English proficiency levels and different general listening comprehension levels and different prior knowledge over some of the target words. More details on these tests will be given in later sections of this chapter.

Based on the combined scores, the participants were grouped into four different proficiency levels on the basis of their combined scores, after which they were then

further randomly stratified into three groups, having taken into account the fact that students from different classes were mixed into each group, that is, each group contained students from the four different classes. The justification for dividing the students into four proficiency levels was that more accurate matching could be ensured and each group would contain students with various proficiency levels. Moreover, this allowed for further statistical analysis to be conducted later to examine the relationship between the students' proficiency level and their vocabulary learning. The following diagram Figure 2.1 clearly illustrates the allocation.

Figure 2.1: Allocating the students to three groups

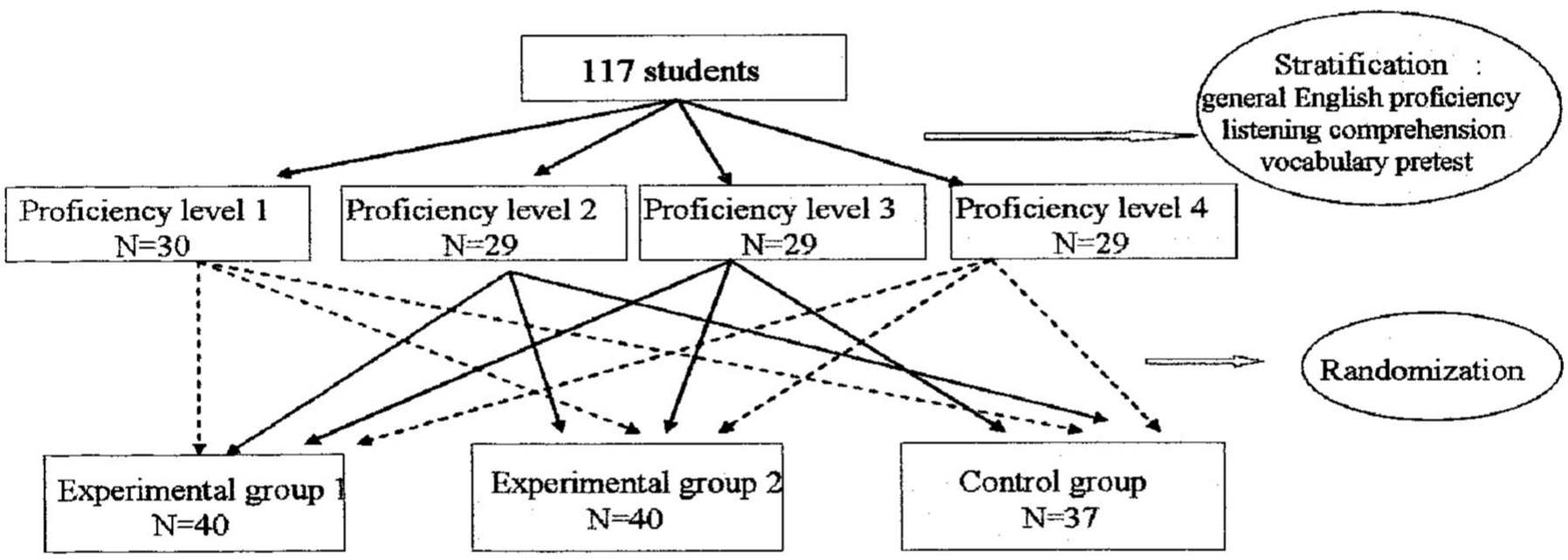


Table 2.3: Frequency table for the scores of each baseline test and combined scores for each group

	Vocabulary pretest M(S.D) Range	**General listening comprehension** M(S.D) Range	**General English proficiency** M(S.D) Range	**Combined scores** M(S.D) Range
Experimental group 1 (N=40)	33.5(6.4) R=35	72(12.3) R=44	91.5(8.7) R=41	197(21.8) R=101
Experimental group 2 (N=40)	34(8.1) R=35	70.9(12.7) R=56	92(7) R=32	197(22.3) R=103
Control group (N=37)	32.7(7) R=31	71.8(13.5) R=60	92.5(9.4) R=39	197(22.6) R=106

Statistical analysis was carried out for the three groups by using SPSS (version 14). Frequency table 2.3 presented basic statistical information for the scores of each test and the combined scores for each group. It can be seen that the mean scores for each test and the combined test scores are similar for each of the three groups. Based on the normal distributed data, one-way ANOVA was then employed to further examine statistically the difference between these groups. Levene's Test (p=.884, >.05) indicated that Tests of Homogeneity of Variances were reached and the combined scores of the participants were normally distributed. A one-way ANOVA then revealed that there was no significant difference in the combined total scores between the three groups (F(2,114)=.000; p=1.000, >.05), and for each of the three sets of scores, vocabulary pretest (F(2,114)=.336; p=.715), general listening comprehension (F(2,114)=.082; p=.921), and general English proficiency (F(2,114)=.142; p=.868). These three groups were actually homogeneous ones, which further statistically verified the random assignment of the participants into the three groups.

Experimental group 1 was the non-codeswitching group (NCS), that is, the teacher explained the English vocabulary without switching to Chinese, but provided the students with L2 information; Experimental group 2 was the codeswitching group (CS), for whom the teacher provided Chinese equivalents for English vocabularies; The control group did not receive any vocabulary explanation from the teacher but listened to the same listening texts with listening comprehension questions and received training on listening strategy.

2.2.3 Pilot phase

'Piloting, or reassessment without tears, is the process whereby you try out the research techniques and methods which you have in mind, see how well they work in practice, and if necessary, modify your plans accordingly' (Blaxter, Hughes and Tight,

1996: 121). Cohen, Manion and Morrison (2000: 260) listed thirteen functions that a pilot may serve, such as checking the clarity of questionnaire items, instructions and layout; eliminating ambiguities in wording; checking the time taken to complete the questionnaire and so on.

A pilot study was carried out ahead of the main study to examine the teaching skills of the researcher as the teacher and validate the listening materials and the teaching plans, to make sure that both experimental groups received equal treatment except for the vocabulary explanation, and to check the validity and reliability of the test format. Two groups of second-year non-English-major students from various departments studying different subjects, who were believed to have a similar English proficiency level to that of first-year English majors, were invited to participate in the pilot study. The reason for choosing groups of non-English major students rather than English majors was the concern that the first-year English majors were the participants for the main study; moreover, the second-year English majors who had a higher proficiency level would find the listening passages too easy for them to cope with. In addition, contamination from the pilot study participants to the main study would be extremely unlikely since they were from different departments[1]. Thus, two groups of non-English-major students participated in the pilot study. However, due to practical problems of access and time, each group could only attend the pilot study for one morning session. Thus both types of treatment were given to each group (see Table 2.4).

Table 2.4: Two groups of pilot participants

		Non-codeswitching	**Codeswitching**
8-10 am, Saturday 22 Sep, 2007	Group I (n=31)	Listening passage 2 and 3	Listening passage 4 and 5
8-10 am, Sunday 23 Sep, 2007	Group II (n=20)	Listening passage 4 and 5	Listening passage 2 and 3

[1] In Chinese universities, unlike some universities in UK such as Oxford and Cambridge, students are accommodated in the same dormitory buildings with those who read for the same subjects from the same department; this restricts their contact with students from other departments.

On a Saturday morning, a group of 31 students received a listening session on two listening passages (passage 2 and 3) with non-codeswitching treatment, and after a break of half an hour, they received codeswitching treatment on another two listening passages (passage 4 and 5). On the following Sunday morning another group of 20 students received both treatments for the four listening passages but in a different sequence. It should be pointed out that these students were studying other subjects in the university and although they were second-year students, their English proficiency level turned out to be lower than expected. They did not perform well in their listening comprehension and vocabulary tests. Nevertheless, the listening material, the teaching plan and the testing instrument were piloted successfully, and revisions were made based upon the results of the pilot.

Firstly, the listening material turned out to be a bit too difficult for those non-English-major students who receive English lessons twice a week only, but it would be about the right level for the main study English-major students who entered the University with a higher English proficiency level in addition to one month of intense English courses.

Secondly, the teaching plan turned out to be well devised insofar as it enabled the meanings of the new words to be presented cogently to the participants. The listening passages were divided into several segments based on the meaning unit, which usually contained two or three sentences. However, the segments of these listening passages turned out to be too long for the students to understand. Thus, smaller meaning segments were presented to the students in the main study for better understanding.

Thirdly, the time spent on each listening passage, about twenty minutes, was less than what was previously planned. In addition, two month's sessions seemed too difficult to ensure a high attendance rate. Thus for the main study, the original plan of covering

two passages for each session was changed to three passages for each session and six sessions in total instead of eight.

Fourthly, as no notes were allowed to be taken in class, the explanation from the teacher on the new vocabularies seemed insignificant for students to grasp the meanings generally. Thus a quick review at the end of each listening passage was taken by the teacher's retelling the content of the listening passages through which the meaning of the new words on the board were presented again and reviewed, after which the listening passage was played a final time.

Fifthly, the vocabulary testing instrument could test their understanding of the meanings of new words. The only problem was that the format of presenting '0' with the 1-5 rate level together was misleading. Thus the blank for writing down the meanings of the words was put right after the '0' (see Figure 2.5).

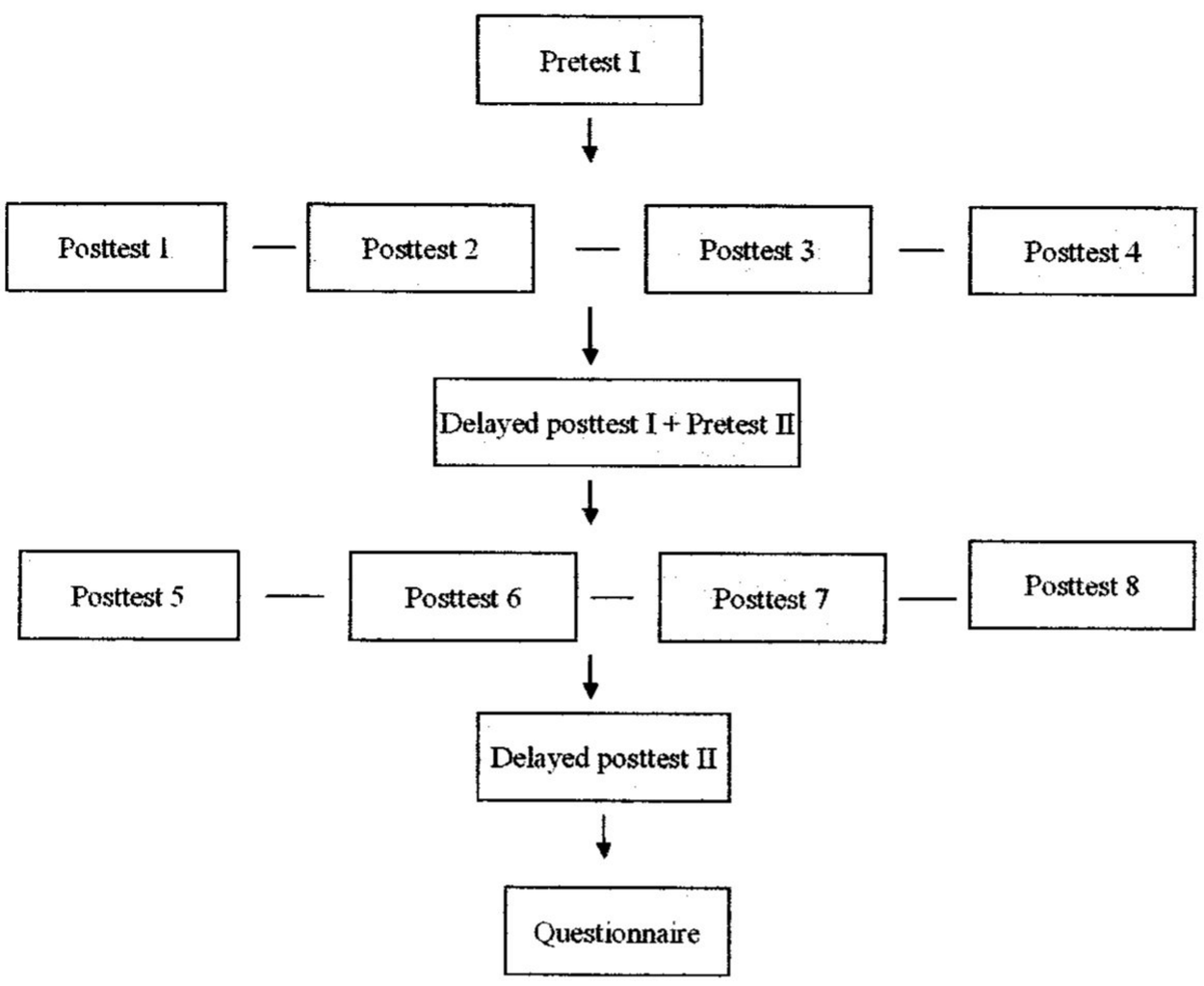
In addition, small-scale questionnaires were administered to the students to elicit their biographic information. Modifications were made accordingly to increase the validity of the questionnaire.

The data from the piloting phase was not analyzed formally due to the incompleteness of the research instruments and materials, as well as the low proficiency level of the participants. The modifications made upon the piloting for each research procedure will be illustrated in detail in later sections.

2.2.4 Data collection procedures

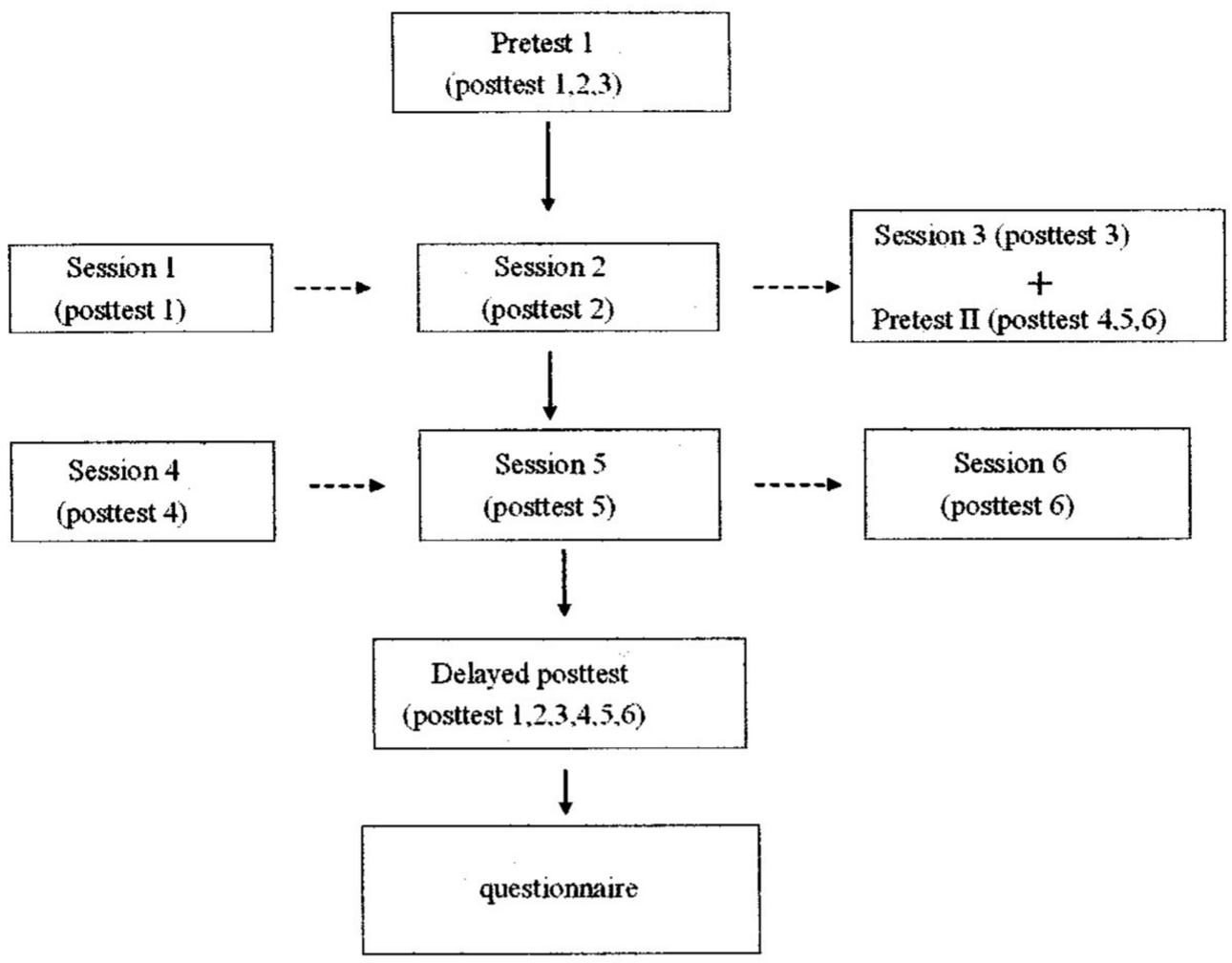
The original data collection procedure employed by the researcher before the piloting was as follows:

Figure 2.2: Original data collection procedure



As illustrated in Figure 2.2, the main experiment was originally designed to last for two months, with each month comprising one stage and each session containing two listening passages for each session. Two delayed posttests seemed sufficient for the two stages. Additionally, the sequential order of vocabulary for the CS and NCS groups to receive treatment was changed for both stages in order to eliminate the possible influence of fatigue. However, changes were made upon piloting. As mentioned in Section 2.2.3, the time spent on each listening passage was less than what is expected, so that three listening passages could be completed in one session. Moreover, the fact that it was difficult to ensure the students' attendance on all these sessions made it necessary to shorten the training period. Thus, based on the feasibility and plausibility of both the study and the reality, the following data collection procedure (see Figure 2.3) was finally adopted.

Figure 2.3: Revised data collection procedure



The schedule for all the tests and sessions is provided in Appendix 2. After discussion with students and the academic administration in the university regarding a suitable time slot, the lessons for both experimental groups were held on Saturday mornings and lasted for an hour for each group, and another half an hour for a posttest on those vocabularies covered during the session. The CS and NCS groups were taught in sequential time slots on Saturday mornings to eliminate contamination, but there was not enough time for the control group on Saturday mornings. Because no posttest was administered for the control group and no notes were allowed to be taken during the lessons for both treatment groups and the control group, contamination of the target words for the control group would be highly unlikely, and the control group could then receive the training session at another time. The students were given a choice on the Pretest I paper regarding their preference for taking the training session on Saturday or Sunday morning or afternoon. In the end the control group was taught on Sunday afternoons due to the students' preference. It was originally planned that the CS and NCS groups would receive lessons in a different sequence of time slots for the

second half of the three sessions to account for such variables as time difference and fatigue. However, the students who already got used to their time slot and had plans for their time did not want to change. Thus, the sequence of the two treatment groups receiving treatment sessions remained the same, with the NCS group receiving the treatment first, followed by the CS group on Saturday mornings.

Pretest I covering the target words of the first three training sessions was administered to all the three groups one week before the main study started. Immediate posttests were administered at the end of each training session, testing the target words covered during the specific listening passages in the session. Six posttests were administered respectively at the end of each session for both treatment groups, but not the control group (see Table 2.5).

Table 2.5: A checklist for the vocabulary tests taken by all the groups

	Experimental group 1	Experimental group 2	Control group
Pretest I, II	√	√	√
Six Posttests	√	√	-
Delayed posttest	√	√	√

The justification of the control group not taking the immediate posttests is as followed. Firstly, it was very unlikely that students in the control group would know the new words in the posttests by just listening to the listening passages three times, especially when the focus of the lesson was solely comprehension of the listening passages. Secondly, the purpose of the control group was to control the possible opportunities of the students' learning the target words outside of the training sessions, for example through their regular lessons or extracurricular reading. Finally and most importantly, it was deemed unethical to test the students on difficult words, which they listened to but had no chance of learning them.

At the end of the third session, together with the posttest 3, another pretest (pretest II) which covered all the vocabularies for the rest three training sessions, was

administered to all the three groups. Three listening passages were covered during each training session. However, only two passages were covered for posttest 3, in order that enough time could be saved for the Pretest II to be administered. The following two points contributed to the decision-making of administering two pretests rather than one. Firstly, because general listening comprehension tests were administered together with the vocabulary Pretest I, there was not enough time for the words of the total 17 passages to be tested altogether. Secondly, the purpose of the pretest was to identify the students' prior knowledge of the target words. If the time between the pretest and the training session was too long, for example, if the words of the last posttest were tested almost two months before the students took the last training session, the students might have learned some of the target words during this period of time, and the reliability of the pretest scores might be in doubt.

A delayed posttest was given to all the three groups one week after the last session, combining all the vocabularies covered within the six sessions. The justification for administering the delayed posttest one week after the last session is threefold. Firstly, by the time the last session was finished, it was early December, a time when the students had almost completed their courses for that term and thus had started their preparation for exams. Secondly, no proper preparation could be possible for the participants because no notes were ever allowed to be taken during the training session and intentional rote learning was thus unlikely. Thirdly, although the delayed posttest was administered one week after the last posttest, the first posttest was already about two months ago.

At the end of the delayed posttest, all the students were invited to fill in a background questionnaire. Meanwhile, the control group received listening lessons at different time slots compared with the treatment groups each weekend and they took two pretests and one delayed posttest, as well as all the immediate posttests on listening comprehension in each session. The materials and instruments used in the study and the specific teaching and testing procedures will be outlined below in detail.

2.2.5 Materials

The various relevant materials employed are introduced respectively here, such as the listening passages, the target words and the teaching plans for each group during each training session.

2.2.5.1 Instructional activity

As reviewed in the Literature, vocabulary acquisition in second language classrooms could take place by the teacher's focusing on vocabulary acquisition activities explicitly, or during some other reading or listening activities in a communicative classroom with the dual purpose of comprehension and vocabulary learning. While most second language acquisition researchers explored vocabulary acquisition via reading contexts, some researchers try to examine learners' vocabulary acquisition during a reading task with teachers interacting with students communicatively. Meng (2006) explored the role of teachers' codeswitching in vocabulary acquisition during a reading comprehension task while the teacher negotiated the meaning of the vocabulary with students interactively.

While most studies on vocabulary acquisition in the literature were carried out in relation to reading comprehension, there have also been some researchers who have focused on vocabulary learning in listening comprehension. As reviewed earlier, Ellis and his colleagues conducted a variety of empirical studies on the role of interaction and meaning negotiation in vocabulary acquisition through listening comprehension. Although the tasks were much more interactional in dyads or groups and so the same as the listening tasks in the current study, the notion of employing listening tasks rather than reading ones was deemed informative. In terms of the teacher's codeswitching, no studies have been taken to date empirically to examine the effect of the teacher's codeswitching on vocabulary learning during a teacher-mediated

listening comprehension task. To illuminate this potential blindspot in our understanding of second language acquisition this study examined vocabulary learning through interaction during listening comprehension. While the focus of the lesson was on listening comprehension through interaction and meaning negotiation, the teacher stopped the flow and drew the students' attention on the form and meanings of some lexical items. Not only did the teacher have more opportunity to codeswitch during such a lesson through interaction with learners, but also such a communicative language environment provided ample scope for vocabulary learning.

2.2.5.2 Listening passages

For the purpose of the current study, the listening passages were deemed appropriate for the students' listening comprehension levels. Most of the students were able to understand the general gist of these listening passages. At the same time, the listening passages contained a certain number of new words, neither too many which would interfere with the students' comprehension on the listening passages as a whole, nor too few which would influence the total number of target words in the study for statistical analysis. It was therefore quite difficult to find existing listening materials suitable for the purpose of this study. Thus, a self-tailored set of listening materials was finally devised for this study.

The raw listening materials were selected from the New Horizon English Textbook, which is a standardized English textbook widely used for non-English-major university students in China. Because the participants in this study were English-major students, it was probable that they would have already had prior-exposure if a textbook generally aimed at English-major students was selected. A standard textbook for non-English majors at the appropriate level and with which they were not familiar was thus most apposite for this study. As each session intended to cover three passages, twenty texts were selected from the listening comprehension section of said textbook at the preparation stage. The criteria for choosing these texts

were as follows: 1) they were relevant to the participants' proficiency level in Chinese contexts; 2) they covered a wide range of topics; 3) they were relatively authentically written. Native-English speakers helped with the selection of these materials. Moreover, a pilot study was conducted to ensure the suitability of these materials by showing them to two native speakers of English. Twenty passages were chosen for the main study. However, due to the fact that a certain number of target words must be contained in each listening passage, these passages had to be revised for the purpose of this study, which will be further illustrated in the following section. Among the twenty revised passages, seventeen of them were finally selected for the main study (see Appendix 3).

Table 2.6: A brief summary of the 17 listening passages

Posttests	**Passages**	**Word count**	**Topic**
Test 1	Passage 4	248	studying abroad; cultural shock
	Passage 5	263	studying abroad; indispensable part of education
	Passage 6	251	passive smoking; learn to say NO
Test 2	Passage 9	256	women working in jobs men usually do
	Passage 10	241	failure as a way towards success
	Passage 11	257	two men flying across English Channel
Test 3	Passage 2	252	relaxed American style
	Passage 7	225	choosing the right career
Test 4	Passage 3	175	Chinese government's environmental policy
	Passage 13	232	a chief executive officer and a gas station worker
	Passage 15	244	the Statue of Liberty
Test 5	Passage 12	306	a moving story of an old couple who died together
	Passage 17	286	history of Valentine's Day
	Passage 20	313	Bermuda Triangle
Test 6	Passage 14	300	a sage throwing starfish into the sea
	Passage 16	275	understanding earthquakes
	Passage 18	253	issue of human cloning

It can be seen from Table 2.6 that the seventeen listening passages covered a wide range of topics, from studying abroad to smoking, from choosing the right career to Bermuda Triangle. On average, 257 words were included in each passage. Three listening passages were employed in each test, with a mixture of topics. Two listening passages were covered in Test 3, due to the time limit and the administering of the Pretest II (see Figure 2.3 for data collection procedure).

2.2.5.3 Selection of target words

Target words for the purpose of this study were chosen based on the listening passages which were selected from the textbook. A sample of these passages was presented to a group of students who were believed to have similar proficiency level as the main study participants in China. However, only a few words in each passage were completely new to all the students. The researcher then faced a dilemma insofar as if there were many completely new words in the listening material, it would have been beyond the participants' proficiency level to understand the general gist of the materials. Thus, in order not to interfere with the general understanding of the listening material and to make sure that a certain number of new words would be covered in each passage, under the help of a highly-educated native-English speaker these raw passages were manipulated by adding some new low-frequency words, which were accurately fitted into the overall meaning of the passage. Some words were inserted into the passages while others were used to replace the original words. These words were mainly adjectives and adverbs, because they could be inserted without influencing the original meaning of the passages, and the participants would be able to understand the general gist of the passages without understanding the meaning of modifying adjectives and adverbs. The original listening passages and the revised ones with alterations highlighted are provided in Appendix 3. Both types of passages were presented to a small group of pilot participants who underlined the words that were new to all of them. It can be seen that the original passage contained

only four new words while the revised one contained on average around eight. The revised listening passages were then narrated by a native-English speaker and recorded with the sound documents being stored as digital data for the study.

As mentioned in an earlier section of this chapter, the intention was for the experiment to resemble a real listening class as closely as possible. The teacher stopped the flow by assisting with the students' general comprehension of the passages and explaining the new lexical items in the listening passages. It was then the teacher's decision as to which words to explain to the students. For those words which were completely new to all the students, the teacher would certainly provide his or her explanation. Meanwhile, for those words which were important to the understanding of the whole passage and which were already familiar to some students but not for others, the teacher often would explain them as well. In light of the above guideline and the particular research aims of this study, the target words for this study included both completely new words and those words which were already familiar to some students. Future analysis could then be sensible and necessary on the students' performance towards these different categories of words. For the sake of convenient usage of terms and future analysis in this study, based on the vocabulary pretests, newly-coined terms were used to refer to these different types of words.

In this way, the target words were analyzed as unit of analysis on the basis of the number of students who were familiar with the meaning of these target words before the study. Pretests function as tests to determine the students' prior familiarity levels with these target words. For some words there were no students who knew them in the pretest and they were named here as Unfamiliar-Words (n=77), while for other words there were some students who knew them already in the pretest and before the treatment and they were labeled Familiar-Words (n=93). Moreover, another look at the Familiar-Words revealed that some words were highly unfamiliar to the class of students because there was only one or two of the total students who knew them in the pretest and there were other words which most of the students were familiar with.

Thus, it was considered necessary to further classify these Familiar-Words into two groups based on the students' pretest results. Those words which less than 30% of the students knew were grouped here as Low-Familiarity-Words (n=53), and those which above 30% of the students knew were grouped as High-Familiarity-Words (n=40). Further statistical analysis could be conducted of words with different familiarity levels. A list of these different categories of target words is provided in Appendix 4. There were in total 193 words tested in the pretests, but in order to ensure a similar amount of target words being tested in each immediate posttest, a total of 170 words was finally selected as the target words for this study. The remaining 23 words, which had fairly high scores in pretests from students, were not included as the target words for the study, and were also not explained by the teacher during the training session.

For the particular listening context of this study, a wide range of concrete and abstract words have been covered, from nouns and verbs to adjectives and adverbs. The target words in each passage would be around ten and the quantity of Chinese used by the teacher for explanation of the target words was controlled at a level below 10%, which corresponds to what Macaro (2005) suggested as a possible threshold beyond which the lesson was no longer communicative.

2.2.5.4 Teaching plans

While the teaching procedures, which will be explained in the following section, were the same for all the sessions and both treatment groups, the different listening passages in each session differed in terms of the particular prior knowledge introduction, listening comprehension questions, and explanation of vocabulary. While the prior knowledge introduction and listening comprehension questions in each session for each listening passage were the same for both treatment groups, the explanation of vocabulary was the only difference between the two treatment groups. Thus, the specific teaching procedures for all the sessions will be illustrated in a later section, and the teaching plans in this section just focused on those related to the

specific listening passages for both treatment groups, that is, the introduction on the topic of the listening passages, listening comprehension questions, and the explanation of vocabulary.

At the beginning of each session, the participants were presented with the prior knowledge introduction, because making some introductory remarks on the topic of the particular listening passages was believed to provide participants with prior knowledge or some *scaffolding* context on the listening materials. It was based on the specific topic of each listening passage. For example, for listening passage four which covered the topic of difficulties students may encounter when studying abroad, the participants were presented with an introduction to culture shock and the possible difficulties students may encounter while studying abroad. In addition, the listening comprehension questions were based on each listening passage as well. General questions on understanding the listening passage as a whole were first asked, for instance, 'what is this passage about?' Then because each listening passage was segmented into several parts with different meaning focus, questions specific to each meaning segment were asked. Although each session was different with different listening passages, they were the same for both treatment groups.

As both treatment groups should receive the same quantity and quality of instructions and input from the teacher in every aspect except for the teacher's explaining vocabulary, the teaching plans for vocabulary explanation were carefully designed beforehand and strictly followed by the teacher during the experiment. For the codeswitching group, the decision made on switching to Chinese for explaining vocabulary has been carefully examined and ensured to be considered effective to the learners' better understanding and possible learning of these lexical items. The same was true for English explanations of these items, which were provided in effective ways as well. By 'effective', it was meant the best way to present the meanings of the new words, either in English or in Chinese, to facilitate students' understanding and learning.

According to Macaro et al. (2009), non-native-speaking teachers can operate as both dictionaries and dictionary designers, in that they can make informed decisions about not only which language (L1, L2, or both) to provide the information in, but also what type of information to provide. There were many options teachers can choose to explain a new word, such as definition, paraphrase, circumlocution, exposition, contextualization, synonym/antonym, hierarchical exemplification.

Thus, facing the various options of explaining vocabulary, teachers, as dictionary designers need to make decisions on which one or more of the options to be employed in order to effectively explain the meaning of the vocabulary to the students. The criterion for choosing the appropriate and effective meanings of the target words in my study was based on the following steps. Firstly, the Chinese-English and English-English dictionary was used for consulting the Chinese and English meanings of the target words. Then, one meaning suitable to the specific context of the listening passages was chosen. Moreover, the issues of the Chinese cultural contexts for understanding the target words and the particular levels of the students were all taken into account. For example, in the course of listening to a particular text, the word 'savvy' (in passage 11) would crop up. The teacher would stop the flow of the text and draw learners' attention by asking in English 'What do you understand by savvy?' If learners had difficulty in understanding, the teacher then might present a synonym in English, like 'savvy means clever'. Alternatively, the teacher may present an equivalent in Chinese '精明的'. Take 'ubiquitous' (in passage 5) for another example, the teacher presented in English a paraphrase, such as 'ubiquitous means existing everywhere' while the Chinese equivalent provided was '普遍存在的'. Whereas at other times, the teacher had to provide a definition in English in order to present the meaning of target words, such as 'mechanic (in passage 7) means a person who is skilled in using or repairing machinery' while in Chinese it means '机械师'.

The same consideration has been given to the English meanings for the target words.

An English-English dictionary was first consulted for the possible ways of explanations. Then two native speakers of English were asked to help with selecting the most effective English explanation. At the same time, the group of experienced teachers in the university also helped with the selection process. The English and Chinese meanings were finally revised upon piloting. In this way, it can be ensured that the English meanings were pertinent to the students' comprehension. However, it should also be pointed out that in the real classroom no teacher can possibly know whether all the students would know all the words in the L2 explanation, and a teacher should look out for confirmation signals during the class to provide further explanations.

The teaching plans were devised by the researcher first, and then shown to and discussed with a native English speaker and a group of experienced English teachers and pertinent changes have been implemented upon piloting. A detailed description on the teaching procedure was covered in the following section. A sample of the teaching plans is in Appendix 5. The full list of the target words with their corresponding Chinese equivalents and English explanations are provided in Appendix 6.

2.2.5.5 Teaching procedures

Teaching procedures for each session and both treatment groups were the same except the different listening passages and the corresponding explanation of the target words. Lesson design was framed through the perspective of communicative language teaching. Its objectives were to help students with their listening comprehension, through teacher and students interacting with each other for meaning negotiation in comprehending questions during which new lexical items were explained.

First of all, before playing the tape some introductory remarks on the topic of the particular listening materials were presented and discussed with learners to provide them with some *scaffolding* context for the listening materials. Then, the teacher

played the listening material all through once. Multiple-choice comprehension questions were handed out to the participants to complete, and then collected by the teacher right after they finished. The main purpose of this multiple-choice comprehension exercise was to elicit their comprehension of the listening material and make the focus of the lesson on comprehension. Otherwise, the posttests on vocabulary at the end of each lesson might arouse some students' additional attention on testing vocabulary. The teacher then asked general questions on understanding the listening material as a whole in order to generate interaction with meaning negotiation for better comprehension.

Next, the teacher played the listening material in different segments, asking two or three specific questions each time for detailed comprehension. During the process of meaning negotiation for comprehension, new vocabulary was illustrated by the teacher. The vocabulary was written on the blackboard to provide visual input and explained to the students. Writing the words down on the board provided the participants with the full spelling of these words, and their attention would be focused on these words for a short while without interfering unduly with the communicative nature of the lesson. A quick review at the end of each listening passage was taken by the teacher's retelling the content of the listening passages through which the meaning of the new words on the board were presented again and reviewed, after which the listening passage was played a final time. Finally, at the end of each lesson, a posttest on the target words was administered to examine their grasp of the target words in each lesson.

In addition, during each lesson, learners were told not to take any type of dictionary with them into the classroom in order to prevent them from looking new words up in the bilingual dictionary which would introduce another extraneous variable into the study. And they were told not to bring paper to use in the classroom to write any words down with exception to the multiple-choice comprehension at the beginning of the session and vocabulary tests at the end of each lesson, so as to control their

writing down some target words for subsequent tests and future revision. This was enforced by the researcher having explained at the beginning that this study was a newly-designed experiment focusing on their understanding of the listening materials rather than any rote-learning of vocabulary. As a few students who attempted to write were gently but firmly stopped by the teacher, this requirement was achieved generally, which can also be confirmed by the classroom observation through video-tapes.

The above teaching procedures applied to the two experimental groups. As for the control group, the teacher played the listening material all through once and students completed the multiple-choice comprehension exercises afterwards which were then collected by the teacher. Then some introductory remarks on the topic of the particular listening materials were presented and both general and specific questions on their understanding of the passages were asked and explained. The reason for playing the listening material at the beginning before the prior knowledge introduction on the topic was the concern that the use of prior knowledge for listening comprehension could be tested and analyzed statistically by comparison with the other two groups. Moreover, because this was the control group which did not take an immediate posttest on vocabulary during each session, there was not any influence on the research design as a whole. While the teacher assisted with the students' understanding of the listening passages by asking comprehension questions, and several words in the sentences were paraphrased by the teacher to the students in English in order to help with their understanding of the whole passage and certain sentences. It would be unethical if the teacher who was supposed to facilitate the students' learning did not provide students with knowledge. However, the explanation was well prepared before the lesson and controlled in the lesson, and no explanation was given by the teacher of any of the target words chosen for this study. Instruction on listening comprehension skills followed. Because these first-year students were required to pass a Band-4 Test for all English Majors (TEM-4) at the end of their second-year study, a special course on the listening comprehension section of this

exam was considered appropriate and appealing to this group of students. The specific items tested in the listening section of TEM-4 were introduced to them, followed by the strategies of tackling these listening problems with sample listening played later.

2.2.6 Instruments

Testing instruments were crucial to the study. The testing instruments in this study would embrace the vocabulary tests and the listening comprehension tests. These testing instruments and the use of questionnaires will be addressed in detail in this section.

2.2.6.1 Vocabulary tests

As illustrated in the section on data collection procedures, two vocabulary pretests were designed to control for the students' prior knowledge of the target words for statistical analysis. Pretest I, which was administered before the training session started, covered the target words in the listening passages of the first half of the six sessions, while pretest II which was administered at the end of the third training session covered the latter half. A posttest at the end of each session was devised to test the vocabularies that were covered in this session. One delayed posttest was carried out a week after the six sessions, made up of the past six posttests but with target words arranged in a different order. As mentioned earlier, words with different familiarity levels were included in the test and the training sessions as target words. Thus, statistical analysis examining the learning and retention of these words could be conducted.

All the tests on vocabulary were designed to use the same test format. The tests were originally planned to be conducted with reference to the Vocabulary Knowledge Scale (see Figure 2.4) designed by Paribakht and Wesche (1993: 15). This incremental scale seemed to be well suited to testing the participants' lexical knowledge. However, due

to limitations which were pointed out by the researchers themselves, and for the purpose of this study, this scale was later revised by the researcher. Firstly, using the word appropriately in context does not necessarily mean that learners know all the synonyms of that word. Another problem arises from the meaning of the word 'synonym' in the scale. Does synonym mean definition or paraphrase or just synonym? To avoid this ambiguity, and not to bias each treatment group in this study, the participants were asked to provide either the L1 or the L2 meaning of the tested words, regardless of the form in paraphrase or definition or synonyms. Moreover, does the scale really test the productive knowledge of the tested words by asking the participants to use the word in a sentence? In terms of this study, due to the fact that no notes were allowed to be taken, revision of the target words would be highly unlikely, which may in turn increase the difficulty of grasping the receptive knowledge not to say anything of the productive knowledge. Moreover, the posttest happened right at the end of each session. Although this incremental scale showed the different stages of acquiring new words, it could not match the purpose of an immediate posttest at the end of each session, and would have been too complicated for coding as well.

Figure 2.4: Vocabulary knowledge scale (Paribakht and Wesche, 1993: 15)

I.	I have never seen this word.
II.	I have seen this word before, but I don't know what it means.
III.	I have seen this word before, and I think it means _____. (synonym or translation)
IV.	I know this word. It means _____. (synonym or translation)
V.	I can use this word in a sentence: _____.

Robson (2002: 304) suggests 'to change an existing instrument so that it better fits your needs'. Based on the above discussion, the test format for this study was to ask the students to write down the meaning of the target words, either in English or in Chinese, with no restriction on the form of the meaning, either synonym or definition or translation. In addition, inspired by the incremental scale of Paribakht and Wesche,

a rate of students' confidence level from 1 to 5 of providing the meaning was asked instead in order to check their perception on the level of knowing the meaning of the words. In this way, a final vocabulary knowledge test format (see Figure 2.5) was considered to be applicable to the current study in that 1) it tested the receptive knowledge of the vocabulary; 2) it allowed for a certain amount of freedom in that the meanings of tested words were provided either in L1 or L2 as learners preferred, which ensured that neither treatment group was biased and prevented the test measurement from testing the learners what they were taught; and subsequent analysis on what they preferred to provide as the meanings of tested words could be conducted as well; 3) the incremental rate showed the confidence level in providing the meanings of new words.

Figure 2.5: Test format devised for this study

> Please look at the words on the left. If you don't know the meaning of them, please choose "0"; if you know the meaning, please write down either Chinese or English meaning on the blank, and rate how confident you are about the meaning you've provided, from "1" (not confident) to "5" (very confident).
>
> Perennially 0 _____ 1 2 3 4 5

2.2.6.2 Listening comprehension tests

Listening comprehension tests were taken by all the three groups together with the pretests, posttests and delayed posttest. General listening comprehension tests were administered together with pretest I and the delayed posttest. The general listening comprehension test was administered to control for the participants' general listening comprehension ability. This listening comprehension test was taken from the very same book where the listening passages were taken. As was illustrated above, this task was appropriate to their current proficiency level. There were three sections in the test,

ten short conversations with ten corresponding multiple-choice comprehension questions, one long conversation with five multiple-choice questions, and three passages with five multiple-choice questions for each passage. In the delayed posttest, a short listening comprehension test was included as well for comparison and future analysis. Since all the words for the six sessions were tested again in this delayed posttest and the participants might find the task too long to complete, there were only two sections in this listening section of the vocabulary delayed posttest, including one long conversation with five multiple-choice questions and three passages with five comprehension questions for each passage, compared with the one with pretest I. In addition to the tests on general listening comprehension, a listening comprehension test on the listening passages covered for each session was administered. Five listening comprehension questions were asked in each passage with multiple-choice answers. The five listening comprehension questions for each listening passage were taken from the corresponding listening section in the New Horizon English Textbook. A wide range of questions were asked, from general ones on the main subject of the listening passage to detailed questions on specific understanding of the passages. All the listening comprehension tests which were included in the vocabulary tests were provided in the Appendix 7.

The multiple-choice question test format was chosen to measure the learners' listening comprehension performance for the following concerns. Firstly, the listening comprehension test was administered at the beginning of each training session. The use of multiple-choice format could save time for the training session, compared with other testing formats such as answering questions, which takes longer for learners to complete. Secondly, the multiple-choice questions were originally sourced from the New Horizon English Textbook. One native speaker of English was asked to help with examing the authenticity of language and any ambiguity of the choices. Finally, the stratified random allocation of the samples could migitate against the possibility that some students might guess some of these multiple-choice questions.

2.2.6.3 Testing procedure

With the testing instruments established, the tests were carried out as planned. For the pretest I which comprised both vocabulary and a general listening comprehension test and was taken one week before the treatment sessions started, all the participants were divided into three multi-media classrooms, each with a computer in front of them and a set of headphones. The test paper was issued to them before the test started. There was one teacher in each room to deal with problems and supervise their test performance. For each immediate posttest together with the specific listening comprehension test for each training session, listening comprehension multiple-choice questions were distributed to the students before the teacher played the tape of the listening passages. After the teacher played the listening passage once, the students were asked to answer the multiple-choice questions in the test. The answer sheets were then collected by the teacher when they finished. The vocabulary posttest was taken at the end of each session after all the listening passages were explained. Test papers were issued to each and taken back when they finished. Pretest II which covered the vocabularies for the last three sessions was taken together with the posttest 3. In terms of the delayed posttest on general listening comprehension and vocabulary, one week after the whole six sessions finished, the participants took the exam in three different multi-media computer rooms, with a supervisor observing their performance in each room, which was a similar process to pretest I. Since the participants' exam scores on both listening comprehension and vocabulary would not in any way influence them and no names were taken by the researcher for each test they took, all the participants behaved themselves in those tests.

2.2.6.4 Video-recording the classroom interaction

Recall that the aim of qualitative analysis of the lexical episodes of the interaction between the teacher and students in the two experimental groups is twofold: to provide methodological evidence for any quantitative findings by ensuring that

appropriate implementation of the different treatments in the different experimental groups, and to provide further insights on the teacher's lexical input and their decision-making during the interaction process. The lexical episodes of the teacher-students interaction on the target words can be extracted from the qualitative data from classroom observation and further analyzed both categorically and interpretatively. Analysis of the qualitative data and its finding will be discussed later in the thesis.

A teacher from the Department of English in the sample university was invited as an assistant to video-record the lessons during this study. As stated earlier, the use of video offers repeated access to the qualitative data on the classroom interaction, and the data could then be stored digitally. Moreover, video-recording could replace the need for real-time coding. Recall that the researcher acted as the teacher in the experiment. Video-recording the classroom interaction then provides the only access for the researcher to observe her own lessons and analyze the qualitative data later.

The assistant teacher sat at one front corner of the classroom in order to video-tape the teacher's handwriting on the blackboard. At the same time, the assistant teacher also quietly changed the recording angles and attempted to include the students' behavior as much as possible. The video-recorder was carefully checked by the researcher and the assistant teacher before every lesson to make sure it functioned properly. An audio-recorder was also employed together with the video-recorder in case anything went wrong with the video camera. After each lesson, the data recorded by the video camera was immediately transferred from the recorder to computer for storage.

2.2.6.5 Questionnaire

A background questionnaire (see Appendix 8) was administered after the delayed posttest on vocabulary and general listening comprehension test finished. The questionnaire only served as a background questionnaire in this thesis to provide some

biographic data. The data from the questionnaire on the participants' background information shows that the students were all roughly the same age, with a range from 19 to 22. They came from a variety of places throughout mainland China. Only sixteen male students were in the sample. They had all learned English for a similar period of time. In this way, it can be seen that this is a homogeneous group of students. The questionnaire also provides the researcher with a self-assessment of the students' general English proficiency and proficiency in English listening and vocabulary, scored on a range from 1 (poor) to 7 (very good). The mean scores of the self-assessment the students gave for the three proficiency levels respectively were 3.76, 3.50, 3.40. Perhaps expectedly the self-assessment scores tend towards the middle of the scale, in other words neither poor nor very good.

2.3 Ethical issues

The CUREC FORM 1 was completed by the researcher and approved by the University of Oxford for the current study. Several issues were illustrated here. For a start, all the students were gathered together and informed of the research. Letters in Chinese introducing the research and inviting them to participate were distributed and inquiries were answered by the researcher. Those who approved of participating signed their names and stayed for the pretest. Since these lessons provided a good opportunity for them to learn English for free and students received course credits for attending the lessons, there were only three who refused to participate. However, for those who agreed, they had the right to decline their participation at any time during the experiment, although they were asked to think about this carefully and advised that it would be better not to drop out once they started. It turned out that in the study about 20% of them were sporadically absent from the sessions. In addition, the administration of questionnaires at the end of the study was conducted with their consent as well. In addition to course credits, such gifts as note-books, stationary and international stamps were provided to them as rewards. They were told they were entitled to inquire about the results of the research afterwards.

As to how the research was presented to the students, the researcher informed the students that the research was to help them with comprehension of English listening materials and implicitly informed the students of both experimental groups that vocabulary learning was an important part of assisting listening comprehension rather than claiming that the focus of this study was on vocabulary learning. The approach taken meant that the students probably would not focus on preparing vocabulary tests at the end of each treatment session. In addition, the focus of the lesson remained communicative in relation to listening comprehension. The students were also informed that any test they took would be anonymous. No names were required on the answer sheets of any of the exam papers and questionnaires. Their results had no influence on their performance in the university and their teachers would have no means of knowing their scores or performance during the experiment.

2.4 Data collected and stored

The quantitative data collected through the research included vocabulary scores and listening comprehension scores during the two pretests, six immediate posttests and one delayed posttest. Qualitative data was obtained through the classroom observation. All the lessons provided by the teacher were transcribed for qualitative analysis.

The data from the tests was stored in Excel documents as digital data. The following describes how the data was coded and input into Excel for storage. For listening comprehension scores, a code was given to each multiple-choice question, with '0' representing a wrong answer and '1' for a correct one. In this case, the participants' performance on different comprehension questions could be analyzed with their vocabulary test performance.

For the vocabulary test scores, each word tested in those tests was marked with three different data sets, 'LT', 'A', 'AL'. 'LT' stands for the language type that the

participants used in providing answers with 'C' representing Chinese and 'E' English; 'A' stands for the accuracy of each answer given, with '0' representing a wrong answer or no answer provided at all and '1' a correct one; 'AL' stands for the accuracy level of each answer given, from 1 to 5. The criteria for the accuracy judgment was based on any correct meaning of the word; regardless whether it was the meaning provided by the teacher in the training session or not, as long as it was the meaning in the specific context of the listening passages, it was correct. However, while most of the word meanings the participants provided were contextual meanings, the other meanings some participants gave were marked out for further analysis. Whenever there was a difficulty or ambiguity in judging the accuracy of each answer given, dictionaries and an English native speaker were consulted, and further ambiguities were marked out for further consideration.

2.5 Validity and reliability

According to Seliger and Shohamy (1989: 184), 'reliability and validity are the two most important criteria for assuring the quality of the data collection procedures'. While reliability provides information on the extent to which the data collection procedure elicits accurate data, validity provides information on the extent to which the procedure really measures what it is supposed to measure. The sampling, materials, instruments, study procedure and even data analysis of the research should all be examined in terms of validity and reliability. Since a detailed description of these items has been provided in the earlier sections in this paper, a brief discussion of the validity and reliability issues follows here.

For the entire study to be valid and reliable, valid and reliable sampling was essential. As Cohen, Manion and Morrison (2000: 129) pointed out, 'an unrepresentative, skewed sample, one that is too small or too large, can easily distort the data, and indeed, in the case of very small samples, prohibit statistical analysis'. The sample in the present study was composed of 117 first-year students in a convenience sample

university. These students were all first-year university students who studied English as their majors. As mentioned in the previous section, before randomly assigning them into three groups, they were stratified into four proficiency levels according to the combined results of their general English proficiency exam, a pretest on the target words (pretest I) and a general listening comprehension test. In this way, their general proficiency level in every aspect related to this study as an extraneous variable were controlled and matched for the purpose of this study. Moreover, since those participants who attended the lessons of this study were given course credits and free lessons on improving their listening comprehension, the drop-out rate was low. Thus, a reasonable number of participants in each group was ensured. In addition, in terms of generalization, any findings of this study can necessarily only be applied to universities which enroll students of a similar level as the convenience sample university.

The main materials used in this study were the listening passages and the corresponding target words. The choice of the listening passages and their revised versions with manipulated target words were honed and improved with help from native English-speakers and experienced English teachers and through implementing pilot studies. Moreover, double checking students' daily textbooks during the main study period helped control their exposure to these passages and target words. In addition to the listening materials and target words, teaching plans were devised accordingly for each listening passage. A native English speaker checked the language in the teaching plan, and a group of experienced teachers in the Foreign Languages Department of the university checked the effectiveness of the teaching plan. Moreover, the pilot study which involved the researcher teaching a group of pilot participants using the listening material and proposed teaching plans was conducted before the main study.

The vocabulary knowledge instrument tested their receptive knowledge of the vocabulary by asking the students to provide meanings for the target words either in

English or in Chinese. This freedom of the language type avoided bias of different treatments for different experimental groups and enabled further statistical analysis on their preference of language use. Moreover, the 1-5 confidence level on their answers provided the research with more information on their provided answers and their perceptions could be analyzed afterwards. This test format on vocabulary was then piloted and revised. The listening comprehension tests were carried out as well. Two pretests on the participants' vocabulary knowledge were administered. Six posttests at the end of each session and one delayed posttest were also administered using the same vocabulary test format. The listening comprehension tests were taken from the same textbook which was also used for choosing the listening materials and listening comprehension questions on various topics appropriate to the participants' proficiency level were chosen for the tests.

Questionnaires were employed in this study to elicit some background information about the students and their self-assessment towards their general English proficiency, their proficiency in English listening and vocabulary. The design of the questionnaire was based upon the specific purpose of the present study. Then, they were piloted by pilot samples, and checked by bilinguals. In order to video-tape lessons for future analysis as a valid data source, a digital camera was used to capture and store data. A tape-recorder was used together with the video-camera in case anything went wrong with the camera.

The teaching and testing procedures were valid and reliable. As for the teaching procedure, the teaching plans for each session and each group were designed by the researcher first, and then checked by native-English speakers and discussed with a group of experienced teachers in the university. Moreover, the pilot phase enabled further modifications. In addition, there was an assistant teacher who sat in the classroom, video-recorded the lessons, and advised the teaching for the researcher. As for the testing procedure, there were two other teachers who helped with supervising the pretest and delayed posttest. For the six posttests which were administered at the

end of each session, the researcher and the teacher who sat in the classroom supervised the participants' performance.

Quantitative data obtained from the various tests in the study were input into the database and a series of tests run using the powerful statistical software tool, SPSS. The qualitative data from the classroom observation were analyzed using a raft of qualitative techniques. For all the data, in order to ensure inter-rater and intra-rater reliability, a research assistant was assigned to check that both the quantitative and qualitative data was input correctly and consistently. In addition, when all the data input process finished, a sample of data was picked out again and checked by the researcher in terms of the accuracy and consistency of data input. Then a series of statistical analyses were conducted in parallel with the use of SPSS software with the qualitative data.

2.6 Chapter summary

In this chapter, quantitative and qualitative approaches to second language research were reviewed first. Then a mixed methods research design was proposed for this study by combining both qualitative and quantitative approaches. The following research aims were outlined in the study. The teacher's codeswitching as an independent variable in an EFL classroom were manipulated to examine its possible impact on the dependent variable, learners' vocabulary learning. An experimental design was adopted involving two experimental groups and a control group. The samples were randomly allocated into the experimental groups and one control group in order to make some level of generalization to the population as a whole possible. All the possible extraneous variables were controlled as much as possible, but the study also closely resembled a real classroom. A predominant focus on the negotiation of meaning was maintained throughout the class. While the teacher assisted the students' vocabulary learning by focusing briefly on lexical form and meaning, the focus of the teaching was still the comprehension of the listening texts. The study was

longitudinal for an effect to take place and be examined. Moreover, qualitative data was obtained through classroom observation which will be analyzed in the following chapters. Finally, there was detailed illustration of the specific issues to be addressed with justifications of the decision-making during the data collection process. This was accompanied by discussions of ethical issues and related questions to the validity and reliability of the research.

CHAPTER THREE Quantitative Analysis of 'What Learners Learn'

3.1 Introduction

As presented in the Methodology Chapter, both quantitative and qualitative data were collected during the two months of fieldwork. The students' vocabulary recall scores were collected in two pretests, six posttests, and a delayed posttest. However, note that the control group students did not take the six immediate vocabulary posttests due to the ethical concern that they would feel frustrated if they were continuously tested on words which had not been focused on by the teacher. General listening comprehension scores were collected in the pretest and delayed posttest. Specific listening comprehension scores of the seventeen target listening passages were collected in the six immediate posttests. Table 3.1 provides a check list of the quantitative data collected from the fieldwork. Qualitative data from video-recorded classroom observation provides the research with a detailed and comprehensive source of data on classroom interaction.

Table 3.1: A check list of the quantitative data collected from the fieldwork

		NCS		**CS**		**Control group**	
		Vocabulary	Listening	Vocabulary	Listening	Vocabulary	Listening
Pretest	I	√	√	√	√	√	√
	II	√	√	√	√	√	√
Posttest	1	√	√	√	√	-	√
	2	√	√	√	√	-	√
	3	√	√	√	√	-	√
	4	√	√	√	√	-	√
	5	√	√	√	√	-	√
	6	√	√	√	√	-	√
Delayed Posttest		√	√	√	√	√	√

In this chapter, the quantitative data will be analyzed in relation to the research questions. In the following chapter, the qualitative data related to the lexical episodes of teacher-students interactions in relation to the target words will be presented and analyzed in order to understand the interaction between the teacher and students and provide further evidence for any quantitative findings from this chapter.

3.2 Restating the research questions

The following research questions were explored in this study.

1. Is it beneficial to focus on form for lexical items during a predominantly communicative activity or to focus only on meaning in terms of the learners' receptive vocabulary learning?

2. Is the learners' receptive vocabulary learning better facilitated by the teacher's use of codeswitching or by providing L2 information?

3. How do prior familiarity with the target words, general proficiency level and listening comprehension scores relate to the learners' vocabulary recall?

4. How confident were the learners with the meanings they provided during the vocabulary tests?

5. Which type of language did the learners prefer to use while providing meanings during the vocabulary tests?

3.3 Addressing the word data sets for analysis

A total of 170 words were tested in the pretest, posttest and delayed posttest. As mentioned in Chapter Two, some of these words were already known by some students in the pretest, but others were not. For some words there were no students who knew them in the pretest and they were named here as Unfamiliar-Words (n=77), while for other words there were some students in the sample who knew them already in the pretest and before the treatment and they were labeled Familiar-Words (n=93).

Moreover, another look at the Familiar-Words (See Appendix 4) revealed that some words were highly unfamiliar to the students because there was only one or two of the total students who knew them in the pretest and there were other words which most of the students were familiar with. The words which less than 30% of the students knew were classified here as Low-Familiarity-Words (n=53), and those which above 30% of the students knew were grouped as High-Familiarity-Words (n=40). These categories of target words are an innovation of this study related to the reality of the classroom and also permitted more subtle statistical analysis to explore whether and how the students might learn these words in different ways.

Both the whole data set which involves 170 words regardless of whether or not they were familiar to the students before the training sessions and the separate vocabulary data sets which include Familiar-Words and Unfamiliar-Words, High-Familiarity-Words and Low-Familiarity-Words, were examined in this chapter. For the words some of the students knew already in the pretest and those which were completely new to them, the question arose as to whether the students learned these words differently in the posttests and delayed posttest and, if so, how? It is then worthwhile to know both the overall gains of the students in a real class, as well as how the students learn different categories of words. However, it should also be borne in mind that the analysis on the whole data set ignored the students' prior knowledge of the target words and focused only on the overall vocabulary gains of the students, and any related findings should be treated with caution.

Thus, different types of word categories will be analyzed for different research questions with regard to the respective research purposes. For the first and second research questions, both the words as a whole and different word categories will be examined. For the third research question, only the words as a whole will be examined by the Regression Modeling. For the last two research questions, only the Unfamiliar-Words will be examined.

The numerical scores of vocabulary tests and listening comprehension tests were used. However, for analysis of each of the six different vocabulary posttests, because different numbers of words were tested in each posttest, the numerical scores were converted into percentages in order to examine the differences between the six posttests. For the analysis process involving the six posttests taken as a whole, the numerical data of the students' vocabulary scores was used.

Table 3.2: The number of vocabulary items tested in each test and for different categories of words

		Words in total	Unfamiliar-Words	Familiar-Words	High-Familiarity-Words
					Low-Familiarity-Words
Pretest		170	77	93	40
					53
Posttest	**1**	30	10	20	12
					8
	2	30	17	13	6
					7
	3	19	10	9	2
					7
	4	31	14	17	7
					10
	5	31	18	13	5
					8
	6	29	8	21	8
					13
	Total	170	77	93	40
					53
Delayed Posttest		170	77	93	40
					53

3.4 Addressing statistical tests

Version 14.0 of the SPSS statistical package was used in this study as the main instrument for quantitative data analysis. Before carrying out any specific statistical test, analysis of the distribution of data was vital in deciding which type of tests to use, in other words parametric or non-parametric. According to Field (2005: 63), for any statistical analysis to be conducted in the data analysis process, the assumptions of normality and homogeneity of variance were examined. A visual judgment was first made on the normal distribution by looking at the histogram curve. Then the significance level of the Kolmogorov-Smirnov Test was examined for a further statistical test of normality in addition to the test of Homogeneity of Variance. Parametric tests such as the T-test and ANOVA were employed subsequently where the assumptions were reached and non-parametric tests were adopted where the assumptions were violated.

Parametric and non-parametric T-tests were employed to examine the between-group difference. Analysis of Variance was employed when over three groups were compared. Analysis of Covariance was then employed to examine the group difference in the posttest and delayed posttest while pretest scores acted as a co-variate. The One-way Repeated Measures ANOVA test was conducted within each group to examine the within-group difference between tests on vocabulary recall and the assumption of Sphericity was examined beforehand. When the assumption of Sphericity was not met, the Greenhouse-Geisser test was used instead. A Correlation Test was carried out to focus on the relationship between certain variables and the degree of correlation was checked through the correlation coefficient level. Linear Regression modeling was also employed in order to explore the independent variable and other confounding variables and their impact on the dependent variable. The key assumptions for Regression Modeling include normally distributed errors or 'residuals' as opposed to the normal distribution of actual scores (Field, 2000: 128).

These assumptions had been reached where Regression Modeling was used. Moreover, Chi-square analysis was mainly employed for analysis of the categorical data. Assumptions of the Chi-square test proposed by Field (2005: 686) were checked, specifically that each person contributed to only one cell of the contingency table and that the expected frequencies should be greater than five.

For the above tests which yielded significant results, the effect size was calculated. For the parametric T-test, the effect size was calculated by the equation '$r=\sqrt{t^2 / t^2 + df}$'. For the non-parametric T-test, the equation '$r=Z/\sqrt{N}$' was employed. For the ANCOVA and Repeated Measures ANOVA, the Partial Eta Squared (η_p^2) was used as the measure for effect size. In addition for establishing that there was a difference between groups, reporting effect size was a means of quantifying the size of the difference between groups. As such the reporting of effect size allows for much broader comparisons of the educational effectiveness of different interventions or educational practices. However, it would seem that educational approaches do not typically produce particularly high effect sizes (Wild, 2004).

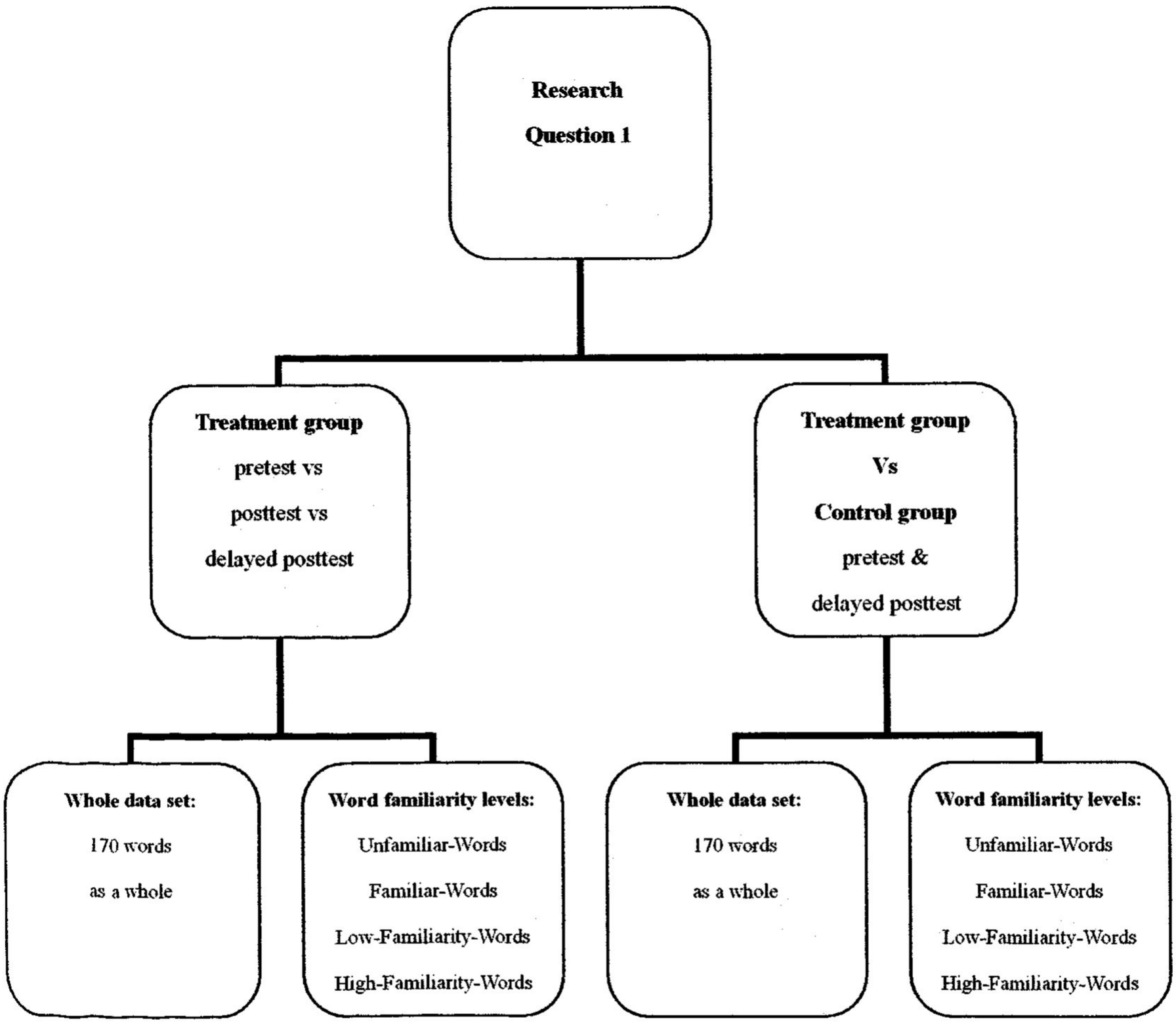
3.5 Question 1: Is it beneficial to focus on form for lexical items during a predominantly communicative activity or to focus only on meaning in terms of the learners' receptive vocabulary learning?

Note that the two experimental groups received the lexically-oriented form-focused instruction while the control group received meaning-only instruction. Moreover, the two experimental groups took the vocabulary pretest, posttest and delayed posttest, while the control group took only the pretest and delayed posttest. In order to explore this question as to whether it is beneficial to focus on form on lexical items, the vocabulary performance of the two experimental groups can be compared with the control group, and the performance of the two experimental groups can be explored at different time points, namely pretest, posttest, and delayed posttest. For the convenience of answering this research question, the two experimental groups were

explored as a whole, with the data of the two merged, and named as '*the treatment group*', because these two experimental groups received the treatment of the focus on form on lexical items.

The above analysis will be conducted through the following two perspectives (see Figure 3.1). The Repeated Measures analysis was employed to examine the different performance of the treatment group at the different points in time according to the three vocabulary tests. ANCOVA analysis was further employed to control the influence of pretest scores and examine the between-group difference. The 170 words as a whole were analyzed first. Then the analysis was extended in relation to the different categories of words based on the students' familiarity with these words, namely Unfamiliar-Words, Familiar-Words, High-Familiarity-Words and Low-Familiarity-Words.

Figure 3.1: Diagram for analyzing research question one



3.5.1 Whole data set

The first research question was analyzed first in relation to the whole data set which includes all 170 words, regardless of whether some of the students knew these words before. The performance of the students from the treatment group in the pretest, posttest, and delayed posttest were examined, followed by a comparison of the performance of the students in the treatment group and the control group in the pretest and delayed posttest.

Table 3.3: Descriptive statistics of the vocabulary pretest, posttest, and delayed posttest for the treatment group and the control group

Vocabulary tests	**Groups**	**N**	**Mean**	**Std. Deviation**	**Range**	**Maximum**
Pretest	***Treatment***	73	31.1	9.7	45	52
	Control	34	29.9	8.8	46	51
Posttest	***Treatment***	67	121.7	25.5	115	165
	Control	-	-	-	-	-
Delayed Posttest	***Treatment***	67	49.0	11.9	53	72
	Control	34	40.9	10.3	51	63

Figure 3.2: Bar chart for the mean vocabulary scores of the treatment group in the pretest, posttest, and delayed posttest

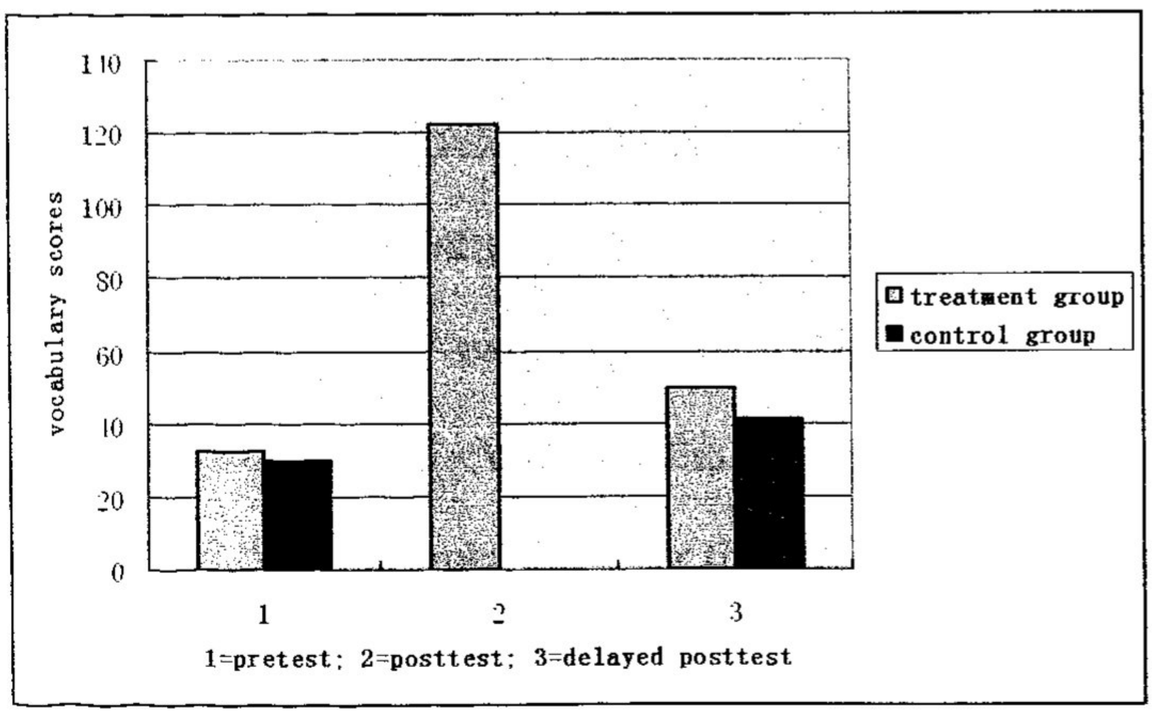


Table 3.3 reported the descriptive statistics of the performance of the treatment group

and the control group in the vocabulary pretest, posttest, and delayed posttest. Figure 3.2 clearly shows the variation of the number of words recalled by the treatment group and control group. The above data were judged to be normally distributed by subjectively looking at the histogram curve, and the Kolmogorov-Smirnov normality test was non-significant, indicating that the distribution of the sample was not significantly different from a normal distribution (Field, 2005: 93). Thus, parametric tests were employed for the analysis.

A Repeated Measures analysis was conducted to statistically examine the students' vocabulary performance in the pretest, posttest, and delayed posttest. As proposed by Field (2005: 341-454), the assumption of Sphericity had been violated ($p<.05$), therefore the degrees of freedom were corrected using Greenhouse-Geisser estimates of Sphericity. The results showed that the students' vocabulary scores were significantly affected by the three different vocabulary tests, with a high level of effect size ($F(1.17, 69.9)=826.3$, $p=0.000$, $\eta_p^2=0.93$). The Bonferroni multiple comparisons result (Table 3.4) indicated a significant difference between the three tests. Thus, their performance in the posttest was significantly different from that in the pretest, and their performance in the delayed posttest was significantly different from that in the posttest. In other words, the students in the treatment group made significant progress in the posttest compared with the pretest, and they recalled a significant number of words in the posttest. However, their performance dropped dramatically and significantly in the delayed posttest, and they recalled significantly fewer words compared with the posttest. Nevertheless, there was a significant increase between the pretest and delayed posttest. Thus, the inferential Repeated Measures analysis provided further solid evidence that the students performed significantly better in the posttest and delayed posttest after they received the treatment than in the pretest.

Table 3.4: Bonferroni Multiple Comparison results from the Repeated Measures analysis

(I) Tests	(J) Tests	Mean Difference (I-J)	Standard Error	Significance level
pretest	posttest	-90.016	2.910	.000
	delayed posttest	-17.115	.951	.000
posttest	pretest	90.016	2.910	.000
	delayed posttest	72.902	2.687	.000
delayed posttest	pretest	17.115	.951	.000
	posttest	-72.902	2.687	.000

In addition to the above analysis of the performance of students from the treatment group in the pretest, posttest, and delayed posttest, an Analysis of Covariance was carried out to investigate the difference in vocabulary recall between the treatment group and the control group in the delayed posttest by controlling the pretest scores as covariate. Figure 3.2 shows that while the treatment group and the control group recalled roughly similar numbers of words in the pretest, there was a gap between the words they recalled in the delayed posttest. The results from ANCOVA showed a significant group difference between the students in the treatment group (M=49) and those in the control group (M=40.9) in the delayed posttest ($F(1,95)=28.07$, $p=.000$, $\eta_p^2=.23$).

To summarize, for all the 170 words tested in the pretest, posttest and delayed posttest, the treatment group made significant improvement in the posttest compared with their performance in the pretest, and again experienced a significant drop in the delayed posttest. Although there was a dramatic decrease from posttest to delayed posttest, there was still significant improvement in the delayed posttest compared with the pretest. In addition, the treatment group significantly outperformed the control group in the delayed posttest. That is, they recalled more words than the control group in the delayed posttest. In all, in terms of the 170 words as a whole it can be concluded that the teacher focusing the students' attention to both the form and meaning of the lexical items, whether through codeswitching or by providing L2 information, did

facilitate the students' vocabulary learning.

3.5.2 Word familiarity levels

As stated earlier, of the 170 words tested in the pretest, posttest and delayed posttest, some words were familiar to none of the students in the pretest and they were labeled Unfamiliar-Words, whereas those which were familiar to some of the student were labeled Familiar-Words. Words which less than 30% of the students knew were labeled Low-Familiarity-Words, and the rest High-Familiarity-Words. The two types of analysis used in relation to the first research question will be conducted with regard to the above word categories separately, that is, the comparative analysis on the performance of the treatment group in the pretest, posttest, and delayed posttest, and the comparison of the performance of the treatment group and the control group.

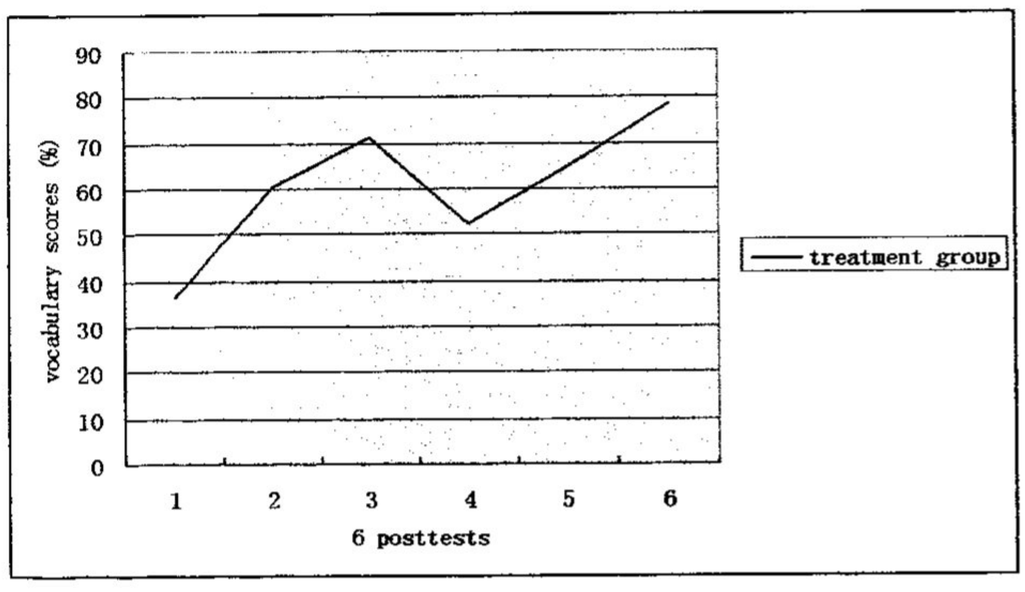
Unfamiliar-Words

Since no students were familiar with the Unfamiliar-Words in the pretest, the words that the students recalled in the six immediate posttests were just the words that they learned from the sessions. The numerical scores that the students achieved in vocabulary tests were transformed into percentages because different numbers of Unfamiliar-Words were covered in different posttests. Table 3.5 reports the percentage level of words recalled by students from the treatment group in each posttest. It can be seen that a certain number of Unfamiliar-Words were recalled by students in each posttest and the number of the Unfamiliar-Words that the students recalled increased with time, from 36.5% of the words in posttest 1 to 78.5% in posttest 6. Figure 3.3 clearly shows the trend. It can be concluded that the treatment group learnt or at least remembered a reasonable percentage of the Unfamiliar-Words in the posttest as a result of the teacher focusing on the form and meaning of individual words.

Table 3.5: Descriptive statistics (expressed as percentage) of the six vocabulary posttests for the treatment group

Vocabulary Posttests	N	Mean	Std. Deviation	Range	Maximum
posttest 1	78	36.5%	24.7%	100%	100%
posttest 2	77	60.5%	21.7%	94.1%	100%
posttest 3	73	71.2%	24.2%	100%	100%
posttest 4	68	52.3%	26.4%	100%	100%
posttest 5	73	64.6%	25.7%	100%	100%
posttest 6	72	78.5%	23.1%	87.5%	100%

Figure 3.3: Line graph showing the vocabulary scores (expressed as percentage) for the six posttests expressed as percentage for the treatment group

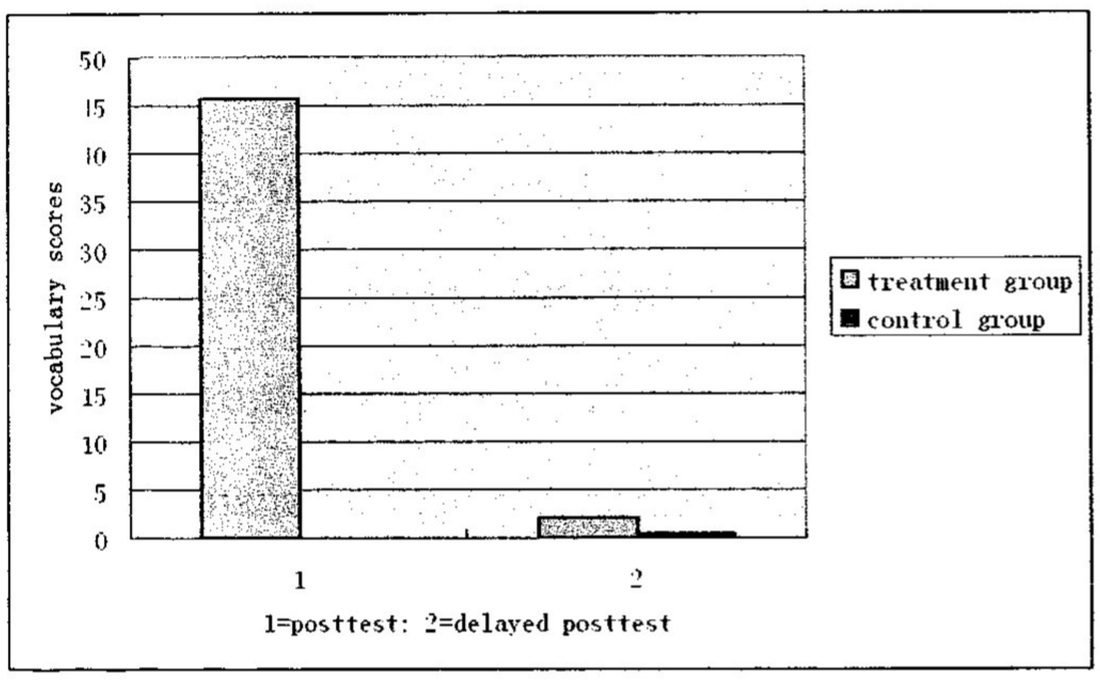


When the six posttests were combined, the vocabulary performance of the students from the treatment group in the posttest and delayed posttest could be further analyzed by Repeated Measures analysis. The Repeated Measure Analysis showed a significant test difference for the treatment group in the posttest and delayed posttest ($F(1, 60)=554.2$, $p=0.000$, $\eta_p^2=0.902$). The treatment group recalled significantly more of the Unfamiliar-Words in the posttest than the delayed posttest. On average, the treatment group recalled 46 words in the posttest. However, in spite of this significant fall in the delayed posttest, compared with the baseline pretest scores which of course was zero the students on average still recalled two words. Table 3.6 reported the related descriptive statistics and Figure 3.4 clearly shows the trend.

Table 3.6: Descriptive statistics of the six vocabulary posttests as a whole and the delayed posttest for the treatment group and the control group on the Unfamiliar-Words

Vocabulary tests	**Posttest**	**Delayed posttest**	
Groups	***treatment group***	***treatment group***	***control group***
N	67	67	34
Mean	45.7	2.2	0.6
Std. Deviation	15	2.3	0.9
Range	67	12	4
Maximum	73	12	4

Figure 3.4: Bar chart for the mean vocabulary scores of the treatment group and control group in the posttest and delayed posttest on the Unfamiliar-Words



In addition to the above analysis of the posttest and delayed posttest for the treatment group, the performance of the treatment group and the control group in the delayed posttest was compared. As the distributions of the vocabulary scores for the treatment group and the control group in the delayed posttest were skewed and the assumptions of normality test and analysis of homogeneity did not hold true, the non-parametric Mann-Whitney test was conducted to examine the different vocabulary performance between the treatment group and the control group. A significant group difference was found between them in the delayed posttest ($U=567$, $p=0.000$, $r=-0.424$), that is, the treatment group recalled significantly more of the Unfamiliar-Words than the control group in the delayed posttest.

To summarize, in spite of the dramatic decrease in learners' performance in the delayed posttest for the treatment group compared with the posttest, the learners still recalled a certain number of Unfamiliar-Words after the teacher explained them during the listening-mediated comprehension task. In addition, the treatment group significantly outperformed the control group in the delayed posttest, which further illustrates the effectiveness of the treatment, in other words, the teacher focusing the students' attention to both the form and meaning of the lexical items.

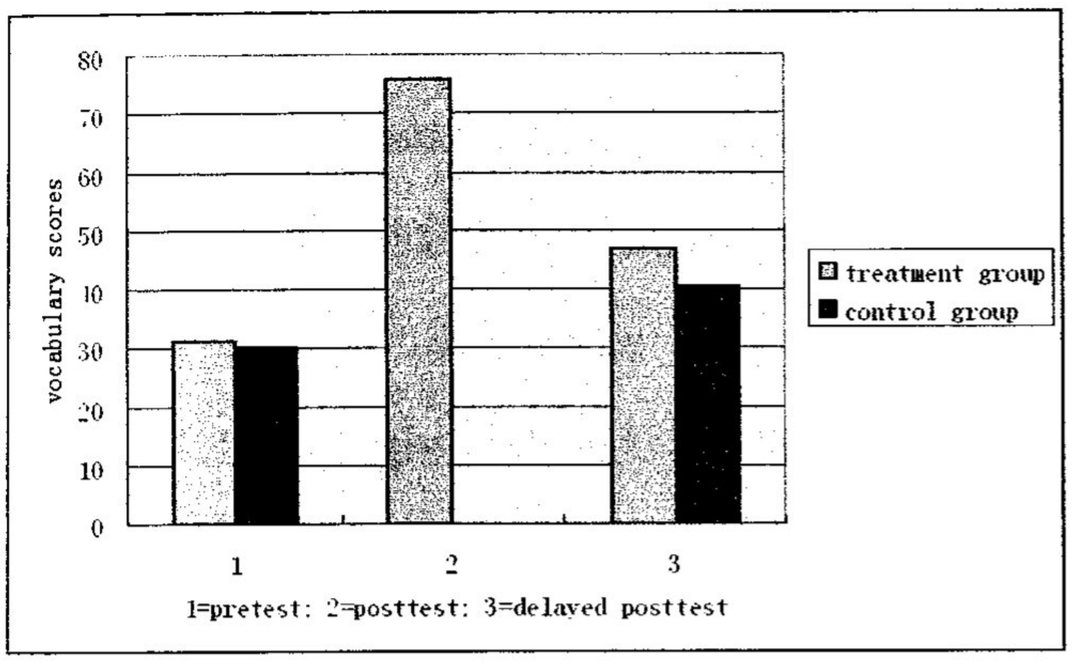
Familiar-Words

The same analysis was conducted for the Familiar-Words. Note that here we are attempting to find out if words already known to *some* students were learned by the whole class, in other words to increase the collective knowledge of certain lexical items. Table 3.7 reports the descriptive statistics of the learners' performance on the Familiar-Words in all the tests for the treatment group. Figure 3.5 further underlines the performance of the students in the treatment group and the control group on the Familiar-Words in the pretest, posttest and delayed posttest by bar chart.

Table 3.7: Descriptive statistics for the students' performance on the Familiar-Words in the pretest, posttest and delayed posttest for the treatment group

	pretest	**posttest**	**delayed posttest**
N	73	67	67
Mean	31.1	76	46.8
Std. Deviation	9.7	11.8	10.8
Range	45	59	52
Maximum	52	92	70

Figure 3.5: Bar chart for the mean vocabulary performance of the treatment group and the control group on the Familiar-Words in the pretest, posttest and delayed posttest



Repeated Measures ANOVA tests were then conducted to examine the within-group difference for the treatment group in the pretest, posttest, and delayed posttests. The results revealed a significant test difference ($F(1.7, 99.9)=847$, $p=0.000$, $\eta_p^2=0.9$). It can then be concluded that the treatment group performed significantly better in the posttest than the pretest, and then dropped significantly in the delayed posttest again. However, they performed significantly better in the delayed posttest compared with the pretest.

In addition to the above analysis of the performance of the treatment group in all tests, analysis of the difference in the performance between the treatment group and the control group in the pretest and delayed posttest was conducted.

Table 3.8: Descriptive statistics on the Familiar-Words for the vocabulary performance of the treatment group and the control group in the pretest and delayed posttest

	Group	N	Mean	Std. Deviation	Range
Pretest	***treatment group***	73	31.1	9.7	45
	control group	34	29.9	8.8	46
Delayed Posttest	***treatment group***	67	46.8	10.9	52
	control group	34	40.3	10	50

Table 3.8 reports the performance of the treatment group and control group in the

pretest and delayed posttest in terms of Familiar-Words. Figure 3.5 shows the trend clearly. Repeated Measures ANOVA revealed a significant test effect on the students' vocabulary performance for both groups ($F(1,95)=352.85$, $p=.000$, $\eta_p^2=.788$). That indicates a significant increase of their performance in the delayed posttest, compared with the pretest. ANCOVA further took into control of the pretest scores and found a significant group difference in the performance of the delayed posttest ($F(1,95)=118.911$, $p=.000$, $\eta_p^2=.717$). That is, the treatment group and the control group had similar lexical knowledge in the pretest, but the treatment group recalled significantly more Familiar-Words than the control group in the delayed posttest.

To summarize, the treatment group performed significantly better in the posttest compared with the pretest, and in the delayed posttest compared with the pretest, although there was a significant drop in performance from the posttest to the delayed posttest. In addition, the treatment group outperformed the control group in the delayed posttest. Thus, in terms of Familiar-Words, the teacher's lexical focus on form did increase the collective knowledge that the class had of certain lexical items.

Recapitulating, with regard to both the Unfamiliar-Words and Familiar-Words, similar results were reached for the first research question, confirming that the teacher's provision of lexical focus on form for both the Unfamiliar-Words and Familiar-Words facilitated students' vocabulary learning.

However, it should also be pointed out that there was a big difference in the number of the Familiar-Words and Unfamiliar-Words recalled by the treatment group in these vocabulary tests (see Table 3.9). Repeated Measures ANOVA revealed significant test effects on the students' performance ($F(2,120)=826.307$, $p=.000$, $\eta_p^2=.932$) and a significant effect from the different word categories on the vocabulary performance ($F(1,60)=1396.4$, $p=.000$, $\eta_p^2=.959$). For each word category, either Unfamiliar-Words or Familiar-Words, the students' performance increased significantly in the posttest and then dropped dramatically in the delayed posttest. At the same time, the different

word categories made a significant difference on the vocabulary scores. Students recalled a roughly similar number of words in the posttest, regardless of whether they knew them before the treatment or not, but they recalled more of the Familiar-Words than the Unfamiliar-Words in the delayed posttest. It seems that the students could retain more of the Familiar-Words than the Unfamiliar-Words. It should be pointed out that Familiar-Words are easier to expose to the students during their normal classes than the Unfamiliar-Words, because the latter tend to be very low frequency words, which were unlikely to appear in normal lessons (see words list in Appendix 4). Further analysis and discussion will be addressed later in relation to the experimental group difference.

Table 3.9: The mean score of the performance of the treatment group in the pretest, posttest, delayed posttest in terms of the Unfamiliar-Words and Familiar-Words

	Pretest	**Posttest**	**Delayed Posttest**
Unfamiliar-Words (N=77)	0	45.7	2.2
Familiar-Words (N=93)	31.1	76	46.8
Words in total (N=170)	31.1	121.7	49

The students' vocabulary performance on Unfamiliar-Words and Familiar-Words has been examined. Next, two categories of Familiar-Words will be investigated, namely the High-Familiarity-Words and the Low-Familiarity-Words.

High-Familiarity- Words and Low-Familiarity-Words

As stated in Section 3.3, those words which less than 30% of the students knew in the pretest were labeled Low-Familiarity-Words, and those which more than 30% of the students knew were labeled High-Familiarity-Words. The same types of analysis was conducted for these two categories of words in order to examine the first research question through the perspective of these two groups of words.

Table 3.10: Mean score for the Low-Familiarity-Words and High-Familiarity-Words recalled by the treatment group and control group in the pretest, posttest and delayed posttest

Vocabulary Tests	**Pretest**		**Posttest**	**Delayed Posttest**	
Groups	***Treatment***	***Control***	***Treatment***	***Treatment***	***Control***
Low-Familiarity-Words (N=53)	4.2	3.6	39.5	13.4	9.5
High-Familiarity-Words (N=40)	27	26.3	36.5	33.5	30.8

Similar tendencies were found for both the Low-Familiarity-Words and High-Familiarity-Words (see Table 3.10). Repeated Measures ANOVA analysis further indicated a significant test difference for the treatment group in terms of the Low-Familiarity-Words ($F(1.572, 94.31)=932.143$, $p=0.000$, $\eta_p^2=0.94$) and High-Familiarity-Words ($F(1.728, 103.703)=143.414$, $p=0.000$, $\eta_p^2=0.71$). That is, the treatment group recalled significantly more of these words in the posttest than in the pretest, and significantly less in the delayed posttest than in the posttest. However, they did recall significantly more of them in the delayed posttest compared with the pretest.

As for the between-group difference, while there was no significant difference between the treatment group and the control group in the pretest, ANCOVA revealed a significant difference in the delayed posttest in terms of the Low-Familiarity-Words ($F(1,95)=15.76$, $p=.000$, $\eta_p^2=.144$) and High-Familiarity-Words ($F(1,95)=15.2$, $p=.000$, $\eta_p^2=.139$). That is, the treatment group outperformed the control group, recalling significantly more of these words than the control group in the delayed posttest.

Summing up, it can still be concluded that the teacher focusing on the form and meaning of lexical items during a communicative activity did facilitate the students' vocabulary learning.

3.5.3 Summary of the first research question

In order to answer the first research question as to whether the teacher focusing on lexical items facilitated the students' vocabulary learning, two types of analysis were conducted from two perspectives. The first analysis was on the performance of the treatment group in the pretest, posttest, and delayed posttest. The second analysis focused on the differences in the performance between the treatment group and the control group in the pretest and delayed posttest. These analyses involved both the 170 words when taken as a whole and different categories of word familiarity levels based on the students' pretest scores. However, no matter which word data set was analyzed, similar trends were observed:

1) The learners in the treatment group, which consisted of both the NCS and CS learners taken collectively, performed significantly better in the posttest than in the pretest, which was then followed by a dramatic decline in the delayed posttest. However, compared with the pretest, there was still a significant increase in the delayed posttest.

2) While there was no significant difference between the treatment group and the control group in the pretest, the treatment group outperformed the control group significantly in the delayed posttest.

Thus the first research question can be answered in the affirmative. The different gains of the Familiar-Words and Unfamiliar-Words will be discussed in detail later.

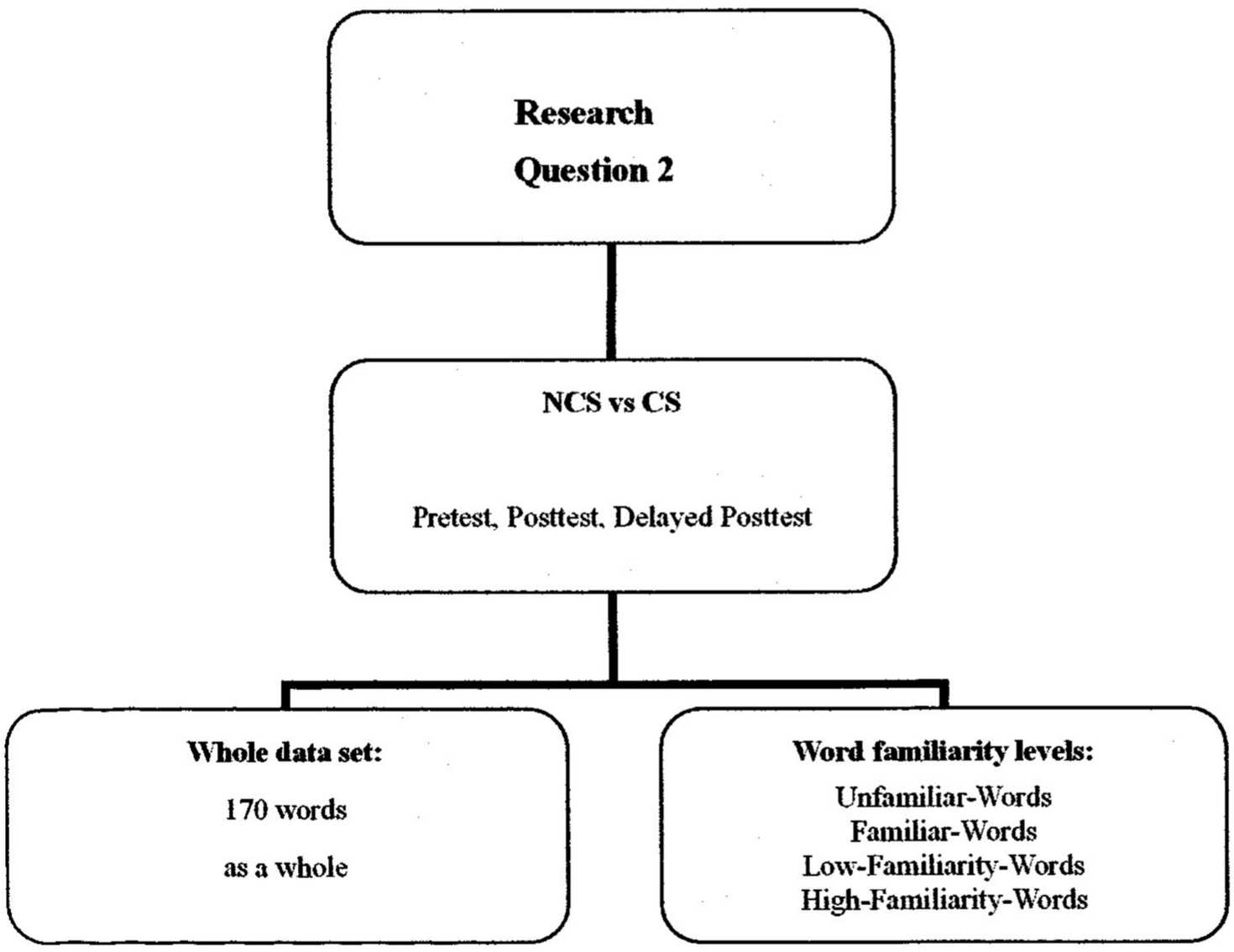
3.6 Question 2: Is the learners' receptive vocabulary learning better facilitated by the teacher's use of codeswitching or by providing L2 information?

This question will be addressed and explored through comparison between the two experimental groups, the CS and NCS group, on their performance in all the

vocabulary tests. Based on a normal distribution of the data, various parametric tests were used to examine group difference on vocabulary performance, including T-test, ANOVA, and ANCOVA. Non-parametric tests were used where the data was not normally distributed.

Similar to the first research question, the above analysis will be conducted in two stages. The first one is for the whole data set comprising the 170 words when taken as a whole. The second stage is the different word categories, Unfamiliar-Words, and Familiar-Words which were further divided into High-Familiarity-Words and Low-Familiarity-Words.

Figure 3.6: Diagram for research question two



3.6.1 Whole data set

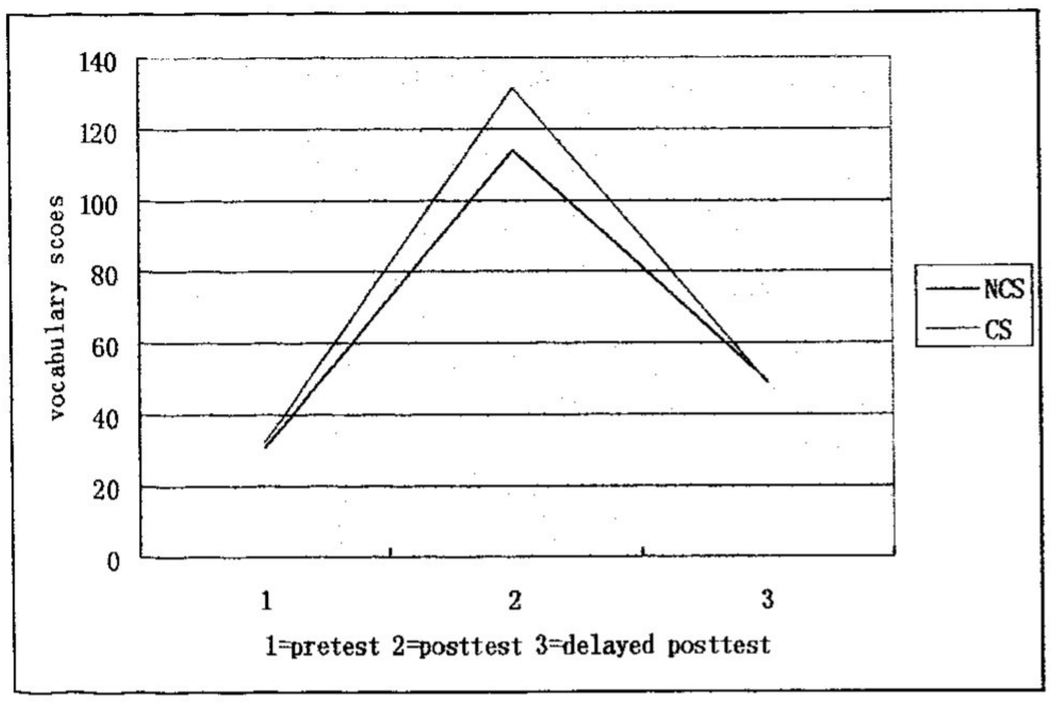
As stated earlier, 170 words were tested in total in the pretest, posttest, and delayed posttest. The descriptive statistics are shown in Table 3.11. It can be seen that the two

experimental groups recalled a similar number of words in the pretest and delayed posttest, but not in the posttest. This difference is clearly illustrated by Figure 3.7.

Table 3.11: Descriptive statistics of the vocabulary scores for the NCS and CS groups in the pretest and posttest and delayed posttest

Vocabulary tests		**NCS**	**CS**
Pretest	***N***	38	35
	M(SD)	30.5(9.3)	31.9(10)
	Range	39	42
	Max	52	49
	Min	13	7
Posttest	***N***	37	30
	M(SD)	113.8(26.3)	131.4(21.1)
	Range	112	74
	Max	162	165
	Min	50	91
Delayed Posttest	***N***	35	32
	M(SD)	49.3(12.3)	48.6(11.5)
	Range	52	47
	Max	72	66
	Min	20	19

Figure 3.7: Line chart for the vocabulary performance of the NCS and CS groups in the pretest, posttest, and delayed posttest



Repeated Measures ANOVA revealed a significant test effect on the vocabulary performance ($F(2,118)=990.273$, $p=.000$, $\eta_p^2 =.944$). The students of both experimental groups performed significantly differently in the three vocabulary tests.

With regard to the between-group difference, ANCOVA found that the covariate, the pretest scores, was significantly related to the posttest scores ($F(1,64)=22.885$, $p=0.000$, $\eta_p^2=0.26$), and there was a significant group effect on posttest scores after controlling the effect of pretest scores, $F(1,64)=9.178$, $p=0.004$, $\eta_p^2=0.13$. Testing the homogeneity of the regression slopes was also conducted and the assumption of homogeneity of regression slopes was reached after examining the significance value of the covariance by outcome interaction (Field, 2005: 383). The results from ANCOVA provided evidence of the group difference in the vocabulary performance in the posttest, that is, the CS group significantly outperformed the NCS group in the posttest, but not in the pretest and delayed posttest.

3.6.2 Word familiarity levels

As stated in Section 3.3, for all the 170 words tested in the pretest, posttest and delayed posttest, words which were not known to any of the students in the pretest were labeled Unfamiliar-Words and those which were known to some of the students were labeled Familiar-Words. Further, those words which less than 30% of the students knew were labeled Low-Familiarity-Words, and the remaining were classified as High-Familiarity-Words. Analysis of the second research question will be carried out in relation to the above word categories.

Unfamiliar-Words

For the Unfamiliar-Words, with which no students were familiar in the pretest as indicated by the fact that the students' pretest scores for these words were all zero, the difference between the two experimental groups in vocabulary performance for each posttest, the combined six posttests and the delayed posttest was examined. Because different numbers of words were tested in each posttest, the numerical scores were converted into percentages for the purpose of comparison. The descriptive statistics for the vocabulary scores of each experimental group in these tests are shown in Table

3.12.

Table 3.12: Descriptive statistics (expressed as percentage) on the Unfamiliar-Words for the vocabulary posttests and delayed posttest for the NCS and CS groups

		Posttest1 (N=10)	**Posttest2** (N=17)	**Posttest3** (N=10)	**Posttest4** (N=14)	**Posttest5** (N=18)	**Posttest6** (N=8)	**Combined 6 posttests** (N=77)	**Delayed Posttest** (N=77)
NCS	***M***	27.7%	53.3%	64.2%	42.5%	58.5%	75%	52.8%	2.6%
	(SD)	(20.5)	(21.4)	(21.4)	(25.6)	(25.5)	(22.9)	(18.6)	(2.4)
	Range	90%	88.2%	100%	100%	100%	87.5%	85.7%	10.4%
	N	N=39	N=38	N=38	N=37	N=38	N=38	N=37	N=35
	Max	90%	94.1%	100%	100%	100%	100%	93.5%	10.4%
CS	***M***	45.4%	67.6%	78.6%	64.1%	71.3%	82.4%	67.4%	3.1%
	(SD)	(25.6)	(19.8)	(19.7)	(22.3)	(24.6)	(23.1)	(17.8)	(3.5)
	Range	100%	76.5%	80%	71.4%	88.9%	75%	71.4%	15.6%
	N	N=39	N=39	N=35	N=31	N=35	N=34	N=30	N=32
	Max	100%	100%	100%	100%	100%	100%	94.8%	15.6%

Table 3.12 presented the descriptive statistics for the two experimental groups on their performance in the posttest and delayed posttest in terms of the Unfamiliar-Words. T-tests were employed to examine the group difference in each posttest. Based on the normality tests for each vocabulary test, both parametric and non-parametric samples T-tests were conducted in order to assess the mean difference between the NCS and CS groups on their performance in these tests. When the assumptions of normal distribution and analysis of homogeneity were reached for the data of both experimental groups, the parametric Independent Samples T-test was employed. When the assumptions were only reached for the data of one of the two groups, considering the fact that transforming data might alter the original data itself, non-parametric Mann-Whitney tests were used instead. In addition, the effect size for any significance level of the different tests was calculated.

Table 3.13: T-test report for vocabulary test scores (expressed as percentage) on the Unfamiliar-Words for the NCS and CS groups from the six posttests and the delayed posttest

	Parametric T-test	**Mann-Whitney T-test**	**Effect size**
Posttest 1		u=442.5 z=-3.216 p=0.001**	r=-0.364
Posttest 2	t(75)=-3.044 p=0.003**		r=0.33
Posttest 3		u=445 z=-2.456 p=0.014*	r=-0.29
Posttest 4	t(66)=-3.655 p=0.001**		r=0.41
Posttest 5	t(71)=-2.179 p=0.033*		r=0.25
Posttest 6		u=500.5 p=0.091	
Combined 6 posttests	t(65)=-3.268 p=0.002**		r=0.38
Delayed Posttest		u=536.5 p=0.764	

* significant at the 0.05 level (2-tailed). ** significant at the 0.01 level (2-tailed).

Table 3.13 shows the results of parametric and non-parametric T-tests for the different performance of the NCS and CS groups in all the posttests and delayed posttest as well as the combined posttest for all the six posttests as a whole. T-test results in the above table show that for the first four posttests a group difference significant at the level of 0.01 was found and a significance level of 0.03 was found in posttest 5. It can then be concluded that from posttest 1 to posttest 5 the CS group recalled significantly more of the Unfamiliar-Words than the NCS group, with a low to medium effect size. However, for posttest 6, Mann-Whitney test indicates a non-significant level of mean difference of p=0.09. Nevertheless, there was still a gap between the NCS and CS group in vocabulary performance in posttest 6, with the CS group descriptively having recalled 7.4% more of the eight Unfamiliar-Words than the NCS group, but not statistically different. In all, although no significant difference was found in

posttest 6, the CS group significantly outperformed the NCS group among the first five of the six posttests.

Further analysis of all six posttests might shed more light on the difference between the performance of the NCS and CS group in the six posttests. The scores of each student in the six posttests were added together and then converted into percentage level of the 'Combined 6 posttests' (Table 3.12). A significant level (p=0.002) of mean difference was found between the NCS and CS groups in the combined six posttests, with a fairly reasonable effect size of 0.38. That is to say, the CS group recalled significantly more of the Unfamiliar-Words during the posttest than the NCS group when the six posttests were regarded as a whole. However, no significant difference was found between the two experimental groups in their vocabulary performance in the delayed posttest.

Summing up, the CS group recalled more Unfamiliar-Words than the NCS group in all the posttests, but this group difference was only significant in the first five posttests. Although the group difference was not significant in posttest 6, when the six posttests were examined as a whole, the CS group recalled significantly more of the Unfamiliar-Words than the NCS group. However, this difference disappeared in the delayed posttest, in which both groups equally forgot many of the Unfamiliar-Words. That is to say, the students' learning Unfamiliar-Words appears to be better facilitated by the teacher's use of codeswitching in explaining the target vocabulary than providing L2 information in the immediate posttest. However, this superiority of the CS group was not evident in the delayed posttest which was taken one week after all the posttests had already been completed. Only a few of the Unfamiliar-Words were retained by the students in both experimental groups in the delayed posttest. There will be further discussion on this later.

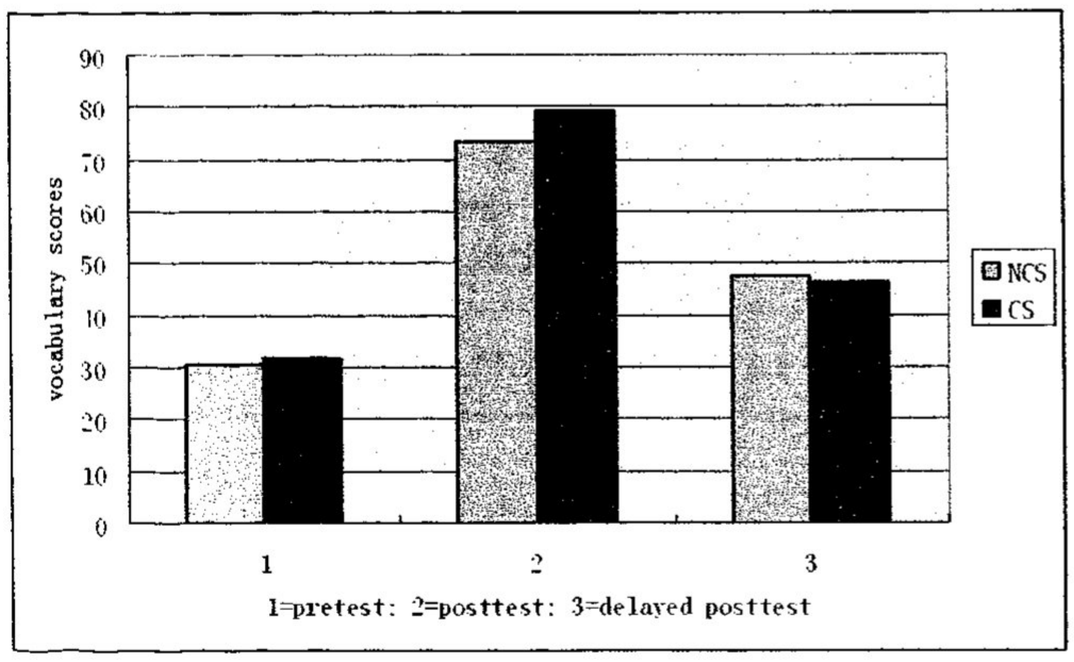
Familiar-Words

Analysis of the differences in performance between the two experimental groups on the Familiar-Words was similarly conducted. Table 3.14 shows that both experimental groups recalled roughly the same number of Familiar-Words in the pretest and delayed posttest, but there is a gap in the performance of the posttest. Figure 3.8 illustrates this trend.

Table 3.14: Descriptive statistics for the students' performance for the NCS and CS group on the Familiar-Words in the pretest, posttest and delayed posttest

	Group	Mean	Std. Deviation	N
Pretest	***NCS***	30.5	9.3	38
	CS	31.9	10.1	35
Posttest	***NCS***	73.2	13.2	37
	CS	79.5	8.8	30
Delayed Posttest	***NCS***	47.4	11.5	35
	CS	47.2	10.2	32

Figure 3.8: Bar chart for the vocabulary performance on the Familiar-Words for the NCS and CS group in the pretest, posttest, and delayed posttest



The Analysis of Covariance, controlling for the possible influence of pretest scores, found a group effect on the posttest ($F(1,64)=5.322$, $p=0.024$, $\eta_p^2=0.077$), with the CS group on average recalling six more of the Familiar-Words than the NCS group. It can

hence be concluded that the CS group recalled significantly more Familiar-Words than the NCS group in the posttest, but no significant group difference was found in the delayed posttest.

To summarize, for both the Familiar-Words and Unfamiliar-Words, the CS group recalled more of these words than the NCS group in the posttest, but not in the delayed posttest. However, it should also be pointed out that there was a gap between the Familiar-Words and Unfamiliar-Words recalled by both groups (see Table 3.15). There is a clearer trend that the students from both experimental groups recalled more of the Unfamiliar-Words than Familiar-Words in the posttest, but retained fewer of the Unfamiliar-Words than Familiar-Words in the delayed posttest. The difference in performance and whether or not the students were familiar with the words beforehand will be discussed later in relation to the students' different levels of prior lexical knowledge.

Table 3.15: Mean scores of the performance of the two experimental groups in the pretest, posttest, delayed posttest in terms of the Unfamiliar-Words and Familiar-Words

Vocabulary tests	**Pretest**		**Posttest**		**Delayed Posttest**	
Experimental groups	**NCS**	**CS**	**NCS**	**CS**	**NCS**	**CS**
Unfamiliar-Words (N=77)	0	0	52.8	67.4	2.6	3.1
Familiar-Words (N=93)	30.5	31.9	73.2	79.5	47.4	47.2
Words in total (N=170)	30.5	31.9	113.8	131.4	49.3	48.6

High-Familiarity-Words and Low-Familiarity-Words

As stated in earlier sections, those words which less than 30% of the students knew in the pretest were labeled Low-Familiarity-Words, and those which more than 30% of the students knew were labeled High-Familiarity-Words. The same analysis was conducted for these two categories of words in order to address the second research

question (see Table 3.16).

Table 3.16: Mean scores for the Low-Familiarity-Words and High-Familiarity-Words recalled by the NCS and CS group in the pretest, posttest, and delayed posttest

Vocabulary tests	**Pretest**		**Posttest**		**Delayed Posttest**	
Groups	**NCS**	**CS**	**NCS**	**CS**	**NCS**	**CS**
Low-Familiarity-Words (N=53)	4.2	4.1	37.4	42.2	13.7	13
High-Familiarity-Words (N=40)	26.2	27.8	35.8	37.3	33.7	33.3

Analysis of Covariance was adopted here to examine the between-group difference in the vocabulary tests. In terms of the Low-Familiarity-Words, ANVOCA revealed a significant group difference in the posttest ($F(1,64)=6.999$, $p=.01$, $\eta_p^2=.099$), with the CS group on average recalling five more of the Low-Familiarity-Words than the NCS group. In terms of the High-Familiarity-Words, no significant group difference was found in all the three vocabulary tests. It can be seen that the students recalled different categories of words in different ways. The students' prior familiarity with the target words has an impact on their vocabulary learning, which will be further explored in the following sections.

3.6.3 Summary of the second research question

In order to answer the second research question as to whether students' vocabulary learning was better facilitated by the teacher's providing CS or L2 information, the analysis of the experimental group difference in the pretest, posttest, and delayed posttest was conducted in two stages. The first analysis involved 170 words taken as a whole, and the second analysis was focused on different categories of word familiarity levels, namely, Unfamiliar-Words, and Familiar-Words which include High-Familiarity-Words and Low-Familiarity-Words. The results can be summarized thus:

1. Analysis of the entire data set which involves the 170 words as a whole revealed a significant experimental group difference in the posttest scores, with the CS group recalling more words than the NCS group.

2. Analysis of different word categories showed that the CS group recalled significantly more Unfamiliar-Words than the NCS group in the first five posttests. Although no significant difference was found in Posttest 6, when examining the six posttests taken as a whole, the CS group still recalled significantly more words than the NCS group. In addition, the CS group recalled more Familiar-Words than the NCS group in the posttest. The CS group on average recalled significantly more Low-Familiarity-Words than the NCS group in the posttest.

Although the students of the two experimental groups recalled similar amount of High-Familiarity-Words in the posttest, it can still be concluded that on the whole in terms of the posttest the CS group significantly recalled more words than the NCS group. That is, the learners' vocabulary learning was better facilitated by the teacher's use of codeswitching than providing L2 information in the posttest. In terms of the delayed posttest, no significant difference was found. That is, no matter which treatment the learners received, they recalled a similar number of words one week after all the training sessions finished. Further analysis of the students' prior familiarity with the target words was conducted in the following section.

3.7 Question 3: How do prior familiarity with the target words, general proficiency level and listening comprehension scores relate to the learners' vocabulary recall?

In the last two research questions, it was found that the teacher's provision of focus on form on lexical items facilitated the learners' vocabulary learning, and the learners' vocabulary learning in the immediate posttest was better facilitated by the teacher's use of codeswitching than providing L2 information. However, in addition to the

independent variable, the teacher's provision of different types of vocabulary explanation, what other factors were related to the learners' vocabulary learning in the immediate posttest? In order to answer this question, all the factors that might contribute to the learners' vocabulary learning in the immediate posttest will be examined through Regression Modeling. Then, those variables significantly influencing the learners' vocabulary scores will be analyzed further.

As stated in the methodology Chapter Two, after listening to the listening passages once, the students were asked to answer multiple-choice listening comprehension questions on these listening passages before the teacher assisted with their understanding of the passages. After the teacher negotiated meaning on the listening passages and the vocabulary in them, the students took the posttest on the words they learnt in the session. Thus, their listening comprehension scores which showed their understanding of the listening passages might in some way relate to the words they learnt after the teacher's treatment on vocabulary explanation. Did the students who better understood the listening passages recall more words in the vocabulary posttest? A Correlation analysis shows that the learners' listening comprehension performance and their posttest scores were significantly correlated at the 0.05 level with the correlation coefficient of $r=0.64$. It can be seen that the learners' comprehension of the listening passages was highly correlated to their vocabulary learning. Indeed, from a pedagogical perspective it was not surprising when the meanings of vocabulary were delivered within the context of listening comprehension tasks, the learners' initial comprehension of the listening passages was to influence their learning of vocabulary in the listening passages. Therefore, the scores on comprehension of the listening passages will be further examined together with their vocabulary scores.

In addition to the learners' listening comprehension performance, there are at least two other confounding variables which might influence the learners' performance in the posttest, specifically, the pretest vocabulary scores and the learners' general proficiency level. It was vital to consider the learners' pretest scores because whether

the learners were familiar with the words before the treatment might have influenced their scores in the vocabulary tests after the treatment. Moreover, the classification of learners into four general proficiency levels was based on the combined scores of the learners' pretest vocabulary scores, their general English proficiency scores, and the general listening comprehension scores. Because the two experimental groups and the control group were stratified based on their general proficiency levels before being randomly allocated, each group contained a similar number of students from all of four different general proficiency levels. However, the students in the same general proficiency levels from different experimental groups might learn and recall different amount of vocabulary in the posttest. It is then of interest to examine how the students from the same proficiency level in the two experimental groups performed in the posttest after the treatment.

In addition to the above possible confounding variables, the independent variable, the teacher's use of codeswitching or L2 information in vocabulary explanation, contributed to the dependent variable, the learners' vocabulary learning in the posttest. Linear Regression Analysis was employed to examine the variables which might contribute to the learners' posttest vocabulary scores and the different variance that each variable might explain on the dependent variable. The following variables were put into the Regression models: the students' pretest vocabulary scores, their posttest listening comprehension scores, their general proficiency levels, and the different experimental groups that the students were in. Various types of models were generated to explore the best fit model in terms of explaining the most variance of the dependent variable. The following model (Table 3.17) which involved all of these variables explained the most variance of the posttest vocabulary scores.

Table 3.17: Regression Model summary

R	**R Square**	**Adjusted R Square**	**F change**	**df1**	**df2**	**sig. F change**
0.791	0.625	0.601	25.887	4	62	0.000

Table 3.18: Statistics for the variance of each variable explaining the posttest vocabulary scores

Predictor Variables	**B**	**Beta**	**P**
listening comprehension scores	1.795	0.532	0.000
pretest vocabulary scores	1.059	0.401	0.000
general proficiency levels	4.593	0.204	0.012
treatment group (NCS/CS)	8.519	0.167	0.047

Table 3.17 reports the descriptive statistics for this model, which indicated a significant value for this good-fit model. All the assumptions were met and the analysis of residuals showed that the data was normally distributed. It can be seen that all the four variables significantly contributed to the variance of the dependent variable and they interacted together significantly explaining around 60% of the variance of the learners' posttest vocabulary performance.

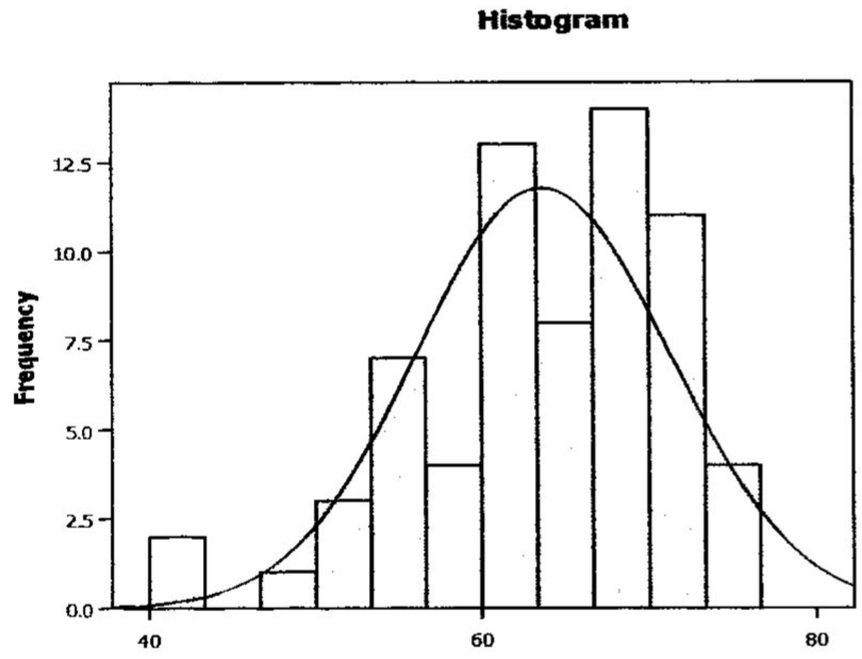
Table 3.18 describes the variance of each variable in explaining the posttest vocabulary scores. The statistics B of the treatment group is the mean advantage of belonging to one of the treatment group expressed in the posttest vocabulary scores. That is, with the students' posttest listening comprehension scores, pretest vocabulary scores, and their general proficiency levels being controlled, being in different treatment groups, either the NCS or the CS group, raises the average level of the students' posttest vocabulary scores significantly by 8.5. This result provided further evidence for the findings of the second research question that the CS group recalled significantly more words than the NCS group in the vocabulary posttests. The positive effect of codeswitching on the students' posttest vocabulary scores was further confirmed.

In this section, the learners' posttest listening comprehension scores, their pretest vocabulary scores, and their general proficiency levels will be analyzed in detail.

Listening comprehension performance in the posttest

In terms of the posttest listening comprehension scores, it can be seen from Table 3.18 that it was significantly related to the students' posttest vocabulary scores. However, how did the listening comprehension scores influence the students' posttest vocabulary scores with regard to the different experimental groups? In order to answer this question, the students were then grouped into three different levels of listening comprehension based on their listening comprehension scores in the posttest to allow the analysis of the vocabulary recall of both the experimental groups. Figure 3.9 shows the distribution curves for the listening comprehension performance of the two experimental groups.

Figure 3.9: Distribution curves for the listening comprehension performance of the two experimental groups



The students scored between 40 and 76 in the multiple-choice listening comprehension test, and the data distribution curve indicated that a large number of students scored highly. In order to ensure that each listening comprehension level involves a roughly similar number of students for further analysis, those who scored between 40 and 61 were grouped as the Low-Level listening group (n=23); those between 62 and 68 as the Middle-Level listening group (n=23); and those between 69 and 76 as the Top-Level listening group (n=21). Table 3.19 describes statistics on the

students' posttest performance in terms of the experimental groups and listening comprehension levels. ANOVA revealed a significant group difference between the three listening comprehension levels in their posttest vocabulary performance within each treatment group, the NCS group ($F(2,34)=7.725$, $p=.002$, $\eta_p^2=.56$) and the CS group ($F(2,27)=5.62$, $p=.009$, $\eta_p^2=.54$).

Table 3.19: Descriptive statistics on the posttest vocabulary performance in terms of the three listening comprehension levels for the two experimental groups

Treatment group	Listening comprehension levels	Mean	Std. Deviation	N
NCS	*Low*	96.5	24.4	15
	Middle	123.4	15.3	16
	Top	131.3	32.6	6
CS	*Low*	118.6	21.9	8
	Middle	122	21.6	7
	Top	142.6	14.6	15

Taking into consideration the pretest scores of the students from these different levels, it was found from Analysis of Covariance that for Low-level listening performance group there was a significant group difference in the posttest vocabulary performance ($F(1,21)=33.82$, $p=.000$, $\eta_p^2=.628$), with the CS group ($M=118.6$) recalling more words than the NCS group ($M=96.5$). That is, those students who have the lowest listening comprehension scores benefited more from the teacher's use of codeswitching than the teacher's providing L2 information to explain vocabulary.

Lexical knowledge levels

In order to further analyze how pretest vocabulary scores were related to learners' posttest vocabulary scores, they were grouped into three prior lexical knowledge levels. Figure 3.10 shows the histogram with a normal curve for the pretest scores of

the two experimental groups. Based on their pretest performance for all the 170 words, those students who scored less than 25, in other words those who scored in the bottom 39% of the total range of scores, were grouped as Bottom-Level lexical group (n=17); those who scored over 35, namely those who scored in the top 39% were grouped as the Top-Level lexical group (n=26); those who scored in the middle were grouped as Middle-Level lexical group (n=18). Table 3.20 shows the number of the students for each experimental group. In this way, further analysis of how students with different levels of prior lexical knowledge in the pretest may learn these words in the posttests and delayed posttest could be conducted in relation to the two experimental groups.

Figure 3.10: Histogram for the pretest scores of the two experimental groups

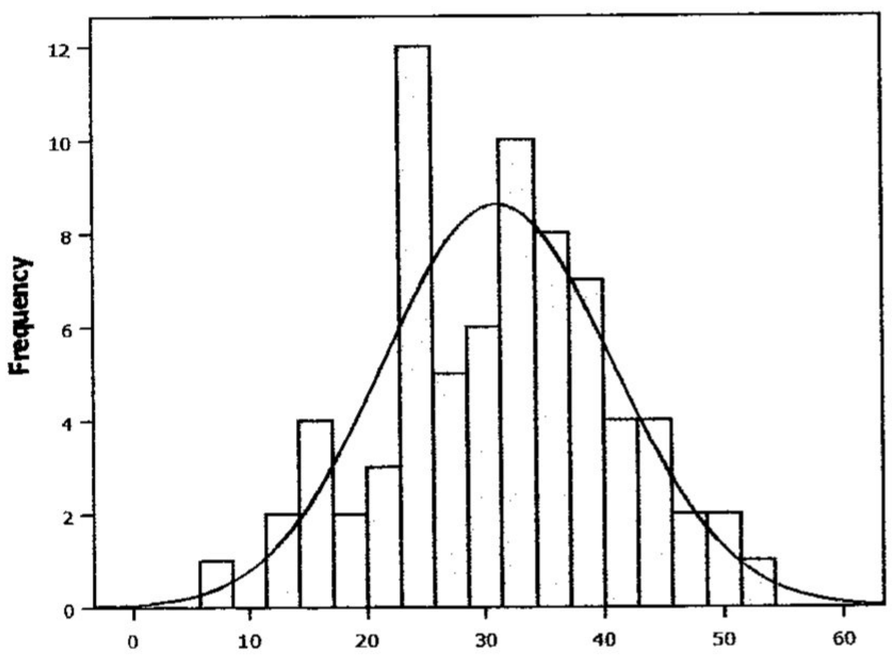


Table 3.20: The number of students in terms of the lexical knowledge levels for each experimental group based on pretest scores

	Bottom-Level	**Middle-Level**	**Top-Level**
NCS	12	10	12
CS	5	8	14

Table 3.21: Mean vocabulary scores for the students of three lexical knowledge levels in the pretest, posttest, and delayed posttest for the two experimental groups

Vocabulary tests	Lexical knowledge levels	Vocabulary scores M(SD)	
		NCS	CS
Pretest	Bottom-Level	22.3 (4.1)	19 (7.8)
	Middle-Level	30.7 (2.7)	30 (3)
	Top-Level	41.4 (4.8)	40.5 (4.9)
Posttest	Bottom-Level	93.5 (22.5)	124.6 (21.7) (*)
	Middle-Level	113 (22)	131.6 (17.7)
	Top-Level	134.8 (13.6)	137.1 (23.6)
Delayed Posttest	Bottom-Level	38.5 (8.9)	33.2 (9.2)
	Middle-Level	47.5 (5.4)	50.4 (7.7)
	Top-Level	62.3 (7.1) (*)	54.6 (8.2)

* The mean difference is significant at the 0.05 level.

Analysis of the differences in vocabulary performance between the two experimental groups was first examined in terms of lexical knowledge level. Table 3.21 shows the mean vocabulary scores for the students of three lexical knowledge levels in the pretest, posttest, and delayed posttest for the two experimental groups. A significant experimental group difference was found for the Bottom-Level lexical group in the posttest while controlling the pretest scores ($F(1,18)=8.258$, $p=.01$, $\eta_p^2=.315$), with the CS group on average recalling 31 more words than the NCS group, and for the Top-Level lexical group in the delayed posttest ($F(1,24)=6.382$, $p=.019$, $\eta_p^2=.21$) with the NCS group on average recalling 7 more words than the CS group.

In all, it can be concluded that the Bottom-Level lexical group in the CS group significantly outperformed those in the NCS group in the posttest, and the Top-Level lexical group in the NCS group outperformed those in the CS group in the delayed posttest. That is, the teacher's providing L2 information helped the Top-Level lexical group with recalling more words in the delayed posttest, and the teacher's use of codeswitching helped the Bottom-Level lexical group with recalling more words in the posttest. Figure 3.11 shows clearly the trend for the Bottom-Level lexical group and Figure 3.12 shows the trend clearly for the Top-Level lexical group.

Figure 3.11: Line graph for the vocabulary performance of the Bottom-Level lexical group for both the NCS and the CS group in the pretest, posttest, and delayed posttest

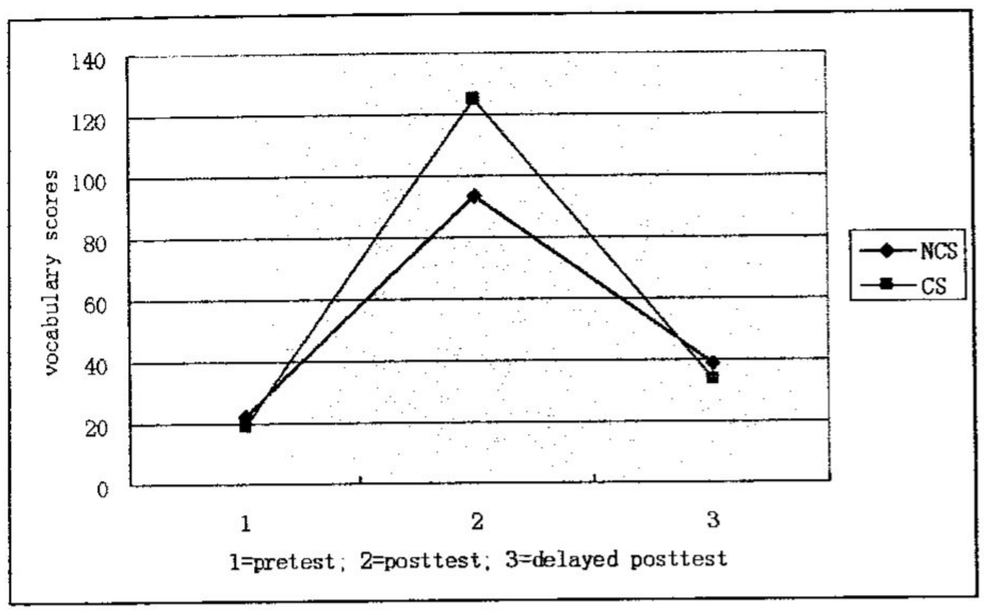
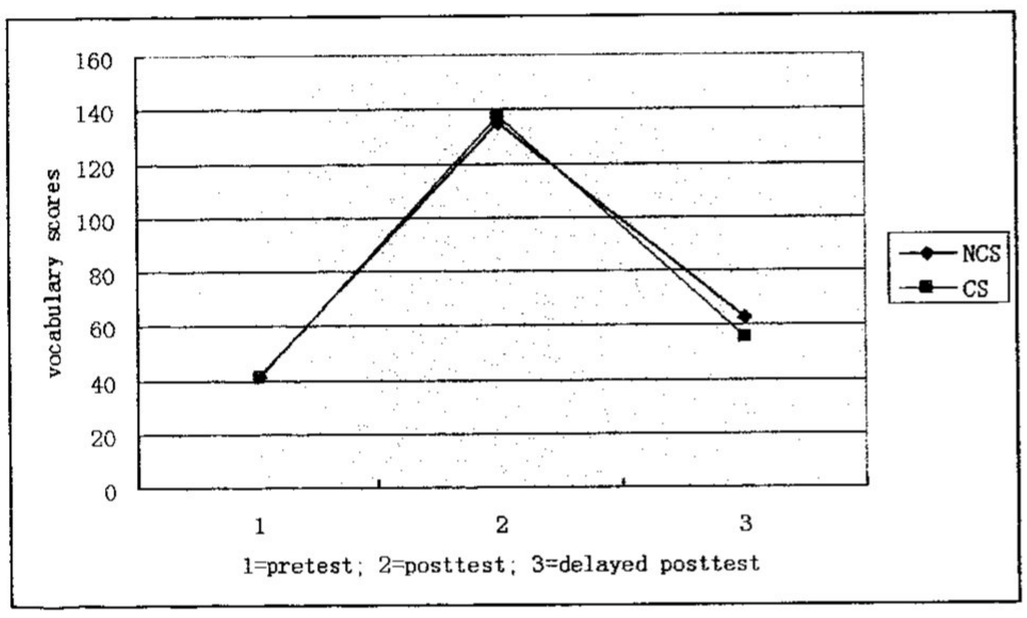


Figure 3.12: Line graph for the vocabulary performance of the Top-Level lexical group for both the NCS and the CS group in the pretest, posttest, and delayed posttest



In addition to the above analysis of the difference in vocabulary performance between the two experimental groups for each lexical knowledge level, the analysis of lexical knowledge levels was carried out for each treatment group.

Figure 3.13: Line graph for the vocabulary performance of students in the three lexical knowledge levels during the pretest, posttest and delayed posttest for the NCS group

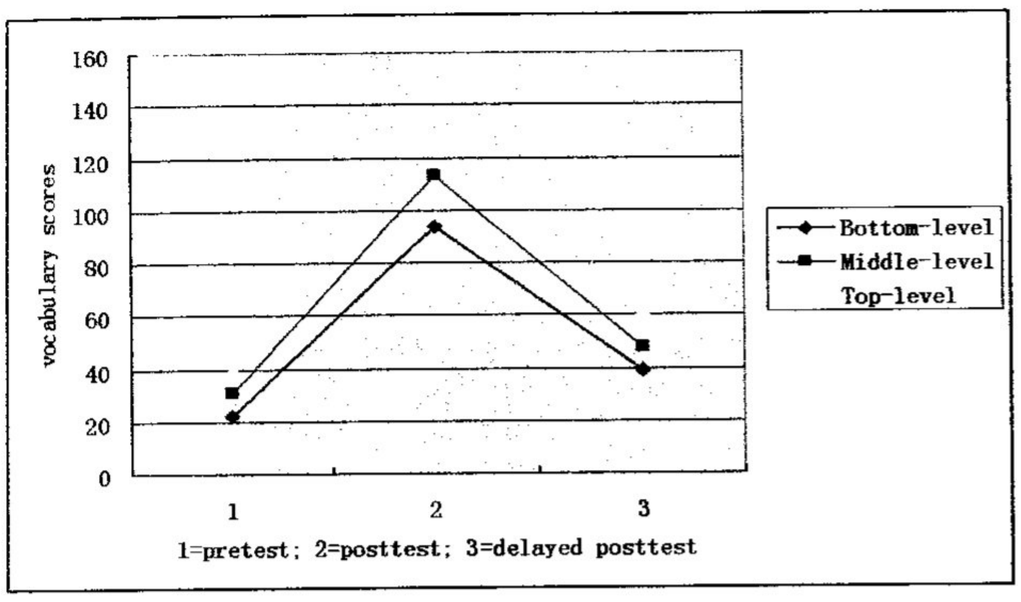
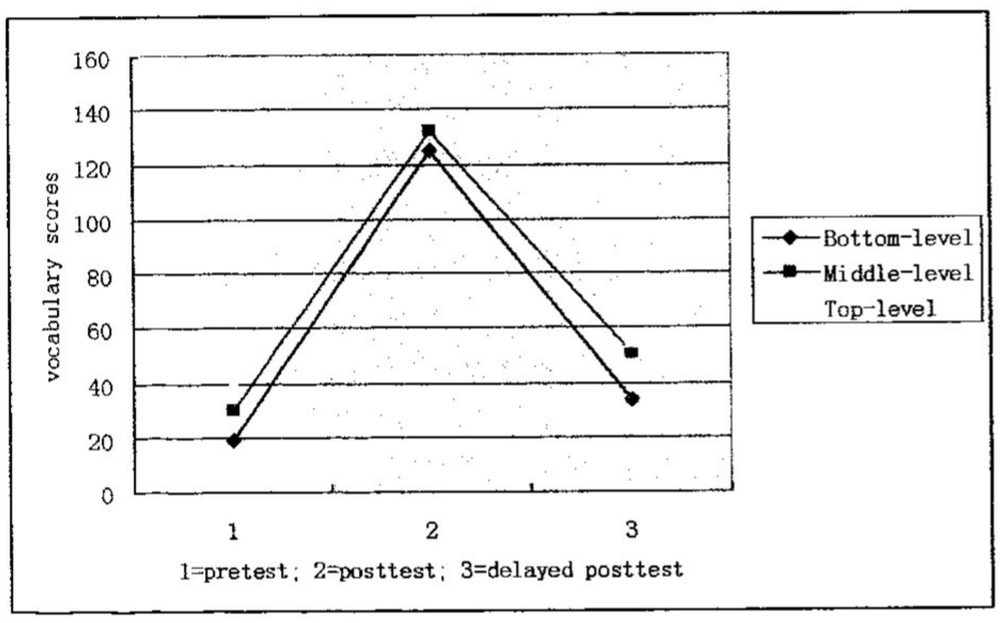


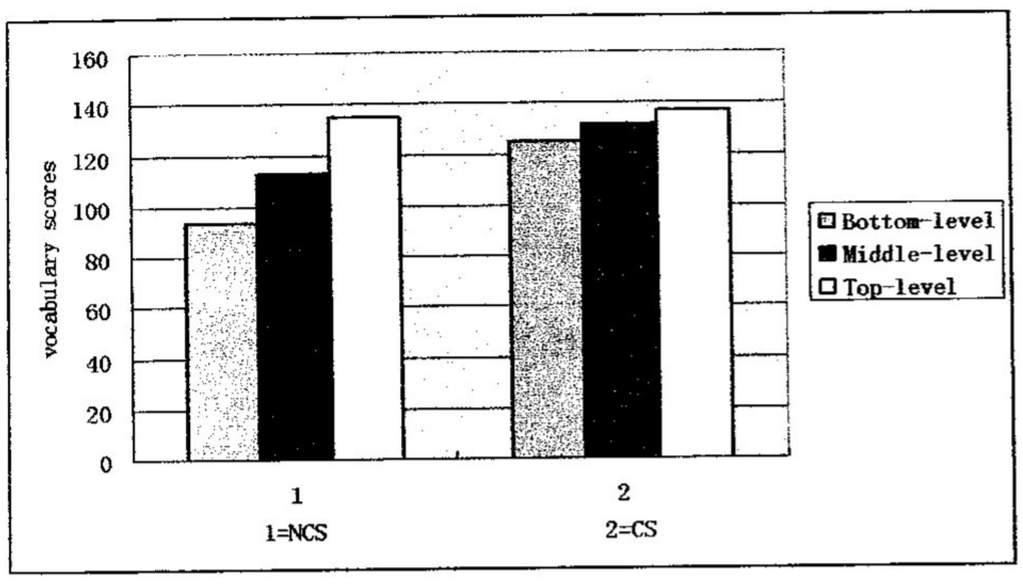
Figure 3.14: Line graph for the vocabulary performance of students in the three lexical knowledge levels during the pretest, posttest and delayed posttest for the CS group



The above two figures (Figure 3.13 and 3.14) clearly show the performance of students from the two different experimental groups with different lexical knowledge levels in the pretest, posttest, and delayed posttest, indicating that in the CS group the gap between these lexical knowledge levels was small compared with the NCS group which reveals a larger gap in the vocabulary performance between these lexical knowledge levels in the posttest. For the NCS group, the range of words recalled by the students from the three lexical knowledge levels was from 93.5 to 134.8; for the CS group, it was from 124.6 to 137.1. The bar chart in Figure 3.15 reveals visually such an effect. For the NCS group, the difference in vocabulary performance between the three lexical knowledge levels was large while there was a much smaller

difference for students from the CS group. It is clear that the teacher's CS use benefited the Bottom-Level lexical group greatly.

Figure 3.15: Bar chart for the different performance of the two experimental groups and lexical knowledge levels in the vocabulary posttest



Further analysis was conducted of the influence of lexical knowledge level on the posttest for each experimental group. While One-Way ANOVA showed no significant difference between the lexical knowledge levels in the posttest for the CS group, there was a significant difference on the posttest for the NCS group ($F(2,34)=13.659$, $p=0.000$, $\eta^2=0.67$). These findings were confirmed by the Analysis of Covariance which controlled for the pretest scores. In other words, for the NCS group the students' posttest vocabulary performance was significantly related to their lexical knowledge level, their posttest vocabulary performance significantly interacted with the lexical knowledge level they were at. Bottom-Level students from the NCS group who knew the least words before the treatment recalled the least words ($M=93.5$) in the posttest, while the Top-Level students who knew the most words before the treatment recalled the most words ($M=134.83$) in the posttest. But the vocabulary performance of the students from the CS group seemed not to be influenced by different lexical knowledge levels. The students from the three lexical knowledge levels recalled a similar amount of words in the posttest. These findings provide further indication that the codeswitching information provided by the teacher in the CS group helped especially the Bottom-Level and Middle-Level lexical groups to recall a similar number of words as the Top-Level students in the posttest.

To summarize, the Bottom-Level lexical group in the CS group significantly outperformed those in the NCS group in the posttest, and the Top-Level lexical group in the NCS group significantly outperformed those in the CS group in the delayed posttest. Further analysis showed that in the posttest the gap between the three lexical knowledge levels in the CS group was small compared with that in the NCS group. The provision of codeswitching information seemed beneficial for the Bottom-Level and Middle-Level lexical groups who recalled more words in the posttest than the students provided with L2 information.

In addition to the above analysis of the overall data set which involved all 170 words, further analysis of the lexical knowledge levels in relation to the different types of word familiarity levels was also conducted. While no significant experimental group difference was found for the Middle-Level lexical group, there was a significant group difference for the Top-Level and Bottom-Level lexical group. For the Top-Level students, the NCS group (M=59.25) recalled more of the Familiarity-Words in the delayed posttest than the CS group (M=52.2), $F(2,32)=7.626$, $p=.002$, $\eta_p^2=.33$. The NCS group (M=38) also recalled more High-Familiarity-Words in the delayed posttest than the CS group (M=35.87), $F(2,32)=8.841$, $p=.001$, $\eta_p^2=.363$. For the Bottom-Level lexical group, the CS group (M=38.71) recalled more of the Low-Familiarity-Words in the posttest than the NCS group (M=30.43), $F(1,19)=4.946$, $p=.039$, $\eta_p^2=.216$. The CS group (M=48.86) also recalled more of the Unfamiliar-Words in the posttest than the NCS group (M=30.71), $F(1,19)=13.86$, $p=.001$, $\eta_p^2=.422$. It can thus be concluded that the Bottom-Level lexical group within the CS group recalled more of the Low-Familiarity-Words and the Unfamiliar-Words than those in the NCS group in the posttest. However, the Top-Level lexical group from the NCS group recalled more of the Low-Familiarity-Words and the High-Familiarity-Words than those in the CS group in the delayed posttest.

General proficiency levels

Recall that the students were stratified into four general proficiency levels based on the combined scores of the general English proficiency scores, general listening comprehension scores, and the pretest vocabulary scores (see Figure 2.1). Then as stated in the Methodology Chapter, certain numbers of students from each of these four general proficiency levels were randomly selected and grouped into the two experimental groups and the control group. Thus, each group contains a similar number of students of different general proficiency levels, and the learners' general proficiency levels were controlled for.

In order to analyze how the learners' general proficiency levels were related to their posttest vocabulary scores with regard to the different experimental groups they were in, analysis of the experimental group difference in the vocabulary tests for each proficiency level was conducted. It was found that for the students with the highest general proficiency level, ANCOVA, controlling the pretest vocabulary scores, indicated a significant treatment group difference in the posttest, with the CS group (M=149.43) recalling more words than the NCS group (M=103.33), $F(1,14)=16.83$, $p=.001$, $\eta^2=.56$, and for the students with the lowest general proficiency level too ($F(1,16)=5.24$, $p=.037$, $\eta^2=.26$), with the CS group (M=123) recalling more words than the NCS group (M=100.38). It can be seen that the students from both highest and lowest proficiency levels benefited more from the teacher's use of CS than L2 informtion in terms of short-term learning. However, it should be borne in mind that the students were grouped into four general proficiency levels, which means that the number of students for each level is perhaps too small to make any statistical generalization.

Summarizing the third research question

In addition to the independent variable, i.e. the different types of treatment the learners received, the learners' posttest listening comprehension performance, their

general proficiency levels, and their pretest vocabulary scores all had an impact on the learners' posttest vocabulary scores. Around 60% of the variance of the students' posttest vocabulary scores was explained by these variables. Controlling for all confounding variables, the different treatment group that the learners were in, in other words receiving the teacher's provision of codeswitching or L2 information, made a significant difference to the posttest vocabulary scores.

There was a link between the learners' listening comprehension of the listening passages and their recall of the vocabulary in the listening passages. Further analysis of the learners' listening comprehension performance levels showed that for the students of Low-level listening scores, the teacher's use of codeswitching helped them recall 22 more words in the posttest than the use of L2 information.

Further analysis of the learners' lexical knowledge levels based on their pretest vocabulary scores showed that the Bottom-Level lexical group in the CS group significantly outperformed those in the NCS group in the posttest, whereas the Top-Level lexical group in the NCS group significantly outperformed those in the CS group in the delayed posttest. In the posttest the gap between the three lexical knowledge levels in the CS group was small compared with that in the NCS group. Moreover, with regard to the different types of word categories, it was found that the Bottom-Level lexical group from the CS group recalled more of the Low-Familiarity-Words and Unfamiliar-Words than those in the NCS group in the posttest. However, the Top-Level lexical group from the NCS group recalled more of the Familiarity-Words and the High-Familiarity-Words than those in the CS group in the delayed posttest.

The students with the highest and lowest general proficiency level in the CS group recalled more words in the posttest than those from the NCS group. However, it should be noted that this result should be treated with caution due to the small number of students within each general proficiency level.

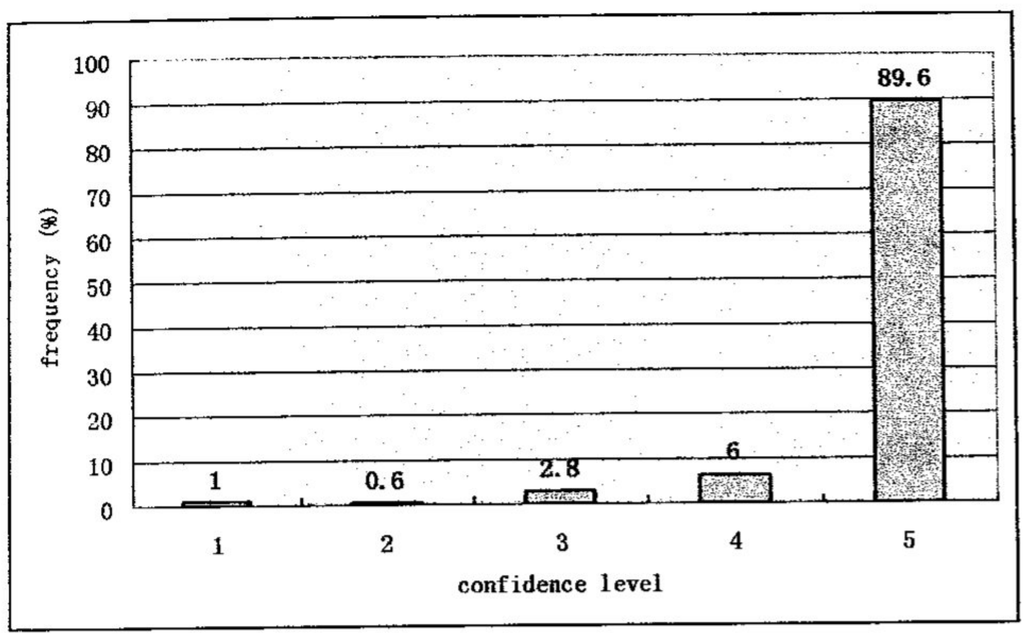
3.8 Question 4: How confident were the learners with the meanings they provided during the vocabulary tests?

As mentioned in section 2.2.7.2, while providing meanings for the target words in the vocabulary tests the students were also asked to rate their confidence level in the answers they provided, with the highest confidence level of 5 and the lowest of 1. In other words if they felt very confident in the accuracy of the meaning they provided for the target words that they had learnt they chose level 5. If they were not confident at all at their answers they chose 1. Thus the confidence level can be examined together with the accuracy of the meanings of the words in the vocabulary tests.

In this section, analysis of the confidence level will deal only with the students' performance on the Unfamiliar-Words in the posttest because the pretest scores for these words were zero and they can be strictly controlled for without considering the possible impact of their pretest performance. Thus, the accuracy and confidence level of the meanings of the Unfamiliar-Words the students provided in the six posttests will be examined.

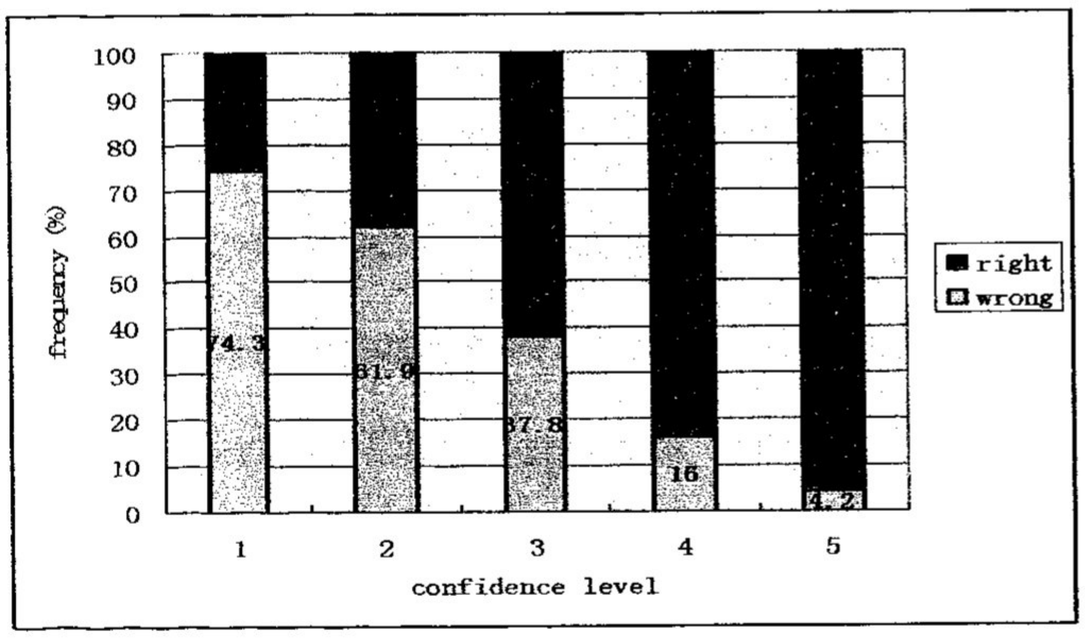
Figure 3.16 shows that 89.6% of the students have chosen level 5 which indicates that they were very confident with the answer they have given for the Unfamiliar-Words. There were 6% of the students who were less confident with their answers. Very few students chose the lower confidence levels. This indicates that most of the students who have written down a confidence level for their answers were generally very confident with the answer they provided for the Unfamiliar-Words.

Figure 3.16: Bar chart for the frequency of the confidence level expressed as percentage for Unfamiliar-Words



A Correlation test was then carried out to examine the relationship between the accuracy of the meanings and the confidence level of the students in the meanings they provided. They were found to be positively correlated with a coefficient of $r=0.392$ ($p=0.000$).

Figure 3.17: Frequency diagram for the accuracy of the meanings provided by the students for each confidence level

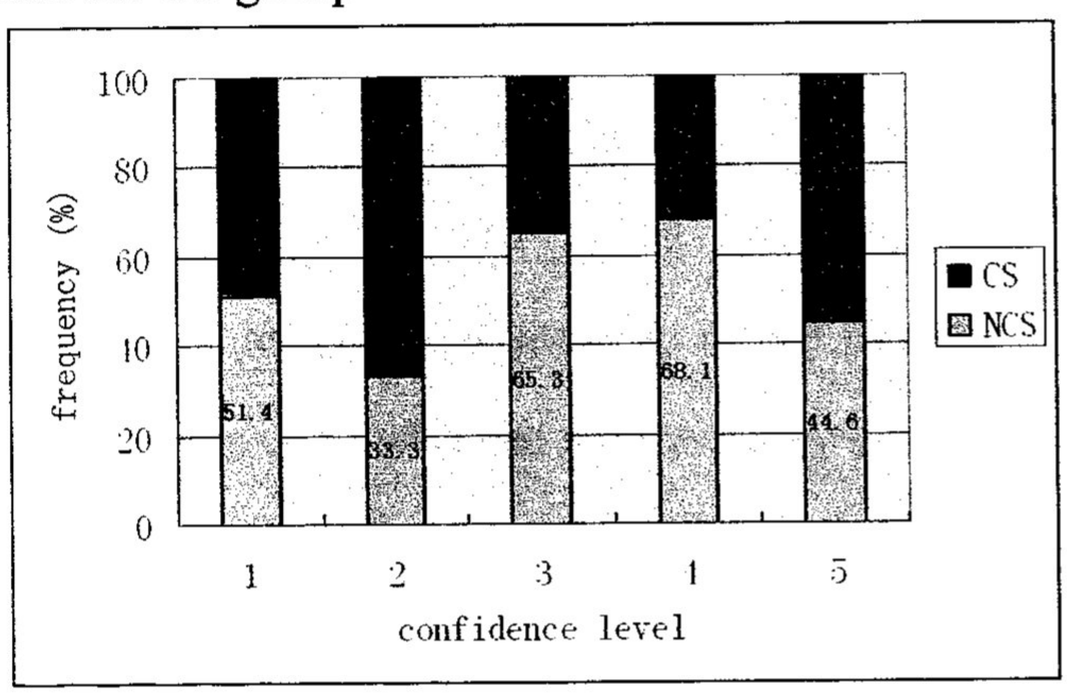


It can be seen from Figure 3.17 that for all the answers with the highest confidence level 5, 95.8% of them were correct answers. That is, the more confident the students were with the answers they provided, the more accurate the answers were. The less confident they were, the more inaccurate their answers were likely to be. It seems that it is unlikely that the students were guessing their answers. They most likely learned

the meanings and were able to recall them in the posttest. There will be further discussion of this in relation to the qualitative findings in the following chapter.

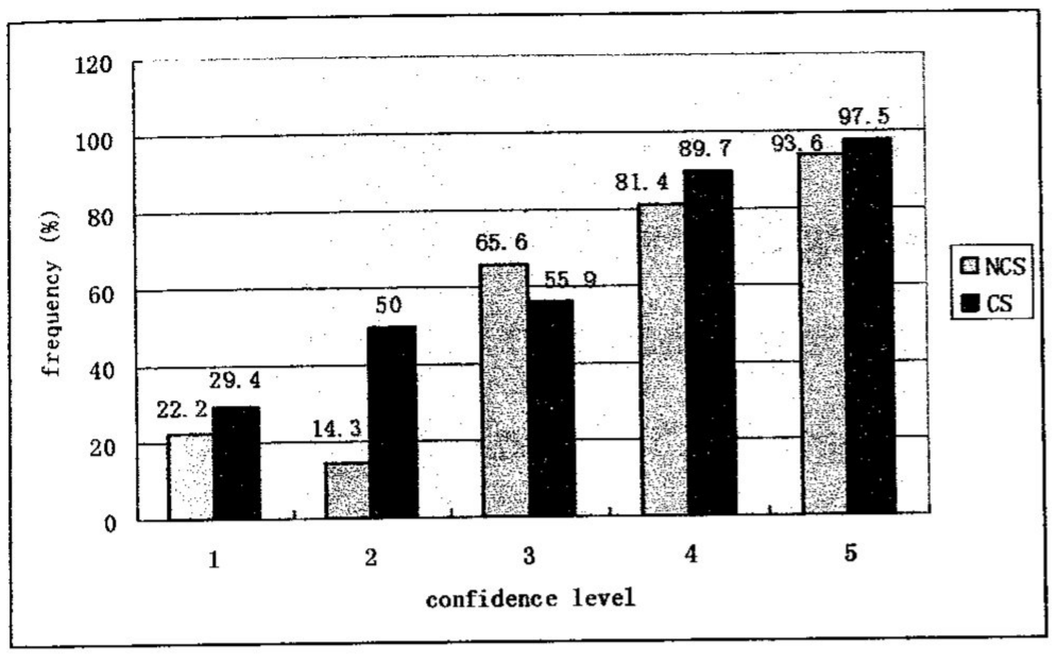
Further analysis of the experimental group difference in confidence level was then carried out. The CS group (Mean=4.87) was found to be significantly more confident than the NCS group (Mean=4.78), with the T-test result of t(3264.22)=-4.557, p=0.000. Figure 3.18 shows clearly the frequency of each confidence level choice for the NCS and the CS group.

Figure 3.18: Bar chart of the frequency of each confidence level choice for the NCS and the CS group



Moreover, it is instructive to further analyze how the confidence level of the students from the two different experimental groups related to the accuracy of their answers. Firstly, it can be seen from Figure 3.19 that the more confident the students from both the NCS and the CS group were, the more accurate the answers they provided for the words were likely to be. Secondly, Figure 3.19 shows the percentage of accurate answers for the two experimental groups in terms of each confidence level. Except for the confidence level 3 in which the NCS group achieved more accurate answers than the CS group, for all other levels of confidence the CS group all achieved more accurate answers than the NCS group.

Figure 3.19: The frequency of the accurate answers for the NCS and the CS group in terms of each confidence level



To summarize, most of the students were generally very confident with the answers they provided for the meanings of the Unfamiliar-Words. Furthermore, a significant positive correlation was found between the accuracy of the meanings and the confidence level of the students in the meanings they provided. The more confident the students were with the answers they provided, the more accurate the answers were likely to be. Moreover, with regard to the two experimental groups, it was found that the CS group tended to be more confident in the answers they provided than the NCS group, and their answers tended to be more accurate than those of the NCS group.

3.9 Question 5: Which type of language did the learners prefer to use while providing meanings during the vocabulary tests?

Throughout the vocabulary tests in this study, the students were allowed to use either Chinese or English to provide meanings for the lexical items. Due to the fact that one experimental group received vocabulary explanation in Chinese and the other in English, it was of interest to explore which language the students used in their answers, the kind of treatment they received and the accuracy of these answers. The words involved in this analysis will only be those Unfamiliar-Words because none of the students knew these words before the treatment and they were well-controlled in this sense.

Analysis was first focused on the relationship between the type of language that the learners used to provide the meanings of the words and the accuracy of vocabulary recall. As only 7% of all students used both English and Chinese to answer the questions, in this study this type of language choice will not be analyzed. A frequency analysis of the language type shows that for all the meanings provided by the students in either English or Chinese, 38.9% were in English, 91.8% of which were accurate answers; and 61.1% were in Chinese, of which 93.4% were correct. It can be seen that the students tend to choose Chinese as their preferred language in order to provide the meanings for the target words that they had just learned. When Chinese is used as the type of language for the meaning of the target words, it also has a higher chance of being an accurate answer. Chi-square analysis was further employed to examine the relationship between the type of language that the learners used and the accuracy. However, there was no significant association between the type of language and the accuracy of the meanings of the target words. That is to say, whether their answers were accurate or not was not related to what type of language the students used in the test.

Chi-square analysis indicates a significant association between the language choice of the students and the treatment group they were in ($X^2(1)=2329.5$, $p=0.000$). That is, the students tend to choose the language type that the teacher has used for lexical input.

Excluding the few answers where students used both English and Chinese, for those answers which were in either English or Chinese, Table 3.22 shows that the students in the NCS group, where English was used by the teacher to explain the Unfamiliar-Words, preferred to use English (55.5%) slightly more than Chinese (44.5%) when providing the meanings of the words and 92.2% of the English answers were accurate ones. However, for the CS group where the teacher provided Chinese equivalents in explaining the Unfamiliar-Words, the students clearly preferred to use

Chinese (77.5%) in providing the meanings of the Unfamiliar-Words and 95.5% of the Chinese answers were accurate ones. Thus, it can be seen that students tend to prefer to use the language that the teacher chose to use to explain the meanings of the lexical items in the vocabulary tests and these answers tend to be more accurate as well. In addition, the Chinese answers provided by the CS group tended to be more accurate than the English answers provided by the NCS group.

Table 3.22: The language type chosen to demonstrate recall and corresponding accuracy, expressed as percentage for each experimental group

Group	Language type	Frequency (%)	Wrong answers	Accurate answers
NCS	**English**	% within language type	7.8%	92.2%
		% within accuracy	63.7%	82.5%
	Chinese	% within language type	18.5%	81.5%
		% within accuracy	36.3%	17.5%
CS	**English**	% within language type	19.6%	80.4%
		% within accuracy	9.6%	2.0%
	Chinese	% within language type	4.5%	95.5%
		% within accuracy	90.4%	98%

To sum up, the students prefer to use Chinese as the type of language to provide the meanings of Unfamiliar-Words, and the answers tended to be more accurate ones. Moreover, the students prefer to use the language that the teacher has chosen to use to explain the meanings of the words in the vocabulary tests and these answers tended to be more accurate as well. What's more, the Chinese answers provided by the CS group also tended to be more accurate than the English answers provided by the NCS group.

3.10 Chapter summary

In this chapter, quantitative data on the students' performance was analyzed, and the following results were inferred.

Firstly, the teacher focusing on both form and meaning of the lexical items facilitated the learners' vocabulary learning. The learners in the two experimental groups performed significantly better in the posttest than in the pretest, which was then followed by a dramatic drop in the delayed posttest. However, compared with the pretest, there was a statistically significant increase in the delayed posttest. While there was no significant difference between the two experimental groups and the control group in the pretest, the two experimental groups outperformed the control group significantly in the delayed posttest. Moreover, analysis of Unfamiliar-Words and Familiar-Words shows that students of the two experimental groups recalled a similar number of Unfamiliar-Words and Familiar-Words in the posttest, regardless of whether they knew them before the treatment or not, but they recalled more of the Familiar-Words than the Unfamiliar-Words in the delayed posttest.

Secondly, in terms of the posttest, the CS group significantly recalled more words than the NCS group. That is, the learners' vocabulary learning was better facilitated by the teacher's use of codeswitching than providing L2 information in the posttest. In terms of the pretest and delayed posttest, no significant difference was found between the two experimental groups. In other words, regardless of which treatment the learners received, they recalled a similar number of words when a period of time had elapsed. Moreover, the analysis of Unfamiliar-Words and Familiar-Words shows that the students from the two experimental groups recalled more of the Unfamiliar-Words than Familiar-Words in the posttest, but retained fewer Unfamiliar-Words than Familiar-Words in the delayed posttest, probably because the Familiar-Words were of higher frequency and therefore easier to be retained.

Thirdly, in addition to the independent variable, i.e. the different types of treatment the learners received, the learners' posttest listening comprehension performance,

their general proficiency levels, and their pretest vocabulary scores all had an impact on the learners' posttest vocabulary scores. Around 60% of the variance of the students' posttest vocabulary scores was explained by these variables. Controlling for all confounding variables, the different treatment group that the learners were in, in other words receiving the teacher's provision of codeswitching or L2 information, made a significant difference to the posttest vocabulary scores.

Further analysis of the learners' listening comprehension performance levels showed that for students of Low-level listening scores, the teacher's use of codeswitching appeared to help them recall significantly 22 more words in the posttest than the use of L2 information. Thus for students with lower listening comprehension scores switching to Chinese facilitated their vocabulary recall.

Further analysis of learners' prior lexical knowledge levels based on their pretest vocabulary scores showed that the Bottom-Level lexical group within the CS group significantly outperformed those in the NCS group in the posttest, and the Top-Level lexical group in the NCS group significantly outperformed those in the CS group in the delayed posttest. In addition, in the posttest the gap between the three lexical knowledge levels in the CS group was small compared with that in the NCS group. With regard to the different types of word categories, it was found that the Bottom-Level lexical group from the CS group recalled more of the Low-Familiarity-Words and the Unfamiliar-Words than those in the NCS group in the posttest. However, the Top-Level lexical group within the NCS group recalled more of the Familiarity-Words and the High-Familiarity-Words than those in the CS group in the delayed posttest.

Analysis of the learners' general proficiency levels indicated that, although the students with the highest and lowest general proficiency level from the CS group were found to have recalled more words in the posttest than those from the NCS group, this result should be treated with caution due to the small number of students within each

proficiency level.

Fourthly, most of the students were generally very confident with the answers they provided for the meanings of the Unfamiliar-Words. A significant association between the accuracy of the meanings and the confidence level of the students in their answers was found. The more confident the students were with respect to the answers they provided, the more accurate the answers were likely to be. With regard to the two experimental groups, the CS group tended to be more confident than the NCS group, and provide more accurate answers than the NCS group.

Fifthly, the students preferred to use Chinese as the language type to provide the meanings of Unfamiliar-Words, and their answers tended to be more accurate ones. Moreover, with regard to the two experimental groups, the students prefer to use the language that the teacher used to explain the meanings of the words in the vocabulary tests and these answers tended to be more accurate as well. In addition, the Chinese answers provided by the CS group tended to be more accurate than the English answers provided by the NCS group.

CHAPTER FOUR Qualitative Analysis of Teacher's Lexical Input

In Chapter Three, the quantitative analysis revealed a significant group difference in the words recalled by the two experimental groups in the posttest, in favor of the CS group. In this chapter, individual words will be examined as the unit of analysis. The lexical episodes of teacher-students interactions on the words which were recalled by the two experimental groups significantly differently will be chosen first, and then analyzed qualitatively in terms of both the teacher's lexical input and the students' reactions and answers. The aim is to both provide methodological evidence for the quantitative findings of the last chapter, and to understand the process of the lexically-oriented focus on form.

As mentioned in Methodology Chapter, analysis of the lexical episodes of teacher-students interaction in the classroom could overcome the weakness of examining the effects of one independent variable on the learning outcome by ensuring these classrooms are really doing what they are supposed to do, that is, the codeswitching group really received vocabulary explanation from the teacher switching to Chinese, and the non-codeswitching group really received the teacher's vocabulary explanation in English and that a similar amount of lexical information was provided for both groups. Moreover, this analysis will attempt to provide deep insights about the interaction process, and help with understanding qualitatively the teacher's decision-making on lexical input, students' reactions and their answers.

4.1 Introduction

As mentioned in the Methodology chapter, the teaching plans for each lesson for each group were devised beforehand by the researcher on the basis of a discussion with a group of experienced teachers and consultation with an English-native-speaker. For example, for the target word 'cleft', the teacher provided an English synonym 'gap' to

the NCS group and the Chinese equivalent '缝隙' to the CS group. The type of information for each word the teacher provided the two groups of students with was thus well planned in advance. However, it should be borne in mind that the lessons took place in a real classroom rather than a laboratory. In the real classroom 'unplanned information' was provided by the teacher in response to the students' reactions and problems. If students showed signs of difficulty in understanding the meanings, it is not ethical for the teacher to ignore their incomprehension and continue with the planned lesson. The teacher now has to make an unplanned decision on contextualizing the synonym 'gap' by using the phrase 'generation gap' when noticing some students' difficulty in understanding the synonym. It then becomes necessary to observe real teacher-students interactions in the classroom in order to examine the actual lexical information provided by the teacher for each experimental group and explore the teacher's planned and unplanned decision-making. Thus, of the 170 words, which ones should be the basis of qualitative analysis and how could they be analyzed?

The target words on which qualitative analysis of the lexical episodes of teacher-students interactions were based included both Unfamiliar-Words set and Familiar-Words set. As mentioned in the previous chapter, among the 170 words tested in the vocabulary tests, those which were known to some of the students in the pretest before the treatment were named Familiar-Words (N=93), and those that no students knew in the pretest were labeled Unfamiliar-Words (N=77). The Unfamiliar-Words are the focus of qualitative analysis in this chapter, due to the fact that no students knew them before the treatment and their performance on recalling the words in the posttests could be well controlled without being influenced by their prior knowledge of these words. Among the 77 Unfamiliar-Words, those words which were recalled by the two experimental groups significantly differently will then be chosen as the main focus of qualitative analysis here. The results of the Chi-square analysis of Unfamiliar-Words revealed that 24 out of the 77 Unfamiliar-Words were recalled by the two groups significantly differently in the posttests, all of them in

favor of the CS group (see Table 4.1).

Table 4.1: A list of 24 Unfamiliar-Words with significant experimental group differences in the posttest

Sessions	Passages	Unfamiliar- words	NCS(%)	CS(%)	Chi-square (p)
1	4	Kin	69.25	89.7	0.025
	4	Apprehension	15.4	46.2	0.003
	5	Denominator	20.5	41	0.05
	6	Inalienable	17.9	48.7	0.004
	6	Stub	25.6	59	0.003
2	9	Relish	36.8	76.9	0.000
	9	Refurbishing	26.3	51.3	0.025
	10	Cleft	76.3	97.4	0.006
	10	Optimal	44.7	66.7	0.053
	11	Uncannily	50	76.9	0.014
3	2	Feign	55.3	80	0.025
	2	Frenzied	44.7	74.3	0.01
4	3	Burgeon	45.9	80.6	0.003
	3	Salience	29.7	71	0.001
	3	Forthwith	40.5	83.9	0.000
	3	Desecrate	18.9	41.9	0.038
	3	Facilitate	45.9	90.3	0.000
	13	Poignantly	40.5	64.5	0.049
	13	Imperiously	32.4	61.3	0.017
	15	Colossus	70.3	93.5	0.015
5	12	Pact	73.7	94.3	0.018
	17	Shroud	52.6	80	0.014
	20	Disquietingly	73.7	97.1	0.005
	20	Enigmatic	63.2	77.1	0.029

* %= the percentage of the number of students who recalled the target words in the posttest

Important insights could be provided by qualitative analysis of lexical episodes of teacher-students interactions in relation to the above 24 Unfamiliar-Words which were recalled significantly differently by the two experimental groups, which in turn might explain the difference in the recall of these words. In addition, Familiar-Words were also analyzed qualitatively as a complement to the above analysis of the Unfamiliar-Words. As some students were already familiar with the Familiar-Words in the pretest before the treatment, the experimental group difference on these words in

the posttest was examined by controlling for the possible effect of their pretest scores. 15 Familiar-Words were found to have been recalled significantly differently by the two experimental groups in the posttest. But because there was already a significant group difference in the pretest for 2 of them, the significant difference in the posttest was regarded as invalid, and thus disregarded. Thus, 13 Familiar-Words with a significant experimental group difference in the posttest are examined in this chapter, among which 2 were High-Familiarity-Words, and 11 Low-Familiarity-Words. Table 4.2 is a list of these 13 Familiar-Words, with all of them generating a significant group difference in favor of the CS group.

Table 4.2: A list of 13 Familiar-Words with significant experimental group difference in the posttest

Session	Familiar words	Tests	NCS(%)	CS(%)	Chi-square(p)
1	assume (H)	*posttest*	66.7	97.4	0.000
		pretest	41	59	
	subject to	*posttest*	41	69.2	0.012
		pretest	0	2.6	
	productivity	*posttest*	61.5	92.3	0.001
		pretest	12.8	5.1	
	indispensable	*posttest*	17.9	56.4	0.000
		pretest	2.6	2.6	
2	eccentric	*posttest*	39.5	74.4	0.002
		pretest	0	2.6	
3	accounting	*posttest*	86.8	100	0.026
		pretest	2.6	10.3	
	utilize	*posttest*	73.7	91.4	0.048
		pretest	0	2.6	
4	coordination	*posttest*	83.8	100	0.019
		pretest	7.9	22.9	
	finance (H)	*posttest*	86.5	100	0.033
		pretest	68.4	74.3	
5	torture	*posttest*	57.9	82.9	0.02
		pretest	2.6	0	
	dispatch	*posttest*	47.4	71.4	0.037
		pretest	2.6	0	
6	condemn	*posttest*	71.1	91.2	0.031
		pretest	15.8	14.3	

	cabinet	*posttest*	44.7	88.2	.000
		pretest	2.6	5.7	

* %= the percentage of the number of students who recalled the target words
* H=High-Familiarity-Words; the rest are Low-Familiarity-Words

Vocabulary information tokens and vocabulary information types

How should we examine the lexical episodes involving these words? The Teacher as Dictionary and Dictionary Designer Model (Macaro et al., 2009) provides some insights which might suggest a potential procedure. Macaro et al. (2009: 9) attempted to put forward the case that non-native speaker teachers can operate both as monolingual and bilingual dictionaries, and also function as 'dictionary designers', by 'making informed decisions about not only which language (L1, L2 or both) to provide the information in, but also what type of information to provide'. Thus, according to Macaro et al., the type of information which is available to the non-native speaker teachers may include definition, synonym, paraphrase, circumlocution, exposition, contextualization, and hierarchical exemplification. However, Macaro et al. (2009: 12) also warned "the problem facing the 'teacher as dictionary and dictionary designer' is which and how many of these options used to clarify a lexical item s/he should take up". Thus, in order to further qualitatively examine what information the teacher provided each group with, the classification put forward by Macaro et al. was employed here as the analysis criteria in terms of the *types* of information and numbers of the information *token*s. In addition to the above options that Macaro et al. proposed, other information will be examined too, such as exposure to the target word, the repetition of any lexical information.

The episodes were first extracted from classroom observation video-recording. The teacher-students interactions involving the lexical episodes over the selected target words were then transcribed. The type and token of lexical information provided by the teacher for each of these words were then selected and compared between the two groups. The type of lexical information refers to the nature of the information given

about the target word, such as English definition, English synonym and Chinese equivalent. The token refers to the number of every piece of information type. One token refers to one piece of this type of information. The time spent on the lexical information for both groups will be compared between the two experimental groups.

As noted in the Methodology Chapter, on the basis of the Teacher as Dictionary and Dictionary Designer Model, the decisions on which types of these options to choose were made under the supervision of a group of experienced teachers and a teaching plan was then drawn up. If the teacher provided additional information besides the teaching plan, which group received the additional lexical information? Why were such unplanned decisions made by the teacher? The teacher's decision-making will then be further explored if any additional 'unplanned' information was given by the teacher compared with the 'planned' teaching plan. In addition to the teacher's input, the students' reactions will also be examined, together with their performance in relation to those words in the posttest.

The 24 Unfamiliar-Words which were recalled by the two experimental groups significantly differently were analyzed qualitatively in detail first in terms of the types and tokens of lexical information provided by the teacher. The results revealed different patterns of teacher's lexical input: the same number of information tokens with different information types; and different numbers of information tokens with different information types (see Table 4.3). The 13 Familiar-Words will finally be examined and the patterns in terms of the teacher's lexical input over these words will be presented and discussed respectively as well.

Table 4.3: A list of lexical input patterns for the two experimental groups

Category	Sub-category	Patterns	NCS / CS	Unfamiliar-Words
Same information tokens	Three information tokens	Pattern I	NCS: L2 written form + synonym/definition + repeat synonym/definition CS: L2 written form + L1 equivalent + repeat L1 equivalent	Colossus Relish Imperiously
		Pattern II	NCS: L2 written form + synonym + repeat synonym CS: L2 written form + L1 equivalent + repeat target word	Pact Stub out Kin
	Four information tokens	Pattern I	NCS: L2 written form + L2 synonym/definition + repeat synonym/definition + repeat target word/synonym CS: L2 written form + L1 equivalent + repeat L1 equivalent/target word + repeat target word	Desecrate Inalienable Salience
		Pattern II	NCS: L2 written form + L2 synonym/definition + antonym + repeat target word/synonym CS: L2 written form + L1 equivalent + antonym + repeat target word/L1 equivalent	Denominator Facilitate Frenzied Disquietingly
Different information tokens	NCS: 3 tokens CS: 2 tokens		NCS: L2 written form + L2 synonym + repeat synonym CS: L2 written form + L1 equivalent	Apprehension Uncannily Forthwith Poignantly Burgeoning
	NCS: 4 tokens CS: 3 tokens	Pattern I	NCS: L2 written form + L2 synonym + repeat synonym + repeat target word CS: L2 written form + L1 equivalent + repeat target word	Shroud Optimal Refurbishing Enigmatic
		Pattern II	NCS: L2 written form + L2 definition/synonym + synonym/contextualize synonym + repeat target word/definition CS: L2 written form + L1 equivalent + repeat L1 equivalent	Cleft Feign

4.2 The same number of information tokens but different types of information

In this category, the same number of information tokens was provided by the teacher for both experimental groups. There are two subcategories. The first category contains three tokens of information for both groups; the second category includes four tokens. The teacher-students interaction dialogues for each Unfamiliar-Word within the

category were tabulated first, followed by the type/token information table. Then the teacher's lexical input will be examined in terms of the group difference. The teacher's decision-making, the students' reactions to the teacher's lexical input and their performance in the posttests will then be analyzed.

4.2.1 Three information tokens

In this category of episodes, for both experimental groups three information tokens were provided by the teacher. There are two patterns of three information tokens for both groups.

Pattern I:

NCS: L2 written form + synonym/definition + repeat synonym/definition;

CS: L2 written form + L1 equivalent + repeat L1 equivalent

It was found that the lexical input of the following three Unfamiliar-Words, *colossus, relish, imperiously*, fall into this pattern. That is, both groups received the L2 written form of the target words. The difference lies in the meanings provided for the target word and the repetition of the particular meaning. For the NCS group, the English synonym or definition was provided by the teacher which was then repeated by the teacher; for the CS group, the L1 equivalent was given by the teacher and then repeated by the teacher afterwards.

The following is the teacher-students interaction for the word *colossus*.

Episode 4.1

NCS (47 sec)

	Tape: 'The Statue of Liberty looked like a 15-storied colossus against the four-and-five-storied buildings of the city. People sat on rooftops to be able to take in her whole presence'
1	T: Why people sat on rooftops?
2	S: (many students answer in chorus) To take in her whole presence
3	T: Yes, to be able to take in her whole presence. How big is it? Class, did you hear she looked like a 15-storied, class do you know story?

4	S: Yes, floor
5	T: Floor right? 15-floored high building. Ok she looked like 15-storied colossus (writes down COLOSSUS on board)
6	S: (low voice echoing) Colossus
7	T: Colossus is a huge man, (pause) very tall, against four-and-five-storied buildings, right?
8	S: (silent)
9	T: Very tall, 15 storied. People ……

CS (34 sec)

	Tape: 'The Statue of Liberty looked like a 15-storied colossus against the four-and-five-storied buildings of the city. People sat on rooftops to be able to take in her whole presence'
1	T: Why people sat on rooftops?
2	S: (many students answer in chorus) To take in her whole presence
3	T: Yes, to be able to take in her whole presence. why? Class, did you hear she looked like a 15-storied, class do you know story?
4	S: Yes, floor
5	T: Yes, floor, 15-floored high building. Ok she looked like a 15-storied colossus (writes down COLOSSUS on board), colossus we say 巨人 (tr: huge man)
6	S: (pause)
7	T: 巨人
8	S: (loudly echoing) Colossus
9	T: People ……

Table 4.4: Type/token information table for *colossus*

Colossus	NCS	CS
teacher's input	L2 written form	L2 written form
	L2 definition 'a huge man, very tall'	L1 equivalent 巨人
	repeat definition 'very tall'	repeat L1 equivalent 巨人
students' reaction	echo target word in low voice	loudly echo target word
students' correct answers	huge man; giant man; 巨人	巨人

Looking through the two sets of teacher-students interactions of the two experimental groups, the teacher in both groups attempted to first elicit the students' understanding of the sentence by asking comprehension questions, gradually leading into the target word explanation. After the focus on both form and meaning of the target word, the teacher quickly returned to the meaning of the content of the listening passages. The teacher navigated in and out of focusing on lexical items while still keeping the

primary focus of the lesson communicative.

A planned decision on the target word meanings provided for the two experimental groups was made before the lesson. For example, the English definition 'a huge man' for the NCS group and a Chinese equivalent 巨人 for the CS group. The first character 巨 means 'huge' and the second character 人 represents 'man'. It should be noted that this decision-making was not copying the dictionary meaning but designing a more contextualized meaning for the students. The Oxford English Dictionary states that 'colossus' means 'anything vast or gigantic'. However, the teacher decided not to follow the dictionary meaning considering the difficulty of the words in this definition, such as 'vast' or 'gigantic', which might be too hard for some students to understand. Thus the teacher acted as a 'dictionary', providing meanings for lexical items, but the teacher also actively modified the dictionary meaning and designed her own pedagogical equivalents based on the context. Recall that this decision was made before the lesson in this study by the teacher and a group of experienced teachers.

However, the teacher also made unplanned decisions on lexical input. When the teacher noticed the quiet response of students from the NCS group, the teacher provided the unplanned additional information 'very tall' to help with some students' understanding of the definition provided before. The definition was clearly longer than the Chinese equivalent: the NCS group received 13 seconds longer treatment than the CS group. At the same time, the teacher also made unplanned decisions by repeating the meanings given before for the two experimental groups when noticing the students' inactive response. The teacher repeated part of the English definition 'very tall' to the NCS group and the Chinese equivalent 巨人 to the CS group. It can be seen that the teacher made several unplanned decisions on providing additional lexical information for the students when noticing students' problems, which is a normal part of the decision-making process in any real classroom. Although different information types were provided and repeated by the teacher for the two experimental groups, the same numbers of information tokens were given for both groups.

In addition to the teacher's input, while the students in the CS group echoed the target word 'colossus' in a higher voice, those from the NCS group echoed it in a low voice. The difference in the posttest scores between the two groups was significant as 93.5% of the students in the CS group scored correct answers compared to 70.3% in the NCS group. In the posttest, 15 out of the 37 from the NCS group wrote 'huge man' and another 6 of them wrote 'giant man'. However, there were 5 of the NCS group who wrote the Chinese equivalent '巨人'. As for the CS group, 93.5% of the students wrote the Chinese equivalent '巨人'. It can be seen that most students tend to provide the same answer that the teacher used for explanation, but there are several students in the NCS group who translated the English explanation into its Chinese equivalent as their answer, which indicates a reliance on L1. Furthermore, several students wrote 'giant man', which also indicates that these students have internalized the meaning given by the teacher and stored and retrieved the meaning from their memories in their own way. It can then be seen from their answers that the students of the NCS group processed the target word in different ways. Some shows signs of reliance on activation via L1; others have already internalized the given meaning and stored the information in L2. These issues will be discussed later in this chapter, and further discussed in the following chapter.

The following two sets of teacher-students interactions are more examples of Pattern I: *relish* and *imperiously*.

Episode 4.2
NCS (18 sec)

	Tape: 'Barty Phillips also spoke to Rose, who works as a general builder in the city of Sheffield. "I didn't relish my old job at all," she said. "I wanted to do more practical work, and I wanted to be self-employed."'
1	T: She said I didn't relish (writes down RELISH on board) my old job at all. Relish just means I didn't enjoy
2	S: (a few echoing) Enjoy
3	T: I didn't like, ok? I didn't like my old job at all, I wanted to do something practical.

CS (14 sec)

	Tape: 'Barty Phillips also spoke to Rose, who works as a general builder in the city of Sheffield. "I didn't relish my old job at all," she said. "I wanted to do more practical work, and I wanted to be self-employed."'
1	T: She said I didn't relish (writes down RELISH on board) my old job at all. I didn't relish my old job at all. Relish just means 喜欢(tr: enjoy)
2	S: 喜欢
3	T: (en…) 喜欢

Table 4.5: Type/token information table for *relish*

Relish	NCS	CS
teacher's input	L2 written form	L2 written form
	L2 synonym 'enjoy, like'	L1 equivalent 喜欢
	repeat synonym 'like'	repeat L1 equivalent 喜欢
students' reaction	echo synonym 'enjoy'	echo the L1 equivalent
students' correct answers	enjoy; like; 喜欢	喜欢; love; like

Episode 4.3:

NCS (13 sec)

	Tape: '"My dear," his wife replied imperiously, "if I had married him, he'd be the chief executive officer and you'd be the gas station worker."'
1	T: So his wife replied imperiously (writes down IMPERIOUSLY on board), imperiously means proudly, very proudly saying 'you would be the gas station worker.
2	S: (echoing) Imperiously, proudly (low voice)

CS (12 sec)

	Tape: '"My dear," his wife replied imperiously, "if I had married him, he'd be the chief executive officer and you'd be the gas station worker."'
1	T: So his wife replied imperiously (writes down IMPERIOUSLY on board), imperiously means 傲慢地 (tr: proudly), 傲慢地 saying that you would be the gas station worker.
2	S: (echoing) Imperiously (low voice)

Table 4.6: Type/token information table for *imperiously*

Imperiously	NCS	CS
teacher's input	L2 written form	L2 written form
	L2 synonym 'proudly'	L1 equivalent 傲慢地
	repeat synonym	repeat L1 equivalent 傲慢地
students' reaction	echo target word and synonym	echo the target word
students' correct answers	proudly; with pride	傲慢地

The analysis of the lexical episodes of the teacher-students interactions of the two target words 'relish' and 'imperiously' shows a similar trend in the teacher's lexical input and the students' reactions and answer types. The teacher could navigate in and out of focusing on the lexical items successfully, without disrupting the communicative nature of the lesson. The teacher, as a dictionary and dictionary designer, made planned and unplanned decisions on the lexical input for target words. For example, the teacher provided a synonym 'enjoy' for the target word 'relish' for the NCS group but made an unplanned decision on providing another synonym 'like' when the teacher noticed the difficulty of the students in processing the first one. Take the target word 'imperiously' as another example: the teacher presented a planned English synonym and its Chinese equivalent. However, both meanings could not match the original meaning of the target word as it is linked to the meaning of 'emperor'. Such a semantic mismatch might indicate the bilingual teacher's limited linguistic knowledge or a well thought-out pedagogical decision of the teacher as a dictionary designer taking into account length and density to help with students' vocabulary learning within such a communicative listening comprehension context. In addition, the teacher also made unplanned decisions on repeating the L2 synonym for the NCS group and the L1 equivalent for the CS group.

As far as the students are concerned, the CS group significantly outperformed the NCS group in the posttest. The students generally provided exactly the same answers that the teacher provided, but several students from the NCS group who were given an English synonym internalized the meaning of the target words and provided other English answers, which demonstrates this successful learning of the target word. Several students from the CS group also provided English synonyms as their answers. In addition, several students from the NCS group provided Chinese equivalents as their answers for the target word 'relish', which indicates their reliance on their mother tongue in the L2 vocabulary learning process.

Pattern II:

NCS: L2 written form + synonym + repeat synonym;
CS: L2 written form + L1 equivalent + repeat target word

In this category of teacher-students interaction lexical episodes, three Unfamiliar-Words, *pact, stub out, kin*, were found to fall into the same pattern. Three information tokens were provided by the teacher for both groups. For the NCS group, the English synonym was provided for the word and then repeated by the teacher; for the CS group, the L1 equivalent was given by the teacher, but the teacher repeated the target word afterwards. While the teacher tried to make students from the NCS group understand further the synonyms as meanings of the target words by repeating the synonym, the teacher actually exposed the students of the CS group to the target word again by repeating the target word in the context.

Table 4.7: Three sets of teacher-students interactions for *kin*, *stub out* and *pact*

	group	**teacher-students interaction**	**teacher's lexical input**	**students echoing**	**students answers**
kin	*NCS (22 sec)*	T: and language, climate, religion, food, educational methods, and lack of family and kin. (writes KIN down) KIN means close relatives. S: echoing RELATIVE T: so lack of family and relatives around you. So these are the differences.	L2 written form + synonym + repeating synonym	synonym	Close relatives; 亲人 亲属 近亲
	CS (22 sec)	T: and language, climate, religion, food, educational methods, and lack of family and kin. (write kin down) S: echoing kin T: KIN means 亲属(tr: close relative)，亲戚(tr: relative). Family and kin S: echoing kin	L2 written form + L1 equivalent + repeating target word	target word	亲属 亲戚
stub out	*NCS (15 sec)*	T: then the smoker usually S: (murmuring with teacher) T: stub (write down on the board) out his cigarette S: (several echoing) stub out T: stub out means put out his cigarette S: (only a few echoing) put out	L2 written form + synonym + repeating synonym	synonym + target word	熄灭 Put out

		T: put out his cigarette			
	CS *(12 sec)*	T: then the smoker will S: stop T: stub (write down on the board) out his cigarette S: (echoing) stub T: stub out means 熄灭 (tr: put out) S: (a lot echoing) stub out T: stub out his cigarette	L2 written form + L1 equivalent + repeating target word	target word	熄灭
pact	*NCS* *(30 sec)*	T: what's the secret that they share? S: (murmuring) T: he made a pact (writes down PACT on board) with his wife, right? pact means agreement. S: (echoing) pact, agreement T: T: So he made an agreement with his wife that he is going to die before she did. Then he could be there to welcome her in heaven.	L2 written form + synonym + repeating synonym	synonym + target word	协议 约定 agree-ment
	CS *(25 sec)*	T: what's the secret that they share? S: (murmuring) T: Bucky made a pact (writes down PACT on board) with his wife, pact means 一致(tr: agreement) S: (echoing in low voice) pact T so he made a pact with his wife that he would die before she did	L2 written form + L1 equivalent + repeating target word	target word	一致 约定

The teacher made planned decisions regarding the definitions of the target words provided. For example, the teacher provided the synonym 'put out' and its Chinese equivalent '熄灭', whose meanings do not match that of the target word. As discussed before, the teacher's planned decision on not pointing out the original meaning of 'stub out' as 'stop a cigarette from burning by pressing the burning end against a hard surface' might indicate the teacher's limited linguistic knowledge, and also their pedagogical decision-making. The question again is how far the teacher should go, in terms of semantic detail, for vocabulary learning in a communicative listening comprehension context.

The teacher also provided unplanned repetition for both groups in different ways based on their spontaneous judgment of students' learning contexts. The NCS group

received an English synonym and repetition of the synonym in context as the teacher believed that these synonyms needed more emphasis in order for the students to process them deeper, whereas the CS group received the L1 equivalent and the repetition of the target word in context again as the teacher judged that the students had no difficulty in understanding the Chinese equivalents. It was evident that the CS group received one more exposure to the target word while the teacher tried to make the synonym for the target word more salient to the NCS group.

With regard to students' reactions, the students in the NCS group tended to repeat the synonym and the target word to themselves, while the students in the CS group repeated only the target word. The repetition of the synonym of the NCS group shows again the difficulty they had in spending time processing the English information, compared with the more direct Chinese equivalent. In addition, analysis on the students' answers in the vocabulary posttest provides more evidence for the students' internalizing the concept and their reliance on L1.

To summarize, the analysis of the lexical episodes of teacher-students interactions in relation to this group of Unfamiliar-Words shows that the teacher could navigate in and out of focusing on lexical items without disrupting the communicative nature of the lesson. The teacher made planned decisions before the lessons on the meanings of the target words and unplanned decisions during the lessons on repeating the English synonym or Chinese equivalents or even providing additional synonyms. Both planned and unplanned decisions on lexical input were made by the teacher, based on the students' reactions and pedagogical concerns for vocabulary learning in a communicative classroom. Although different types of lexical information were provided by the teacher for the two experimental groups, the teacher provided the same number of information tokens for the two groups. In terms of the length of the two meanings and the time the teacher spent on each type of information, the NCS group seems to have received more information for the target words 'colossus' and 'relish' than the CS group, for which an additional synonym or definition was

provided for the NCS group. In terms of the answers provided by the students in the vocabulary posttest, it can be seen that some students provided their own answers different from the one provided by the teacher, which is an indication of their internalizing the meanings of the words and their reliance on L1.

4.2.2 Four information tokens

On some occasions, four information tokens were provided by the teacher for the two experimental groups. There are two patterns of four information tokens under this category.

Pattern I:

NCS: L2 written form + L2 synonym/definition + repeat synonym/definition + repeat target word/synonym;
CS: L2 written form + L1 equivalent + repeat L1 equivalent/target word + repeat target word

In this sub-category of lexical input patterns, four information tokens were provided by the teacher for both experimental groups. For the NCS group, the English synonym or definition was provided for the word and was then repeated by the teacher, while the teacher also repeated the target word or the synonym again to the students; for the CS group, the L1 equivalent was given and then repeated by the teacher and the teacher also repeated the target word afterwards. The following three Unfamiliar-Words, *desecrate, inalienable, salience*, are provided here as examples.

Episode 4.4:
NCS (25 sec)

	Tape: 'the move is to prevent township factories from further desecrating the environment.'
1	T: To prevent the township factories from desecrating (writes down DESECRATE) the environment, can you guess desecrate?
2	S: (one student) To damage
3	T: Yes! To damage or destroy. So to stop township factories from desecrating the environment, that means, from destroying or damaging the environment.

CS (27 sec)

	Tape: 'the move is to prevent township factories from further desecrating the environment.'

1	T: To prevent township factories from further desecrating (writes down DESECRATE), can you guess desecrate?
2	S: (silence)
3	T: It means in Chinese 破坏(tr: destroy). 破坏环境 (tr: destroy environment) So to stop township factories from desecrating the environment. That is their purpose.

NCS (65 sec)

	Tape: 'there is no such a thing as an inalienable right to smoke'
1	T: Do you have a right to smoke?
2	S: Yes/no
3	T: It's a bit difficult. Let's listen to it again (plays the sentence again)... Do smokers have right to smoke?
4	S: No
5	T: It says there is no such a thing as an inalienable (writes down INALIENABLE on board) means 'cannot be taken away', inalienable right means you have a right to smoke which cannot be taken away. But there is no such a thing as an inalienable right to smoke means you have no such a right to smoke.

CS (62 sec)

	Tape: 'there is no such a thing as an inalienable right to smoke'
1	T: Do smokers have a right to smoke? ...Do smokers have right to smoke?
2	S: Yes/no
3	T: Ok it's difficult, please listen to this sentence again (plays the sentence again)
4	S: No
5	T: No, there is no such a thing as an inalienable (writes down on board) means 不可剥夺的(cannot be taken away)，不可剥夺的权利(right that cannot be taken away) There is no such a thing as an inalienable right to smoke, that means you have no such a right to smoke.

NCS (78 sec)

	Tape: 'while keeping a close eye and a heavy hand on existing polluters, the officials have put more salience on prevention.'
1	T: So in addition to keeping an eye on the existing polluters, the officials have put more salience (writes down SALIENCE on board) on prevention (writes down Prevention). Class do you know prevention?
2	S: Yes
3	T: To prevent, that means to stop. Put salience on prevention, Salience means stress.
4	S: (low voice echoing) Stress
5	T: Do you know emphasis?
6	S: Yes
7	T: Ok to put emphasis on prevention, what does it mean?
8	S: (murmuring)
9	T: Means to stop those possible polluters. That means, control existing polluters and also pay attention to possible polluters, to prevent more polluters. So in addition to keeping an eye on existing polluters, the officials put emphasis on prevention.

CS (44 sec)

	Tape: 'while keeping a close eye and a heavy hand on existing polluters, the officials have put more salience on prevention.'
1	T: So they keep an eye on the existing polluters, the officials put salience (writes down SALIENCE on board) on prevention (writes down Prevention) Class do you know prevention?
2	S: Yes
3	T: Prevention means to stop, put salience on, salience we say 重点(tr: stress)
4	S: (echoing) Salience (low voice)
5	T: So put salience on stop those companies from polluting. So in addition to keeping an eye on existing polluters, the officials put salience on prevention, to stop those possible polluters from polluting.

Table 4.8: Type/token information table for *desecrate, inalienable, salience*

Desecrate	NCS	CS
teacher's input	L2 written form	L2 written form
	synonym 'damage, destroy'	L1 equivalent 破坏
	repeat the synonym in the sentence	repeat L1 equivalent 破坏环境
	repeat the target word in the sentence	repeat the target word in the sentence
students' reactions	silence	silence
students' correct answers	destroy; damage; 破坏	破坏

Inalienable	NCS	CS
teacher's input	L2 written form	L2 written form
	definition 'cannot be taken away'	L1 equivalent 不可剥夺的
	repeat the definition	repeat the L1 equivalent 不可剥夺的权利 in a contextual phrase
	repeat the target word in the sentence	repeat the target word in the sentence
students' reactions	silence	silence
students' correct answers	cannot be taken away; 不可被夺的	不可剥夺的；不可夺取的

Salience	NCS	CS
teacher's input	L2 written form	L2 written form
	L2 synonym 'stress, emphasis'	L1 equivalent 重点
	repeat synonym 'emphasis' in the sentence	repeat the target word in the sentence
	repeat synonym 'emphasis' in the sentence	repeat the target word in the sentence
students' reaction	echo one synonym 'stress'	echo target word

students' correct answers	stress; emphasis	重点

Although the same number of information tokens was provided by the teacher for the two experimental groups, the group difference in the teacher's lexical input lies in the different 'planned' meanings and the 'unplanned' repetition of different types of information. As planned, besides the different types of meanings provided for both groups, the synonyms or definition all semantically matched the corresponding Chinese equivalents for these three Unfamiliar-Words. 不可剥夺的 means 'cannot be taken away'. The character 不 means 'not'; 可 means 'can'; 剥夺 means 'take away'; 的 is an adjective marker. 破坏 just means 'destroy' or 'damage'. 重点 means 'emphasis'. However, it should be pointed out that both the target words 'desecrate' and 'salience' have wider semantic connotations which do not exist in both explanations. 'Desecrate' has religious connotations and 'salience' implies visual and auditory aspects of emphasizing something. It is again an issue of the teacher's designing the dictionary as lexical input for learners in a communicative context and how far a teacher should go for vocabulary explanation in a listening comprehension lesson.

As for the unplanned repetition of lexical information, it seems that both 'desecrate' and 'inalienable' are difficult target words so that the teacher repeated either the synonym/definition or the Chinese equivalent again to both groups for emphasis. However, for the target word 'salience', the teacher provided two synonyms and also checked the students' understanding of the synonyms which leads to the teacher's repeating the synonym twice later in context to the NCS group while the CS group received the teacher's repetition of the target word in context. Thus the time the teacher spent on the NCS group is much longer than the CS group. This case indicates again that providing English synonyms as meanings for the target words entails the risk that students have difficulty with the English synonyms and more time should be spent on explaining the synonyms.

With regard to the students' reactions, the students of both groups remained silent for 'desecrate' and 'inalienable' which were both relatively difficult words for them. For the target word 'salience', the NCS group repeated the synonym and the CS group echoed the target word, which demonstrates that again some students have difficulty with some English synonyms and it takes them time to process the L2 information, while the Chinese equivalent allows students more time to process the target word. As far as the students' answers in the vocabulary posttest are concerned, there are again incidences of their internalizing the concepts and reliance on L1. A good case in point is that 2 out of the 39 students of the NCS group wrote the Chinese 不可被夺的 for the target word 'inalienable', which was obviously a direct Chinese translation for the English definition 'cannot be taken away'.

Pattern II:

NCS: L2 written form + L2 synonym/definition +antonym + repeat target word/synonym;
CS: L2 written form + L1 equivalent + antonym+ repeat target word/L1 equivalent

In this category of lexical patterns, four information tokens were also provided by the teacher for both experimental groups. Both groups received the L2 written form of the target words. An antonym, a similar form, or a stem of the target words were provided by the teacher for both groups as well, which reflects the various options available to the teacher to explain new words. In addition, the NCS group was provided with the English synonym or definition, and the teacher also repeated the target word or the synonym; for the CS group, the L1 equivalent was given by the teacher, and the teacher repeated either the L1 equivalent or the target word afterwards. The following four Unfamiliar-Words, *denominator, facilitate, frenzied, disquietingly,* are provided here as examples.

The following are the teacher-students interactions for the words *denominator and frenzied*.

Episode 4.5:

NCS (34 sec)

	Tape: 'We must work towards understanding each other, sorting through our differences and finding the common denominator of common people that all of us share'
1	T: We must understand each other, right?
2	S: …
3	T: Sorting through the differences and finding the common denominator (write down 'DENOMINATOR' on board). Class denominator is the opposite word to differences, it's the common things that you share. So finding the common denominator of common people that all of us share. This is what we must do.
4	S: (echoing) Denominator, common things, share

CS (33 sec)

	Tape: 'We must work towards understanding each other, sorting through our differences and finding the common denominator of common people that all of us share'
1	T: We should understand each other, right?
2	S: (murmuring)
3	T: Sorting through the differences and also finding the common denominator (write down 'DENOMINATOR' on board) that all of us share. So denominator is the opposite word to differences, we say 共同点(similarities). Sorting through the differences and finding the common denominator that all of us share
4	S: (echoing loudly) Denominator

NCS (41 sec)

	Tape: 'Americans seem either totally frenzied and hard-working or totally relaxed and at ease.'
1	T: So the Americans
2	S: Totally …
3	T: Either…or…. Right? Either totally frenzied (writes down FRENZIED on board) and hard-working. Frenzied and hard-working, means frenzied this word has the similar meaning as
4	S: Hard-working
5	T: Hard-working, frenzied means very busy. Or totally relaxed and at ease. So that means frenzied has the opposite meaning as
6	S: Relaxed
7	T: Yes, either frenzied and hard-working or relaxed and at ease……

CS (33 sec)

	Tape: 'Americans seem either totally frenzied and hard-working or totally relaxed and at ease.'
1	T: So the Americans seem totally frenzied (writes down FRENZIED on board) and
2	S: Hard-working
3	T: Hard-working or totally

4	S: Relaxed
5	T: Relaxed and at ease. Right? So you know frenzied and hard-working and relaxed and at ease are opposite words. Frenzied in Chinese we say 繁忙的(tr: very busy)，忙碌的(tr: very busy) so the opposite word is relaxed.
6	S: (a few echoing) Frenzied
7	T: Either frenzied or hard-working

Table 4.9: Type/token information table for *denominator* and *frenzied*

Denominator	NCS	CS
teacher's input	L2 written form	L2 written form
	antonym 'differences'	antonym 'differences'
	definition 'common things that you share'	L1 equivalent 共同点
	repeat the target word in the sentence	repeat the target word in the sentence
students' reactions	echo the target word and key words in the definition	echo the target word
students' correct answers	common things; things in common; similarity; 相似点；共同点	相同点；共同点

Frenzied	NCS	CS
teacher's input	L2 written form	L2 written form
	L2 synonym 'very busy'	L1 equivalent 繁忙的，忙碌的
	L2 antonym 'relaxed'	L2 antonym 'relaxed'
	repeat target word in the sentence	repeat target word in the sentence
students' reaction	silent	echo target word
students' correct answers	busy; 繁忙的；忙碌的；忙的	繁忙的；忙碌的

It can be seen from the Table 4.9 that the teacher provided the same L2 written form, the antonym and repeated the target word in the context for both groups. The difference only lies in the 'planned' meanings provided by the teacher for both groups, with the English definition or synonym for the NCS group and the Chinese equivalent for the CS group. There is no semantic difference between the English and Chinese meanings. The two sets of Chinese equivalents '繁忙的，忙碌的' provided for the target word 'frenzied' are interchangeable synonyms, in other words the common ways of repeating the same idea with two different expressions. The teacher spent slightly

longer time in conveying the meaning of the word and the whole sentence for the NCS group. However, it was the CS group who achieved significantly higher recalling scores on the two words in the posttest.

In terms of the students' answers, it is again evident that the students also provided answers which were different from what the teacher presented in class. A very interesting example is the range of the students' correct answers for the target word 'denominator'. For the NCS group, 2 out of the 39 students gave the correct answer in English 'common things' and 1 'things in common'. Another 2 students provided the answer 'similarity' which was good proof that the students had internalized the concept of the target word and provided a correct answer different from what was given. Moreover, 2 out of the 39 students gave the correct answer in Chinese '相似点'(tr: similarity) '共同点'(tr: common things) which show that these two students translated the English definition into Chinese to process the lexical knowledge of the target word. For the CS group, there were 6 out of the 39 students who wrote the correct answer in Chinese '相同点' (tr: similarity) and 9 of them wrote '共同点' (tr: common things). These two sets of Chinese characters represent the same meaning, only with different characters. Similar evidence was found for the target word 'frenzied'.

A similar pattern comes from the following teacher-students interactions for the words *facilitate* and *disquietingly*.

Episode 4.6:
NCS (50 sec)

	Tape: 'but shutting down polluting factories is only part of the solution. There must be appropriate technological and financial instruments to facilitate environmentally friendly development.'
1	T: So these kind of instruments to facilitate (writes down FACILITATE) environmentally friendly development, facilitate means to help something to grow.
2	S: (several students complain that they couldn't see clearly what the teacher wrote on the board)
3	T: (rewrite the word again, and spelled the word) f-a-c-i-l-i-t-a-t-e. It is different from facilities, which is a noun. This facilitate is a verb, to help to grow. To facilitate the environmentally friendly development
4	S: (echoing) Facilitate

CS (27 sec)

	Tape: 'but shutting down polluting factories is only part of the solution. There must be appropriate technological and financial instruments to facilitate environmentally friendly development.'
1	T: So using these instruments in order to facilitate (writes down FACILITATE), facilitate is a verb, it is different from facilities, you know, which is a noun, facilitate is a verb. It means 促进(tr: facilitate). To facilitate the environmentally friendly development
2	S: (echoing) Facilitate

NCS (35 sec)

1	Tape: 'There is a place in the Atlantic Ocean where ships and airplanes seem to disappear disquietingly often. It seems to form a triangle between Miami, Bermuda, and the ocean east of Puerto Rico. This area is called the Bermuda Triangle.'
2	T: Class what kind of place is Bermuda Triangle?
3	S: (murmuring with the teacher)
4	T: Ships, planes, seem to disappear disquietingly (writes down DISQUIETINGLY) often. Ok? Disappear often, in what way? Disquietingly. Class you know quiet right? So disquietingly means worryingly.
5	S: (near silence)

CS (30 sec)

1	Tape: 'There is a place in the Atlantic Ocean where ships and airplanes seem to disappear disquietingly often. It seems to form a triangle between Miami, Bermuda, and the ocean east of Puerto Rico. This area is called the Bermuda Triangle.'
2	T: Class what kind of place is Bermuda Triangle?
3	S: (murmuring with the teacher)
4	T: Where ships and airplanes seem to disappear often. There is one word disquietingly (writes down DISQUIETINGLY) often. Do you know quiet?
5	S: Yes
6	T: Disquietingly means 令人担忧地 (tr: make people worried), 令人担忧地
7	S: (a few echoing) Disquietingly

Table 4.10: Type/token information table for *facilitate* and *disquietingly*

Facilitate	NCS	CS
teacher's input	L2 written form	L2 written form
	compare with 'facilities'	compare with 'facilities'
	definition 'help something to grow'	L1 equivalent 促进
	repeat the target word in the sentence	repeat the target word in the sentence
students' reactions	echo the target word	echo the target word
students' correct answers	help; help grow; 帮助	促进

Disquietingly	NCS	CS
teacher's input	L2 written form	L2 written form
	stem 'quiet'	stem 'quiet'
	synonym 'worryingly'	L1 equivalent 令人担忧地
	repeat target word	repeat L1 equivalent 令人担忧地
students' reactions	near silence	echoing target word
students' correct answers	worryingly; 担忧地	令人担忧地；令人不安地

The teacher reminded the students in both groups of the stem 'quiet' for the target word 'disquietingly' and a similar-form word 'facilities' for the target word 'facilitate', thus providing more information related to the target word either in form or in meaning. As planned, different meanings were provided for the target words, namely either the English synonym or definition for the NCS group or the Chinese equivalent for the CS group. With regard to the meanings provided by the teacher for both groups, the English synonym 'worryingly' includes only one word which represented the exact meaning of the word 'disquietingly'. However, because the Chinese language has no inflections at the end of the word to indicate the part of speech, tense, gender, number and so on, it was necessary to use five characters in the Chinese equivalent to fully express the meaning of 'to make people worried'. 令人 represented the meaning of 'to make people', which is indispensable in Chinese when describing objects rather than people, and 担忧地 encapsulated the main idea, namely to be 'worried or worrying'. The group difference lies in the 'unplanned' repetition for the target word 'disquietingly'. The teacher repeated the target word for the NCS group and repeated the Chinese equivalent for the CS group. Although more Chinese characters were given for the CS group compared with the one-word synonym for the NCS group, the teacher still spent slightly longer time for the NCS group. Although the NCS group had one more exposure to the target word, the CS group still outperformed the NCS group significantly for both target words in the posttest. In addition, the diversity of the students' answers in the vocabulary posttest on these two target words also illustrates their internalizing the words themselves.

4.2.3 Summary

To summarize, for the above mentioned two categories of teacher-students interactions, the teacher provided the same number of information tokens for the two experimental groups, namely either three or four. However, the two groups recalled these words in a significantly different way, with the CS group performing significantly better than the NCS group.

In terms of the teacher's lexical input, a close look at each episode of teacher-students interactions indicates that the main difference between the information types provided for both groups is in the different 'planned' English and Chinese meanings and the unplanned repetition of those different meanings. Although different meanings were provided to different groups, there was no semantic difference between the different meanings of both groups. There was some semantic mismatch between the target word itself and its English and Chinese explanations, but this was a planned decision made by the teacher before the lesson as dictionary and dictionary designer. With regard to the number of words and the length of time spent by the teacher for each group, it seems that the teacher spent more time on the NCS than the CS group, especially when the teacher provided the English definition for the target word for the NCS group and L1 equivalent for the CS group. The following table (Table 4.11) for the different meanings provided by the teacher for both groups shows clearly the trend.

Moreover, the teacher provided 'unplanned' information by repeating the different meanings. When synonyms were provided by the teacher for the NCS group, synonyms were frequently repeated by the teacher again in the context of the sentence instead of just providing the target word. Thus the CS group generally received one more exposure to the target word because the teacher repeated the target word to the CS group while repeating the synonym to the NCS group. It should be pointed out

that repetition of the meanings of the target words and the target words themselves are unplanned decisions made by the teacher spontaneously during the lesson. These unplanned pedagogical decisions were made by the teacher based on the students' difficulties in understanding and processing the meanings provided. Although the repetitions are beyond the outline of the teaching plan, both groups received such repetitions from the teacher. The major difference still lies in the English and Chinese meanings given by the teacher.

In terms of the students' reactions, those from the NCS group tended to echo the synonym when the teacher provided one, while those from the CS group tended to echo the target word. In terms of their answers, there is a clear trend that some students provided answers different to what the teacher presented in class, which further indicates a tendency that the students internalized the meanings of the target words in their minds and were able to express the meanings in their own words. In addition, the answers of several students from the NCS group show signs of reliance on L1, especially at such an initial stage of lexical development. They appeared to translate English synonyms given by the teacher into Chinese equivalents and stored these in their memories as the meanings of the target words.

Table 4.11: A list of meanings provided by the teacher for both experimental groups with regard to the 13 Unfamiliar-Words under the category of same information tokens

Unfamiliar-Words	**NCS**	**CS**
stub out	put out	熄灭
colossus	a huge man, very tall	巨人
disquietingly	worryingly	令人担忧地
relish	enjoy, like	喜欢
salience	stress, emphasis	重点
pact	agreement	一致
denominator	common things that you share	共同点
facilitate	help something to grow	促进
desecrate	damage, destroy	破坏
inalienable	cannot be taken away	不可剥夺的
kin	close relatives	亲属，亲戚
imperiously	proudly	傲慢地
frenzied	very busy	繁忙的，忙碌的

4.3 Different numbers of information tokens and different types of information

When the same number of information tokens was provided for both experimental groups, what matters are only the different types of information. However, when different numbers of information tokens were provided by the teacher for the two experimental groups, it becomes essential to examine which group received more information tokens from the teacher and what types of different information were given. Two categories of the teacher's lexical input patterns were found. One category involves two tokens of information for the CS group and three for the NCS group. The other category involves three tokens of information for the CS group and four tokens for the NCS group. The lexical episodes of teacher-students interactions in relation to Unfamiliar-Words which fit into these categories will be outlined below and discussed in terms of the teacher's lexical input and the students' reactions and answers.

4.3.1 Three information tokens for NCS and two for CS

Under this category, three information tokens were found for the NCS group and two

for the CS group. There are five Unfamiliar-Words which fit into the following pattern:

apprehension, uncannily, forthwith, poignantly, burgeoning

NCS: L2 written form + L2 synonym + repeat synonym;
CS: L2 written form + L1 equivalent

Table 4.12: The information table for the teacher's lexical input and students' reactions in relation to 5 Unfamiliar-Words

	group	**teacher-students interaction**	**teachers information type**	**students echoing**
appre-hension	*NCS (43 sec)*	T: So these differences caused feelings of uncertainty and apprehension. Class you see this word, looks like comprehension. But it's not comprehension, it's apprehension. APPREHENSION means anxiety. Do you know anxiety? S: yes (not loudly answered) T: or worry. So these difference caused feelings of uncertainty and anxiety. S: echoing apprehension, anxiety	L2 written form + synonym + repeating synonym	synonym + target word
	CS (26 sec)	T: So these differences cause feelings of uncertainty and apprehension. (writes down apprehension onto the board) Class you see this word look like comprehension, right? S: yes T: But it's not comprehension, it's apprehension. it means 焦虑(tr: anxiety)，忧虑 (tr: anxiety) S: echoing apprehension (loudly)	L2 written form + L1 equivalent	target word
uncannily	*NCS (8 sec)*	T: So uncannily (writes down UNCANNILY on board) uncannily means very strangely, ok? Very strangely, this officer demanded 'have you anything to declare' S: (silence)	L2 written form + synonym + repeating synonym	no
	CS (9 sec)	T: So the customs officer uncannily (writes down UNCANNILY on board) uncannily means 奇怪地(tr: strangely)，不可思议地(tr: strangely) He demanded 'have you anything to declare' S: echoing uncannily (low voice)	L2 written form + L1 equivalent	target word
forthwith	*NCS (10 sec)*	T: So demanding that local officials forthwith (writes down FORTHWITH on board) stop financing (writes down Finance) heavily polluted businesses. Forthwith means immediately, Financing means providing money	L2 written form + synonym + repeating	no

		for, so immediately stop giving money to the heavily polluted businesses. Then what's the purpose of doing these? Let's listen	synonym	
	CS *(7 sec)*	T: demanding that local officials forthwith (writes down FORTHWITH on board) stop financing (writes down Finance) 资助 heavily polluted businesses. Forthwith means 立即(tr: immediately)，马上(tr: immediately), those heavily polluted businesses. Then what's the purpose of doing these? Let's listen	L2 written form + L1 equivalent	no
poignantly	*NCS* *(10 sec)*	T: yes, the sentence says he saw the worker poignantly (writes down POIGNANTLY on board) wave to his wife, poignantly means very sadly, sadly talking to his wife, and said 'it was great talking to you'.	L2 written form + synonym + repeating synonym	no
	CS *(11 sec)*	T: the worker poignantly (writes down POIGNANTLY on board) wave to his wife, poignantly means 可怜地 (tr: sadly)，悲伤地(tr: sadly), waving to his wife and said 'it was great talking to you'.	L2 written form + L1 equivalent	no
burgeoning	*NCS* *(39 sec)*	T: …Ok, then this plan is based on burgeoning (writes down on board BURGEON) confidence. Burgeoning means growing, ok? do you know grow? S: yes T: ok, growing confidence and commitment to the concept of managed development. That means the government started to understand and be confident on the 'managed development' of the economy and put environmental concerns into it. That is, while developing the economy, you should manage the development as well.	L2 written form + synonym + repeating synonym	silent
	CS *(41 sec)*	T: Ok, did you hear 'this plan is based on burgeoning (writes down on board BURGEON) confidence'. Burgeoning means 越来越多的 (growing) The whole sentence means why the government put environmental concerns into economic development? It is based on the idea of managed development. That is, while developing economy, we should pay attention to the environment as well.	L2 written form + L1 equivalent	silent

Table 4.13: A list of Unfamiliar-Words with the meanings given by the teacher and the students' answers for each experimental group

Unfamiliar-Words		**NCS**	**CS**
apprehension	*Teacher's input*	anxiety, worry	焦虑，忧虑
	Students' answers	anxiety 焦虑	焦虑 anxiety
uncannily	*Teacher's input*	very strangely	奇怪地，不可思议地
	Students' answers	strangely 奇怪地	不可思议地
forthwith	*Teacher's input*	immediately	立即，马上
	Students' answers	immediately, at once, 立即，马上	立即，马上，立刻
poignantly	*Teacher's input*	very sadly	可怜地，悲伤地
	Students' answers	sadly	可怜地，悲伤地
burgeoning	*Teacher's input*	growing	越来越多的
	Students' answers	growing	越来越多的

It can be seen from the above sets of lexical episodes of teacher-students interactions for the five Unfamiliar-Words that, in addition to the L2 written form of the target word depicted on the board for both groups, the teacher provided a synonym for the target words and then made unplanned decisions to repeat the synonym again as part of the sentence for the NCS group, while the teacher provided only the L1 equivalent for the CS group. That is, compared with the CS group with Chinese equivalent, the meanings of the target words were strengthened by the teacher's repeating synonyms in context again for the NCS group.

Although the teacher provided one more information token for the NCS group, the teacher spent roughly similar amount of time for both groups in explaining the target words, because the teacher generally provided two L1 equivalents for the CS group for the sake of providing a complete meaning and also strengthening the students' understanding (see Table 4.13). For the target word 'apprehension', 焦虑 stresses 'being anxious' while 忧虑 focuses on 'worry'. Alternatively taking 'uncannily' as another example, 奇怪地 means 'strangely' while 不可思议地 means 'unimaginably'. 不可 means 'cannot', 思议 means 'imagine or think', 地 is the adverb marker. 立即 and 马上 is another good example, as they both mean

'immediately'. These sets of Chinese equivalents all semantically match each other although there is only a slight difference in meaning. These sets of Chinese equivalents were provided by the teacher to the CS group as prepared in the teaching plan. Providing the same meanings through different expressions strengthened their understanding. It should also be noted that there was no semantic difference between the English synonyms and Chinese equivalents.

In terms of the students' reactions, students from the NCS group tended to echo the synonym, although occasionally they echoed the target word or kept silent, while students from the CS group always echoed the target words. In terms of the answers that the students provided in the vocabulary posttest, some students gave different answers from what the teacher presented in class, which again shows their internalizing these concepts and reliance on L1. It can be seen from Table 4.13 that for the target words *apprehension*, *uncannily* and *forthwith*, several students from the NCS group provided a Chinese equivalent which was a correct direct translation from the English synonym. These provide evidence that some students rely on L1 in their early lexical development, and again that they internalized these concepts in their minds. Only one student of the CS group gave the correct answer in English 'anxiety', which also shows his internalizing of the concept.

4.3.2 Four information tokens for NCS and three for CS

Four information tokens were found for the NCS group and three for the CS group. There are two types of teacher's lexical input patterns under this category.

Pattern I:

NCS: L2 written form + L2 synonym + repeat synonym + repeat target word;
CS: L2 written form + L1 equivalent + repeat target word

Table 4.14 : The information table for the teacher's lexical input and students' reactions

	group	**teacher-students interactions**	**Teacher's lexical input**	**Students echoing**
shroud	*NCS* *(29 sec)*	T: how do we describe February? S: a month of romance T: yes, there is another word, class, the history of Valentine's Day is shrouded (writes down SHROUD on board) in mystery. You know mystery right? S: yes T: shrouded means cover, 'is shrouded in mystery' means 'is covered in mystery', that means it's very mysterious.	L2 written form + synonym + repeating synonym + repeat target word	silent
	CS *(29 sec)*	T: how may we describe February? S: it's a month of romance T: so class, we say the history of Valentine's Day is shrouded (writes down SHROUD on board) in mystery. You know mystery right? Shroud we say 遮盖(tr: cover)，覆盖(tr: cover), is shrouded in mystery, it means it's mysterious. S: (echoing) shroud	L2 written form + L1 equivalent + repeat target word	target word
optimal	*NCS* *(32 sec)*	T: what you could do to deal with failure? First, to think about S: your failure T: your failure, and all these questions were given then, for example, what caused it? What's the reasons? What caused it? Were conditions optimal (writes down OPTIMAL on board)? Optimal means perfect. S: echoing perfect T: were conditions for you to do the job perfect? Were conditions optimal? ok	L2 written form + synonym + repeating synonym + repeat target word	synonym
	CS *(25 sec)*	T: this paragraph tells you what to do to deal with failure. Right? First, you S: think about failure T: think about failure, asking yourself many questions. What caused it? That means what's the reason? Right? Were conditions optimal (writes down OPTIMAL on board)? Optimal means 最佳的(tr: perfect)，理想的(tr: perfect) Were conditions optimal? S: echoing optimal	L2 written form + L1 equivalent + repeat target word	target word

refurbishing	*NCS* *(40 sec)*	T: how did Rose learn her job? S: from other people and from experience T: yes, she was a builder. But, actually for this type of job other women they were specially trained, Did you hear 'trained'? they were trained for refurbishing (writes down REFURBISH on board), refurbishing is a very formal word, it just means repairs. Do refurbishing to buildings means do some repair work for buildings. S: (low voice echoing) repair	L2 written form + synonym + repeating synonym + repeat target word	synonym
	CS *(35 sec)*	T: how did Rose learn her job? S: from other people and from experience T: yes, she was a builder. But, actually women doing her job were specially trained, they were trained for refurbishing (writes down REFURBISH on board), refurbish we say 翻修(tr: repair)，装修(decorate) S: (loudly echoing) refurbishing T: ok? Refurbishing to buildings	L2 written form + L1 equivalent + repeat target word	target word
enigmatic	*NCS* *(13 sec)*	T: maybe possible in the future. This area is thought to be one of the most enigmatic (writes down ENIGMATIC) places, enigmatic means mysterious, one of the enigmatic, one of the most mysterious places in the world. S: echoing mysterious (low voice)	L2 written form + synonym + repeating synonym + repeat target word	synonym
	CS *(10 sec)*	T: maybe possible in the future. This area is regarded to be one of the most enigmatic (writes down ENIGMATIC) places, enigmatic means 神秘的(tr: mysterious) enigmatic places in the world S: echoing enigmatic (low voice)	L2 written form + L1 equivalent + repeat target word	target word

Table 4.15 : A list of Unfamiliar-Words with the respective meanings and students' answers for each group

Unfamiliar-Words		**NCS**	**CS**
shroud	*Teacher's input*	cover	遮盖，覆盖
	Students' answers	cover	遮盖，覆盖，掩盖
optimal	*Teacher's input*	perfect	最佳的，理想的
	Students' answers	perfect 良好的，完美的，极好的	最佳的，极好的
refurbishing	*Teacher's input*	repairs	翻修，装修
	Students' answers	repairs 维修	翻修，装修
enigmatic	*Teacher's input*	mysterious	神秘的
	Students' answers	mysterious	神秘的

Based on the lexical episodes of the teacher-students interactions in relation to the four Unfamiliar-Words, *shroud, optimal, refurbishing, enigmatic*, the lexical information provided for both experimental groups by the teacher was analyzed (see Table 4.14). It can be seen that the teacher provided an L2 synonym for the NCS group and an L1 equivalent for the CS group as planned in the teaching plan. The English synonyms and Chinese equivalents match each other semantically. Two sets of Chinese equivalents were provided when there existed different expressions in Chinese for the same concept. Where there were no frequently-used alternative expressions available in the Chinese language, one equivalent was given, such as 神秘的 for enigmatic.

However, the teacher's unplanned decision regarding repetition of certain information caused a group difference in information tokens. That is, the NCS group received one more information token as the teacher repeated the synonym for the target word in order to strengthen the students' understanding of the meaning of the target word. It seems that the teacher tended to repeat the synonyms again when noticing the students' difficulty in processing them. The reactions of the NCS group provide further evidence of their difficulty in focusing on the synonyms and connecting the L2 information to its concept as they tended to repeat the synonyms more frequently, while in contrast the CS group repeated the target words more often.

Although the NCS group receives more lexical input from the teacher, the CS group outperformed the NCS group in the vocabulary posttest in relation to these four Unfamiliar-Words. Further analysis of their answers again demonstrates their internalizing these concepts and dependence on L1. Table 4.15 shows that for the target words 'optimal' and 'refurbishing' the NCS group translated the synonym into '良好的' '完美的' '极好的' and '维修', and stored them as the meanings of the target word. Several students in the CS group provided different expressions of the same concept in Chinese, for example 掩盖 and 极好的, which have a slightly different

meaning but can still be regarded as correct answers in the context.

Pattern II:

NCS: L2 written form + L2 definition/synonym + synonym / contextualize synonym + repeat target word/definition;
CS: L2 written form + L1 equivalent + repeat L1 equivalent

In the case of this pattern, there was no semantic difference in the planned information for the two experimental groups, the English synonym or definition and the Chinese equivalent. Although the teacher made unplanned decisions on repeating the respective information for the two groups, the teacher repeated only one piece of information for each experimental group. The main unplanned decision-making occurs when the teacher provided one more information token for the NCS group. That is, the teacher provided another type of lexical option available to explain the meanings of the target words when noticing the students' difficulty in understanding the English information, by either providing another synonym or contextualizing a synonym. Take the target word 'cleft' for example, the teacher provided the synonym 'gap' first, and then another synonym 'ditch' when she noticed the students' difficulty in understanding. Then the teacher further contextualized the synonym 'gap' since some students have difficulty in such an important and frequently used word. This is where a significant time difference appears and the teacher spent 29 seconds more for the NCS group than the CS group. Take 'feign' for another example, the teacher spent more time for the NCS group in providing a synonym 'pretend' when noticing the students' difficulty in processing the definition 'force or give unwillingly' and also ensuring that the students knew the synonym 'pretend' by asking a clarification question 'do you know pretend'. However, it should be borne in mind that it was still the CS group who outperformed the NCS group in the posttest.

The following are the teacher-students interactions for the word *cleft and feign*.

Episdoe 4.7:

NCS (37 sec)

	Tape: 'Robert Bruce, leader of the Scots in the 13th century, was hiding from the English in a cave. He watched a spider industriously spinning a web. The spider tried to reach across a cleft in the rock…'
1	T: … Then the spider tried to reach across a cleft (writes down CLEFT on board).
2	S: (echoing) Cleft
3	T: Cleft is a gap. Do you know gap?
4	S: Yeah (some students echoing gap)
5	T: Or ditch?
6	S: Yeah (some students echoing ditch)
7	T: Have you heard of generation gap?
8	S: Yes
9	T: That means you and your parents have different attitude toward things. So gap is something that you cannot across. So the spider tried to cross the cleft, right?
10	S: (echoing) Cleft

CS (8 sec)

	Tape: 'Robert Bruce, leader of the Scots in the 13th century, was hiding from the English in a cave. He watched a spider industriously spinning a web. The spider tried to reach across a cleft in the rock…'
1	T: … Then the spider tried to reach across a cleft (writes down CLEFT on board). Cleft is 缝隙 (tr: gap)
2	S: (echoing) cleft (loudly)
3	T: Ok? 缝隙

NCS (19 sec)

	Tape: 'Americans perennially use first names upon meeting a stranger and do not always shake hands. They often just feign a smile and say "Hi" or "Hello", rather than using a more ritualistic handshake.'
1	T: They often just feign (writes down FEIGN on board) a smile. Feign means force a smile unwillingly, ok? You give a smile unwillingly
2	S: Oh
3	T: Or to pretend. Do you know pretend?
4	S: Yes
5	T: So they often force a smile unwillingly and say Hi or Hello …

CS (9 sec)

1	Tape: 'Americans perennially use first names upon meeting a stranger and do not always shake hands. They often just feign a smile and say "Hi" or "Hello", rather than using a more ritualistic handshake.'
2	T: So they often just feign (writes down FEIGN on board) a smile. Feign means 假装 (tr: pretend) smile
3	S: (echoing) feign (low voice)

4	T: Ok? 假装 and say Hi or Hello …

Table 4.16 : Type/token information table for *cleft* and *feign*

Cleft	NCS	CS
teacher's input	L2 written form	L2 written form
	L2 synonym 'gap, ditch'	L1 equivalent 缝隙
	contextualizing synonym 'gap'	
	repeat target word in the sentence	repeat L1 equivalent 缝隙
students' reaction	echo synonyms and target word	echo target word
students' correct answers	gap; ditch; 沟；鸿沟；间隙	缝隙；间隙

Feign	NCS	CS
teacher's input	L2 written form	L2 written form
	L2 definition 'force or give unwillingly'	L1 equivalent 假装
	L2 synonym 'pretend'	
	repeat definition in the sentence	repeat L1 equivalent
students' reaction	silent	echo target word
students' correct answers	pretend; force unwillingly; 假装	假装

In terms of the students' answers, there are also indications of some students providing different answers from what the teacher presented in class (see Table 4.16). As for the students' answers for the target word 'cleft', 14 out of the 38 students from the NCS group wrote the correct English answer 'gap' and another 3 of them wrote 'ditch'. The other 12 students provided Chinese answers which were regarded as the correct ones as well, such as '沟'(tr: ditch) '鸿沟' (tr: ditch) '间隙' (tr: gap) which are direct translations for the synonyms 'ditch' and 'gap'. As for the CS group, 35 out of the 39 students wrote the correct Chinese answer '缝隙' and another 3 of them wrote '间隙', which just means 'gap' and evidently shows these students' internalizing the concept. In addition, for the target word 'feign', 3 students of the NCS group gave the correct Chinese answer '假装', which is a direct translation from the synonym 'pretend'.

4.3.3 Summary

To summarize, it is evident that the NCS group received one more information token from the teacher than the CS group in relation to some Unfamiliar-Words. Consequently, the teacher spent more time reinforcing their memory in the NCS group than the CS group. In addition to the 'planned' different explanations provided by the teacher for both groups, this additional information mainly comes from the unplanned decision-making of the teacher, in other words the teacher spent more time in helping the NCS group with their understanding of the meanings of the target word, either by repeating the synonym, providing another synonym or contextualizing a synonym given before. However, the CS group recalled all these Unfamiliar-Words significantly better than the NCS group in the posttests.

Moreover, a closer look at the students' answers in the vocabulary posttest reveals a similar trend, as some students provided answers which were different from what the teacher presented in class, which further indicates that they internalized the meanings of the target words provided by the teacher and produced the output meaning by themselves. Similarly, several students from the NCS group relied on their L1 in lexical development by providing Chinese equivalents as their correct answers for the meanings of the target words.

4.4 Evidence from Familiar-Words

13 Familiar-Words, words that some students in the class already knew, were found to have been recalled significantly differently by the two experimental groups in the immediate posttest. The lexical episodes of the teacher-students interactions for these words are attached in Appendix 9. A number of similar patterns of teacher's lexical input and students' reactions were found. The following table (Table 4.17) illustrates these patterns.

Table 4.17: Patterns of teacher's lexical input and students' reactions in relation to 13 Familiar-Words

Information token	**Familiar-Words**		**NCS**	**CS**
two tokens	**condemn**	*teacher input*	L2 written form + synonym 'criticize'	L2 written form + L1 equivalent 谴责
		students reaction	silence	echo L1 equivalent
three tokens	**utilize**	*teacher input*	L2 written form + synonym 'use' + repeat synonym	L2 written form + L1 equivalent 使用 + repeat target word
		students reaction	echo synonym	echo L1 equivalent + target word
	eccentric	*teacher input*	L2 written form + synonym 'unusual, strange'+ repeat synonym	L2 written form + L1 equivalent 古怪的 + repeat target word
		students reaction	echo synonym	echo target word
four tokens	**coordi-nation**	*teacher input*	L2 written form + definition 'working together' + repeat definition + repeat target word	L2 written form + L1 equivalent 合作 + repeat L1 equivalent + repeat target word
		students reaction	echo definition	echo L1 equivalent + target word
three/ two tokens	**indis-pensable**	*teacher input*	L2 written form + synonym 'very important' + repeat synonym	L2 written form + L1 equivalent 不可缺少的，重要的
		students reaction	echo synonym + target word	echo L1 equivalent + target word
	dispatch	*teacher input*	L2 written form + synonym 'send' + repeat synonym	L2 written form + L1 equivalent 派遣
		students reaction	silence	echo target word
	cabinet	*teacher input*	L2 written form + definition 'a piece of furniture, a kind of drawer that you can put files in' + repeat target word	L2 written form + L1 equivalent 柜子，橱子
		students reaction	silence	echo L1 equivalent + target word
	produc-tivity	*teacher input*	L2 written form + definition 'the ability, the efficiency to produce or work' + repeat target word	L2 written form + L1 equivalent 生产力，生产率
		students	echo target word	echo L1 equivalent

		reaction		
four/ two tokens	**accou- nting**	*teacher input*	L2 written form + definition 'keeping or counting of money' + repeat target word + repeat definition	L2 written form + L1 equivalent 会计
		students reaction	echo target word	echo target word
	torture	*teacher input*	L2 written form + definition 'cause great pain' + repeat target word + repeat definition	L2 written form + L1 equivalent 折磨
		students reaction	silence	echo L1 equivalent + target word
four/ three tokens	**finance**	*teacher input*	L2 written form + contextualization 'finance concerns with money' + definition 'provide/give money for' + repeat target word	L2 written form + L1 equivalent 资助 + repeat target word
		students reaction	silence	echo L1 equivalent
	subject to	*teacher input*	L2 written form + definition 'make somebody suffer' + repeat target word + repeat definition	L2 written form + L1 equivalent 使某人遭受什么罪 + repeat target word
		students reaction	silence	echo target word
	assume	*teacher input*	L2 written form + definition 'think that something is true or take for granted' + repeat target word + repeat definition	L2 written form + L1 equivalent 假设，假定+ repeat target word
		students reaction	silence	silence

Just as with the Unfamiliar-Words, there are also two big categories of patterns for the 13 Familiar-Words: 1) same information tokens with different information types, 2) different information tokens and different information types.

The same number of information tokens but with different information types were

provided by the teacher in the case of both experimental groups. When two tokens were given, the group difference lies only in the English synonym and Chinese equivalent. When three tokens were given, the group difference lies in both the meanings and the different repetition of either the meaning or the target word itself. Thus, the teacher gave a synonym and repeated the synonym again for the NCS group in order for the English synonym to be fully understood in the context. When the teacher gave the Chinese equivalent to the CS group, the teacher repeated the target word in context. Moreover, the students of the NCS group tended to echo the synonym, whereas the CS group repeated the target word. When four tokens were given, the group difference is similarly in the meanings and repetition of the meanings. The teacher repeated the respective meaning to both groups, namely the definition for the NCS group and the L1 equivalent for the CS group.

It can then be concluded that when the same information tokens were provided by the teacher for both groups, the group difference is reflected in both the 'planned' meanings and the 'unplanned' repetition of the different meaning types afterwards. The teacher tended to repeat what was provided to the NCS group more frequently than the CS group, that is, the teacher tended to repeat the English synonym or definition more often than she repeated the Chinese equivalent. This suggests that providing an English synonym or definition is more difficult and time-consuming for the students to process and absorb than simply giving the Chinese equivalent. Moreover, the students' tendency to echo the synonym more frequently also indicates their spending more time on processing the meaning of the target word.

Similarly, different information tokens with different types of information were generally provided by the teacher for both groups. However, it can be seen that it was always the NCS group who received more information tokens than the CS group. When three information tokens were given to the NCS group and two for the CS group, it is clear that the teacher repeated either the synonym or the target word to the NCS group while no repetition was found with the CS group. Likewise, even when

four information tokens were provided for the NCS group and two for the CS group, the teacher repeated both the definition and the target word to the NCS group while there was no repetition for the CS group from the teacher. In addition, the final example is the pattern of four information tokens for the NCS group and three for the CS group. The teacher gave the definition of the target words to the students of the NCS group and repeated both the definition and the target word again in the relevant context, while the teacher provided the L1 equivalent and repeated the target word only for the CS group. For the Familiar-word 'finance', the teacher did not repeat the definition but contextualized 'finance' as 'finance concerns with money' for the NCS group only.

It can thus be concluded from this category that the teacher spent more time and energy in providing a clear meaning for the target word and making the meaning more salient for the NCS group, but the CS group outperformed the NCS group significantly on these Familiar-Words in the posttest. Moreover, in terms of the students' reactions, the CS group seemed more active and tended to repeat the target word more than the NCS group.

Irrespective of whether the same or different numbers of information tokens were provided by the teacher for both experimental groups, the CS group consistently outperformed the NCS group on these 13 Familiar-Words in the immediate posttest.

4.5 Chapter summary and conclusion

This chapter provided in-depth insights into the reason why the CS group performed significantly better than the NCS group during the immediate posttest in terms of the teacher's lexical input and the students' reactions and answers in the posttest. From the above qualitative analysis of both the Unfamiliar-Words and the Familiar-Words which were recalled significantly differently by the two experimental groups in the vocabulary posttest, the following observations can be drawn.

1) For both experimental groups, the lexical episodes of the teacher-students interactions show that the teacher was able to focus the students' attention to both form and meaning of the target words without disrupting the communicative orientation of the lesson. The teacher could successfully navigate in and out of focusing on the lexical items and negotiate meaning with the students in relation to the content of the listening passages before focusing more extensively on the lexical items and returning to the negotiation of meaning on the listening passages after the focus on lexical items.

2) Analysis of the types and tokens of lexical information given by the teacher for both experimental groups show that the teacher provided various types and tokens of information in order to effectively explain the meanings of the target words. The teacher thus functions as a 'dictionary', providing the students with not only the orthographic and syntactic information in relation to difficult words but also the meanings of these words.

3) At the same time, the teacher functions as a 'dictionary designer', by designing a unique dictionary for different learning contexts and needs of different groups of students. The teacher made planned decisions on the lexical information for the target words before the lessons by designing a teaching plan. Meanwhile, the teacher made unplanned decisions in the real-life classroom environment on the lexical information input according to the students' reactions and problems by adjusting the teaching plan and providing more lexical information. For example, the teacher made unplanned decisions on repeating the meanings of the target words either with an English synonym or Chinese equivalent and the target word itself.

4) Analysis of the difference between the two experimental groups in the patterns of lexical information tokens provided by the teacher shows that the teacher provided the same and different numbers of information tokens for the two groups. The group

difference is explained by the unplanned decision-making of the teacher during the lessons. It was found that the teacher provided more information tokens for the NCS group than the CS group, namely by repeating the English synonyms, contextualizing the synonym or providing new synonyms to the NCS group. Consequently the teacher spent longer on the NCS group than the CS group. It was the NCS group who received additional lexical input from the teacher, but it was the CS group who significantly recalled more words in the immediate posttest than the NCS group. This additional lexical information tokens for the NCS group actually provides further evidence for the quantitative findings of the previous chapter in favor of the CS group.

5) It should be pointed out that the additional information tokens provided for the NCS group and the more time spent for the NCS group indicates the difficulty of the students in the NCS group in processing the L2 meanings of the target words given by the teacher. The unplanned decision-making of the teacher was based on the students' reactions to the English synonyms or definitions provided by the teacher. When the teacher noticed the students' difficulty in understanding one synonym, the teacher either repeated the synonym again or provided another synonym. Further evidence comes from the analysis of the students' reactions, which shows that the students from the NCS group tended to echo the synonym for the target word which was provided by the teacher, while those from the CS group tended to echo the target word more frequently.

6) Analysis of the students' answers provides further insights as to the students' processing of vocabulary information. Some students from the NCS group provided their answers in Chinese, although they only received English input from the teacher. It seems that these students translated the English information given by the teacher into Chinese, and then stored this translation in their memories as the meanings for the target words. For these students, it is obvious that Chinese information is more helpful than English for them to understand the meanings of the target words, thereby

establishing a link between the target words and concepts. It should also be noted that some students from the NCS group provided English meanings which were different from the English meanings given by the teacher, and some from the CS group provided other Chinese equivalents which were different from the Chinese equivalents given by the teacher. This moving away from the given language type and given meaning shows signs that the students might have already conceptualized the meanings and embedded them into their own knowledge, which possibly allowed them to phrase different meanings in the vocabulary tests.

CHAPTER FIVE Discussion

This study serves as an exploratory work to examine the effectiveness of focus on form on lexical items and the role of the teacher's use of CS in learners' L2 vocabulary learning in the context of a meaning-oriented listening comprehension class.

The students' attention was drawn to both meaning and form of the lexical items by the teacher while they were presented with listening comprehension materials and encouraged to negotiate meaning with the teacher in relation to the content of the listening materials and especially the new words in them. The teacher's switching to Chinese to explain the target vocabularies was compared with the teacher's providing L2 information on the meanings of the target vocabularies. The two types of explanation for the target vocabularies were examined as ways of focusing on 'form' on lexical items by comparing them with a baseline group where the teacher did not provide any vocabulary explanation for the target vocabularies.

This study was initially focused on two main research questions as to the effectiveness of focus on form on lexical items and the teacher's CS use. A randomized control experimental design was employed as the main research technique, involving two experimental groups and one control group. From the process of data analysis, three further issues emerged, in relation to other confounding variables influencing the students' vocabulary learning, the students' confidence level and their preference of language type. Both quantitative data on students' vocabulary scores in the pretest, posttest, and delayed posttest, and qualitative data on the lexical episodes of teacher-students interaction were analyzed. The findings are reiterated and discussed in this chapter in relation to previous theories and studies.

5.1 Lexically-oriented form-focused instruction

Before launching into a discussion of the first research question as to the effectiveness of focus on form on lexical items, it is helpful to restate the theoretical and pedagogical context of the lexically-oriented form-focused instruction in this study.

What is meant by lexically-oriented focus on form in this study? The 'form' in the lexically-oriented form-focused instruction refers not only to the orthographic and syntactic form of the words but also to the form-meaning connections of these lexical items. The two experimental groups in this study involve two different ways of the teacher drawing the students' attention to both form and meaning of the target lexical items. The primary focus of the lessons for the two experimental groups was still communicative, that is the teacher helped the students' comprehension of the listening passages by asking comprehension questions and negotiating meaning with the students. When there were words in the listening passages that were difficult for the students to understand, the teacher stopped the flow of the interaction and drew the students' attention to the spelling, the pronunciation, and most importantly, the meaning of these lexical items and then returned fairly quickly to the meaning of the listening texts, without detracting from the communicative nature of the lesson.

The qualitative analysis of those lexical episodes of teacher-students interactions in relation to those words for which there were significant experimental group differences in recall provides further evidence that the teacher was able to focus the students' attention to both form and meaning of the lexical items without disrupting the communicative nature of the lesson. In fact, the teacher always dealt with the meaning of the listening passages before and after focusing the students' attention onto lexical items. This suggests that the lexically-oriented form-focused instruction can be done without disrupting the communicative orientation of the lessons. This supports the claims of Ellis et al (2001: 310), who stated that teachers and students could navigate in and out of focusing on aspects of the code while still keeping the

overall orientation of the message intact. This also affirms the claims of Laufer and Girsai (2008: 695), who stated that '...learners' attention can be drawn to lexical items (single words and multi-word units) within a communicative task environment if these lexical items are necessary for the completion of a communicative, or an authentic language task'.

The present study has provided empirical support for the successful implementation of lexically-oriented focus on form in a communicative language environment. Through the medium of listening activities, this study provides evidence to support previous arguments in favour of a focus on form within lexis, which have been put forward by studies involving reading texts (Long, 1997; Doughty and Williams, 1998; Haastrup and Henriksen, 2001; Laufer, 2005a,b, 2006) and descriptive studies on lexically-oriented focus on form (Ellis et al., 2001, 2002; Basturkmen et al, 2002; Loewen, 2005; Williams, 2001; Alcon, 2007; Zyzik and Polio, 2008).

This study also supports previous studies in a Chinese EFL context. Guo (2007), who observed an EFL classroom in a Chinese university, investigated the lexical CS behaviour of the teacher in this context. In naturally occurring reading comprehension lessons, the two teachers in his study were found to stop the lesson and draw students' attention to lexical items by switching to their L1. In the studies by Meng (2006) and Liu (2008), who examined the effectiveness of L1 use in the L2 classroom through different experimental and control groups in either Chinese secondary school or university level EFL classrooms, the teachers all drew students' attention to lexical items. Although these studies involve reading texts as the mediating activity, the teacher's behaviour observed by Guo (2007), Meng (2006) and Liu (2008) is similar to that conducted in this study in that it is ecologically valid for the teacher in the Chinese EFL classroom to draw students' attention to both form and meaning of the lexical items.

It is important to remember that qualitative analysis of lexical episodes of

teacher-students interactions shows that the teacher provided both planned and unplanned lexical information to the students, offering further evidence that teachers can draw students' attention to lexical items through different ways, either in a preselected way according to the teaching plan before the lesson or incidentally arising from the students' difficulties during the specific learning context (Ellis, 2001; Williams, 2001; Alcon, 2007; Zyzik and Polio, 2008). It should be noted that the unplanned lexical information in this study and the previous studies on incidental form-focused instruction all result from the learners' difficulties in the lessons. However, they are different in that the unplanned lexical information is incidental information provided to explain the lexical items which have been preselected by the teacher as the focus of the attention rather than another new lexical item incidentally explained by the teacher. Due to the experimental nature of this current study, where preselected lexical items have to be the focus, both planned and unplanned lexical input could be provided by the teacher for the same target lexical item. For example, when the students have difficulties in understanding one synonym given by the teacher for a target word, the teacher has to make unplanned decisions on further explaining the synonym. It is then the teacher's decision-making on which and how many aspects of the 'form' of the lexical items should be provided during the lexically-oriented form-focused instruction on the basis of the specific lexical items and students' reactions.

5.2 Is it beneficial to focus on form on lexical items?

Having stated the features of lexically-oriented form-focused instruction in this study, let us discuss in depth the first research question, whether or not it is beneficial in terms of vocabulary learning to have brief episodes of lexically-oriented focus on form. While there is indirect and direct empirical evidence for the effectiveness of form-focused tasks or activities in L2 vocabulary learning in the literature, there is a lack of empirical evidence for the efficacy of lexically-oriented form-focused instruction on students' vocabulary gains. This study fills the gap by examining the

effectiveness of the lexically-oriented form-focused instruction through measuring the vocabulary gains of two experimental groups who received the teacher's focus on form on lexical items over a time period of two months and then comparing these gains with the performance of a control group who did not receive any focus on form on the lexical items.

Firstly, in terms of the vocabulary gains of the two experimental groups in the posttest and delayed posttest, the analysis shows that the two groups performed significantly better in the immediate posttest than in the pretest and significantly worse in the delayed posttest than in the immediate posttest. However, compared with the pretest, there was still a significant increase in vocabulary scores in the delayed posttest. It can then be seen that the students in these two experimental groups, who received lexically-oriented form-focused instruction, benefited significantly from this type of lexical instruction at least in the short term. Although these vocabulary gains dropped significantly in the delayed posttest about one week later after the final training session, the two experimental groups still benefited from the lexical instruction in the long-term, compared with their pretest vocabulary scores before the instruction. Moreover, it should be noted that there was no revision by the students either in class or out of class, which is contrary to the normal procedure of vocabulary learning. It is then entirely understandable that the students were unable to retain these words in the long-run. Thus it can be concluded from the vocabulary gains over time that this type of form-focused instruction helps with both short- and long-term retention of new words, but it requires many encounters with the new words in order to keep a high retention rate in the long run.

Secondly, stronger evidence for the effectiveness of lexically-oriented form-focused instruction comes from the comparison between the two experimental groups which received lexically-oriented form-focused instruction and the control group who did not receive any explanation of target vocabularies in the delayed posttest. Recall that the control group did not take the immediate posttest, due to ethical concerns that they

would feel frustrated being tested on something they barely knew and had not received any lexical explanation from the teacher. While no significant difference was found in the pretest, this analysis shows that the two experimental groups significantly outperformed the control group in the delayed posttest. That is, the students from the two experimental groups who received lexically-oriented form-focused instruction recalled significantly more words in the delayed posttest than those from the control group who did not receive any focus on form on lexical items but only focused on the meaning of the listening passages, which again indicates the superiority of the lexically-oriented form-focused instruction over meaning-only instruction without focusing on form on lexical items.

Taking the above two points together, although the two experimental groups recalled over 50 percent of the words in the immediate posttest and failed to retain these words in the delayed posttest due to a lack of opportunities for reviewing the target words, these two groups still outperformed the control group significantly in the delayed posttest. In all, the following tentative conclusion can then be drawn that vocabulary learning is better facilitated by lexically-oriented form-focused instruction than meaning-only instruction without focusing on form at all.

As few previous studies have examined the effectiveness of the lexically-oriented form-focused instruction, the findings of this study could only be compared with those of other similar studies. The findings of this study provide evidence for those descriptive studies (Alcon, 2007; Zyzik and Polio, 2008) on lexically-oriented form-focused instruction that the learners' attention could be selectively directed to vocabulary items, which resulted in the learners' noticing of these lexical items and subsequent recall of them. It is then worth focusing on form on lexical items with the primary focus of the lesson still communicative in second language classrooms. Although those studies examining the effectiveness of form-focused tasks on L2 vocabulary learning (Hill and Laufer, 2003; Laufer, 2003; De la Fuente, 2006; Min, 2008; Laufer and Girsai, 2008) investigated form-focused tasks in the reading context,

this study still supports the findings of these studies in terms of the effectiveness of form-focused instruction as a whole, that is the efficacy of drawing students' attention to lexically-oriented 'form' in a meaning-focused language classroom.

This effectiveness of lexically-oriented focus on form on learners' L2 vocabulary learning is also indirectly in line with a series of research literature reviewed in the first chapter, although there are no such empirical studies which directly examined this effectiveness. The findings of this study provide empirical evidence against Krashen's Comprehensible Input Hypotheses, claiming that the structure slightly beyond the current level of competence (i+1) will be provided automatically through comprehensible input, which in turn leads to acquisition. The control group in this study which was also exposed to the listening passages recalled few words in the delayed posttest. Long (1981, 1983, 1985) further argued that learners need to interact and negotiate meaning with teachers or peers in order to achieve better comprehension which in turn makes acquisition possible. The control group in this study also had opportunities to interact with the teacher over the meanings of the listening passages. During the lesson, the teacher was negotiating with students over general meaning rather than specific lexical 'form'. However, it seems that comprehension of meaning in the context could not guarantee the incidental acquisition of new vocabulary. Some attention must be focused on form-meaning connections during the meaning negotiation process.

This study is then consistent with Hulstijn's (2001, 2003) argument on incidental and intentional vocabulary learning and other researchers' arguments on the role of consciousness in L2 (Schmidt, 1993; Ellis, 1994, 1995; Robinson, 1995), that target language forms can only be acquired when they are noticed, and vocabulary learning requires attention to both form and meaning; thus instruction works by increasing the salience of the target lexical items input. No instruction was given in the control group for attention on the target lexical items, whereas in the two experimental groups the students' attention was drawn to the lexical items by the teacher. The findings that

the two experimental groups recalled a certain level of vocabulary in the short- and long-term and also outperformed the control group further supports the claim that a certain amount of attention on lexically-oriented 'form' is vital to understanding and learning meaning of the lexical items.

5.3 Classroom CS: restating the context

The two experimental groups in this study differed in terms of the teacher's focusing on form on lexical items in the listening comprehension tasks, through providing L2 information for the target vocabularies or by switching to learners' L1. Before beginning a discussion of the second research question as to the effectiveness of the teacher's CS use, it is necessary first to restate the features of classroom CS in this study and how it is related to naturalistic CS and L1 use.

One experimental group in this study received the teacher's switching to the students' mother tongue, Chinese, in explaining the new English vocabulary in the listening comprehension passages. Recall that the aim of the lesson was to help with the students' understanding of the listening passages through the teacher's negotiating meaning of the passages with the students and only occasionally focusing on some difficult lexical items in the listening passages. The teacher's use of CS in this study is then one type of classroom CS, that is the lexically-oriented intra-sentential CS used by the teacher in a communicative language classroom.

What are the characteristics of classroom CS in comparison with naturalistic CS? Starting with socio-linguistic research, naturalistic CS has long been investigated as the bilingual competence in formal or informal natural settings. Classroom CS, on the other hand, is limited in the second language classroom environment, whether between teacher and students or among students. While there is a consensus that the use of CS in naturalistic settings is considered as an indicator of bilingual competence, there is still contention as to the positive aspect of CS use in the second language

classroom by the teacher or students. Nevertheless, classroom CS still needs to conform to the general constraints established in naturalistic CS settings. Due to the particular features of the second language classroom in preserving a certain role for the target language, intra-sentential CS is the main type of CS in the second language classroom. That is, according to Myers-scotton (1993), the Matrix Language is English, which sets the grammatical frame and is crucial to language production; and Chinese is the Embedded Language, which should conform to the syntactic constraints of English as the Matrix Language. In addition to the syntactic constraints of the CS, the pragmatic aspects of classroom CS should not be neglected. Compared with naturalistic CS, the pragmatic perspective of classroom CS is more restrained to the social constructs of both the teacher and students in the classroom, that is, the different functions that CS may serve in the second language classroom such as giving instructions, functioning as metatalk for group discussion, maintaining discipline, providing grammatical and lexical explanations, and so on.

It should also be pointed out that although classroom CS is a kind of L1 use in the L2 classroom, the features of classroom CS make it distinct from and unique among the studies of L1 use in that it sets 'optimal' boundaries for the type of L1 use in the L2 classroom, that is, as examined in this study, a limited amount of L1 was used by the teacher in explaining lexical items while still keeping the nature of the lessons communicative and meaning-focused.

The teacher's CS use in this study involved only the teacher's switching to Chinese while conveying the meanings of the new English lexical items, thus serving only one function, that is, providing meanings for lexical items. Recall that the nature of the class was communicative with an occasional focus on form on the lexical items, and this lexically-oriented focus on form was achieved through the teacher's switching to the students' mother tongue. The Matrix Language was still the target language English and Chinese was used within the syntactic and semantic constraints of the Matrix Language. Thus, the type of classroom CS examined in this study is the

lexically-oriented intra-sentential CS used by the teacher within a communicative language classroom. Moreover, the time spent on the lexical CS segments in this study was within the 10% threshold level proposed by Macaro (2005), which is another important feature of this type of classroom CS in that it prevents the class from reverting to the Grammar-Translation teaching method and helps preserve the nature of the lesson as communicative and message-oriented.

This type of CS is popular in a Chinese university EFL context. Note that Guo (2007) observed the teacher's CS behaviour in a Chinese university EFL context and reported that 26.7% of CS is intra-sentential CS and the teacher in the postgraduate level English class employed twice the intra-sentential CS than the other teacher in the undergraduate level English class. Moreover, both teachers were found to spend around 30% of the CS in providing Chinese lexical meanings for difficult English words. Thus, it can be seen that lexically-oriented intra-sentential CS used by the teacher in this study is one type of normal CS behaviour in Chinese university EFL settings. And what is important is that this study shows that classroom CS turned out to be viable and effective, as it was successfully implemented in the second language classroom during the training sessions of the main study, and the students from this experimental group recalled over half of the words in the vocabulary posttest.

5.4 The effect of the teacher' use of codeswitching on the students' vocabulary learning

Having stated the nature of lexically-oriented intra-sentential classroom CS used by the teacher in this study, let us now discuss the important issue of the effect of the teacher's use of CS on the students' vocabulary learning. This study finds from both its quantitative and qualitative analysis that the students' vocabulary recall in the immediate posttest is better facilitated by the teacher switching to Chinese compared with the teacher's provision of English information. Note that the posttest was administered at the end of each session, which contained three passages. That is, there

is a positive effect of the teacher's use of CS in explaining English new words on the students' receptive knowledge of these new words in the short term. Moreover, the short-term superiority of the teacher's use of CS in the immediate posttest was further confirmed by the qualitative analysis that the CS group actually received less lexical information input than the NCS group from the teacher.

This finding regarding the effect of the teacher's CS use in explaining new words on the students' learning of these words provides empirical evidence for the hypothesis on the positive role of L1 in the students' second language learning. In terms of previous empirical studies about the L1 use in the L2 classroom, most studies observed language use in the classroom, and few empirically examined the possible effect of L1 use in the L2 classroom with exception of Kaneko (1992), Meng (2006) and Liu (2008). Despite the limitations of these three studies, they intended to empirically examine the effect of teacher's L1 use on students' uptake. Although no substantial results were found in these studies, Kaneko's findings about the importance of teacher L1 and L2 mixed speech in relation to students' vocabulary uptake was confirmed by the findings of this study. Meng (2006) and Liu (2008) both examined the teacher's provision of lexical explanations in both English and Chinese, and argued for the superiority of this method in students' vocabulary recall tests compared with those groups who received only one type of lexical explanation either in English or in Chinese. However, their results should be treated with caution, because in both studies additional lexical information was provided for this superior group. The current study did not examine the provision of lexical explanation in both language types, but compared English and Chinese explanation in order to examine the effect of the judicious use of L1 through the teacher's CS use. The English-only group in Liu's study and the English-only and Chinese-only groups in Meng's study actually all had vocabulary gains in the posttests under the teacher's provision of lexical explanations, which are in this way consistent with the findings of this study.

In terms of previous theoretical studies positing the benefit of CS in the L2 classroom,

this study provides empirical evidence of the positive effect of teacher's CS use on students' vocabulary learning as argued by those researchers who have seen the intrinsic pedagogical value of L1 use in the L2 classroom (Auerbach, 1993; Atkinson, 1987; 1993; Harbord, 1992; Butzkamm, 2003; Macaro, 2000; 2005; Cook, 1999; 2001b; Turnbull, 2001). In addition, the successful implementation of the lexically-oriented intra-sentential CS used by the teacher in the L2 classroom and its positive effects on students' learning in some way explored the issues related to the 'optimal' use of CS proposed by Macaro (1997; 2001b; 2005) and Turnbull and Arnett (2002). That is, consistent with Macaro (2005), if the intention of the lesson is to communicate via L2, the use of CS will not push the amount of L1 use above the threshold level. The amount of CS use in this study is under the 10% threshold level proposed by Macaro (2005). In response to Turnbull and Arnett's call for further research to determine the acceptability and the effectiveness of the teachers' drawing on L1, this study confirms the effectiveness of the teacher's limited use of lexically-oriented intra-sentential CS in the L2 classroom, namely the teacher switching to their mother tongue when explaining new lexical items which cropped up in a communicative comprehension lesson. Moreover, Vygotsky (1978) argued that, through scaffolding help, teachers and peers could move learners through their ZPD. The students' L1 can then be used as providing effective scaffolding for the students to grasp new words.

In terms of the delayed posttest, although there is no long term superiority of CS use over L2 information found in the delayed posttest, considering the circumstance that no revision was conducted either in class by the teacher or out of class by the learners themselves, it is not surprising that few words were retained over time, no matter which group the students are in.

Further findings in relation to the influence of lexical knowledge and listening comprehension performance will be discussed later in depth together with the lexical development models.

5.5 Native speaker and non-native speaker teacher as dictionary and dictionary designer

This study provides additional insights to dictionary and glossary use reviewed in the literature chapter in that both L1 and L2 explanations for the meanings of the target words were examined. This study examined the teacher acting as dictionary and dictionary designer and providing L1 and L2 explanations during a communicative listening task which involved the whole class in oral interaction, whereas in previous studies on dictionary and glossary use students were only provided in reading texts with L1 or L2 explanations within the text or on the margin or in the references without the teacher's interactive involvement.

However, in terms of the L1 and L2 explanations provided for the students, the findings of this study that the CS group benefited significantly from the teacher's switching to L1 compared with the NCS group are consistent with that of Oskarsson (1975) that L1 explanations were found to be significantly better than the L2 explanation in the immediate posttest. The findings, that the students within the CS group with the lowest lexical knowledge significantly outperformed those in the NCS group in the immediate posttest and the students in the NCS group with the highest lexical knowledge significantly outperformed those in the CS group in the delayed posttest, are consistent with the findings of Miyasako (2002) in relation to learners' lexical knowledge levels that L2 glosses tended to be more effective for learners with higher lexical knowledge and L1 glosses were more effective for lower-lexical knowledge group of learners.

Most importantly, the findings of this study contribute to the NST and NNST debate. In this study, the meanings of the target words were provided by a non-native speaker teacher in a communicative language classroom, which is typical of EFL settings in countries like China. However, the Chinese and English that the teacher used in

explaining the target lexical items for the two experimental groups as different treatments in this study is to some extent representative of the language use of teachers of different languages. In other words, the teacher who provided English information for the NCS group can be regarded as representative of a monolingual teacher because the teacher provided the target language for the students throughout the lesson. Although this teacher is not a native speaker of English in reality, it should be pointed out that the teacher has a high proficiency level of English language and can be regarded as near-native. The teacher who provided Chinese information for the CS group can be regarded as representative of a bilingual teacher because the teacher employed both English and Chinese throughout the lesson, and the teacher is one of the many non-native speaking teachers of English in China. Thus, according to Medgyes (1992), the CS group teacher can be seen as an ideal non-native because she has achieved near-native proficiency in English, but the NCS group teacher cannot because only a minority of 'native' teachers of English can speak fluent Chinese. Any findings from this study could then only contribute to the NST and NNST debate in terms of the languages available to the students in this study.

Linking back to the NST and NNST debate, the CS group teacher in this study has had all the advantages of what Medgyes (1992, 1994) and Cook (2005) have described as a non-native speaking teacher, and it turned out that the teacher has performed well as a non-native speaking teacher in judiciously using the students' mother tongue in the L2 classroom, which has led to the students' better recalling of the words in the immediate posttest; in comparison to the students who received treatment from a monolingual teacher who was 'deprived' of the opportunity of sharing the students' mother tongue. Although no definitive conclusion can be made here on the advantage of NNST over NST, from the findings of this study it can be concluded that the students benefited more from the bilingual teacher who can switch to the learners' native language compared with the monolingual teacher who could only use the target language in terms of short term receptive vocabulary knowledge learning.

Linking to the NST and NNST as Dictionary and Dictionary Designer Model (Macaro et al., 2009), the teacher in the two experimental groups provided various information as an explanation of the lexical items, which made the teacher's role similar to that of a 'dictionary', which the students can get meaning from. The qualitative findings of the analysis on the interaction between the teacher and the students over the lexically-oriented episodes provide evidence for a variety of options that the teacher has for the explanation of lexical items. Moreover, the students were not only passively receiving an explanation of the target words from the teacher, but they could also interact with the teacher over the explanations and their difficulties. It was then the teacher's decision-making on what lexical information to provide for the students and what more information to give when noticing students' difficulties. In this way, the teacher also functions as a 'dictionary designer', designing a unique dictionary for the students.

The qualitative analysis shows that the teacher provided both planned and unplanned lexical information for both experimental groups. The planned lexical information was devised before the lessons in the teaching plan by the teacher and a group of experienced English teachers. They made decisions on what lexical information should be provided for each target word and in which language type, thus designing a unique set of lexical information input for the target words. This set of unique lexical information was then presented to the students, together with the spelling and the pronunciation of the target words, which actually resembles a unique 'dictionary' for a group of target words in a particular lesson. It should also be noted that the nature of this unique dictionary is dynamic, because unplanned lexical information is provided by the teacher as well in the classes according to the students' difficulties and problems. Recall that the teacher in this study provided repetition of both English synonyms and Chinese equivalents and even the target words to the two experimental groups. Thus, both NST and NNST can function as a dictionary in the class, providing lexical information in both the native language and the target language for students,

but also as a dictionary designer, making dynamic decisions, planned or unplanned, on what lexical information types and how many information tokens to present to the students.

It should also be pointed out that the teacher as a 'dictionary designer' needs to be equipped with a good knowledge of both languages and a good understanding of pedagogical issues in order to design a suitable and effective 'dictionary' for a particular group of students and explain the target words effectively to the students, especially for those words with a semantic mismatch. As we saw in chapter one, Jiang (2004b) commented on lexical restructuring over semantic mismatch lexical items. That is, when one Chinese equivalent corresponds to two different English words, such as both 'standard' and 'criterion' in Chinese means '标准 biao zhun', it then becomes difficult for Chinese students to know the semantic difference between the two English words. However, it was beyond the scope of this study to examine this issue in depth in that this study tested the receptive aspects of the lexical knowledge rather than productive knowledge, thus there is no way of examining further the students' awareness of the semantic mismatch.

Nevertheless, the qualitative analysis of the lexical episodes of the teacher-students interactions has revealed incidences of semantic mismatch across the two languages. For example, the target word phrase 'stub out' actually in English means 'stop a cigarette from burning by pressing the end against something'. However, the teacher provided the English synonym 'put out' and the Chinese equivalent '熄灭', both of which do not contain the meaning of 'pressing the end against something'. The semantic mismatch not only occurs for the Chinese equivalent, but also for the English synonym, as the original target word phrase has a more specific connotation and the two explanations have wider meanings. The issue of interest here is whether the teacher should point out the mismatch or even provide an exact meaning in both English and Chinese which can semantically match the original word. However, that means a lengthy English definition and a difficult and infrequent Chinese equivalent

for the target word. Is this worthwhile? This mismatch might be caused by the non-native speaker teacher's lack of in-depth knowledge in relation to the target word phrase. However, it might also be the teacher's deliberate decision-making on choosing a shorter synonym which matches the context and a Chinese equivalent which matches the semantic level of the synonym, both of which match the meaning of the whole context. Therefore, it first requires the teachers' adequate knowledge of the semantic mismatch themselves and then their judicious pedagogical decision-making on whether to provide the semantically matching explanations in the context for the students who first encounter the new target word to help with a lexical restructuring and it raises the question as to what criterions teachers should consider for such a decision-making. Jiang (2004b) argued that either the teacher's instruction in relation to the mismatch or sufficient input is necessary for learners to notice the mismatch and restructure it. A series of issues need to be researched in future about when and how to restructure the semantic mismatch, and how to train teachers to make sound pedagogical decisions.

5.6 What other factors are related to the learners' vocabulary learning and in what way?

In this study, Regression Modeling confirmed that in addition to the independent variable, i.e. the different types of treatment the learners received, the learners' posttest listening comprehension performance, their general proficiency levels, and their pretest vocabulary scores all had an impact on the learners' posttest vocabulary scores. Around 60% of the variance of the students' posttest vocabulary scores was explained by these variables. Controlling for all confounding variables, the different treatment group that the learners were in, in other words receiving the teacher's provision of codeswitching or L2 information, made a significant difference to the posttest vocabulary scores.

With regard to the pretest vocabulary scores, on the basis of which the students were

grouped into three lexical prior knowledge levels, it was found that the students in the CS group with the lowest lexical knowledge significantly outperformed those in the NCS group in the posttest, and the students in the NCS group with the highest lexical knowledge significantly outperformed those in the CS group in the delayed posttest. When individual words were the unit of analysis, it was further found that the students from the CS group with the lowest lexical knowledge recalled more of the Low-Familiarity-words and Unfamiliar-words than those in the NCS group in the posttest, and the students from the NCS group with the highest lexical knowledge recalled more Familiarity-words and High-Familiarity-words than those in the CS group in the delayed posttest. The impact of the students' different prior lexical knowledge levels on their vocabulary posttest will be further discussed below.

Moreover, the students' listening comprehension performance in the posttests was found to be related to their posttest vocabulary scores with respect to the different experimental groups. Students with low-level listening scores benefited more from the teacher's use of CS than L2 information. The teacher's use of CS helped the low-level listening group recall significantly 22 more words in the posttest than the use of L2 information. The impact of the students' listening comprehension performance on their vocabulary posttest will be discussed further below.

Finally, with regard to the general proficiency level, students with the highest and lowest general proficiency level from the CS group recalled more words in the posttest than those from the NCS group. However, this result should be treated with caution because the students were grouped into four general proficiency levels and the number of students in each level then became too small to make any further statistical generalisation. Thus, although the students' different general proficiency levels were found to be related to their posttest vocabulary scores, the influence of the general proficiency level on the posttest vocabulary scores will not be further discussed here. Further research with a larger sample is needed to examine the impact of general proficiency levels.

5.6.1 Prior lexical knowledge levels

Recall that on the basis of the students' pretest scores they were grouped into three different levels of prior knowledge of the lexical items. Those who knew the fewest target words before the treatment were classified into the Bottom-level lexical group, whereas those who knew the most target words comprised the Top-level lexical group. It was found that Bottom-level lexical group of the CS group significantly outperformed those in the NCS group in the posttest, and the Top-level lexical group in the NCS group significantly outperformed those in the CS group in the delayed posttest. Compared with the NCS group, the gap in posttest vocabulary scores between the three lexical knowledge levels in the CS group was small. These results seem consistent in supporting the tendency that students with low prior lexical knowledge benefited significantly from the teacher' use of CS compared with L2 information in explaining the new lexical items in the short term, while those who knew the most words before the training session retained significantly more words in the long term from the teacher's provision of L2 information than from the teacher's switching to Chinese to provide information.

The findings in relation to the prior lexical knowledge levels are presently discussed with previous studies on mental translation and bilingual's mental lexical representations. Kern (1994), who examined the multifaceted role mental translation plays in L2 reading, found that readers' use of translation was influenced by their proficiency levels, that is, readers in low reading ability group reported using mental translation most frequently. Although Kern examined L2 reading and this study examined new words in the L2 listening comprehension tasks, if 'translation may reduce the load placed on cognitive resources' in that L2 readers translate less familiar words into more familiar L1 words to optimize their short-term retention, then the teacher's switching to students' L1 in explaining the new lexical items would help students with lightening up their cognitive processing load and in turn optimizing

their shot-term retention. This may explain why the students in this study with low prior lexical knowledge and low listening comprehension scores, that is those who knew very few target words before the session and had difficulty in understanding the listening passages, benefited the most from the teacher's use of CS.

Further evidence comes from the qualitative findings of this study. The analysis on the way that the students provided answers in the vocabulary posttest shows that some students from the NCS group opted to provide Chinese equivalents as the answers for the target words even though the teacher had actually provided English synonyms or definitions for them during the lesson. It can be seen that these students translated the less familiar English information into more familiar Chinese and memorized the meanings in Chinese. It seems that Chinese is more salient to their memory than English and helps with establishing the link between the target word and its concept.

Furthermore, the qualitative analysis of the teacher-students interactions during the lexical form-focused episodes reveals that, when the teacher provided the students of the NCS group with L2 synonyms the students tended to repeat the synonym out loud by themselves, whereas when the teacher provided the students of the CS group with L1 equivalents the students tended to repeat the target word more often. The repetition of the synonyms rather than the target words shows clearly that it takes the NCS group some time to understand the meanings of the synonym. Synonyms, as less familiar information in the target language, caused problems of understanding compared with provision of a Chinese equivalent. The synonym has to be linked to its own concept first before it could help to establish a link between the target word and its concept. For some students, in order to understand the synonyms, the Chinese equivalents for the synonyms have to be activated first to establish the link between the synonym and its own concept. However, for the CS group, when Chinese equivalent could help to establish a quick link between the target word and its concept, they have more time to process the target word itself. Moreover, the teacher generally spent more time on helping with the NCS group with understanding the meanings of

the target words by repeating the synonym or the target word.

However, it is evident that the CS group outperformed the NCS group significantly in the vocabulary posttest. It seems that the students of the CS group could understand the meaning of the target word rapidly and then focus their selective attention on the target word itself in the original listening passage. Those in the NCS group spent more time in understanding the meaning of the target word and in turn have less time processing the target word itself due to the limited capacity of the working memory. This provides evidence for Macaro's argument that 'a code-switch can reduce the selective attention dedicated to a single communication breakdown, freeing up working memory capacity to work on the meaning of larger chunks of input' (Macaro, 2005: 74).

As reviewed in the first chapter, the influence of the level of learners' language proficiency was discussed by Kroll and Stewart (1994) with regard to the Hierarchical Model of bilingual mental lexical representation. The links between the lexicons and the conceptual store are bi-directional and differ in strength. Strong links exist between the L1 lexicon and conceptual memory, in contrast the link from the L2 lexicon to the conceptual system remains relatively weak even in highly fluent bilinguals. Novice language learners rely more exclusively on lexical level links, that is between the L1 word and the L2 word, and get access to conceptual memory only via the L1 lexicon. Although Kroll and Stewart (1994) examined the language proficiency level, the findings of this study in relation to the prior lexical knowledge levels still provide support for the above theory in that the teacher's CS helps the students in the CS group, especially those with low-level prior lexical knowledge to establish a quick link between the L2 and L1 lexicon, which in turn leads to the conceptual memory and retention. In contrast, it would be more difficult for the students with low-level lexical knowledge in the NCS group who received only target language information to establish a quick and strong direct link between the L2 word and the conceptual memory. This study also found that students of the NCS group

with top-level prior lexical knowledge were actually able to retain the most Familiar-words in the delayed posttest. The teacher's provision of L2 meanings did not help them with establishing a fast link in the immediate posttest but retaining a strong link between the L2 lexical form and meaning representation in the long run. This is also consistent with what De Groot and Hoeks (1995) claimed that the better one knows a language the more direct the links between the L2 lexical form and its meaning representation.

The findings of this study on prior lexical knowledge have been discussed above with respect to the studies on mental translation and bilingual lexicon in relation to the proficiency levels. However, it should be pointed out that the proficiency levels in different studies were measured in different ways. Kern (1994) divided his subjects into high, middle and low reading ability groups on the basis of their mean scores on the ETS French Reading Comprehension Test (Educational Testing Service, 1980). In the experiments of Kroll and Stewart (1994), subjects were given questionnaires in which they were asked to rate their own ability to read and speak in English. The prior lexical knowledge level in this study was determined on the basis of the students' pretest vocabulary scores on the target words. Thus, although the proficiency levels were discussed in these different studies, the difference in the method of measuring proficiency levels should be borne in mind.

Let us now relate the findings of this study to the L2 lexical development model. Jiang's (2002; 2004) three-stage model of adult vocabulary acquisition implies an incremental development of the L2 vocabulary knowledge. With the level getting higher and higher, the learners rely less and less on L1 translation. It is difficult to classify which stage these learners in this study are in with different words, but it is evident at least that the learners who knew the least words before the treatment rely more on L1 information to form a link between L2 lexical form and meaning, because those students who have the least prior lexical knowledge benefited more from codeswitching than from L2 information in the short term, and those learners who

knew the most words before the treatment could retain more words from the L2 information directly with the L1 being discarded in the long term as a strong link was established between L2 words and their concepts among the NCS group.

As demonstrated by Figure 1.6 of the lexical development model based on Jiang's (2000) model with the provision of L2 information, either as a synonym or a definition, those students who knew fewer words before the treatment are slower to establish a direct link between the new L2 word and its concept because the students often have problems with the L2 information itself and only establish a quick link with the help of L1 translation. Two incidences from the qualitative analysis can be taken as examples here. One is the teacher's additional explanation of the L2 synonyms for the NCS group. The teacher spent more time for the NCS group in explaining the synonyms when the teacher noticed the difficulties of the students in understanding the synonyms. One case in point is the new word 'cleft': when the teacher provided the synonym 'gap' and also noticed the students' difficulty in understanding the meaning of the synonym 'gap', the teacher contextualized the synonym by saying that 'generation gap means the different views between parents and children' in order to make students comprehend. It was subsequently observed that L2 information caused comprehension problems among students, and the teacher expended more time and energy in order to explain the new word using the L2 information. Another example involves the students' reactions. The students from the NCS group were found to repeat the synonyms more often, while the CS group tended to repeat the target words. It can be seen that one reason for the students' repetition of the synonyms is their difficulty in processing them, whereas the CS group were given the L1 translation and so spent more time processing the target words.

Recapitulating, the students who knew the least words before the treatment had difficulties in quickly and strongly linking the new L2 words to their concept via the L2 information. Instead, the teacher's switching to the L1 equivalent would benefit them more in terms of time spent and better comprehension (see Figure 5.1). When

the students have difficulties with most L2 synonyms or definitions, they need to rely on L1 to help with establishing a link with the concepts. However, if they were provided with L1 equivalents directly, the link with the concepts can be established quicker. With regard to the students who knew the most words before the treatment, that is, with highest prior lexical knowledge (see Figure 5.2), when L2 information was provided to them, a quicker link between the new L2 words and the concept could be established because a direct link between the L2 information and the concept has already been made strongly due to their larger vocabulary size. Although same routes are taken for both types of information, compared with the L1 equivalents provided for the CS group, the L2 information provided the students with the highest prior lexical knowledge in the NCS group with more opportunities for understanding the syntactic and morphological information of the L2 words. Thus, although there was no significant group difference found in the posttest for these students with highest lexical prior knowledge, the students from the NCS group significantly outperformed those from the CS group in the delayed posttest, simply because a strong and complete link had been established between the new L2 word and its concept via the L2 information.

It should be pointed out that the prior lexical knowledge of this study is merely based on the students' pretest knowledge of the target vocabulary (N=170) in this study, rather than the general vocabulary size of the students. It would be interesting for future study to examine in more depth the impact of vocabulary size on lexical knowledge development.

Figure 5.1: Links between L2 word and the concept via L2 information or L1 equivalent for students with lowest prior lexical knowledge level

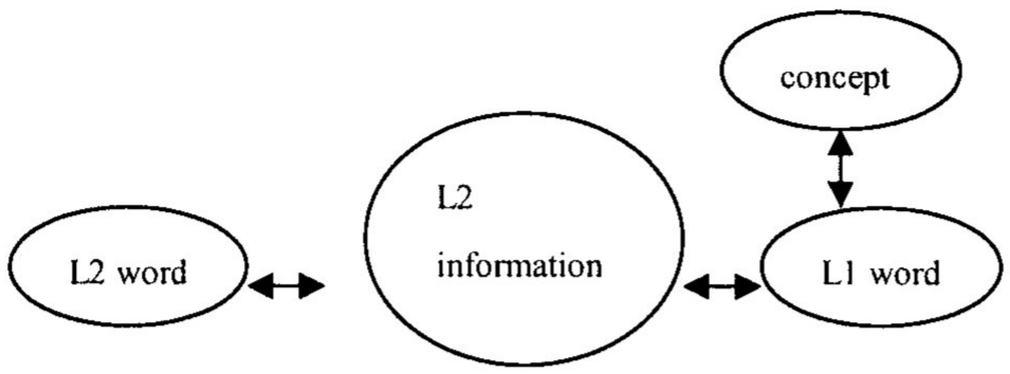
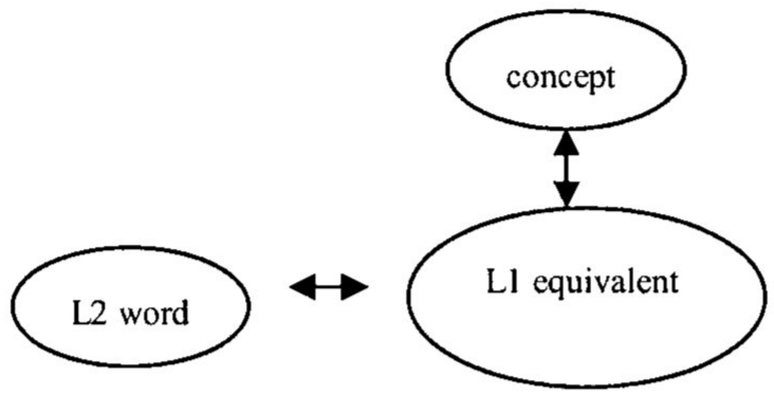
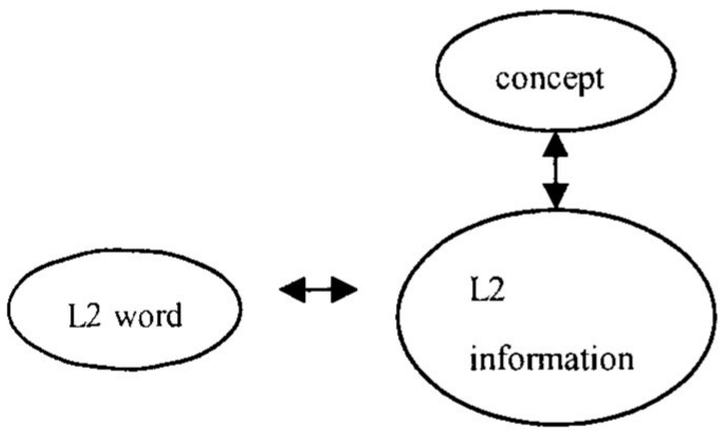
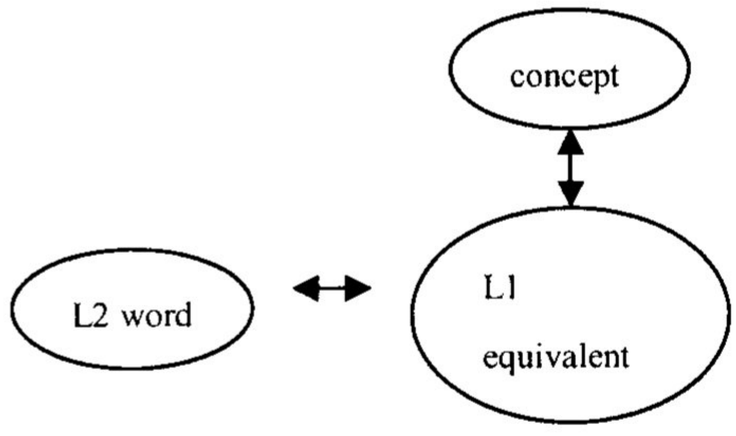


Figure 5.2: Links between L2 word and the concept via L2 information or L1 equivalent for students with highest prior lexical knowledge level







The above discussion is based on how well the students knew the L2 information and could thus establish a quick link between the L2 information and the concept in order to develop a link between the L2 target word and the concept. In addition, how familiar the students are with the L2 target words also has impact on how the words are processed and learned.

On the basis of the students' familiarity with the target words, when the words were analyzed as the unit of analysis, the target words were grouped into two main groups

--- Familiar-Words and Unfamiliar-Words. The Familiar-Words were then further grouped into High-Familiarity-Words and Low-Familiarity-Words. It was found in this study that the students from the CS group with the lowest prior lexical knowledge recalled more of the Low-Familiarity-Words and Unfamiliar-Words than those in the NCS group in the posttest, and the students from the NCS group with the highest prior lexical knowledge recalled more of the Familiarity-Words and High-Familiarity-Words than those in the CS group in the delayed posttest. These results relating to the word categories provide further evidence for the above discussion. That is, for the Unfamiliar-Words which no students knew before the treatment and the Low-Familiarity-Words which less than 30% of the students knew, the teacher's provision of an L1 equivalent helps those students from the CS group with the lowest prior lexical knowledge recall significantly more words in the posttest than those of the NCS group who received the teacher's provision of L2 information. For the Familiar-Words and High-Familiarity-Words, the students from the NCS group who knew the most words before the treatment benefited from the teacher's provision of L2 information and recalled significantly more of these words than those from the CS group who received the teacher's provision of L1 equivalent in the delayed posttest.

The above findings on the group difference relating to different word categories provide further insights into understanding the impact of the familiarity of the words on the students' vocabulary learning. Words can exist at different stages or levels in the lexical knowledge development process. Some words are completely new to the students, while others are not as students might have encountered them before, thus some sort of link had already been established. It can then be seen that for the Unfamiliar-Words which are new to all the students before the treatment or Low-Familiarity-Words which are new to most of the students, L1 equivalents play an essential role for the learners in terms of short-term learning, in particular for the students with the lowest prior lexical knowledge. For those Familiar-Words, which some students knew before the treatment and possibly had been exposed to before, a

possible initial link might have once been established; thus the provision of L2 information could help with establishing a strong link between the L2 new words and their concepts in the long term. However, it should also be noted that the familiarity level examined in this study is based on the number of students who knew the words before the treatment, rather than the incremental level of familiarity towards one word by the students. It is only an assumption here that some students might be possibly exposed to the Familiar-Words before and not to the Unfamiliar-Words. Future studies could explore this issue further.

Taken together, the results of this study are basically consistent with previous studies on bilingual mental lexicon representation models and models of lexical development in L2 vocabulary learning, in that L1 equivalents play an essential role at the initial stages of lexical development, especially for students who knew the least words before the treatment with low lexical knowledge. As the students' lexical development progresses, their reliance on L1 tends to decrease and rely more on the L2 information to establish a strong link between the L2 lexicon and its concept. The findings of this study also provide support for the claim that a CS can reduce the cognitive load of the working memory and free up more memory capacity to establish the link between the target word and its concept.

5.6.2 Listening comprehension performance and L2 vocabulary learning

It was found in this study that students' listening comprehension performance was related to their posttest vocabulary scores with regard to different treatment groups. Students with low-level listening scores from the CS group were found to outperform those from the NCS group. The teacher's use of CS helped the low-level listening group of students recall significantly 22 more words in the posttest than the use of L2 information. That is, those students who have difficulties in understanding the meaning of the listening context found the teacher's provision of L1 equivalents more helpful and beneficial to their vocabulary learning.

Linking back to the working memory model and the decoding process for listening texts, the cognitive load is much greater in listening. The phonological loop is heavily activated to process and store short-term information in listening to the listening texts. The limited capacity of the phonological loop itself and the pressure of a large amount of input from the listening texts create a heavy cognitive load in understanding a listening text. The low-level listening group with lowest listening comprehension performance scores quite possibly would encounter such a decoding problem while processing the listening input in the working memory through the phonological loop, and it might take them longer to recall a known item of vocabulary. Recall that the listening comprehension level is specific to the students' understanding of the listening passages for each session. Thus, for these learners with low-level listening comprehension scores, if they were provided with L2 information, they would find it even more difficult to cope with the given English meaning in the working memory and understand the meaning of the L2 information within the listening context. The L1 equivalent could help them tackle the difficult words quickly and free up more capacity to focus more of their attention on the target word itself and the content of the listening passages.

As no previous studies examined listening comprehension and vocabulary acquisition with the teacher's use of CS, the results of this study could only be discussed here more generally with studies on vocabulary learning in the listening-mediated environment. Previous studies (Ellis et al., 1994; Ellis, 1995; Foster, 1998; De La Fuente, 2002) on L2 word meaning acquisition via different types of listening input were carried out in dyads rather than between the teacher and the whole class in this study, but they all indicate that the group who interacted with the teacher over lexical items during the listening input outperformed those who did not. The findings of this study are consistent with the above results in that the two treatment groups in this study all had opportunities to interact with the teacher in relation to difficult lexical items although they were pre-planned by the researcher for the purpose of the study,

whereas the control group in this study were exposed to the same listening passages without interaction with the teacher over the difficult lexical items. Despite the limitations, Toya's (1993) findings that the explicit modification of listening input resulted in significant superiority over the unmodified group on the immediate posttests were also supported by this study, in which the two experimental groups who received interactionally-modified lexical input significantly outperformed the control group who were only exposed to the listening passages with unmodified lexical items.

5.7 How confident were the learners with the meanings they provided during the vocabulary tests? Which type of language did the learners prefer to use while providing meanings during the vocabulary tests?

These two questions, relating to the confidence level reported by the students and their choice of language type while providing answers for the vocabulary tests, emerged from the process of research design and data analysis. The first question relates to how the confidence level of the students in their answers indicates the relationship between the perceived meanings by the students and the real meanings of the target words. Few studies explicitly asked such research questions on the confidence level of the students in their answers or even examined the relationship between the accuracy of the answers and students' confidence level towards these answers. The two commonly used vocabulary knowledge scales actually all involve the confidence level test (Wesche and Paribakht, 1996; Meara, 2001). The confidence level attached to the vocabulary measurement in this study allows further analysis on the accuracy of the answers and the students' confidence level towards these answers. The results show that most of the students were generally very confident with the answers they provided for the meanings of the Unfamiliar-Words. Recall that only Unfamiliar-Words were examined for these two questions. A significant association between the accuracy of the meanings and the confidence level of the students with regard to the meanings they provided was found. The more confident the students were with the answers they provided, the more accurate the answers were likely to be.

The CS group was found to be significantly more confident than the NCS group. Moreover, further analysis on the three categories of data - the treatment group, the accuracy of the answers, and the confidence level choice - provided further evidence that the more confident the students from both treatment groups were, the more accurate their answers were likely to be. The analysis also showed that the CS group tended to provide more accurate answers than the NCS group.

The second question as to the language type employed by the students to provide answers for the target words originated from the research design for this study as well. In order not to bias each of the experimental groups which received vocabulary explanation in different language types, the students were asked to write down the meanings of the target words in whichever language they preferred in the vocabulary tests, which allows further analysis of the relationship between the language type they used in the vocabulary test, the language type they received from the teacher's lexical input and the accuracy of these answers.

It was found that the students preferred to use the language that the teacher has chosen to use to explain the meanings of the words in the vocabulary tests and these answers tended to be more accurate as well. However, the percentage of the students from the NCS group who chose English as their answers was less than the percentage of the students from the CS group who chose Chinese as their answers. That is, there are some students of the NCS group who received English explanations from the teacher and still wrote Chinese equivalents as their answers in the vocabulary tests. Further evidence can be found from the qualitative analysis of the lexical episodes of teacher-students interactions that some students from the NCS group actually translated the English synonyms provided by the teacher into Chinese and processed and stored and retrieved the Chinese equivalents as the meanings of the target words in their mind. Moreover, the Chinese answers provided by the CS group tended to be more accurate than the English answers provided by the NCS group. To the researcher's knowledge, there is no study which actually examined the languages the

learners prefer to use in their vocabulary test. Although the findings of this study cannot be discussed with previous studies, this study still provides new insights into learners' lexical knowledge development. For some students, the mother tongue plays a very important role in providing scaffolding for linking the L2 word to its concept.

5.8 Chapter summary

Based on the findings of this study, this chapter discussed issues related to the research questions, such as the lexically-oriented form-focused instruction, lexical intra-sentential CS, lexical knowledge development, confidence level and preferred language types.

Firstly, this study found that the two experimental groups performed significantly better in the immediate posttest than the pretest, and significantly better in the delayed posttest compared with the pretest. The two experimental groups also outperformed the control group in the delayed posttest. The lexically-oriented form-focused instruction examined in this study was then found to benefit the students' vocabulary learning significantly more than the meaning-only instruction, which reaffirms the findings of the previous literature on focus on form within lexis (Long, 1997; Doughty and Williams, 1998; Haastrup and Henriksen, 2001; Laufer, 2005a, b, 2006) and that on the effectiveness of form-focused tasks on vocabulary learning (Hill and Laufer, 2003; Laufer, 2003; De La Fuente, 2006; Min, 2008; Laufer and Girsai, 2008). The implementation of lexically-oriented focus on form also conforms to the Chinese EFL context of previous studies (Guo, 2007; Meng, 2006; Liu, 2008). The effectiveness of the lexically-oriented focus on form in the students' vocabulary learning is also indirectly in line with some literature, in that it provides counter evidence against Krashen's Comprehensible Input Hypothesis for not interacting with the learners, and against Long's Interaction Hypothesis for not interacting with the learners over the 'form' of the lexical items, that is, both the meaning and form. The findings then support some researchers' argument that certain amount of attention has

to be given to both form and meaning of the lexical items to increase the salience of the target lexical forms in input, which then leads to better vocabulary learning.

Secondly, this study found that the CS group significantly outperformed the NCS group in the immediate posttest although not in the delayed posttest. The students then benefited more from the lexically-oriented CS used by the teacher than the L2 information as the meanings of the target words provided by the teacher in a communicative language classroom. This finding is consistent with previous empirical work in some aspects on the effectiveness of CS use (Kaneko, 1992; Meng, 2006; Liu, 2008), in spite of the methodological differences employed in these studies. This finding also provides empirical evidence for the theoretical arguments regarding the efficacy of the optimal use of CS in the second language classroom (Auerbach, 1993; Atkinson, 1987; Harbord, 1992; Butzkamm, 2003; Macaro, 2000, 2005; Cook, 1999, 2001b; Turnbull, 2001).

Thirdly, this study also found that the students' pretest vocabulary scores had an impact on their learning these words in the posttest and delayed posttest. The students within the CS group who knew the least words before the treatment significantly outperformed those from the NCS group in the immediate posttest. The students within the NCS group who knew the most words before the treatment significantly outperformed those from the CS group in the delayed posttest. Although the lexical knowledge levels examined in this study can not parallel with language proficiency levels examined in previous studies, these findings could still provide evidence for Jiang's lexical development model (2000, 2002, 2004) and the bilingual mental lexical representation model (Kroll and Stewart, 1994) in relation to the different proficiency levels. That is, the teacher's switching to the students' L1 could help them establish a quick link between the target word and its concept, especially for the students with the lowest lexical knowledge and in the initial stage of the lexical development. The teacher's provision of L2 information could particularly benefit those learners with high-level lexical knowledge to establish a strong link between the

target word and the concept, which will benefit these learners in the long run.

Fourthly, the findings of this study were consistent with the studies on the effectiveness of L1 and L2 dictionaries and glosses (Oskarsson, 1975; Miyasako, 2002) that L1 glosses were more effective for lower-lexical knowledge group of learners and L2 glosses tended to be more effective for learners with high lexical knowledge. The findings were then further discussed in relation to the NST and NNST as dictionary and dictionary designer. Both NST and NNST can function as a 'dictionary' to provide learners with L1 or L2 explanation for the new words, and also as a unique 'dictionary designer' to design a dictionary for learners in specific contexts to provide both planned and unplanned lexical information input for learners and make pedagogical decisions on the type and amount of information input. This provides evidence for Macaro et al.'s model (2009) that both NST and NNST have various options of lexical input. Moreover, compared with NST, the NNSTs have the advantage of using learners' mother tongue (Medgyes, 1992, 1994) and the judicious use of L1 could lead to better learning (Cook, 2005), at least in the short term, which was supported again by the findings of this study. It should also be noted that the judicious use of both languages in the second language classroom by NNSTs requires a certain level of proficiency level in both languages in order to make sound pedagogical decisions on lexical input.

Fifthly, this study also found that the students' listening comprehension levels, that is how well they comprehended the listening passages, had an impact on how well they learnt the target words in the listening passages. The students with low-level listening scores from the CS group were found to significantly outperform those of the NCS group in the immediate posttest. That is, those students who had achieved the lowest scores in comprehending the listening comprehension questions about the listening passages actually benefited more from the teacher's switching to L1 to explain the new words. These findings provide evidence for the use of CS in lightening up the cognitive load of the working memory in order to free up more capacity for

processing the target word itself, because of the limited capacity of the phonological loop which is vital for listening texts as the mediating activities to carry the new words.

Lastly, the confidence level reported by the students and their choice of language types while providing answers for the vocabulary tests were analyzed as two emerging questions from the process of data analysis. No previous studies could be drawn for a discussion with the findings of this study. However, it provides new insights into learners' lexical knowledge development. The students were generally confident with the answers they provided, which tended to be the accurate one as well. The CS group was found to be more confident than the NCS group, and tended to provide more accurate answers than the NCS group. It is normal that the students tended to provide the answers which were given to them by the teacher, but some students from the NCS group who received the teacher's provision of English explanations nevertheless wrote the Chinese equivalents in their vocabulary tests. This provides further support for the findings of the study on the role of L1 in learners' vocabulary learning.

CONCLUSION

Amid the burgeoning research literature on codeswitching in naturalistic settings, CS use in the second language classroom by both teachers and students has also aroused growing attention. While most studies in the SLA literature focused on observing classroom CS and understanding its types and functions or even theoretically debating its effect in L2 learning, few studies actually empirically examined the effect of CS on learners' L2 learning. The role of L1 in the L2 learning was re-examined through the lens of the judicious use of classroom CS. Classroom CS is situated in the L2 classroom, which conforms to the syntactic and semantic constraints to any CS behaviour, and enables a judicious use of L1 in a communicative language classroom.

This study serves as an empirical attempt to fill the gap in the literature by examining the effects of lexically-oriented classroom CS used by the teacher on the learners' L2 vocabulary learning. Listening comprehension activities were employed as mediating tasks in a communicative language class. Vocabulary learning, as one important aspect of second language learning, was examined as a by-product of listening comprehension tasks in this study. In such a meaning-focused communicative language class on listening comprehension, learners' attention was drawn to difficult lexical items by the teacher without detracting from the communicative nature of the lesson. The teacher's switching to learners' L1 to provide the meanings of the target lexical items, as one type of focus on form on lexis, is compared with the teacher's providing L2 information for the meanings of the target words, as the other type of focus on form within lexis. A control group which did not receive any focus on form for the target vocabularies was examined as a baseline group. Thus, the effectiveness of lexically-oriented focus on form and the teacher's CS use was researched in this study as the main research aims.

This chapter will summarize the significance of the overall findings of this study,

together with some of the methodological issues raised during the research. Then a critique of the limitations of this study and recommendations for future studies will be made. Any implications for both the classroom and policy-making levels will be finally drawn.

1. Significance of the findings

Lexically-oriented form-focused instruction was successfully implemented in a communicative language classroom. The teacher drew the students' attention to both form and meaning of lexical items in a meaning-focused communicative language classroom; and both the teacher and students navigated in and out of the lexically-oriented form-focused episodes without disrupting the communicative nature of the lessons. Results for the students' recall of the target words show that lexically-oriented focus on form is effective in enhancing the students' vocabulary learning. The teacher's provision of vocabulary explanation facilitated the learners' vocabulary learning. Thus it can be concluded that it is worth dedicating time to focus on the 'form' of lexical items in a communicative language classroom in order to promote learners effectively grasping these words.

Results in relation to the experimental group difference show that learners' vocabulary learning was better facilitated by the teacher's use of codeswitching than providing L2 information, at least in the short term. However, no matter which treatment the learners received, they recalled a similar number of words in the long term. Considering the fact that the students' exposure to the target words was controlled inside and outside of the lessons, it is then evident that several encounters of the target words are essential for more words to be retained.

A mixed methods research design was able to demonstrate that the NCS group actually received more lexical input from the teacher than the CS group. The teacher spent more time for the NCS group in repeating the L2 synonyms or target words.

Students of the NCS group also spent a longer time echoing the L2 synonym compared with the target word. The short-term effectiveness of the teacher's use of lexically-oriented intra-sentential CS in the students' receptive vocabulary learning is therefore confirmed.

Taking into account students' listening comprehension performance during the listening passages, how well they understood the listening passages in fact influenced their recall of the words in the listening passages. Those students who had difficulties in understanding the listening passages in fact benefited much more from the teacher's switching to L1 to explain the new words than from the provision of L2 information in the short term. These findings provide evidence for the use of CS in lightening the cognitive load of the working memory, in order to free up more capacity for processing the target word itself, because of the limited capacity of the phonological loop in processing the listening texts as the mediating activities to carry the new words.

When taking into account how many words the students knew before the lexical treatment, students who knew the least words before the treatment lessons benefited significantly more from the teacher's use of CS than L2 information in the short term. However, students who knew the most words before the treatment retained significantly more words from the teacher's provision of L2 information than switching to L1 in the long term. Furthermore, when words are taken as the unit of analysis, that is when considering whether the target words were known by students before the treatment, it was found that the words that no one knew or hardly anyone knew before the treatment were recalled significantly better by the students who knew fewer words before the treatment and who received the teacher's use of CS than those who received the teacher's provision of L2 information in the short term. However, the words that were known to some or most students before the treatment lessons were retained significantly better by the students who knew the most words before the treatment and who received the teacher's provision of L2 information compared with

those who received the teacher's switching to L1 in the long term.

It can then be concluded that the teacher's use of lexical CS is particularly effective for the students who knew the least words before the lesson in terms of short-term learning, as the teacher's switching to L1 could lighten the cognitive load for these students and free up more capacity in their working memory for processing of the target word itself. The higher the students' lexical knowledge in the L2 becomes, the less they rely on their L1. Students with the highest lexical knowledge retained more words from the teacher's provision of L2 information in the long term. Once the link between the lexicon and the conceptual system through the L2 information is established, it is strongly retained in the memory of this group of learners. In other words, the teacher's switching to the students' L1 could help them establish a quick link between the target word and its concept, especially for the learners who have the least lexical knowledge before the lesson. The teacher's provision of L2 information could particularly benefit those learners with a high level lexical knowledge to establish a strong link between the target word and the concept to be able to retain words in the long term.

Analysis of the lexical episodes of the teacher-students interactions has provided evidence for the role of the teacher as dictionary and dictionary designer in the second language classroom. The teacher, as a dictionary and dictionary designer, made planned or unplanned decisions for the types and amount of information for the target words to convey to the students. The teacher used different types and amounts of lexical information in order to effectively explain the meaning of the target words. It can be seen that the teacher functions as a 'dictionary', providing meanings for difficult lexical items with a variety of options at their disposal. Questions then arise as to what and how many of these options could be provided to the students and at what time. In this way, the teacher also functions as a 'dictionary designer' in that the teacher needs to design a unique 'dictionary' according to the students' lexical knowledge levels and the particular learning context.

Meanwhile, it should also be pointed out that teachers as dictionary designers usually make planned and unplanned decisions on the types of lexical input based on their own limited bilingual knowledge and the overall time available in a communicative classroom context. The teacher can make planned decisions before the lessons on designing the 'dictionary' for the students, drawing from his or her own teaching experience and understanding of the students. At the same time, unplanned decisions have to be made on-the-spot during the lessons in accordance with the students' reactions and problems.

Non-native speaker teachers, who have two languages at their disposal, have the advantage over most native speaker teachers in that they can make judicious decisions on switching to students' L1 effectively. However, it should also be pointed out that the judicious use of CS in the L2 classroom requires a high command of both languages for non-native speaker teachers.

Results also show that most of the students were generally very confident with the answers they provided for the meanings of the words. A significant association was found between the accuracy of the meanings and the confidence level of the students over the meanings they provided. The more confident the students were with the answers they provided, the more accurate the answers were likely to be. The CS group was found to be more confident than the NCS group, and tended to provide more accurate answers than the NCS group.

Analysis of the language type the students used in providing answers for the target words shows that the students preferred to use L1 as the type of language to provide meanings for the words and these answers tended to be more accurate ones. Moreover, the students preferred to use the language that the teacher has chosen to use in explaining the meanings of the words and these answers tended to be more accurate as well. The use of L1 in answering for the meanings of the new words, especially for

the students who received the teacher's L2 information during the treatment, provides evidence for the vital role of L1 in the developmental process of students' lexical knowledge.

On the whole, this study has helped to fill the gap in the literature by examining lexically-oriented form-focused instruction and the teacher's use of CS in the L2 classroom in meaning-focused listening comprehension tasks, whereas previous studies have either examined the effectiveness of form-focused tasks or teachers' lexical CS use in reading texts, and either observed teachers' CS use or argued theoretically for the judicious use of classroom CS. The findings of this exploratory study into the effectiveness of both lexically-oriented form-focused instruction and the lexical intra-sentential CS used by the teacher provide empirical evidence for the theoretical arguments and prescriptive observations in the literature for lexically-oriented focus on form and classroom CS.

2. Methodological issues and limitations

This study has explored the issue in using a more rigorous mixed methods research design by largely overcoming the methodological limitations of similar previous studies. Firstly, the participants were randomly allocated into three groups on the basis of their general proficiency level. Secondly, there were two experimental groups comparing two different types of lexically-oriented focus on form, with either the teacher providing L2 information or the teacher switching to learners' L1 as explanations for the target lexical items and one control group where no lexically-oriented focus on form was involved; rather than providing the explanation in both types of languages (Meng, 2006; Liu, 2008). Thirdly, this study conducted more statistical analysis of the quantitative data which overcame the limited statistical analysis of some studies, for example Liu, 2008. Fourthly, the vocabulary test format in this study did not bias any experimental group, which allowed for further analysis on the language type that the students employed in providing answers for the target

words and the accuracy of the meanings provided. Finally, but perhaps most importantly, this study not only analyzed the quantitative data of the students' performance in the listening and vocabulary tests through the statistical analysis of the group difference, but also analyzed the qualitative data of the lexical episodes of teacher-students interactions which provides further weight to the validity of the quantitative findings. Thus it is apparent that the advantage of one group over the other is indeed due to the different treatment rather than other factors, for example whether the better performing group might have received more lexical input from the teacher. It is relatively straightforward to conduct an experiment and analyze the quantitative data statistically and draw conclusions, but it is also important to qualitatively ensure that the experimental groups really received the proposed different treatment and it is the different treatment which resulted in the significant results. Hence, this type of mixed methods research design combining both quantitative and qualitative approaches should be employed wherever possible.

This study also has methodological limitations which future research may be able to overcome. In order to control individual student's revision after the training session and to make the delayed posttest vocabulary scores comparable between the different groups, the students were deprived of the opportunity to write the target words down during class or review them after class. This obviously runs counter to the normal learning process which requires consolidation stages for the knowledge to be stored and retrieved. While over 50% of the target words were recalled by the students in the immediate posttest, the majority of the words failed to be retained in the delayed posttest one week after the last training session and six weeks after the first training session. This limitation could be overcome by the following two ways in future research: firstly, consolidating tasks could be provided for the students so that further review is possible; secondly, several delayed posttests at different time intervals could be conducted so that students' learning progress can be explained in depth in terms of the time effect.

Moreover, the control group in this study, which did not receive any treatment on vocabulary explanation, did not take the immediate vocabulary posttest due to the ethical concern that they would feel frustrated only knowing one or two words in the test; hence a delayed posttest was deemed sufficient for the purposes of this study. However, for future studies, if the control group or any baseline group could take the immediate posttest as well, more statistical analysis could then be conducted to provide more empirical evidence for any superiority of the experimental groups over the control group in the immediate posttest.

In addition to the above methodological issues, a number of aspects could be further researched in any future study.

Firstly, the target words in this study included such word types as nouns, verbs, adjectives and adverbs, including both concrete and abstract words. However, this study did not have a chance to involve any cognate and non-cognate word pairs in the two languages, that is whether the Chinese equivalent and the English target word are semantically matched or not. Moreover, this study only includes several concrete words and most are abstract words. Future studies could introduce word type variables and examine whether there is any difference of students' recalling different types of words as teachers switched to their mother tongue to explain their meanings.

Secondly, this study only managed to examine the students' receptive knowledge of the words due to the limited exposure of the students to the target words and the difficulty level of these words. With the teachers' providing additional lexical input for students or carrying out consolidating tasks or activities, future studies might be able to examine the productive aspects of the words, which may in turn extend the efficacy of CS use in various aspects of second language vocabulary learning.

Thirdly, this study examined only one type of classroom CS, that is, the lexically-oriented intra-sentential CS and its effect on the students' lexical learning.

Future studies could explore other types of CS behaviour by teachers or even between students in the L2 classroom, such as the learner-preemptive type which involves the teacher reacting to students' questions or queries over difficult lexical items.

Fourthly, the number of students in each proficiency level for each experimental group is too small for making any statistical generalisation. Future studies on a larger sample could investigate any correlation between learners' proficiency level and their vocabulary recall resulting from different lexical input.

Fifthly, due to limitations of time and space, students' perceptions towards the teacher's CS use were not investigated in this thesis. Future studies could focus on students' reactions to the teacher's CS use. Students could be asked to keep a diary of their cognitive reactions, or participate in a stimulated recall after the lessons to report their reactions and perceptions towards the teacher's CS use during the lessons.

Finally, due to practical concerns that the researcher had over six years teaching experience at university level in China and it was considered to be time-consuming to train another teacher, the researcher acted as the teacher in this study. Conversely, there were certain advantages of the researcher being the teacher in this study, including familiarity with the research design, being able to commence teaching in the pilot study and the main study without prior training and adjusting quickly to any deviation from conducting the lessons. However, this study can be carried out by any 'normal' teachers in the field in future. It should be pointed out that this type of research requires lots of time and effort on the part of the researcher. Ideally the researcher should not become too embroiled in the details of teaching in order to remain detached and make objective judgements on the lessons as a whole.

3. Pedagogical implications

Based on the findings of this study and the conclusions drawn, the following

pedagogical recommendations can be made, especially for Chinese EFL teachers and language-teaching policy makers.

Firstly, in order for new words to be acquired, learners must pay a certain level of attention to lexical items including both the meaning and form of the lexical items. Teachers can direct learners' attention to the lexical items and provide meanings for words while still making the lesson as communicative as possible. The words then become more intelligible to the students, which leads to better comprehension and further possible acquisition of the words.

Then the question remains as to how to draw learners' attention to 'form'? Two ways were examined in this study, namely, the teacher either switched to L1 to explain the new words or provided the students with English information as explanations for the new words. Analysis of the comparison between the two methods has revealed the efficacy of the judicious use of Chinese on students' short-term vocabulary learning. Thus, teachers could switch to a limited amount of Chinese while explaining difficult English words in a communicative language environment, which will result in better short-term learning of the words. The words could be retained in the long term if students were exposed to the words more often.

However, that teachers can switch to L1 to explain difficult words does not necessarily mean that teachers should switch to L1 for all words and all students in the same way. For words that are new to every student or most of the students, it is beneficial for the teacher to switch to L1 to explain difficult English words, especially for the students who know fewer words and have difficulties in understanding either the listening or reading texts. For the words that were already known to only some students in the class, it is then beneficial for the teacher to provide students with English information, especially for the students who know more words and have less difficulties with either the listening or reading texts. Teachers then may need to adopt a differentiated pedagogy for different students and different words.

The next question is how could teachers develop this differentiated pedagogy in order to make effective decisions as to how to carry out a lexically-oriented form-focused instruction? Teachers not only function as 'dictionaries', focusing students' attention on 'form' and providing meanings for difficult English words, but also as a 'dictionary designer', making both planned and unplanned decisions and designing a unique dictionary for a group of students and a group of words. Planned decision-making should take place before the lessons involving which words and which lexical information types and tokens should be provided for these words, on the basis of teachers' experience and the understanding of their students. Unplanned decision-making could also take place during the lessons on the basis of students' reactions and the specific language environment, such as whether to provide another English synonym if students have difficulties in understanding the given one, whether to contextualize the English synonym, whether to provide another L1 equivalent, whether to repeat the English synonym or L1 equivalent or the target words in the context again, and so on.

While providing either English information or Chinese equivalents, teachers should be aware of the semantic mismatch between the two languages. Lexical restructuring is therefore very important for those mismatched concepts and items in both languages. Teachers may need to make pedagogical decisions on how to make those mismatched items more intelligible to their students and help them with restructuring the link between the L2 lexicon and the conceptual knowledge.

It can thus be seen that a non-native-English speaker teacher, who has the advantage of being able to make judicious use of the students' mother tongue in the second language classroom, should not feel inferior to those native-English speaker teachers. The question is how to make optimal or judicious use of L1 in the English language classroom. However, to be a good dictionary-designer, the non-native-English speaker teachers in China must have a good command of both languages so that optimal CS

use could be effective.

Finally, for some students, especially those low ability ones, mental translation is an indispensable stage in the learning process. That is, even though teachers provide them with English meanings they would translate those English meanings into L1 equivalents and recall those L1 equivalents as the meanings of the new words. Teachers then should allow such a process to happen naturally, as a quick and direct link will be finally established between the English new word and its concept.

It can then be seen that more rigorous training is needed in order for teachers to make sound pedagogical decisions on how to make optimal or judicious use of L1 in the EFL classroom. There are several ways that teachers can be trained to be aware of language use and the role of L1 in the EFL classroom. Training sessions on language use in the EFL classroom should be part of the training course for language teachers. They can be asked to compare and contrast naturalistic interaction with classroom interaction and compare how bilingual communities speak with the way in which CLT classrooms operate with regard to L1, in order to understand more deeply the implications of teacher codeswitching. Moreover, they can be helped to compare monolingual dictionary explanations with bilingual dictionary explanations in order to understand what teachers as dictionary designers could do.

What implications can this study generate for the language policy-making of the Ministry of Education in China? The issue of teachers' language use in the English language classroom should be a consideration to be included in the Educational Outline for English Language as a blueprint for teachers to follow. At minimum, it is possible to acknowledge the legitimate existence of Chinese in the English language classroom so that sound pedagogical decisions could be made by teachers on how to make optimal use of Chinese for the benefit of Chinese students' English language learning. While teachers can switch to Chinese to provide meanings for new English vocabulary, the process of teachers acting as dictionary and dictionary designer in

particular needs pedagogical training on the judicious use of Chinese in the English language classroom, including when it is appropriate to switch to Chinese? For whom is it appropriate to switch to Chinese? How to switch to Chinese? What types of Chinese equivalents should teachers provide students with? What can teachers do to help students with restructuring the semantic mismatch between the two languages? Which way is more effective? With so many pedagogical questions still to be answered, and with new research findings in the literature of vocabulary learning, teachers should receive some pedagogical and theoretical training in order to enhance their capabilities as dictionary and dictionary designers in real classrooms.

4. Concluding remarks

Based on a sound second language research methodological design, this study contributes to the literature on L1 use in the L2 classroom in that the judicious use of L1 in the L2 classroom, that is the teacher's making judicious decisions on switching to a limited amount of L1 in the communicative language classroom through listening comprehension tasks, is effective towards L2 learners' vocabulary learning, at least in the short term. This study has provided a broader perspective on the debates on naturalistic CS and classroom CS, and also on non-native speaker teachers in the EFL learning context. Non-native speaker teachers do not have to feel inferior to native speaker teachers, nor ashamed when switching to learners' L1, as long as sound pedagogical decisions have been made upon the judicious use of the L1. Switching to L1 is an inalienable right for the non-native speaker teachers in the L2 classroom, and the question is how to judiciously and effectively switch to L1 in relation to students' L2 learning.

Some tentative guidelines, resulting from the limited findings of this study, have been presented in this thesis. However, it is still far too early to specify exactly when the teacher should switch to L1 for what types of words and how much L1 to use. As mentioned, more research is still needed exploring the optimal use of CS in the L2

classroom.

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APPENDICES

Appendix 1: Informed consent letter
Appendix 2: Data collection schedule
Appendix 3: Seventeen revised listening passages
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1. Informed consent letter

各位同学：

你们好！

本人，田丽丽，目前正在英国牛津大学攻读应用语言学博士学位。博士论文是关于中国大学生英语听力以及词汇学习的研究。为了完成博士论文数据的收集工作，现特别在此邀请你们参加到这个研究中来。

你们将被邀请参加为期两个月的英语听力理解的培训课程，每个周末上课，每次课大约持续一个小时。在这期间你们会被邀请参加关于听力和词汇的测试。在整个课程结束后你们将被邀请填写一份问卷调查表，其中一部分同学也将会被邀参加访谈。为了保障数据收集的连续性和有效性，如果你们决定参加本研究就务必不能缺课，坚持参加所有的培训课程和测试。

你们参加本次研究的所有成绩和数据都将保密，并且只供本研究使用。你有权对本研究的结果进行询问和查询，以期对于你们的英语听力和词汇学习有所助益。有任何的疑问，请你们和我联系。

联系方式：电子邮件 lili.tian@sant.ox.ac.uk　　电话　13853569310

或者同我的导师联系：　Prof. Ernesto Macaro　　ernesto.macaro@edstud.ox.ac.uk

感谢你们的支持与帮助！

田丽丽

烟台大学外国语学院讲师

英国牛津大学教育系在读博士

Dear students,

I, Lili Tian, am currently reading for a Dphil in Applied Linguistics at Oxford University. My thesis is on researching the teaching of English listening and vocabulary acquisition in Chinese universities. As part of the data collection stage of my thesis, I am inviting you to take part in my research.

You are invited to participate in a listening comprehension course over a period of two months, including one class a week of approximately one hour in length held on weekends. During the course you will take part in listening comprehension and vocabulary tests. After the course has finished you will be asked to fill in a questionnaire and some students will be interviewed. To ensure continuity and integrity of data collection, once you have decided to take part you will be expected to attend all classes as well as to take the tests.

All data collected in this research will remain confidential and will be used only for the purposes of this research. You have the right to inquire about the results of this study to help you with further listening comprehension and vocabulary learning. If you have any questions, please contact me: Email: lili.tian@sant.ox.ac.uk Mobile: 13853569310

Alternatively you can contact my supervisor: Prof. Ernesto Macaro
Email: ernesto.macaro@edstud.ox.ac.uk

Many thanks for your help and support,
Lili Tian

Lecturer of the Foreign Languages Department of Yantai University
Dphil candidate of the Department of Education, Oxford University

2. Data collection schedule

Pilot *(vocabulary + listening comprehension + questionnaire)*

		NCS	CS
9.22	Group I (n=31)	p.2 p.3	p.4 p.5
9.23	Group II (n=20)	p.4 p.5	p.2 p.3

Pre-test I *(vocabulary +general listening comprehension)*

10.13 --- NCS, CS, Control Group

Session 1

Test 1 *(vocabulary --- NCS, CS)*

		NCS	CS	Control Group
10.20	8:30 – 10:00	p.4,5,6		
10.20	10:00 – 11:30		p.4,5,6	
10.21	14:00 – 16:00			p.4,5,6 (listening comprehension + strategy training)

Session 2

Test 2 *(vocabulary --- NCS, CS)*

		NCS	CS	Control Group
10.27	8:30 – 10:00	p.9,10,11		
10.27	10:00 – 11:30		p. 9,10,11	
10.28	14:00 – 16:00			p9,10,11 (listening comprehension + strategy training)

Session 3

Test 3 + Pre-test II *(vocabulary --- NCS, CS)*

		NCS	CS	Control Group
11.3	8:30 – 10:00	p.2,7		
11.3	10:00 – 11:30		p. 2,7	
11.4	14:00 – 16:00			P2,7 (listening comprehension + strategy training)

Session 4

Test 4 *(vocabulary --- NCS, CS)*

		NCS	CS	Control Group
11.10	8:30 – 10:00	p.3,13,15		

11.10	10:00 – 11:30		p. 3,13,15	
11.11	14:00 – 16:00			P3,13,15 (listening comprehension + strategy training)

Session 5

Test 5 *(vocabulary --- NCS, CS)*

		NCS	CS	Control Group
11.17	8:30 – 10:00	p.12,17,20		
11.17	10:00 – 11:30		p. 12,17,20	
11.17	14:00 – 16:00			P12,17,20 (listening comprehension + strategy training)

Session 6

Test 6 *(vocabulary --- NCS, CS)*

		NCS	CS	Control Group
11.24	8:30 – 10:00	p.14,16,18		
11.24	10:00 – 11:30		p. 14,16,18	
11.25	14:00 – 16:00			P14,16,18 (listening comprehension + strategy training)

Delayed Posttest *(vocabulary + general listening comprehension + questionnaire)*

12.8 --- NCS, CS, Control Group

3. Seventeen revised listening passages

(those underlined are the inserted or the words replaced with new ones in the brackets)

Passage 2

Although the relaxed American style is well known, many new visitors think that it shows a "lack of respect". This is especially true in the business world. Americans perennially (often) use first names upon meeting a stranger and do not always shake hands. They often just feign a smile and say "Hi" or "Hello", rather than using a more ritualistic (formal) handshake. It is good to remember that to an American such a laissez-faire (relaxed) greeting really means the same thing as a more official handshake somewhere else. In a similar way, Americans do not usually give a special "good-bye" or shake hands to each person when they leave a party or business meeting. They will often just wave good-bye to the whole group and perhaps say, "Well, so long everybody, I'll see you tomorrow." They then will leave. No handshakes.

Americans seem either totally frenzied (hurried) and hard-working or totally relaxed and at ease. Often you will see men working at office desks without their chairs and even putting their feet up on the desk while they talk on the telephone. This is not meant to be provocative (offensive). Once Americans leave the busy streets, they are easy and relaxed.

A visitor to the United States should, therefore, understand that being in a great hurry does not denote (show) unfriendliness, and being relaxed and being at ease does not show a lack of respect. Americans have myriad (a great range of) customs and habits that at first may seem strange to a visitor. In time you will learn these new ways.

Passage 3

The Chinese government's plan to put environmental concerns into national and local economic development planning is based on its burgeoning confidence and strong commitment to the concept of managed development. While keeping a close eye and a heavy hand on existing polluters, the officials have put more salience (attention) on prevention.

In addition to a recent official statement encouraging environmental friendly technologies and industries, the National Environmental Protection Agency promulgated (issued) a united order with the Ministry of Supervision demanding that local officials forthwith (immediately) stop financing heavily polluting businesses. The move is to prevent township factories from further desecrating (damaging) the environment.

But shutting down polluting factories is only part of the solution. There must be appropriate technological and financial instruments to facilitate environmentally friendly development.

The United Nations General Assembly will hold a special meeting later this month to review the process of managed development worldwide. The Chinese hope to see stronger commitment from the world community for international coordination (working together) in the fight to protect our common natural surroundings. No single country can save the environment alone.

Passage 4

When you leave home and all the things that are familiar, you encounter many new and confusing situations. These situations simply create stress; the reaction to this stress is call "culture shock". Some of the differences between life at home and life in a new place are patently obvious: language, climate, religion, food, educational methods, and lack of family and kin (close ties). Other differences are not as conspicuous (obvious): how students relate to teachers, how people make decisions, how people spend their leisure time, how people resolve conflicts, how people express feelings and sensitive matters. These differences cause feelings of uncertainty and apprehension (anxiety).

You may also feel that you don't know what to do in certain situations. Probably you did not think about these things at home because you knew what to do and what to expect. You also knew how other people acted and thought. In other words, you understood "the rules" and "the signs". Life was easier at home.

Your body and your mind may react in unusual ways to the stress and confusion of living in a new culture. Some of the reactions you experience may be: feeling solitary (isolated) or alone, sleeping too much or tiring easily, finding it difficult to sleep, suffering body pains, especially in the head, neck, back and stomach, wanting to return home and feeling animosity (angry) toward local people. These reactions are normal. You are not ill. It is a temporary situation for people who are adjusting to life in a new environment.

Passage 5

Studying abroad has always been an important element of learning the language and culture of another country. When you cross cultural boundaries you learn something even more valuable than a new language and a new way of life. You learn to see for yourself in a new light, things will never again look quite the same.

We live in an increasingly wired (interdependent) world. To survive and succeed, as individuals and as a nation, we must cultivate (establish) close, meaningful contacts with our colleagues in other countries. We must work toward understanding each other, sorting through our differences and finding the common denominator (ties) of common people that all of us share. This is more than just high-sounding rhetoric; it is a possible vision. This vision can be achieved through the experiences involved in study abroad. Studying abroad represents a very real investment in one's own future and growth besides being an investment in the future of the world. Being transplanted or transferred from the familiar to the unfamiliar provides a unique opportunity for self-discovery, as well as personal and professional growth. Only thirty years ago, study abroad was considered an unusual and costly educational option, but now, opportunities and programs are ubiquitous (abundant). State University of New York at Oswego offers a wide variety of programs in countries as diverse as the hosts themselves.

As the world grows smaller, and our options increasingly expand, studying abroad needs to be a indispensable (key) part of your education. However, some students hesitate to take the first step

because of certain false stories that surround the idea of studying overseas.

Passage 6

"There is no such thing as an inalienable 'right' to smoke", says Dr. Ronald Davies, Director of the Office on Smoking and Health of the U.S. Department of Health and Human Services. "Any assumed 'right' to smoke ends where a nonsmoker's nose begins.'

Speak up. What can you do to protect yourself and your family? Professor Carlson begins her campaign against passive smoking at her front door, where a sign reads: "Welcome to Another Smoke-free Home!" As she explains it, "Many people who visit object to cigarette smoke, and I would not more subject them to passive smoking than I would serve spoiled food."

When Professor Carlson finds herself seated next to a smoker, she politely says, "Excuse me, cigarette smoke makes me sick." The smoker usually stubs out (puts out) his cigarette.

Nonsmokers are now encouraged to speak up next time on their own. The encouragement is certainly needed: a U.S. government study shows that not even one of 25 nonsmokers ever ask smokers to refrain from smoking (not to smoke) for a while.

For the problems with smokers at work, she suggests getting together with other nonsmoking employees and speaking to the boss. Explain that your productivity is being reduced by the smoke you have to breathe. If that doesn't work, get a letter from your doctor explaining that your health is jeopardized (threatened) by tobacco smoke on the job. Or you may play the bottom-line card: point out that a smoke-free workplace will ultimately (eventually) result in reduced medical and insurance costs, and greater productivity.

Passage 7

Sometimes we say that someone we know is "a square peg in a round hole". This simply means that the person we are talking about is not suited for the job he is doing. He may be a bookkeeper who really wants to be an actor or a mechanic who likes cooking. Unfortunately, many people in the world are "square pegs"; they are not doing the kind of work they should be doing, for one reason or another. As a result they probably are not doing a very good job and invariably (certainly) are not happy.

Choosing the right career is very important. Most of us spend a great part of our lives at your jobs. For that reason we should try to find out what our fortes (talents) are and how we can utilize (use) them. We can do this through talent tests, interviews with specialists, and study of the books in our field of interest.

There are many careers open to each of us. Perhaps we like science. Then we might prepare ourselves to be chemists, physicists, or biologists. Maybe our interests take us into the business world and such work as accounting, personnel management or public relations. Many persons find their niche (place) in government service. Teaching, newspaper work, medicine, engineering --- these and many other fields offer alluring (fascinating) careers to persons with talent and training.

Passage 9

Britain has laws to make sure that women have the same opportunities as men in education, jobs, and training. But it is still unusual to find women working in jobs that necessitate (require) physical or heavy labor.

Nikki Henriques is a car repair engineer in London. She used to be a secretary. Barty Phillips, who freelances (writes) for a newspaper, asked her why she wanted to work with cars.

"My first reason is freedom," she said. "I also wanted to use my hands, and I like learning about how things work. Many people prefer to have a woman repair their cars, too."

Nikki found it hard to become a car repair engineer. She once spent 20 grueling weeks in a college where people could learn a new job. "For ten weeks I was the only woman among four hundred men, and some of them were impertinent (rude) to me, just because of my sex. It was also very fatiguing (tiring)…"

Barty Phillips also spoke to Rose, who works as a general builder in the city of Sheffield. "I didn't relish (enjoy) my old job at all," she said. "I wanted to do more practical work, and I wanted to be self-employed."

Rose learned her job from other people and from experience. However, many of the women in her group have been specially trained for refurbishing (improvements) to buildings and general repairs.

"People often say, 'Oh, women aren't strong enough,' but I don't think strength is important," said Rose. "The important thing is to get used to doing a different caliber (sort) of work."

Passage 10

In one way of thinking, failure is part of life. In another way, failure may be a way towards success. The "spider story" is often recounted (told). Robert Bruce, leader of the Scots in the 13th century, was hiding from the English in a cave. He watched a spider industriously spinning a web. The spider tried to reach across a cleft (rough place) in the rock. He tried six times to span the gap. On the seventh time he made it and went on to spin his web. Bruce is said to have taken heart and to have gone on to defeat the English… Edison, the inventor of the light bulb, made hundreds of models that failed before he found the right way to make one.

So what? First, always think about your failure. What caused it? Were conditions optimal (right)? Were you in top form yourself? What can you amend (change) so things will go right next time? Second, is the goal you're endeavoring (trying) to reach the right one? Try to do some thinking about what your real goals may be. Think about this question, "If I do succeed in this, where will it get me?" This may help you prevent failure in things you shouldn't be doing anyway.

The third thing to bear in mind about failure is that it's a part of the tapestry of life. Learn to "live

with yourself" even though you may have failed. Remember, "You can't win them all."

Passage 11

In 1909 an English newspaper offered 1,000 pounds to the first man to fly across the English Channel in an airplane. Today, modern high-speed airplanes cross it in minutes. But at that time it still seemed a good distance. The race to win the money soon became a race between two eccentric (colorful) men.

One was Louis Bleriot, a French factory owner. He was already well-known as a plucky pilot because he had crashed several times. Some people sneered (laughed) at him. One man said, "He may not be the first to fly across the Channel but he will certainly be the first to die in a crash!" But Bleriot was really a good, savvy (clever) and brave pilot.

The other man was Hubert Latham. He was half French and half English. He capriciously took up flying when his doctors told him he had only a year to live. "Oh, well," he said, "if I'm going to die soon, I think I shall have a peril-fraught (dangerous) and interesting life now."

Latham was the first to try to fly across the Channel. Ten kilometers from the French coast, unfortunately his plane had engine trouble. It crashed into the water and began to sink. A boat reached Latham just in time and found him sitting (calmly) on the wing with great poise, smoking.

Bleriot took off six days later. Somehow he got to the English side and landed in a farmer's field. When he did so, a customs officer rushed up to his plane. Uncannily (Interestingly), the officer demanded, "Have you anything to declare?"

Passage 12

One evening I found myself at a business meeting in Washington, D.C. and as fate would have it, Bucky Fuller happened to be making a presentation that evening at another business meeting in the very same hotel I got to the ballroom in time to hear the end of Bucky's lecture. I looked in wonder at this lucid little man in his eighties, with his clear mind, incisive (deep) wise thoughts and endless energy. At the culmination (end) of the talk, we walked together through the underground parking lot leading to his airport.

"I've got to go to New York City tonight for another rendezvous (presentation)," he said, looking at me with an anxiousness that I had rarely seen in Bucky.

"You know, Annie's not doing so well. I'm very concerned about her."

We embraced.

Bucky Fuller had once shared in secret with me that he had made a pact with (promised) his wife Annie to die before she did, so that he could be there to welcome her when it was her turn. I took the comment as a hope, not a commitment.

Soon after Bucky's presentation in New York, he learned that Annie had fallen into a coma in a hospital in Los Angeles. Doctors felt that there was a good chance she would not regain consciousness. Nucky took the first flight he could get. Upon arriving in Los Angeles, he went post-haste (immediately) to Annie's bedside. Sitting beside her, he closed his eyes and quietly died.

The power to choose life fully was something that Bucky exemplified. So much so that he had the power to choose death when it was time, pacifically (peacefully), with arms wide open to the universe that he served. It was simply another valiant (courageous) step forward.

Hours later, Annie peacefully joined him in death. He had kept his promise. He was waiting for her.

Passage 13

Thomas Wheeler, a chief executive officer of the Massachusetts Mutual Life Insurance Company, and his wife were driving along an interstate highway when he noticed that their car was low on gas. Wheeler got off the highway at the next exit and soon found a dilapidated (rundown) gas station with just one gas pump. He asked the only worker to fill the tank and check the oil, and then went for a little amble (walk) around the station to exercise his legs.

As he was returning to the car, he noticed that the worker and his wife were engaged in an animated (lively) conversation. The conversation abruptly stopped as he paid the worker. But as he was getting back into the car, he saw the worker poignantly wave to his wife and heard him say, "It was great talking to you."

As they drove out of the station, Wheeler asked his wife if she knew the man. She readily acquiesced (admitted) she did. They had gone to high school together and had dated fervently (steadily) for about a year.

"Boy, were you lucky that I came along," boasted Wheeler. "If you had married him, you'd be the wife of a meager gas station worker instead of the wife of a chief executive officer."

"My dear," his wife replied imperiously, "if I had married him, he'd be the chief executive officer and you'd be the gas station worker."

Passage 14

Once upon a time there was a sage (wise man) that used to go to the ocean to do his writing. He had a wont (habit) of walking on the beach before he began his work.

One day he was walking along the shore. As he looked down on the beach, he saw a human silhouette (figure) moving like a dancer. He smiled to himself at the thought of someone who would dance on the beach. So he began to sprint (walk faster) to catch up.

As he got closer, he saw that it was a young man and the young man wasn't dancing, but instead

he was reaching down to the shore, picking up something and very gently throwing it into the ocean.

As he got closer he called out, "Good morning! What are you doing?"

The young man paused, looked up and replied, "Throwing starfish into the ocean."

"I guess I should have asked, why are you tossing (throwing) starfish into the ocean?"

"The sun is up and the tide is receding (going out). And if I don't throw them in they'll die."

"But, young man, don't you realize that there are miles and miles of beach and starfish all along it. You can't possibly make a difference!"

The young man listened courteously (politely). Then he bent down, picked another starfish and threw it into the sea, past the breaking waves and said, "It made a difference for that one."

There is something very special in each and every one of us. We have all been gifted with the ability to make a difference. And if we can become aware of that gift, we will gain through the strength of our visions the power to shape the future.

We must each find our starfish. And if we throw our starfish judiciously (wisely) and well, the world will become better.

Passage 15

The Statue of Liberty stands 151 feet (46 meters) tall and weighs 225 tons. The palm of her hand alone could contain several people. On the 4th of July, 1884, when the Statue was delivered to the American Ambassador in Paris, her enormous mass and proportions awed the people crowded around her. She looked like a 15-storied colossus (giant) against the four-and-five-storied buildings of the city. People sat on rooftops to be able to take in her whole presence.

To travel from Paris to New York Harbor, the Statue had to be disassembled into 300 pieces and shipped in more than 200 wooden boxes. The pieces of her torch-bearing arm alone --- which had been displayed previously in Philadelphia in 1876 --- filled 21 boxes. Once the Statue was ready to be shipped to the United States, problems appeared on the other side of the Atlantic: the base on which she would stand was far from complete. Finally, on June 17, 1886 the Statue arrived, and was officially erected (installed) on a massive monument designed by Richard Morris Hunt. In October of 1886, President Grover Cleveland delivered a dedication address at the Statue's dedication ceremony, during which she was ultimately unveiled to the American people.

For millions of immigrants from Europe, the Statue of Liberty was their first sight of the Promised Land. And the Statue of Liberty has become one of the emblems (symbols) of the US since she stood on the small island of New York Harbor.

Passage 16

The danger from earthquakes is very real and tangible --- they are probably the most terrible natural disaster on earth. It was thought in the past that earthquakes were punishment from an wrathful (angry) god. Only recently have scientists begun to understand why earthquakes happen.

Seismologists (scientists) could not understand earthquakes until they understood more about the earth's surface. According to their findings, there are twelve huge plates that make up the surface of the earth. The oceans and land rest on these plates which fit together like huge pieces of a jigsaw puzzle.

The plates do not fit perfectly, however --- they are always moving. Some plates are slowly moving apart and others are moving together. The plates that begin in the middle of the Atlantic Ocean are moving apart and the plates that meet in the Pacific Ocean are pushing together. In fact, the Atlantic Ocean is slowly growing larger and the Pacific Ocean is getting smaller. Earthquakes occur when two plates that are pushing against each other slide violently past each other. A large amount of energy is unleashed (released), and the land on top of the plates shakes, causing cracks to appear in the ground and waves to form in the ocean. Terrible carnage (destruction) can occur; buildings can be destroyed, and fires started.

Because most earthquakes occur at places where two plates push against each other, these places, called faults, are very hazardous (dangerous). The famous San Andreas Fault is the meeting point of the Pacific and the North American Plates. The San Francisco earthquake of 1906, which almost completely decimated (destroyed) the city, occurred because San Francisco is very close to the San Andreas Fault.

Passage 17

Every February, across the country, candy, flowers, and gifts are exchanged between loved ones, all in the name of St. Valentine. But who is this mysterious saint and why do we celebrate this holiday?

The history of Valentine's Day is shrouded in mystery. But we do know that February has long been a month of romance. St Valentine's Day, as we know it today, contains manifold (many) stories from both Christian and ancient Roman traditions.

Today, the Church recognizes at least three different saints, one of whom was named Valentine. One story argues that Valentine was a priest who served during the third century in Rome. When Emperor Claudius II decided that single men made better soldiers than those with wives and families, he banned marriage for young men. Valentine ignored the order and continued to officiate (perform) marriage for young lovers in secret. When Valentine's actions were discovered, Claudius ordered that he be put to death. Other stories suggest that Valentine may have been executed (killed) for attempting to help Christians clandestinely escape from Roman prisons where they were often beaten and tortured.

According to one story, Valentine actually sent the first 'valentine' greeting himself. While in

prison, it is believed that Valentine fell in love with a young girl who visited him during his confinement. Before his death, it is said that he wrote her a letter, in which he signed 'From your Valentine,' an expression that is still in use today. Although the truth behind the Valentine stories is not clear, the stories certainly emphasize his appeal as a sympathetic, heroic, and, most importantly, romantic figure. It's no surprise that by the Middle Ages, Valentine was one of the most revered (popular) saints in England and France.

Passage 18

What's the public's attitude toward the issue of human cloning? The fact that an unknown scientist could become the attention of the media by announcing that he was ready to create a human clone showed how much this issue has fascinated and scared the whole world.

''It's not a fear of science but of how to control the technology," said Anne Figert, a professor in the department of sociology at Loyola University in Chicago.

The idea also had a strong appeal because it touched on a central subject throughout civilization: the search for immortality, added Kenneth Howard, a professor of psychology at Northeastern University in Chicago.

Richard Seed, a Harvard-educated physicist, said cloning a human could happen within 18 months if he could get financial backing. His first products would be cloned babies for infertile couples.

Within hours Seed was condemned by the White House and attacked in the US Congress. He was also put on ABC's *Nightline* last week under the wave of media publicity. There, he even offered to clone Ted Koppel, the host of the program.

The University of Illinois at Chicago said the 69-year-old Seed had used the space there for three years to do small-scale experiments on the immune systems of mice. His space had neither a desk nor a file cabinet.

A university spokesman said Seed had published more than 20 scientific papers including an article in the *Journal of the American Medical Association* in 1994. He was involved in human embryo transplant research 20 years ago.

Passage 20

There is a place in the Atlantic Ocean where ships and airplanes seem to disappear disquietingly (very) often. It seems to form a triangle between Miami, Bermuda, and the ocean east of Puerto Rico. This area is called the Bermuda Triangle.

The biggest single loss of planes transpired (happened) in December 1945. Five Navy planes from Florida were flying together. There were 14 men in them. They radioed back to their base that their flying instruments were not working. The base radioed back to them to follow the sun west. They answered that they could not see the sun, even though the weather was clement (good). They also said that the ocean didn't look normal as it should. Finally they said they could not hear base.

Then there was silence.

In the meantime, 13 men in another plan had been dispatched (sent) to help them. But they just transmitted (sent) one message. It said that they were coming to the place where the planes were lost. Then it also disappeared and was never heard from again.

It is known that pilots of planes often have trouble with their instruments in the Bermuda Triangle. Many people have studied the Triangle to find out what could be causing such things to happen there. In 1965 a plane was sent to study the magnetic field in the Bermuda Triangle. Soon after flying into the area, the plane disappeared. The 10 men in it were gone, too.

Instrument trouble alone can't be the whole answer. Most of the ships and planes have vanished close to land, in good weather, and often in daytime. Everything seems to happen very quickly.

So many planes, ships, and people have been lost there that this area is thought to be one of the most enigmatic (mysterious) places in the world. Perhaps some day in the future, we'll be able to explain the mystery of the Bermuda Triangle.

4. Words lists

Table: The number of students of each group who knew the words in the two vocabulary pretests

Pre-test I	NCS	CS	Control	Pre-test II	NCS	CS	Control
accounting	1	4	2	**burgeon**	0	0	0
alluring	0	1	0	commitment	24	22	18
amend	9	2	3	**salience**	0	0	0
animosity	0	0	0	**promulgate**	0	0	0
apprehension	0	0	0	**forthwith**	0	0	0
assume	16	23	16	**facilitate**	0	0	0
boundary	16	25	21	coordination	3	8	6
campaign	13	23	16	executive	3	0	1
caliber	0	0	0	dilapidated	0	0	1
cleft	0	0	0	**amble**	0	0	0
capriciously	0	0	0	animated	1	1	0
conflict	27	28	24	abruptly	13	12	13
cultivate	3	4	4	**poignantly**	0	0	0
conspicuous	10	11	13	**acquiesce**	0	0	0
crash	35	34	34	**fervently**	0	0	0
demand	33	38	36	meager	1	0	1
denote	0	0	0	**imperiously**	0	0	0
declare	33	30	29	finance	26	26	23
denominator	0	0	0	**desecrate**	0	0	0
encounter	5	5	3	appropriate	25	25	24
expand	25	34	28	palm	13	13	8
endeavor	9	10	5	mass	30	24	24
eccentric	0	1	0	unveil	4	5	3
forte	0	0	0	immigrant	24	23	24
feign	0	0	0	**emblem**	0	0	0
frenzied	0	0	0	**sage**	0	0	0
freelance	0	0	0	**wont**	0	0	0
fatiguing	1	0	0	silhouetter	1	0	0
grueling	0	0	0	**sprint**	0	0	0
impertinent	0	0	0	toss	1	0	0
indispensable	1	1	0	**recede**	0	0	0
inalienable	0	0	0	courteously	7	10	7
invariably	4	13	10	**judiciously**	0	0	0
industriously	0	0	0	starfish	0	3	2
jeopardize	0	0	0	proportion	3	4	5
kin	0	0	0	awe	5	1	2

Laissze-faire	0	0	0	**colossus**	0	0	0
mechanic	11	3	10	**disassemble**	0	0	0
myriad	0	0	0	monument	8	6	2
necessitate	15	23	21	dedication	1	2	0
niche	0	0	0	tangible	1	0	0
Object to	23	23	23	disaster	30	25	26
optimal	0	0	0	**wrathful**	0	0	0
patently	0	0	0	seismologist	1	1	0
productivity	5	2	5	**unleash**	0	0	0
peg	0	0	2	hazardous	2	1	0
personnel	7	7	6	**decimate**	0	0	0
perennially	0	0	0	dispatch	1	0	0
provocative	0	0	0	transmit	10	12	7
plucky	0	0	0	magnetic	2	2	0
Peril-fraught	0	0	0	vanish	2	4	5
poise	0	0	0	clone	34	30	26
physical	37	38	34	announce	36	34	29
relish	0	0	0	appeal	23	24	21
refurbishing	0	0	0	civilization	25	23	20
recount	1	0	1	immortality	2	1	1
reaction	33	34	32	condemn	6	5	5
rhetoric	0	0	0	immune	14	22	20
represent	20	27	20	infertile	8	2	1
refrain	1	0	1	cabinet	1	2	0
ritualistic	0	0	0	embryo	6	3	3
solitary	20	12	13	jigsaw	0	0	1
Subject to	0	1	0	plate	25	22	24
stub	0	0	0	slide	26	23	28
square	37	37	34	**lucid**	0	0	0
specialist	21	21	17	**incisive**	0	0	0
spin	0	0	0	**culmination**	0	0	0
span	0	1	0	**rendezvous**	0	0	0
sneer	1	0	0	exemplify	6	4	5
savvy	0	0	0	pacifically	0	0	3
sink	35	31	31	**valiant**	0	0	0
spoil	11	15	11	**shroud**	0	0	0
transfer	28	28	27	**manifold**	0	0	0
tapestry	0	0	0	ban	25	25	27
ubiquitous	0	0	0	**officiate**	0	0	0
unique	36	31	31	execute	1	0	1
utilise	0	1	0	**clandestinely**	0	0	0
uncannily	0	0	0	torture	1	0	0
wired	0	1	0	**confinement**	0	0	0

N=79(**37**)				sympathetic	23	23	27
				revered	0	0	0
				embrace	19	18	11
				pact	0	0	0
				coma	0	0	0
				Post-haste	0	0	0
				disquietingly	0	0	0
				transpire	0	0	0
				instrument	21	23	23
				clement	0	0	0
				enigmatic	0	0	0
				mystery	30	34	32
				N=91(**40**)			

※**Target words:** There are totally 170 words; those in bold with a frequency of zero are the Unfamiliar-Words (N=77), that is, the words no one knew beforehand. The rest are named as Familiar-Words (N=93).

Table: The number of students of each group who knew the Familiar-Words in the two vocabulary pretests

High-familiarity-words	**NCS**	**CS**	**Control**	**Total**	**Low-familiarity-words**	**NCS**	**CS**	**Control**	**Total**
physical	37	38	34	94.8%	conspicuous	10	11	13	29.6%
square	37	37	34	93.9%	transmit	10	12	7	27.1%
demand	33	38	36	93%	invariably	4	13	10	23.5%
announce	36	34	29	92.5%	courteously	7	10	7	22.4%
mystery	30	34	32	89.7%	endeavor	9	10	5	20.9%
crash	35	34	34	89.6%	mechanic	11	3	10	20.9%
reaction	33	34	32	86.1%	personnel	7	7	6	17.4%
unique	36	31	31	85.2%	coordination	3	8	6	15.9%
sink	35	31	31	84.3%	monument	8	6	2	15%
clone	34	30	26	84.1%	condemn	6	5	5	15%
declare	33	30	29	80%	exemplify	6	4	5	14%
expand	25	34	28	75.7%	amend	9	2	3	12.2%
disaster	30	25	26	75.7%	encounter	5	5	3	11.3%
mass	30	24	24	72.9%	unveil	4	5	3	11.2%
transfer	28	28	27	72.2%	proportion	3	4	5	11.2%
slide	26	23	28	72%	embryo	6	3	3	11.2%
ban	25	25	27	72%	productively	5	2	5	10.4%

finance	26	26	23	70.1%	vanish	2	4	5	10.3%
appropriate	25	25	24	69.2%	infertile	8	2	1	10.3%
conflict	27	28	24	68.7%	cultivate	3	4	4	9.6%
sympathetic	23	23	27	68.2%	awe	5	1	2	7.5%
immigrant	24	23	24	66.4%	accounting	1	4	2	6%
plate	25	22	24	66.4%	starfish	0	3	2	4.7%
appeal	23	24	21	63.6%	executive	3	0	1	3.7%
civilization	25	23	20	63.6%	magnetic	2	2	0	3.7%
instrument	21	23	23	62.6%	immortality	2	1	1	3.7%
object to	23	23	23	60%	cabinet	1	2	0	2.8%
commitment	24	22	18	59.8%	pacifically	0	0	3	2.8%
represent	20	27	20	58.3%	hazardous	2	1	0	2.8%
boundary	16	25	21	53.9%	dedication	1	2	0	2.8%
immune	14	22	20	52.4%	animated	1	1	0	1.9%
specialist	21	21	17	51.3%	meager	1	0	1	1.9%
necessitate	15	23	21	51.3%	seismologist	1	1	0	1.9%
assume	16	23	16	47.8%	execute	1	0	1	1.9%
campaign	13	23	16	45.2%	indispensable	1	1	0	1.7%
embrace	19	18	11	44.9%	peg	0	0	2	1.7%
solitary	20	12	13	39.1%	recount	1	0	1	1.7%
abruptly	13	12	13	35.5%	refrain	1	0	1	1.7%
spoil	11	15	11	32.2%	alluring	0	1	0	0.9%
palm	13	13	8	31.8%	eccentric	0	1	0	0.9%
N=40					fatiguing	1	0	0	0.9%
					tangible	1	0	0	0.9%
					toss	1	0	0	0.9%
					silhouette	1	0	0	0.9%
					dilapidated	0	0	1	0.9%
					subject to	0	1	0	0.9%
					span	0	1	0	0.9%
					sneer	1	0	0	0.9%
					utilize	0	1	0	0.9%
					wired	0	1	0	0.9%
					dispatch	1	0	0	0.9%
					jigsaw	0	0	1	0.9%
					torture	1	0	0	0.9%
					N=53				

※**Familiar-Words:** There are totally 93 Familiar-Words, of which, more than 30% of the students knew in the pretests are named High-Familiarity-Words (N=40), those less than 30% of the students knew in the pretest are named Low-Familiarity-Words (N=53).

5. Teaching plans (3 sample passages)

Passage 4

Introducing the topic

T: How long have you been studying in Yantai University?

S: over a month

T: Do you still remember your feeling on the day when you first came to Yantai University? Excited? Nervous in such a new environment? Happy? Sad to leave your parents and family?

S: …

T: when you leave home and come to a new environment, you come across new things, you need to adjust yourself to this new settings. The same is true if you have a chance to go abroad to study, a complete new environment, new culture and people, which you need even more time to get used to it. This can be called 'Culture Shock'. (Example or joke on 'where, where…' of modesty)

S: …

T: Now shall we listen to a passage on studying abroad and the 'culture shock' you may feel. Please complete the listening comprehension questions on the answer sheets after the listening.

T: (Play the whole passage)

S: (Do the multiple-choice exercise)

T: (play the first section)

T: What may create stress, according to the passage?

S: many new and confusing situations.

T: yes, 'when you leave home and all the things that are familiar, you encounter many new and confusing situations. These situations simply create stress…' Encounter means come across/遭遇遇到. 'The reaction to this stress is called Culture Shock'. Reaction means response/反应.

T: (play the second section)

T: Give examples of the differences between life at home and life in a new place?

S: …

T: language, climate, religion, food, educational methods, lack of family and kin. Kin means close relatives/亲属

T: some of the differences between life at home and life in a new place are patently obvious… patently means clearly/明显地，显然地

T: (play the next section)

T: how about other differences? Example?

S: …

T: 'Other differences are not as conspicuous'. Conspicuous means obvious/显而易见. Such as 'how students relate to teachers, how people make decisions, how people spend their leisure time, how people resolve conflicts, how people express feelings and sensitive matters'.

T: (play the next section)

T: what's the influence of these differences?

S: uncertainty and apprehension

T: 'these differences cause feelings of uncertainty and apprehension'. Apprehension means anxiety/忧虑，焦虑

T: why? How do you feel?

S: 'you may also feel that you don't know what to do in certain situations …'

T: (play the next section)

T: what are the reactions you may experience?

S: feeling solitary or alone, sleeping too much or tiring easily, finding it difficult to sleep, suffering body pains …

T: yes, …… Solitary means alone/孤单的，孤独的　Animosity means angry/生气，厌恶

T: (play the last section)

T: Are you ill when you have the above reactions?

S: No, you are not ill. It's just a temporary situation. It lasts short.

T: Go through the words on the board again.

Listen to the tape again the last time.

Passage 5

Introducing the topic

T: Next passage we're going to listen is also about studying abroad. However, it's not on how you would react to the new environment and face 'culture shock'. Instead, it's on studying abroad itself.

T: please listen carefully and complete the comprehension questions on the answer sheets.

T: (play the whole passage)

T: what is the passage about?

S: studying abroad

T: yes, studying abroad is important for learning the language and culture of another country.

T: (play the first section)

T: How can we learn the language and culture of another country?

S: studying abroad in that country

T: yes, 'when you cross cultural boundaries, you learn something more valuable than …' Boundaries means limits/界限.

T: (play the second section)

T: what kind of world we live in now?

S: ……

T: 'we live in an increasingly wired world'. Wired means connected or interdependent/互相连接，互相依靠的。

T: (play the next section)

T: what must we do in such a new world?

S: ……

T: 'we must cultivate close, meaningful contacts with …' Cultivate means establish or set up/建立。Denominator means things that we share/共同点。

T: (play the next section)

T: what does it sound?

S: ……

T: This is more than just high-sounding rhetoric, means 'this is not just rhetoric'. Rhetoric means pretty words/华丽的词藻，精美的语言。

T: How can it be achieved?

S: by studying abroad.

T: represent means stand for/代表

T: (Play the next section)

T: What is 'studying abroad' compared as?

S: 'being transplanted or transferred from … to …'

T: Transplant or transfer means move from one place to another/迁移，转移

T: (play the next section)

T: What was study abroad like thirty years ago?

S: an unusual and costly educational option

T: How about now?

S: opportunities and programs are ubiquitous. Ubiquitous means existing everywhere/普遍存在的

unique means special/独特的

T: (play the next section)

T: how about this sentence?

S: an example of New York State University

T: (play the last section)

T: What happens when the world grows smaller?

S: ……

T: '… our options increasingly expand'. Expand means get bigger/扩大。

'studying abroad needs to be an indispensable part of your education'. Indispensable means key or very important/不可缺少的，重要的

T: Go through the words and main idea again on the board

Play the tape the last time

Clean the board

Passage 6

Introducing the topic

T: We all know that smoking is bad to our health. And in many public places you may see a sign 'Please don't smoking here'. However, there are still many who smoke. Have you heard of the term 'passive smoking'? Can you guess its meaning?

S: ……

T: Do you have experience of sitting next to or near to a person who smoke? For example, my Dad smokes, and my mum and I have to sit in an environment filled with cigarette smoke. For me and Mum, this is a kind of smoking as well. We smoke!!! This is called 'passive smoking' or 'second-hand smoke'. Current scientific evidence shows that exposure to secondhand tobacco smoke causes death, disease, and disability.

T: so when this happens, what shall we do? We should speak up, and tell them to stop smoking in front of us.

T: (play the whole passage and ask students to complete the comprehension questions)

T: what's the whole passage about?

S: what can you do to protect yourself and your family, that is, to say 'No' to smokers.

T: (play the first section)

T: According to Dr. Donald Davies, do smokers have a right to smoke?

S: No.

T: 'there is no such thing as an inalienable right to smoke'. Inalienable means cannot be taken away from/不可剥夺的. 'Any assumed right to smoke ends where a nonsmoker's nose begins'. Assume means think that something is true or take into granted/假设，假定.

T: (play the second section)

T: what can you do to protect yourself and your family?

S: speak up

T: she begins her campaign against passive smoking. Campaign means action/行动。

T: what did Prof Carlson write on the sign at her front door?

S: Welcome to another smoke-free home

T: what does it mean?

S: if you are a smoker, you are not welcome but you may not smoke here

T: (play the next section)

T: why she put such a sign at her front door?

S: ……

T: 'Many people object to cigarette smoke, and I would not more subject them to passive smoking than I would serve spoiled food'. Object to means dislike or disagree/反对。Subject them to something means make someone suffer from something/使…遭受。Spoil means destroy/破坏，but here spoiled food means bad food. This sentence means that I would not have my guests suffer from passive smoking, just as I would not serve them spoiled food.

T: (play the next section)

T: How does she react to passive smoking?

S: speak up

T: yes, ask that smoker politely to stop smoking. Then the smoker would stub out his cigarette. Stub out means put out/熄灭。

T: (play the next section)

T: Do the nonsmokers often speak up to stop smokers?

S: no.

T: not even one of 25 nonsmokers ever ask smokers to refrain from smoking for a while. Refrain means hold back or stop/克制，抑制。

T: (play the next section)

T: what's her suggestion for the problems with smoke at work?

S: ……

T: 'explain that your productivity is being reduced by the smoke you have to breathe'. Productivity means the efficiency or ability to produce/生产力，生产率。

T: (play the next section)

T: or what can you do?

S: ……

T: 'get a letter saying that your health is jeopardized by tobacco smoke on the job'. Jeopardize means threaten or be in danger/威胁，危险。

T: (play the last section)

T: or what can you do?

S: ……

T: bottom-line card: a smoke-free workplace will ultimately result in reduced medical and insurance ……

T: Go through the words again

Play the passage again

6. List of target words with Chinese and English meanings

Test 1

Passage 4

Encounter: come across 遭遇，遇到
Reaction: response 反应
Patently (obvious): very clearly 明显的，显然的
Kin: close relatives 亲属，亲戚
Conspicuous: obvious 明显的，显然的
Conflict: disagreement 冲突
Apprehension: anxiety, worry 焦虑，忧虑
Solitary: lonely 孤单的，孤独的
Animosity: (feeling) angry 生气，厌恶

Passage 5

Boundary: limit or border 界限
Wired: connected or dependent on each other 互相连接，互相依靠的
Cultivate: establish or set up 建立
Denominator: common things that you share 共同点
Rhetoric: beautiful or pretty words 华丽的词藻，精美的语言
Represent: stand for 代表
transfer: move from one place to another 转移
Unique : special 独特的
Ubiquitous: existing everywhere 普遍存在的
Expand: get bigger 扩大
Indispensable: very important 不可缺少的，重要的

Passage 6

Inalienable: cannot be taken away 不可剥夺的
Assume: think that something is true or take for granted 假设，假定
Campaign: action or activities 行动
Object to: disagree or dislike or oppose 反对
Subject to: make somebody suffer 使某人遭受什么罪
Stub out: put out 熄灭
Refrain: stop or hold back or control 克制，抑制
Productivity: the ability, the efficiency to produce or work 生产力，生产率
Jeopardize: threaten or harm or be in danger 威胁，危险
Spoil: destroy 破坏

Test 2

Passage 9

Necessitate: to require, to make something necessary 需要
Physical: of the body 身体的
Freelance: write 写稿，撰稿
Grueling: very hard 艰难的
Impertinent: rude 粗鲁的
Fatiguing: tiring 疲劳的
Relish: enjoy, like 喜欢
Refurbishing: repairs 翻修，装修
Caliber: type 种类

Passage 10
Recount: tell 叙述，描述
Spin: make a web by moving round 编织
Industriously: hard-working 辛苦的，努力工作的
Cleft: gap or ditch 缝隙
Span: to reach across or go across 穿越
Optimal: perfect 最佳的，理想的
Amend: improve 修改，改正
Endeavor: try 试图，尝试
Tapestry: a colorful carpet, being colorful 丰富多彩的（生活）

Passage 11
Eccentric: unusual, strange 古怪的
Plucky: brave 勇敢的
Sneer: laugh (at) 嘲笑
Savvy: clever or smart 精明的
Capriciously: somebody make a sudden decision without thinking much 冲动的
Peril-fraught: dangerous 危险的
Poise: calm 沉着，冷静
Uncannily: very strangely 奇怪地，不可思议地
Demand: ask 询问
Declare: report or tell 申报
Crash: hit 碰撞
Sink: fall 下沉

Test 3
Pasage 2

Perennially: always 经常，总是
Feign (a smile): force a smile unwillingly or pretend 假装
Ritualistic: formal 正式的
Laissez-faire: Faire means do, laissez means to let. To let sb do whatever, so means

'relaxed' 做，让某人做，使人放松的
Frenzied: very busy 繁忙的，忙碌的
Provocative: cause sb to feel angry on purpose 冒犯的，不礼貌的
Denote: show 表示
Myriad: lots of, many 许多

Passage 7
Square: having four-sides or triangles 方的
Peg: a short piece of wood or metal to put in a hole used for hanging things 木栓
Mechanic: somebody who is skilled at using machines 机械工，机械师
Invariably: not changing, always 总是，不变的
Forte: talent 天赋
Utilize: use 使用
Accounting: keeping or counting of money 会计
Personnel: all the employees 人事
Niche: a suitable place 适当的位置
Alluring: attractive 吸引人的
Specialist: expert, somebody who has special skills 专家

Test 4
Passage 3
Commitment: duty or responsibility 责任，义务
Burgeoning: growing 越来越多的
Salience: stress, emphasis 重点
Promulgate: make known to the public 颁布
Forthwith: immediately 立即，马上
Desecrate: damage, destroy 破坏
Appropriate: suitable or proper 适当的，合适的
Facilitate: help something to grow 促进
Coordination: working together 合作
Finance: provide money for 资助

Passage 13
Dilapidated: very old 破旧的
Amble: walk 散步
Animated: lively 活跃的
Abruptly: suddenly 突然
Poignantly: very sadly 可怜地，悲伤地
Acquiesce: agree 同意，承认
Fervently: with passion, love 热烈地
Meager: poor 穷困的
Imperiously: proudly 傲慢地

Executive: carrying out or doing things 执行的

Passage 15

Palm: bottom side of your hand 手掌
Mass: weight 重量
Proportion: size 比例
Awe: surprise and frighten 使畏惧
Colossus: a huge man, very tall 巨人
Disassemble: assemble means put together, disassemble means take thing apart into pieces 组装；拆开
Monument: building to memorize 纪念碑
Dedication: opening 开幕
Unveil: veil means cover, unveil means uncover or open or show 揭开
Emblem: symbol 象征
Immigrant: person from a foreign country 移民

Test 5

Passage 12

Lucid: clear thinking 思维清晰的
Incisive: deep 深刻的
Culmination: the end 终点，结束
Rendezvous: meeting 会面，见面
Embrace: hug or hold each other 拥抱
Pact: agreement 一致
Coma: a state of unconsciousness 昏迷
Posthaste: immediately 立即，马上
Exemplify: to be an example 举例说明
Pacifically: peacefully 平静地
Valiant: brave or courageous 勇敢的

Passage 17

Shroud: cover 遮盖，覆盖
Manifold: many 许多
Ban: stop 禁止
Officiate: to perform or host 主持
Execute: kill by law 依法处死，处决
Clandestinely: secretly 秘密的
Torture: cause great pain 折磨
Confinement: the state of being in prison 关押，在关押期间
Sympathetic: showing sympathy, understanding 同情的
Revered: respected 受人尊敬（尊重）的

Passage 20

Disquietingly: worryingly 令人担忧地
Transpire: happen 发生
Clement: (weather) good （天气）好的，晴朗的
Dispatch: send (people) 派遣
Transmit: send (message) 发送
Magnetic: two iron objects attract each other, this kind of force is called magnetic 磁力的
Vanish: disappear 消失
Enigmatic: mysterious 神秘的
Instrument: tool 工具
Mystery: unexplained incident 神秘

Test 6
Passage 14

Sage: a wise man 圣人
Wont: habit 习惯
Silhouette: the shape or shadow or figure of a person or something 轮廓，影子
Sprint: run fast 奔跑
Recede: always use together with tide, tide going back or out 退（潮）
Toss: throw, formal word 扔
Courteously: very politely 有礼貌地，谦虚地
Judiciously: wisely or correctly 明智地
Starfish: sea creature shaped like a star 海星

Passage 16

Tangible: be able to feel or touch 可以触摸到的
Disaster: a great misfortune 灾难
Wrathful: angry 愤怒的
Seismologist: scientist who study earthquakes 地震学家
Jigsaw puzzle: a game that you put pieces of things together in order to make a whole picture 拼图游戏
Slide: move smoothly 滑
Unleash: release, give out 释放
Hazardous: dangerous 危险的
Decimate: destroy 破坏，毁灭
Plate: a moving part of the surface of the earth 板块

Passage 18

Immortality: mortal means death, living forever, never die 长生不老
Appeal: attraction 吸引力
Infertile: cannot have babies 不能生育的
Condemn: criticize 谴责
Immune: protection from disease 免疫力的
Cabinet: a piece of future, a kind of drawer that you can put files in 柜子，橱子
Embryo: a cell, before the baby was born 胚胎
Civilization: human society with its highly developed social organization 文明
Clone: copy 克隆
Announce: say in public 宣布

7. Sample vocabulary tests with listening comprehension tests

Pretest I

听力理解： (Listening comprehension)

一. 短对话 (long conversation)

1. 2. 3. 4. 5. 6. 7. 8. 9. 10.

二. 长对话 (short conversation)

1. 2. 3. 4. 5.

三. 短文 (short passages)

1. 2. 3. 4. 5. 6. 7. 8. 9. 10.

11. 12. 13. 14. 15.

词汇：

请看左边的单词。如果你完全不认识这个单词，请在其右边的数字中选择‘0’；如果你知道这个单词的意思，请在右边的横线上填写出它的英语或者汉语意思，并且在其后的从 1 到 5 的数字中选择你对于所填写的意思的确定程度。‘1’ 指‘完全不确定’，‘5’ 指‘非常确定’。从 1 到 5 确定程度依次递增。

accounting	0	_____	1	2	3	4	5
adjust	0	_____	1	2	3	4	5
alluring	0	_____	1	2	3	4	5
amend	0	_____	1	2	3	4	5
animosity	0	_____	1	2	3	4	5
apprehension	0	_____	1	2	3	4	5
assume	0	_____	1	2	3	4	5
boundary	0	_____	1	2	3	4	5
breathe	0	_____	1	2	3	4	5
campaign	0	_____	1	2	3	4	5
caliber	0	_____	1	2	3	4	5
cleft	0	_____	1	2	3	4	5
custom	0	_____	1	2	3	4	5
capriciously	0	_____	1	2	3	4	5
conflict	0	_____	1	2	3	4	5
cultivate	0	_____	1	2	3	4	5
conspicuous	0	_____	1	2	3	4	5
crash	0	_____	1	2	3	4	5

confusion	0	_____	1	2	3	4	5
defeat	0	_____	1	2	3	4	5
demand	0	_____	1	2	3	4	5
denote	0	_____	1	2	3	4	5
declare	0	_____	1	2	3	4	5
denominator	0	_____	1	2	3	4	5
encounter	0	_____	1	2	3	4	5
expand	0	_____	1	2	3	4	5
engineer	0	_____	1	2	3	4	5
endeavor	0	_____	1	2	3	4	5
eccentric	0	_____	1	2	3	4	5
engine	0	_____	1	2	3	4	5
employ	0	_____	1	2	3	4	5
forte	0	_____	1	2	3	4	5
feign	0	_____	1	2	3	4	5
frenzied	0	_____	1	2	3	4	5
freelance	0	_____	1	2	3	4	5
fatiguing	0	_____	1	2	3	4	5
grueling	0	_____	1	2	3	4	5
gap	0	_____	1	2	3	4	5
handshake	0	_____	1	2	3	4	5
impertinent	0	_____	1	2	3	4	5
indispensable	0	_____	1	2	3	4	5
investment	0	_____	1	2	3	4	5
inalienable	0	_____	1	2	3	4	5
insurance	0	_____	1	2	3	4	5
invariably	0	_____	1	2	3	4	5
industriously	0	_____	1	2	3	4	5
jeopardize	0	_____	1	2	3	4	5
kin	0	_____	1	2	3	4	5

leisure	0	_____	1	2	3	4	5
laissez-faire	0	_____	1	2	3	4	5
mechanic	0	_____	1	2	3	4	5
myriad	0	_____	1	2	3	4	5
necessitate	0	_____	1	2	3	4	5
niche	0	_____	1	2	3	4	5
object to	0	_____	1	2	3	4	5
opportunity	0	_____	1	2	3	4	5
optimal	0	_____	1	2	3	4	5
patently	0	_____	1	2	3	4	5
productivity	0	_____	1	2	3	4	5
passive	0	_____	1	2	3	4	5
peg	0	_____	1	2	3	4	5
personnel	0	_____	1	2	3	4	5
perennially	0	_____	1	2	3	4	5
provocative	0	_____	1	2	3	4	5
plucky	0	_____	1	2	3	4	5
peril-fraught	0	_____	1	2	3	4	5
poise	0	_____	1	2	3	4	5
physical	0	_____	1	2	3	4	5
relish	0	_____	1	2	3	4	5
refurbishing	0	_____	1	2	3	4	5
recount	0	_____	1	2	3	4	5
reaction	0	_____	1	2	3	4	5
rhetoric	0	_____	1	2	3	4	5
represent	0	_____	1	2	3	4	5
refrain	0	_____	1	2	3	4	5
ritualistic	0	_____	1	2	3	4	5
solitary	0	_____	1	2	3	4	5
survive	0	_____	1	2	3	4	5

subject to	0	_____	1	2	3	4	5
stub	0	_____	1	2	3	4	5
square	0	_____	1	2	3	4	5
specialist	0	_____	1	2	3	4	5
spider	0	_____	1	2	3	4	5
spin	0	_____	1	2	3	4	5
span	0	_____	1	2	3	4	5
sneer	0	_____	1	2	3	4	5
savvy	0	_____	1	2	3	4	5
sink	0	_____	1	2	3	4	5
spoil	0	_____	1	2	3	4	5
stress	0	_____	1	2	3	4	5
transfer	0	_____	1	2	3	4	5
transplant	0	_____	1	2	3	4	5
talent	0	_____	1	2	3	4	5
totally	0	_____	1	2	3	4	5
tapestry	0	_____	1	2	3	4	5
ubiquitous	0	_____	1	2	3	4	5
unique	0	_____	1	2	3	4	5
ultimately	0	_____	1	2	3	4	5
utilize	0	_____	1	2	3	4	5
uncannily	0	_____	1	2	3	4	5
unfriendliness	0	_____	1	2	3	4	5
wired	0	_____	1	2	3	4	5

学号 _____ (student ID)

性别 _____ (sex)

高考英语成绩 _____ (English scores in national university entrance exam)

请选择你所偏爱的周末培训课时间： 周六上午 周六下午 周日上午 周日下午
(Please choose the time you prefer to take the training sessions each weekend)

Posttest 1

请看左边的单词。如果你完全不认识这个单词，请在其右边的数字中选择‘0’；如果你知道这个单词的意思，请在右边的横线上填写出它的英语或者汉语意思，并且在其后的从 1 到 5 的数字中选择你对于所填写的意思的确定程度。‘1’ 指‘完全不确定’，‘5’ 指‘非常确定’。从 1 到 5 确定程度依次递增。

Reaction	0	_____	1	2	3	4	5
Encounter	0	_____	1	2	3	4	5
Boundary	0	_____	1	2	3	4	5
Wired	0	_____	1	2	3	4	5
Patently	0	_____	1	2	3	4	5
Kin	0	_____	1	2	3	4	5
Cultivate	0	_____	1	2	3	4	5
Denominator	0	_____	1	2	3	4	5
Conspicuous	0	_____	1	2	3	4	5
Conflicts	0	_____	1	2	3	4	5
Apprehension	0	_____	1	2	3	4	5
Rhetoric	0	_____	1	2	3	4	5
Transfer	0	_____	1	2	3	4	5
Ubiquitous	0	_____	1	2	3	4	5
Solitary	0	_____	1	2	3	4	5
Animosity	0	_____	1	2	3	4	5
Expand	0	_____	1	2	3	4	5
Indispensable	0	_____	1	2	3	4	5
Represent	0	_____	1	2	3	4	5
Unique	0	_____	1	2	3	4	5
Inalienable	0	_____	1	2	3	4	5
Assume	0	_____	1	2	3	4	5

Campaign	0	_____	1	2	3	4	5
Object to	0	_____	1	2	3	4	5
Subject to	0	_____	1	2	3	4	5
Stub	0	_____	1	2	3	4	5
Refrain	0	_____	1	2	3	4	5
Jeopardize	0	_____	1	2	3	4	5
Productivity	0	_____	1	2	3	4	5
Spoil	0	_____	1	2	3	4	5

Posttest 2

学号 _____

请看左边的单词。如果你完全不认识这个单词，请在其右边的数字中选择‘0’；如果你知道这个单词的意思，请在右边的横线上填写出它的英语或者汉语意思，并且在其后的从 1 到 5 的数字中选择你对于所填写的意思的确定程度。‘1’ 指‘完全不确定’，‘5’ 指‘非常确定’。从 1 到 5 确定程度依次递增。

Necessitate	0	_____	1	2	3	4	5
Freelance	0	_____	1	2	3	4	5
Recount	0	_____	1	2	3	4	5
Industriously	0	_____	1	2	3	4	5
Eccentric	0	_____	1	2	3	4	5
Crash	0	_____	1	2	3	4	5
Grueling	0	_____	1	2	3	4	5
Impertinent	0	_____	1	2	3	4	5
Spin	0	_____	1	2	3	4	5
Cleft	0	_____	1	2	3	4	5
Sneer	0	_____	1	2	3	4	5
Plucky	0	_____	1	2	3	4	5
Fatiguing	0	_____	1	2	3	4	5
Relish	0	_____	1	2	3	4	5
Span	0	_____	1	2	3	4	5
Optimal	0	_____	1	2	3	4	5
Savvy	0	_____	1	2	3	4	5
Capriciously	0	_____	1	2	3	4	5
Refurbishing	0	_____	1	2	3	4	5

Caliber	0	_____	1	2	3	4	5
Amend	0	_____	1	2	3	4	5
Endeavor	0	_____	1	2	3	4	5
Peril-fraught	0	_____	1	2	3	4	5
Poise	0	_____	1	2	3	4	5
Tapestry	0	_____	1	2	3	4	5
Uncannily	0	_____	1	2	3	4	5
Declare	0	_____	1	2	3	4	5
Sink	0	_____	1	2	3	4	5
Physical	0	_____	1	2	3	4	5
Demand	0	_____	1	2	3	4	5

Posttest 3 + pretest II

学号 _____

请看左边的单词。如果你完全不认识这个单词，请在其右边的数字中选择‘0’；如果你知道这个单词的意思，请在右边的横线上填写出它的英语或者汉语意思，并且在其后的从 1 到 5 的数字中选择你对于所填写的意思的确定程度。‘1’ 指‘完全不确定’，‘5’ 指‘非常确定’。从 1 到 5 确定程度依次递增。

Perennially	0	_____	1	2	3	4	5
feign	0	_____	1	2	3	4	5
mechanic	0	_____	1	2	3	4	5
invariably	0	_____	1	2	3	4	5
specialist	0	_____	1	2	3	4	5
accounting	0	_____	1	2	3	4	5
personnel	0	_____	1	2	3	4	5
ritualistic	0	_____	1	2	3	4	5
laissez-faire	0	_____	1	2	3	4	5
frenzied	0	_____	1	2	3	4	5
provocative	0	_____	1	2	3	4	5
denote	0	_____	1	2	3	4	5
myriad	0	_____	1	2	3	4	5

square	0	_____	1	2	3	4	5
peg	0	_____	1	2	3	4	5
forte	0	_____	1	2	3	4	5
utilize	0	_____	1	2	3	4	5
niche	0	_____	1	2	3	4	5
alluring	0	_____	1	2	3	4	5
burgeon	0	_____	1	2	3	4	5
commitment	0	_____	1	2	3	4	5
salience	0	_____	1	2	3	4	5
promulgate	0	_____	1	2	3	4	5
forthwith	0	_____	1	2	3	4	5
facilitate	0	_____	1	2	3	4	5
coordination	0	_____	1	2	3	4	5
executive	0	_____	1	2	3	4	5
dilapidated	0	_____	1	2	3	4	5
amble	0	_____	1	2	3	4	5
animated	0	_____	1	2	3	4	5
abruptly	0	_____	1	2	3	4	5
poignantly	0	_____	1	2	3	4	5
acquiesce	0	_____	1	2	3	4	5
fervently	0	_____	1	2	3	4	5
meager	0	_____	1	2	3	4	5
imperiously	0	_____	1	2	3	4	5
finance	0	_____	1	2	3	4	5
desecrate	0	_____	1	2	3	4	5
appropriate	0	_____	1	2	3	4	5
palm	0	_____	1	2	3	4	5
mass	0	_____	1	2	3	4	5
unveil	0	_____	1	2	3	4	5
immigrant	0	_____	1	2	3	4	5

emblem	0	_____	1	2	3	4	5
sage	0	_____	1	2	3	4	5
wont	0	_____	1	2	3	4	5
silhouette	0	_____	1	2	3	4	5
sprint	0	_____	1	2	3	4	5
toss	0	_____	1	2	3	4	5
recede	0	_____	1	2	3	4	5
courteously	0	_____	1	2	3	4	5
judiciously	0	_____	1	2	3	4	5
starfish	0	_____	1	2	3	4	5
proportion	0	_____	1	2	3	4	5
awe	0	_____	1	2	3	4	5
colossus	0	_____	1	2	3	4	5
disassemble	0	_____	1	2	3	4	5
monument	0	_____	1	2	3	4	5
dedication	0	_____	1	2	3	4	5
tangible	0	_____	1	2	3	4	5
disaster	0	_____	1	2	3	4	5
wrathful	0	_____	1	2	3	4	5
seismologist	0	_____	1	2	3	4	5
unleash	0	_____	1	2	3	4	5
hazardous	0	_____	1	2	3	4	5
decimate	0	_____	1	2	3	4	5
dispatch	0	_____	1	2	3	4	5
transmit	0	_____	1	2	3	4	5
magnetic	0	_____	1	2	3	4	5
vanish	0	_____	1	2	3	4	5
clone	0	_____	1	2	3	4	5
announce	0	_____	1	2	3	4	5
appeal	0	_____	1	2	3	4	5

civilization	0	_____	1	2	3	4	5
immortality	0	_____	1	2	3	4	5
condemn	0	_____	1	2	3	4	5
immune	0	_____	1	2	3	4	5
infertile	0	_____	1	2	3	4	5
cabinet	0	_____	1	2	3	4	5
embryo	0	_____	1	2	3	4	5
jigsaw	0	_____	1	2	3	4	5
plate	0	_____	1	2	3	4	5
slide	0	_____	1	2	3	4	5
lucid	0	_____	1	2	3	4	5
incisive	0	_____	1	2	3	4	5
culmination	0	_____	1	2	3	4	5
rendezvous	0	_____	1	2	3	4	5
exemplify	0	_____	1	2	3	4	5
pacifically	0	_____	1	2	3	4	5
valiant	0	_____	1	2	3	4	5
shroud	0	_____	1	2	3	4	5
manifold	0	_____	1	2	3	4	5
ban	0	_____	1	2	3	4	5
officiate	0	_____	1	2	3	4	5
execute	0	_____	1	2	3	4	5
clandestinely	0	_____	1	2	3	4	5
torture	0	_____	1	2	3	4	5
confinement	0	_____	1	2	3	4	5
sympathetic	0	_____	1	2	3	4	5
revered	0	_____	1	2	3	4	5
embrace	0	_____	1	2	3	4	5
pact	0	_____	1	2	3	4	5
coma	0	_____	1	2	3	4	5

post-haste	0	_____	1	2	3	4	5
disquietingly	0	_____	1	2	3	4	5
transpire	0	_____	1	2	3	4	5
instrument	0	_____	1	2	3	4	5
clement	0	_____	1	2	3	4	5
enigmatic	0	_____	1	2	3	4	5
mystery	0	_____	1	2	3	4	5

Posttest 4

学号 _____

请看左边的单词。如果你完全不认识这个单词，请在其右边的数字中选择‘0’；如果你知道这个单词的意思，请在右边的横线上填写出它的英语或者汉语意思，并且在其后的从 1 到 5 的数字中选择你对于所填写的意思的确定程度。‘1’ 指‘完全不确定’，‘5’ 指‘非常确定’。从 1 到 5 确定程度依次递增。

burgeon	0	_____	1	2	3	4	5
commitment	0	_____	1	2	3	4	5
salience	0	_____	1	2	3	4	5
appropriate	0	_____	1	2	3	4	5
facilitate	0	_____	1	2	3	4	5
coordination	0	_____	1	2	3	4	5
colossus	0	_____	1	2	3	4	5
disassemble	0	_____	1	2	3	4	5
monument	0	_____	1	2	3	4	5
executive	0	_____	1	2	3	4	5
dilapidated	0	_____	1	2	3	4	5
poignantly	0	_____	1	2	3	4	5
acquiesce	0	_____	1	2	3	4	5
fervently	0	_____	1	2	3	4	5
meager	0	_____	1	2	3	4	5
imperiously	0	_____	1	2	3	4	5
palm	0	_____	1	2	3	4	5
mass	0	_____	1	2	3	4	5
proportion	0	_____	1	2	3	4	5
awe	0	_____	1	2	3	4	5
dedication	0	_____	1	2	3	4	5

unveil	0	_____	1	2	3	4	5
immigrant	0	_____	1	2	3	4	5
emblem	0	_____	1	2	3	4	5
promulgate	0	_____	1	2	3	4	5
forthwith	0	_____	1	2	3	4	5
finance	0	_____	1	2	3	4	5
desecrate	0	_____	1	2	3	4	5
amble	0	_____	1	2	3	4	5
animated	0	_____	1	2	3	4	5
abruptly	0	_____	1	2	3	4	5

Posttest 5

学号 _____

请看左边的单词。如果你完全不认识这个单词，请在其右边的数字中选择‘0’；如果你知道这个单词的意思，请在右边的横线上填写出它的英语或者汉语意思，并且在其后的从 1 到 5 的数字中选择你对于所填写的意思的确定程度。‘1’ 指‘完全不确定’，‘5’ 指‘非常确定’。从 1 到 5 确定程度依次递增。

lucid	0	_____	1	2	3	4	5
embrace	0	_____	1	2	3	4	5
pact	0	_____	1	2	3	4	5
coma	0	_____	1	2	3	4	5
post-haste	0	_____	1	2	3	4	5
exemplify	0	_____	1	2	3	4	5
pacifically	0	_____	1	2	3	4	5
clandestinely	0	_____	1	2	3	4	5
torture	0	_____	1	2	3	4	5
confinement	0	_____	1	2	3	4	5
valiant	0	_____	1	2	3	4	5
incisive	0	_____	1	2	3	4	5
culmination	0	_____	1	2	3	4	5
rendezvous	0	_____	1	2	3	4	5
shroud	0	_____	1	2	3	4	5
manifold	0	_____	1	2	3	4	5
ban	0	_____	1	2	3	4	5
officiate	0	_____	1	2	3	4	5
execute	0	_____	1	2	3	4	5
sympathetic	0	_____	1	2	3	4	5
revered	0	_____	1	2	3	4	5

transmit	0	_____	1	2	3	4	5
magnetic	0	_____	1	2	3	4	5
vanish	0	_____	1	2	3	4	5
disquietingly	0	_____	1	2	3	4	5
transpire	0	_____	1	2	3	4	5
instrument	0	_____	1	2	3	4	5
clement	0	_____	1	2	3	4	5
dispatch	0	_____	1	2	3	4	5
enigmatic	0	_____	1	2	3	4	5
mystery	0	_____	1	2	3	4	5

Posttest 6

学号 _____

请看左边的单词。如果你完全不认识这个单词，请在其右边的数字中选择‘0’；如果你知道这个单词的意思，请在右边的横线上填写出它的英语或者汉语意思，并且在其后的从 1 到 5 的数字中选择你对于所填写的意思的确定程度。‘1’ 指‘完全不确定’，‘5’ 指‘非常确定’。从 1 到 5 确定程度依次递增。

sage	0	_____	1	2	3	4	5
wont	0	_____	1	2	3	4	5
courteously	0	_____	1	2	3	4	5
judiciously	0	_____	1	2	3	4	5
starfish	0	_____	1	2	3	4	5
civilization	0	_____	1	2	3	4	5
immortality	0	_____	1	2	3	4	5
condemn	0	_____	1	2	3	4	5
tangible	0	_____	1	2	3	4	5
disaster	0	_____	1	2	3	4	5
wrathful	0	_____	1	2	3	4	5
slide	0	_____	1	2	3	4	5
unleash	0	_____	1	2	3	4	5
hazardous	0	_____	1	2	3	4	5
decimate	0	_____	1	2	3	4	5
clone	0	_____	1	2	3	4	5
announce	0	_____	1	2	3	4	5
appeal	0	_____	1	2	3	4	5
immune	0	_____	1	2	3	4	5
infertile	0	_____	1	2	3	4	5
cabinet	0	_____	1	2	3	4	5

embryo	0	_____	1	2	3	4	5
silhouette	0	_____	1	2	3	4	5
sprint	0	_____	1	2	3	4	5
toss	0	_____	1	2	3	4	5
recede	0	_____	1	2	3	4	5
seismologist	0	_____	1	2	3	4	5
jigsaw	0	_____	1	2	3	4	5
plate	0	_____	1	2	3	4	5

Delayed posttest

学号 _____ 第_____ 组

(student ID) (Group)

听力理解： (Listening comprehension)

一. 长对话 (Long conversation)

1. 2. 3. 4. 5.

二. 短文 (Short passages)

1. 2. 3. 4. 5. 6. 7. 8. 9. 10.

11. 12. 13. 14. 15.

词汇：

请看左边的单词。如果你完全不认识这个单词，请在其右边的数字中选择‘0’；如果你知道这个单词的意思，请在右边的横线上填写出它的英语或者汉语意思，并且在其后的从 1 到 5 的数字中选择你对于所填写的意思的确定程度。‘1’ 指‘完全不确定’，‘5’ 指‘非常确定’。从 1 到 5 确定程度依次递增。

accounting	0	_____	1	2	3	4	5
adjust	0	_____	1	2	3	4	5
alluring	0	_____	1	2	3	4	5
amend	0	_____	1	2	3	4	5
animosity	0	_____	1	2	3	4	5
apprehension	0	_____	1	2	3	4	5
assume	0	_____	1	2	3	4	5
amble	0	_____	1	2	3	4	5
animated	0	_____	1	2	3	4	5
abruptly	0	_____	1	2	3	4	5

acquiesce	0	_____	1	2	3	4	5
appropriate	0	_____	1	2	3	4	5
awe	0	_____	1	2	3	4	5
announce	0	_____	1	2	3	4	5
appeal	0	_____	1	2	3	4	5
ban	0	_____	1	2	3	4	5
boundary	0	_____	1	2	3	4	5
breathe	0	_____	1	2	3	4	5
burgeon	0	_____	1	2	3	4	5
campaign	0	_____	1	2	3	4	5
caliber	0	_____	1	2	3	4	5
cleft	0	_____	1	2	3	4	5
custom	0	_____	1	2	3	4	5
capriciously	0	_____	1	2	3	4	5
conflict	0	_____	1	2	3	4	5
cultivate	0	_____	1	2	3	4	5
conspicuous	0	_____	1	2	3	4	5
crash	0	_____	1	2	3	4	5
confusion	0	_____	1	2	3	4	5
commitment	0	_____	1	2	3	4	5
coordination	0	_____	1	2	3	4	5
colossus	0	_____	1	2	3	4	5
clone	0	_____	1	2	3	4	5
civilization	0	_____	1	2	3	4	5
condemn	0	_____	1	2	3	4	5
cabinet	0	_____	1	2	3	4	5
clandestinely	0	_____	1	2	3	4	5
confinement	0	_____	1	2	3	4	5
coma	0	_____	1	2	3	4	5
clement	0	_____	1	2	3	4	5

courteously	0	_____	1	2	3	4	5
culmination	0	_____	1	2	3	4	5
defeat	0	_____	1	2	3	4	5
demand	0	_____	1	2	3	4	5
denote	0	_____	1	2	3	4	5
declare	0	_____	1	2	3	4	5
denominator	0	_____	1	2	3	4	5
dilapidated	0	_____	1	2	3	4	5
desecrate	0	_____	1	2	3	4	5
disassemble	0	_____	1	2	3	4	5
dedication	0	_____	1	2	3	4	5
disaster	0	_____	1	2	3	4	5
decimate	0	_____	1	2	3	4	5
dispatch	0	_____	1	2	3	4	5
disquietingly	0	_____	1	2	3	4	5
encounter	0	_____	1	2	3	4	5
expand	0	_____	1	2	3	4	5
engineer	0	_____	1	2	3	4	5
endeavor	0	_____	1	2	3	4	5
eccentric	0	_____	1	2	3	4	5
engine	0	_____	1	2	3	4	5
employ	0	_____	1	2	3	4	5
executive	0	_____	1	2	3	4	5
emblem	0	_____	1	2	3	4	5
embryo	0	_____	1	2	3	4	5
exemplify	0	_____	1	2	3	4	5
execute	0	_____	1	2	3	4	5
embrace	0	_____	1	2	3	4	5
enigmatic	0	_____	1	2	3	4	5
facilitate	0	_____	1	2	3	4	5

forte	0	_____	1	2	3	4	5
forthwith	0	_____	1	2	3	4	5
feign	0	_____	1	2	3	4	5
frenzied	0	_____	1	2	3	4	5
freelance	0	_____	1	2	3	4	5
fatiguing	0	_____	1	2	3	4	5
fervently	0	_____	1	2	3	4	5
finance	0	_____	1	2	3	4	5
grueling	0	_____	1	2	3	4	5
gap	0	_____	1	2	3	4	5
handshake	0	_____	1	2	3	4	5
hazardous	0	_____	1	2	3	4	5
impertinent	0	_____	1	2	3	4	5
imperiously	0	_____	1	2	3	4	5
immigrant	0	_____	1	2	3	4	5
immortality	0	_____	1	2	3	4	5
immune	0	_____	1	2	3	4	5
infertile	0	_____	1	2	3	4	5
incisive	0	_____	1	2	3	4	5
instrument	0	_____	1	2	3	4	5
indispensable	0	_____	1	2	3	4	5
investment	0	_____	1	2	3	4	5
inalienable	0	_____	1	2	3	4	5
insurance	0	_____	1	2	3	4	5
invariably	0	_____	1	2	3	4	5
industriously	0	_____	1	2	3	4	5
jeopardize	0	_____	1	2	3	4	5
judiciously	0	_____	1	2	3	4	5
jigsaw	0	_____	1	2	3	4	5
kin	0	_____	1	2	3	4	5

leisure	0	_____	1	2	3	4	5
laissez-faire	0	_____	1	2	3	4	5
lucid	0	_____	1	2	3	4	5
mass	0	_____	1	2	3	4	5
monument	0	_____	1	2	3	4	5
magnetic	0	_____	1	2	3	4	5
manifold	0	_____	1	2	3	4	5
mystery	0	_____	1	2	3	4	5
meager	0	_____	1	2	3	4	5
mechanic	0	_____	1	2	3	4	5
myriad	0	_____	1	2	3	4	5
mystery	0	_____	1	2	3	4	5
necessitate	0	_____	1	2	3	4	5
niche	0	_____	1	2	3	4	5
object to	0	_____	1	2	3	4	5
officiate	0	_____	1	2	3	4	5
opportunity	0	_____	1	2	3	4	5
optimal	0	_____	1	2	3	4	5
patently	0	_____	1	2	3	4	5
productivity	0	_____	1	2	3	4	5
passive	0	_____	1	2	3	4	5
peg	0	_____	1	2	3	4	5
personnel	0	_____	1	2	3	4	5
perennially	0	_____	1	2	3	4	5
provocative	0	_____	1	2	3	4	5
plucky	0	_____	1	2	3	4	5
peril-fraught	0	_____	1	2	3	4	5
poise	0	_____	1	2	3	4	5
physical	0	_____	1	2	3	4	5
promulgate	0	_____	1	2	3	4	5

poignantly	0	_____	1	2	3	4	5
palm	0	_____	1	2	3	4	5
proportion	0	_____	1	2	3	4	5
plate	0	_____	1	2	3	4	5
pacifically	0	_____	1	2	3	4	5
pact	0	_____	1	2	3	4	5
post-haste	0	_____	1	2	3	4	5
recede	0	_____	1	2	3	4	5
rendezvous	0	_____	1	2	3	4	5
revered	0	_____	1	2	3	4	5
relish	0	_____	1	2	3	4	5
refurbishing	0	_____	1	2	3	4	5
recount	0	_____	1	2	3	4	5
reaction	0	_____	1	2	3	4	5
rhetoric	0	_____	1	2	3	4	5
represent	0	_____	1	2	3	4	5
refrain	0	_____	1	2	3	4	5
ritualistic	0	_____	1	2	3	4	5
sage	0	_____	1	2	3	4	5
salience	0	_____	1	2	3	4	5
silhouette	0	_____	1	2	3	4	5
sprint	0	_____	1	2	3	4	5
starfish	0	_____	1	2	3	4	5
seismologist	0	_____	1	2	3	4	5
slide	0	_____	1	2	3	4	5
shroud	0	_____	1	2	3	4	5
sympathetic	0	_____	1	2	3	4	5
solitary	0	_____	1	2	3	4	5
survive	0	_____	1	2	3	4	5
subject to	0	_____	1	2	3	4	5

stub	0	_____	1	2	3	4	5
square	0	_____	1	2	3	4	5
specialist	0	_____	1	2	3	4	5
spider	0	_____	1	2	3	4	5
spin	0	_____	1	2	3	4	5
span	0	_____	1	2	3	4	5
sneer	0	_____	1	2	3	4	5
savvy	0	_____	1	2	3	4	5
sink	0	_____	1	2	3	4	5
spoil	0	_____	1	2	3	4	5
stress	0	_____	1	2	3	4	5
transfer	0	_____	1	2	3	4	5
transplant	0	_____	1	2	3	4	5
talent	0	_____	1	2	3	4	5
totally	0	_____	1	2	3	4	5
tapestry	0	_____	1	2	3	4	5
toss	0	_____	1	2	3	4	5
tangible	0	_____	1	2	3	4	5
transmit	0	_____	1	2	3	4	5
torture	0	_____	1	2	3	4	5
transpire	0	_____	1	2	3	4	5
ubiquitous	0	_____	1	2	3	4	5
unique	0	_____	1	2	3	4	5
ultimately	0	_____	1	2	3	4	5
utilize	0	_____	1	2	3	4	5
uncannily	0	_____	1	2	3	4	5
unfriendliness	0	_____	1	2	3	4	5
unveil	0	_____	1	2	3	4	5
unleash	0	_____	1	2	3	4	5
vanish	0	_____	1	2	3	4	5

valiant	0	_____	1	2	3	4	5
wired	0	_____	1	2	3	4	5
wont	0	_____	1	2	3	4	5
wrathful	0	_____	1	2	3	4	5

Sample student copies of the tests on listening comprehension and vocabulary

Sample Posttest 2

10.27.2007
posttest

学号 2007134010634

请看左边的单词。如果你完全不认识这个单词，请在其右边的数字中选择‘0’；如果你知道这个单词的意思，请在右边的横线上填写出它的英语或者汉语意思，并且在其后的从 1 到 5 的数字中选择你对于所填写的意思的确定程度。‘1’ 指‘完全不确定’，‘5’ 指‘非常确定’。从 1 到 5 确定程度依次递增。

Necessitate	0		1	2	3	4	5
Freelance	0		1	2	3	4	5
Recount	0		1	2	3	4	5
Industriously	0		1	2	3	4	5
Eccentric	0		1	2	3	4	5
Crash	0		1	2	3	4	5
Grueling	0		1	2	3	4	5
Impertinent	0		1	2	3	4	5
Spin	0		1	2	3	4	5
Cleft	0		1	2	3	4	5
Sneer	0			2	3	4	5
Plucky	0		1	2	3	4	5
Fatiguing	0		1	2	3	4	5
Relish	0		1	2	3	4	5
Span	0		1	2	3	4	5
Optimal	0		1	2	3	4	5
Savvy	0		1	2	3	4	5
Capriciously	0		1	2	3	4	5
Refurbishing	0		1	2	3	4	5
Caliber	0		1	2	3	4	5
Amend	0		1	2	3	4	5
Endeavor	0		1	2	3	4	5
Peril-fraught	0		1	2	3	4	5
Poise	0		1	2	3	4	5
Tapestry	0		1	2	3	4	5
Uncannily	0		1	2	3	4	5
Declare	0		1	2	3	4	5
Sink	0		1	2	3	4	5
Physical	0		1	2	3	4	5
Demand	0		1	2	3	4	5

Sample Delayed-posttest

学号 2007035011120 第 1 组

听力理解：

一．长对话

1. D 2. ~~B~~ A 3. B 4. D 5. D

二．短文

1. B 2. D 3. D 4. C 5. D 6. C 7. B 8. B 9. B 10. C

11. C 12. C 13. D 14. C 15. B

词汇：

请看左边的单词。如果你完全不认识这个单词，请在其右边的数字中选择‘0’；如果你知道这个单词的意思，请在右边的横线上填写出它的英语或者汉语意思，并且在其后的从 1 到 5 的数字中选择你对于所填写的意思的确定程度。‘1’ 指‘完全不确定’，‘5’ 指‘非常确定’。从 1 到 5 确定程度依次递增。

accounting	0	_____	1	2	3	4	5
adjust	0	调整	1	2	3	4	5 ✓
alluring	0 ✓	_____	1	2	3	4	5
amend	0 ✓	_____	1	2	3	4	5
animosity	0 ✓	_____	1	2	3	4	5
apprehension	0	理解	1	2	3	4	5 ✓
assume	0	假设	1	2	3	4	5 ✓
amble	0 ✓	_____	1	2	3	4	5
animated	0 ✓	_____	1	2	3	4	5
abruptly	0	粗暴 突然	1	2	3	4	5 ✓
acquiesce	0 ✓	_____	1	2	3	4	5
appropriate	0	正确 合适	1	2	3	4	5 ✓
awe	0 ✓	_____	1	2	3	4	5
announce	0	宣布	1	2	3	4	5 ✓
appeal	0	吸引	1	2	3	4	5 ✓
ban	0	禁止	1	2	3	4	5 ✓
boundary	0	界线	1	2	3	4	5 ✓
breathe	0	呼吸	1	2	3	4	5 ✓
burgeon	0 ✓	_____	1	2	3	4	5

campaign	0	运动	1	2	3	4	5
caliber	0		1	2	3	4	5
cleft	0		1	2	3	4	5
custom	0	风俗	1	2	3	4	5
capriciously	0		1	2	3	4	5
conflict	0	冲突	1	2	3	4	5
cultivate	0	培养	1	2	3	4	5
conspicuous	0	明显的	1	2	3	4	5
crash	0	冲撞	1	2	3	4	5
confusion	0	困惑	1	2	3	4	5
commitment	0	约束 义务 承诺	1	2	3	4	5
coordination	0	合作	1	2	3	4	5
colossus	0		1	2	3	4	5
clone	0	克隆	1	2	3	4	5
civilization	0	文明	1	2	3	4	5
condemn	0	谴责	1	2	3	4	5
cabinet	0	抽屉 厨柜	1	2	3	4	5
clandestinely	0		1	2	3	4	5
confinement	0	约束缚	1	2	3	4	5
coma	0		1	2	3	4	5
clement	0		1	2	3	4	5
courteously	0	礼貌地	1	2	3	4	5
culmination	0		1	2	3	4	5
defeat	0	击败	1	2	3	4	5
demand	0	需要	1	2	3	4	5
denote	0	表示 显示	1	2	3	4	5
declare	0	宣称 发布	1	2	3	4	5
denominator	0		1	2	3	4	5
dilapidated	0		1	2	3	4	5
desecrate	0		1	2	3	4	5

disassemble	0	不懂	1	2	3	4	5
dedication	0	奉献 忠诚	1	2	3	4	5
disaster	0	灾难	1	2	3	4	5
decimate	0		1	2	3	4	5
dispatch	0		1	2	3	4	5
disquietingly	0		1	2	3	4	5
encounter	0	遇到	1	2	3	4	5
expand	0	扩展	1	2	3	4	5
engineer	0	~~斗斗~~工程师	1	2	3	4	5
endeavor	0	努力	1	2	3	4	5
eccentric	0		1	2	3	4	5
engine	0	发动机	1	2	3	4	5
employ	0	雇佣	1	2	3	4	5
executive	0	执行的	1	2	3	4	5
emblem	0		1	2	3	4	5
embryo	0	胚胎	1	2	3	4	5
exemplify	0	以…为例子	1	2	3	4	5
execute	0	执行	1	2	3	4	5
embrace	0	拥抱	1	2	3	4	5
enigmatic	0		1	2	3	4	5
facilitate	0	设备	1	2	3	4	5
forte	0		1	2	3	4	5
forthwith	0		1	2	3	4	5
feign	0		1	2	3	4	5
frenzied	0		1	2	3	4	5
freelance	0		1	2	3	4	5
fatiguing	0	疲劳的	1	2	3	4	5
fervently	0		1	2	3	4	5
finance	0	财政 金融	1	2	3	4	5
grueling	0		1	2	3	4	5

gap	0	洞	1	2	3	4	5
handshake	0	握手	1	2	3	4	5
hazardous	0		1	2	3	4	5
impertinent	0		1	2	3	4	5
imperiously	0		1	2	3	4	5
immigrant	0	移民	1	2	3	4	5
immortality	0	长生不老	1	2	3	4	5
immune	0	免疫	1	2	3	4	5
infertile	0	不育	1	2	3	4	5
incisive	0		1	2	3	4	5
instrument	0	设备	1	2	3	4	5
indispensable	0	不可少	1	2	3	4	5
investment	0	投资	1	2	3	4	5
inalienable	0		1	2	3	4	5
insurance	0	保险	1	2	3	4	5
invariably	0	总是	1	2	3	4	5
industriously	0	工业地	1	2	3	4	5
jeopardize	0		1	2	3	4	5
judiciously	0		1	2	3	4	5
jigsaw	0		1	2	3	4	5
kin	0	敏锐	1	2	3	4	5
leisure	0	休闲 空闲	1	2	3	4	5
laissez-faire	0		1	2	3	4	5
lucid	0		1	2	3	4	5
mass	0	大量	1	2	3	4	5
monument	0	纪念石碑	1	2	3	4	5
magnetic	0	有磁性	1	2	3	4	5
manifold	0		1	2	3	4	5
mystery	0	神秘	1	2	3	4	5
meager	0	少量	1	2	3	4	5

mechanic	0	机械的	1	2	3	4	5
myriad	0		1	2	3	4	5
mystery	0	神秘迷	1	2	3	4	5
necessitate	0	需要	1	2	3	4	5
niche	0		1	2	3	4	5
object to	0	反对	1	2	3	4	5
officiate	0		1	2	3	4	5
opportunity	0	机会	1	2	3	4	5
optimal	0	可选择的	1	2	3	4	5
patently	0		1	2	3	4	5
productivity	0	生产力	1	2	3	4	5
passive	0	被动的	1	2	3	4	5
peg	0		1	2	3	4	5
personnel	0	职员	1	2	3	4	5
perennially	0		1	2	3	4	5
provocative	0		1	2	3	4	5
plucky	0		1	2	3	4	5
peril-fraught	0		1	2	3	4	5
poise	0	有毒的	1	2	3	4	5
physical	0	身体的	1	2	3	4	5
promulgate	0		1	2	3	4	5
poignantly	0		1	2	3	4	5
palm	0	掌	1	2	3	4	5
proportion	0		1	2	3	4	5
plate	0	盘子. 板块	1	2	3	4	5
pacifically	0		1	2	3	4	5
pact	0		1	2	3	4	5
post-haste	0		1	2	3	4	5
recede	0		1	2	3	4	5
rendezvous	0		1	2	3	4	5

revered	0	_____	1	2	3	4	5
relish	0	_____	1	2	3	4	5
refurbishing	0	_____	1	2	3	4	5
recount	0	_____	1	2	3	4	5
reaction	0	反应	1	2	3	4	5
rhetoric	0	_____	1	2	3	4	5
represent	0	代表	1	2	3	4	5
refrain	0	_____	1	2	3	4	5
ritualistic	0	_____	1	2	3	4	5
sage	0	_____	1	2	3	4	5
salience	0	_____	1	2	3	4	5
silhouette	0	_____	1	2	3	4	5
sprint	0	_____	1	2	3	4	5
starfish	0	海星	1	2	3	4	5
seismologist	0	_____	1	2	3	4	5
slide	0	滑	1	2	3	4	5
shroud	0	_____	1	2	3	4	5
sympathetic	0	同情心	1	2	3	4	5
solitary	0	孤独心	1	2	3	4	5
survive	0	存活 先存	1	2	3	4	5
subject to	0	属于	1	2	3	4	5
stub	0	_____	1	2	3	4	5
square	0	正方形	1	2	3	4	5
specialist	0	专家	1	2	3	4	5
spider	0	蜘蛛	1	2	3	4	5
spin	0	_____	1	2	3	4	5
span	0	_____	1	2	3	4	5
sneer	0	_____	1	2	3	4	5
savvy	0	_____	1	2	3	4	5
sink	0	下沉	1	2	3	4	5

6

spoil	0	破坏，腐蚀	1	2	3	4	5
stress	0	压力	1	2	3	4	5
transfer	0	转运 改变 转运	1	2	3	4	5
transplant	0	移植	1	2	3	4	5
talent	0	天才 天分	1	2	3	4	5
totally	0	总共	1	2	3	4	5
tapestry	0		1	2	3	4	5
toss	0	投 掷	1	2	3	4	5
tangible	0		1	2	3	4	5
transmit	0	传送	1	2	3	4	5
torture	0	折磨	1	2	3	4	5
transpire	0		1	2	3	4	5
ubiquitous	0		1	2	3	4	5
unique	0	唯一的	1	2	3	4	5
ultimately	0	最终	1	2	3	4	5
utilize	0		1	2	3	4	5
uncannily	0	不明确的	1	2	3	4	5
unfriendliness	0	不友好	1	2	3	4	5
unveil	0	揭露 展现	1	2	3	4	5
unleash	0		1	2	3	4	5
vanish	0	消失	1	2	3	4	5
valiant	0		1	2	3	4	5
wired	0	紧张的	1	2	3	4	5
wont	0		1	2	3	4	5
wrathful	0		1	2	3	4	5

8. Questionnaire

Student number _____ Sex _____ Age _____

Which province and city are you from? _____

Please rate your current general proficiency in English by choosing one that matches you best in the following scale from 1 (poor) to 5 (very good)

1 2 3 4 5 6 7

Please rate your current proficiency in English Listening by choosing one that matches you best in the following scale from 1 (poor) to 5 (very good)

1 2 3 4 5 6 7

Please rate your current proficiency in English vocabulary by choosing one that matches you best in the following scale from 1 (poor) to 5 (very good)

1 2 3 4 5 6 7

9. Teacher-students interactions for the 13 Familiar-words

Condemn

NCS

	Tape: 'Within hours Seed was condemned by the White House and attacked in the US Congress.'
1	T: class, you see, what's people's response? What's the response from the world?
2	S: (silence)
3	T: did you hear within hours Seed was condemned (write down condemn on the board). (pause) condemn means criticize, by the White House. You know White House right?

CS

	Tape: 'Within hours Seed was condemned by the White House and attacked in the US Congress.'
1	T: class what's the response from the government? Or from the public?
2	S: (silence)
3	T: within hours he was condemned (write down condemn on the board) by the White House and US Congress. Condemn means 谴责 (tr: condemn)
4	S: (one or two students echo) 谴责

Type/token information table:

	NCS	CS
teacher's input	L2 written form	L2 written form
	L2 synonym 'criticize'	L1 equivalent 谴责
students' reaction	keep silent	echo the L1 equivalent

Cabinet

NCS

	Tape: 'his space had neither a desk nor a file cabinet.'
1	T: his space, had neither a desk nor a file cabinet (write down cabinet on the board) cabinet is a piece of furniture, do you know furniture?
2	S: yes
3	T: it is a kind of drawer, that you can put files in. That's a cabinet, describing his working place.
4	S: (silence)

CS

	Tape: 'his space had neither a desk nor a file cabinet.'
1	T: his space, means the place where he worked, had neither a desk nor a file cabinet

	(write down cabinet on the board) class, cabinet we say 柜子(tr: cabinet)，橱子(tr: cabinet)
2	S: (several students echo) 柜子，橱子　(one or two echo) cabinet, file
3	T: to put your file

Type/token information table:

	NCS	CS
teacher's input	L2 written form	L2 written form
	L2 definition 'a piece of furniture, a kind of drawer, that you can put files in'	L1 equivalent 柜子，橱子
	repeat target word	
students' reaction	keep silent	echo the L1 equivalent and target word

Utilize

NCS

	Tape: 'for that reason we should try to find out what our fortes are and how we can utilize them.'
1	T: And how we can utilize (write down utilize on the board) them. Utilize means
2	S: (several students know the word and answer) use
3	T: use. It's a very formal word.
4	S: (several students echo) use
5	T: so find out talent and how we can use them

CS

	Tape: 'for that reason we should try to find out what our fortes are and how we can utilize them.'
1	T: and we should know how we can utilize (write down utilize on the board) them. Utilize is a very formal word, we say 使用(tr: use)
2	S: (some students echo) utilize (one or two students echo 使用)
3	T: so how we utilize the fortes

Type/token information table:

	NCS	CS
teacher's input	L2 written form	L2 written form
	L2 synonym 'use'	L1 equivalent 使用
	repeat synonym in the sentence	repeat the target word in the sentence again
students' reaction	echo the synonym	echo target word and L1 equivalent

Coordination

NCS

	Tape: 'The Chinese hope to see stronger commitment from the world community for international coordination in the fight to protect our common natural surroundings.'
1	T: ok how about the Chinese? (pause) the Chinese hope to see what?
2	S: (one or two students murmur)
3	T: ah…international coordination (write down coordination on the board)
4	S: (some students echo) coordination
5	T: so coordination means working together
6	S: (several students echo) working together
7	T: so the Chinese people hope to see stronger commitment from the world community for international working together, international coordination, ok? in order to protect our natural surroundings.

CS

	Tape: 'The Chinese hope to see stronger commitment from the world community for international coordination in the fight to protect our common natural surroundings.'
1	T: class, how about the Chinese? (pause) The Chinese hope to see international coordination (write down coordination on the board)
2	S: (some students say) international coordination
3	T: coordination we say 合作(tr: working together)
4	S: (some students echo) coordination (one or two echo) 合作
5	T: international coordination we say 国际合作, in the fight to protect our common natural surroundings

Type/token information table:

	NCS	CS
teacher's input	L2 written form	L2 written form
	definition 'working together'	L1 equivalent 合作
	repeat the definition	repeat the L1 equivalent 国际合作 in a contextual phrase
	repeat the target word in the sentence	repeat the target word in the sentence
students' reactions	echo the definition	echo the target word and L1 equivalent

Indispensable

NCS

	Tape: 'studying abroad needs to be an indispensable part of your education'
1	T: studying abroad needs to be an indispensable part of your education. Indispensable (Write it down on the board) means key, very important.
2	S: (echoing) education…indispensable…very important (only several students echoing)
3	T: Very important part of your education.

CS

	Tape: 'studying abroad needs to be an indispensable part of your education'
1	T: studying abroad needs to be an indispensable (write it down on the board) part of your education.
2	S: (echoing) indispensable…education
3	T: indispensable, we say, '不可缺少的(tr: indispensable)，重要的(tr: important)'
4	S: (several students echoing) 不可缺少的，重要的

Type/token information table:

	NCS	CS
teacher's input	L2 written form	L2 written form
	synonym	L1 equivalent
	repeat synonym	
students' reactions	echo the target word and synonym	echo the target word and L1 equivalent

Eccentric

NCS

	Tape: 'the race to win the money soon became a race between two eccentric men'
1	T: he said the race to win the money soon became a race between two eccentric men. Eccentric (Write it down on the board) means very unusual, strange.
2	S: (several students echoing) eccentric, unusual, strange
3	T: ok? so very unusual men to fly across the channel.

CS

	Tape: 'the race to win the money soon became a race between two eccentric men'
1	T: So it is a race between two eccentric (write it down on the board) men. Eccentric we say '古怪的' (tr: strange)
2	S: (many students echoing) eccentric, 古怪的
3	T: ok? eccentric

Type/token information table:

	NCS	CS
teacher's input	L2 written form	L2 written form

	synonym	L1 equivalent
	repeat synonym	repeat target word
students' reactions	echo the synonym	echo the target word

Dispatch

NCS

	Tape: '13 men in another plane had been dispatched to help them'
1	T: yes, 27 people lost their lives during this biggest single loss. So we say 13 men in another plane had been dispatched (write down dispatch on the board) to help them. Dispatch means to send, to send people to help them.
2	S: (silence)

CS

	Tape: '13 men in another plane had been dispatched to help them'
1	T: there is one word 13 men in another plane had been dispatched (write down dispatch on the board) to help them.
2	S: (one or two students echo) dispatch
3	T: dispatch we say 派遣(tr: dispatch)
4	S: (several echo) dispatch, 派遣

Type/token information table:

	NCS	CS
teacher's input	L2 written form	L2 written form
	synonym	L1 equivalent
	repeat synonym	
students' reactions	silent	echo the target word

Productivity

NCS

	Tape: 'for the problems with smokers at work, she suggests getting together with other nonsmoking employees and speaking to the boss. Explain that your productivity is being reduced by the smoke you have to breathe.'
1	T: class, how about you have smokers at work, in your offices, what should you do?
2	S: ah…
3	T: she suggested you should get together with other nonsmoking employees and speak to the boss, right?
4	S: (some students answer) get together with …employees, speak to the boss
5	T: and what should you say to the boss? (pause) explain that you productivity (write down on the board) Productivity means the ability, the efficiency to produce or to work, so your productivity is being reduced by the smoke you have to breathe. That means,

	you speak up to the boss.
6	S: (in chorus) productivity

CS

1	Tape: 'for the problems with smokers at work, she suggests getting together with other nonsmoking employees and speaking to the boss. Explain that your productivity is being reduced by the smoke you have to breathe.'
2	T: class, if you have smoking colleagues right? You have problems at work, what should you do then?
3	S: (in chorus) get together with other nonsmoking employees and speak to the boss
4	T: yes, explaining that your productivity (write it down on the board)
5	S: (in chorus) productivity is being reduced
6	T: productivity means 生产力(tr: productivity)，生产率(tr: productivity)
7	S: (some students say) 生产力
	T: is being reduced by the smoke you have to breathe.

Type/token information table:

	NCS	CS
teacher's input	L2 written form	L2 written form
	L2 definition 'ability or efficiency to produce or work'	L1 equivalent 生产力, 生产率
	repeat target word in the sentence	
students' reaction	echo target word	echo L1 equivalent

Accounting

NCS

	Tape: 'maybe our interests take us into the business world and such work as accounting, personnel management or public relations.'
1	T: if you want to do business, you can do work like accounting (write it down on the board)
2	S: (some students say) accounting
3	T: what is accounting? accounting means keeping or counting of money, the keeping or counting of money is called accounting, ok?
4	S: (silence)

CS

	Tape: 'maybe our interests take us into the business world and such work as accounting, personnel management or public relations.'
1	T: if you like business, you can do such works as accounting (write it down on the board),
2	S: (some students say) accounting
3	T: accounting we say 会计 (tr: accounting)
4	S: (several students echo) accounting

Type/token information table:

	NCS	CS
teacher's input	L2 written form	L2 written form
	L2 definition 'keeping or counting of money'	L1 equivalent 会计
	repeat target word in the sentence	
	repeat definition in the sentence	
students' reaction	echo target word	echo target word

Torture

NCS

	Tape: 'other stories suggest that Valentine may have been executed for attempting to help Christians clandestinely escape from Roman prisons where they were often beaten and *tortured*.'
1	T: They were often beaten and tortured (write down torture on the board) Class, do you know torture?
2	S: (silence)
3	T: torture means cause great pain (pause)
4	S: (silence)
5	T: cause great pain to somebody, means somebody was tortured.

CS

1	Tape: 'other stories suggest that Valentine may have been executed for attempting to help Christians clandestinely escape from Roman prisons where they were often beaten and *tortured*.'
2	T: they were beaten, do you know beaten?
3	S: yes
4	T: and tortured (write down torture on the board) torture means 折磨 (tr: torture)

5	S: (some students echo) torture (one or two echo) 折磨

Type/token information table:

	NCS	CS
teacher's input	L2 written form	L2 written form
	L2 definition 'cause great pain'	L1 equivalent 折磨
	repeat target word in the sentence	
	repeat definition in the sentence	
students' reaction	silence	echo target word and L1 equivalent

Finance

NCS

1	Tape: 'In addition to a recent official statement encouraging environmental friendly technologies and industries, the National Environmental Protection Agency promulgated a united order with the Secistry of Supervision demanding that local officials forthwith stop *financing* heavily polluting businesses.'
2	T: did you hear a united order?
3	S: (several students answer) yes
4	T: what does the order say?
5	S: (one or two students answer) stop
6	T: to stop what?
7	S: (silence)
8	T: to stop financing (write finance down on the board).
9	S: (many students echo) finance
10	T: Class, do you know finance?
11	S: yeah
12	T: finance concerns with money, right?
13	S: yeah
14	T: that means you give money for, provide money for. So stop financing what?
15	S: (silence)
16	T: to stop financing those polluted businesses.

CS

1	Tape: 'In addition to a recent official statement encouraging environmental friendly technologies and industries, the National Environmental Protection Agency promulgated

	a united order with the Sacristy of Supervision demanding that local officials forthwith stop *financing* heavily polluting businesses.'
2	T: this sentence is very long, but the main idea is about the order. Did you hear a united order?
3	S: (silence)
4	T: what should the officials do?
5	S: (silence)
6	T: they should stop financing (write down finance on the board)
7	S: (some students say) finance
8	T: finance we say 资助 (tr: finance)
9	S: (one or two students echo) 资助
10	T: finance what? (pause) those heavily polluted businesses
11	S: (several students say) heavily polluted businesses

Type/token information table:

	type/token	NCS	CS
teacher's input	1	L2 written form	L2 written form
	2	contextualization 'finance concerns with money' (Line 12)	
	3	L2 definition 'give money for, provide money for'	L1 equivalent 资助
	4	repeat target word in the sentence	repeat target word in the sentence
students' reaction		silent	echo L1 equivalent

Subject to

NCS

	Tape: 'I would not more subject them to passive smoking than I would serve spoiled food.'
1	T: I would not more subject them to (write subject to down on the board) to passive smoking, subject somebody to something means 'to make somebody suffer'
2	S: (several students say) suffer
3	T: suffer from what?
4	S: smoke
5	T: yes, from cigarette smoke, to subject them to smoking

CS

	Tape: 'I would not more subject them to passive smoking than I would serve spoiled food.'
1	T: I would not more subject them to (write subject to down on the board) passive smoking than I would serve spoiled food.
2	S: (echoing) subject to
3	T: do you know spoiled food?
4	S: yes
5	T: ok bad food, not tasty. Subject somebody to something means '使某人遭受什么罪'(tr: make somebody suffer). So subject them to smoking

Type/token information table:

	NCS	CS
teacher's input	L2 written form	L2 written form
	L2 definition 'make somebody suffer'	L1 equivalent 使某人遭受什么罪
	repeat target word in the sentence	repeat target word in the sentence
	repeat definition in the sentence	
students' reaction	silent	echoing target word in the sentence

Assume

NCS

	Tape: 'any assumed right to smoke ends where a nonsmoker's nose begins'.
1	T: any assumed (write it down on the board) right, Assume means think that something is true or take for granted
2	S: (silence)
3	T: so assumed right to smoke ends means stops means that he thinks that he has a right to smoke, but actually there is no right to smoke.

CS

	Tape: 'any assumed right to smoke ends where a nonsmoker's nose begins'.
1	T: any assumed (write it down on the board) right to smoke
2	S: (echoing) assume
3	T: class, assume we say '假设 (tr: assume)，假定 (tr: assume)', right?
4	S: yes
5	T: so assumed right to smoke ends means stops

Type/token information table:

	NCS	CS
teacher's input	L2 written form	L2 written form
	L2 definition 'think that something is true or take for granted'	L1 equivalent 假设，假定
	repeat target word in the sentence	repeat target word in the sentence
	repeat definition in the sentence	
students' reaction	silent	silent