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**How teacher questioning behaviours assist and
affect language teaching and learning in EFL
classrooms in Taiwan**

By

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of Doctor of Philosophy in Education

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ABSTRACT

This study examined classroom questioning with a socio-cultural theoretical framework to gain a better understanding of how teacher questioning operates as a pedagogical and learning tool in English classroom settings in Taiwan. Four teachers and twelve students in four different classes in three secondary schools participated in this study in the second term of the academic year 2006. Three kinds of interviews (pre-observation, post-observation, and stimulated recall interviews) were conducted for all subject teachers in order to obtain in-depth information for further analyses. 12 focal students were selected to respond to the questionnaire and participated in the semi-structured interview with the researcher. 24 class periods were videotaped and twenty of them were transcribed verbatim. Both qualitative and quantitative approaches were employed to analyze the collected data.

Teacher questions served as important devices to self-clarify, to push learners' language production, to encourage comprehensible output, to impart knowledge and to mediate learners' language learning and cognitive development. Both Mandarin and English languages used in teacher questioning had pedagogical functions. Also, the research findings indicate that there is a strong relationship between teachers' teaching and learning goals and their decisive use of questions to scaffold classroom participation and learning. L1 use as private speech in learner responses was found to have affective, social, and cognitive functions. Most of the time, the four classes which were observed were quiet and passive. After analyzing the questionnaire and interview data, the researcher found that some socially-constructed affective factors, the learner-teacher or learner-learner interpersonal relationships, and some specific Taiwanese socio-cultural reasons might cause learners to hold back from classroom interaction.

The instructional goals of the subject teachers differed in the opportunities they created for learning. The research findings also suggested that no matter which languages the teachers used, how to make efforts to negotiate forms and meanings with students is the most effective way to improve learners' learning. Socio-cultural theory is indeed a viable theoretical framework for analyzing teachers' solicitations but further research can be improved by conducting a complementary socio-cognitive model that emphasizes that social and cognitive concepts are even more closely connected. In addition, it seems important for further research to carry out prolonged and extensive fieldwork to obtain in-depth data and investigating long-term, not short-term, effects of teacher questioning.

Chapter 1 Introduction

In this chapter, I start to introduce this research by providing a general description of the research topic (Section 1.1), the rationale and the significance of the present research (Section 1.2), the background knowledge of the educational system and English classroom settings in Taiwan (Section 1.3) and a concise description of the thesis structure (Section 1.4).

1.1 General description of research topic

In search of knowledge about classroom language teaching and learning, educational researchers have carried out extensive research by observing and interviewing teachers and students. Among teaching techniques, teacher questioning is one of the most widely used, which can help understand teacher repertoire in classroom teaching and learning (Hsu, 2001). As Tharp and Gallimore (1988) and Hargie (2006) comment, since the first Socratic seminars, classroom questions have been the most effective means in teacher-student interactions.

The discourse features of teacher talk such as correction, feedback, and especially the use of questioning have been examined for their roles in ESL (English as a second language) and EFL (English as a foreign language) classrooms (Hall and Verplaetse, 2000), because it is assumed that when pupils are being asked a question, they are responsible for responding. Through questioning, teacher talk helps to explicitly focus learner attention on syntactic forms, which in turn facilitates their development of linguistic knowledge of the second language (Schmidt, 1994).

The research studies in EFL classrooms have followed the SLA (second language acquisition) and ESL theories and research patterns and demonstrate some specific findings. Shomoossi (2004) indicates that teachers use DQs (display questions) 4.4 times more than the numbers of RQs (referential questions. See their definitions in Section 2.2.2). Both Wu (1993) and Moritoshi (2006) point out that students are sometimes unable to answer the teacher's questions on their first initiative. Therefore, question strategies (or follow-up strategies) are effective in eliciting syntactically more complex and longer output. In addition, in Asian countries, students prefer to be 'modest' by providing short answers to questions so that their classmates will not gain the impression that they are 'showing off' (Wu, 1993; Tasaka, 1998).

These findings above are different from the results that we know from ‘content’ lessons (for example Geography or Science lessons), SLA or ESL classrooms. In fact, the influences of questioning behaviours found in content classrooms are not the same as those in ESL classrooms; and the effects of teacher questions in ESL and EFL settings also differ in nature (Hsu, 2001). The most obvious distinction between EFL and ESL settings is the teacher’s choice of language to interact with the students (McCormick, 1997). In an ESL setting, “English is studied in an environment and culture in which English is spoken” (McCormick, 1997:18). If native Mandarin speakers study English in Britain, they are studying English as a second language. In ESL classrooms, English is the mediation of communication shared by the teacher, the native speakers of Mandarin and other international students. In EFL settings, “English is studied in an environment and culture in which a language other than English is spoken” (McCormick, 1997:18). For instance, if native Mandarin speakers study English in Mandarin speaking countries (i.e. Taiwan), they are studying English as a foreign language. The present study aims to examine the assistance and the influences of teacher questioning in EFL classroom settings in Taiwan.

In addition, some primary issues in relation to teacher questioning will be explored. Firstly, since teacher classroom instruction is based on teaching goals, in order to achieve particular objectives, how teachers’ questions assist them to accomplish these goals will be explored. Secondly, in EFL classrooms, when the teacher and students share the same mother tongue, the native language may be inevitably used in class talk. In my view, research on questioning behaviours and on the role of first language in language classes exist as two separate fields, rarely interacting. Few studies look more closely at the combination of language choices and questioning behaviours. This unique feature will be examined in the present study. Finally, questions always require responses and thus serve as a method to obligate students to contribute to classroom conversation. Thus, to realize the effectiveness of teacher questioning, the study must take learner responses into consideration, otherwise it will lead to incomplete research. Therefore, the research topic emerges: **How teacher questioning behaviours assist and affect language teaching and learning in EFL classrooms in Taiwan.**

1.2 Research purposes

How teachers use questions during whole-class instruction has generated numerous discussions on the role of this discursive tool for involving learners in classroom

conversations (McCormick and Donato, 2000). Previous classroom-based research studies have identified various question types, including ‘closed’ and ‘open’ questions (Barnes, 1969), ‘convergent’ and ‘divergent’ questions (Stevens 1912, cited in Ozerk, 2001), ‘display’ and ‘referential’ questions (Long and Sato, 1983), and so on. If, as Postman (1979, quoted in McCormick and Donato, 2000:01) claims, “ all our knowledge results from questions, ... [and] question-asking is our most important intellectual tool’, then continued research studies into this pedagogical tool may effectively improve classroom instruction.

While much language research has focused on counting and classifying question taxonomies, the present research argues that a framework to examine classroom teacher questioning must reflect their ‘mediational quality’ (McCormick and Donato, 2000), their ability to affect and to assist learning. To achieve this, socio-cultural theory is used as a theoretical framework to investigate verbal exchanges between the teacher and learners. With this theoretical construct as guidance, the present research has five purposes, which will be delineated respectively as follows.

First of all, the present research aims to explore how learners’ opportunities for English language learning and cognitive development are generated by teacher questioning practices. Even if a few researchers have studied the relationships between the types of teacher solicitations and the quantity and quality of learner responses (e.g. Nunan, 1987; Wu, 1993; Wintergerst, 1994), however, another dimension of teacher questioning practices—the opportunities teacher questions generate to contribute to learners’ language development and cognitive processing has not yet been examined extensively. As Carlsen (1991) stated, teacher questions might sometimes discourage learners from speaking and learning. It is necessary to understand and to discover whether the use of effective questioning can make an obvious difference. Therefore, one of the major purposes of the present research is to extend the literature on teacher questioning by addressing the diversity of the learning opportunities it generates in language classes for the students in terms of input comprehension, output comprehensibility, knowledge transmission, and learners’ movement towards self-regulation.

Studies in educational contexts around the world have shown that teachers and learners make use of code-switching when interacting in the foreign language classrooms (Macaro, 2001; Turnbull, 2002; Greggio and Gil, 2007).

However, little research work has been done to focus on teachers’ language choices in their questioning practices. If it is normal and natural for multilingual speakers to

make alternating use of all of the languages at their disposal while communicating with other multilinguals (Seidlitz, 2003), when we examine the opportunities Mandarin-speaking teachers' solicitations generate for Mandarin-speaking learners in English language classes, the co-explanations of language choices and elicitations on the part of teachers are worthy of further analyses. Therefore, the second goal of the present research is to find some explanations for the apparent lack of the understanding about the code-switching patterns in teacher questioning behaviours.

Third, this study also attempts to explore a new perspective on the functions of teacher questions and their links to teachers' expressed instructional goals within the framework of scaffolding with reference to socio-cultural theory. Scaffolding is the concept that is related to a socio-cultural perspective on teaching and learning (McCormick, 1997). The concept of scaffolding which was introduced by Wood et al. (1976) enables researchers to discover how teachers or more knowledgeable peers assist less able students or novices. Many research studies have examined scaffolding in the language classroom from a variety of aspects e.g. peer or group work (Donato, 1994). However, different from others, this study of teacher questions further elaborates on the application of scaffolding to investigate how teachers employ native-language and target- language questions to assist them with the achievement of their teaching and learning goals.

Fourth, the present research will explore learner responding behaviours in language classrooms. To my knowledge, learner responding is the topic that largely has been unexplored in the second and foreign language literatures, and little is known about what learners will do in response to teachers' questions and how these responses demonstrate learners' language learning and cognitive processing. This study, for that reason, will fill in this gap in foreign language literature by examining students' responding practices in terms of the response patterns they produce, the languages they speak, and the roles their first language plays.

Fifth, the present research will explore how other factors might lead to the differences in learners' responding and speaking behaviours. Factors that have been identified to exert influences on learners' classroom participation, such as students' perceptions of their mentor and peers (Young, 1991; Fassinger, 1995), and learners' attitudes towards speaking in class (Young, 1990) will be examined. These factors as well as additional factors that emerge from the data, contributing to the diversity of learners' speaking and responding practices in Taiwanese EFL classroom settings, will all be explored.

1.3 Introduction of English classroom contexts in Taiwan

Since this research tries to discover how questioning affects and assists language teaching and learning in specific Taiwanese English classrooms, it is necessary to provide basic background information about Taiwanese history, the educational system and English classroom contexts in Taiwan before the detailed research descriptions and discussions.

1.3.1 An introduction to Taiwan

Taiwan is located off the southeastern coast of China, at the western edge of the Pacific Ocean, between the Philippines and Japan (Ministry of Education (MOE), 2007a). Historically, it is the island of the immigrants who migrated mainly from the southeastern provinces of China bringing with them the Chinese life style and cultural traditions (Fwu and Wang, 2002). After the Sino-Japanese War (1894-1895), Taiwan was ceded to Japan as a colony. Following fifty years of Japanese colonization, Taiwan was taken over in 1949 by the Nationalist regime that had retreated from Mainland China (Fwu and Wang, 2002). At that time, the national language policy changed in favor of Mandarin. The choice was largely based on two factors: the urgent desire to facilitate communication among ethno-linguistic groups (Oladejo, 2006) and the need to replace Japanese as the language of education (Tsao, 1999). As of today, Mandarin is still the national and official language in Taiwan and it is also the main medium of instruction in classrooms.

1.3.2 The educational system

The present educational system in Taiwan supports at most 22 years of formal study. Completion times are flexible, depending on the needs of students. Normally, the entire process requires 2 years of nursery school, 6 years of primary school, 3 years for both junior high (lower secondary) and senior high (upper secondary) school, 4-7 years of college or university, 1-4 years of a post-graduate programme, and 2-7 years of doctoral study (MOE, 2007b).

Basic compulsory education encompasses 6 years of primary school education and 3 years of lower secondary school education. After completing compulsory education,

students can choose an academic route or a vocational route (MOE, 2007b). The academic route consists of upper secondary school education, college/university education, and post-graduate programmes. This route is viewed as the mainstream educational system. The purpose for this route is to nurture high-quality professionals. On the other hand, the vocational route includes vocational high schools, junior colleges, institutes of technology and universities of technology. The educational goal at these levels is to develop technical manpower for economic development (MOE, 2007b). The current school system is shown in the diagram in Appendix A.

1.3.3 English teacher education

Normally, all subject teachers including English teachers are all trained before they start to teach in schools. Pre-service teacher training in Taiwan can fall into two categories. The first type is Normal (Teacher) College, preparing teachers for primary schools and kindergartens. The second type is Normal (Teacher) University, preparing teachers for secondary schools. Both types of institutes accept senior high school graduates for a four-year teacher training education (MOE, 2008). In addition, after “The Teacher Education Law” revised and released in 1994, all state and private universities are allowed to provide a pre-service training programme to prepare subject teachers for primary and secondary schools (MOE, 2008).

Full programmes of pre-service teacher training include common courses, discipline courses, education specialization courses, and half-year internship. Those who complete the programme obtain a teaching certificate. They must also pass a qualification test set by the MOE to finally become a qualified teacher (MOE, 2008).

However, there are no clear guidelines provided in such pre-service training programmes for educators to train English student teachers and little about English teacher professional development in Taiwan has been documented systematically (Liou, 2001). According to Liou (2001), the traditional view of learning to teach in Taiwan regards good English teaching as a collection of skillful pedagogical techniques and transmission of subject matter knowledge. Such a behavioral view may lead to the notion of ‘best practice’ as teaching demonstrations have been held for ages in primary and secondary school levels in this country. Based on this approach, the primary job for teacher trainers is to prepare student teachers for higher English mastery and a stock of English pedagogy knowledge. Accordingly, student teachers can transmit these to their own teaching and pass them on to their students (Liou,

2001).

1.3.4 The role of English in Taiwan

Because of the continued strength of English on the world scene, recent global and local events (e.g. the admission of Taiwan into the World Trade Organization) have led to further calls to strengthen the role of English in the educational and sociopolitical agenda. Examples of this public expression for increased English use in Taiwan include the suggestion from the President in 2002 that English should become the second official language of the island (Oladejo, 2006).

Another recent change was the introduction of a General English Proficiency Test (GEPT), which commenced in 2000 and aimed to improve and to standardize the English performance of the citizens across different levels of learning (Oladejo, 2006). Besides, lowering the commencement age for formal exposure to English is another important change. Previously, pupils were only allowed to learn English formally in the first year of lower secondary school. Since the 2005 school year, students in primary school Year 3 were expected to commence English learning. By doing so, students are not only able to formally access the language much earlier, but they also have more opportunities to learn the language. Moreover, several departments of the government, such as the police, the judiciary, or the foreign services are increasingly using English for day-to-day functions. Efforts are also made to encourage teachers from different subjects to learn English (Oladejo, 2006). Also, English competence will become a preliminary requirement for promotion in government services (“Gov’t Employees”, 2004).

Under this general atmosphere, it is not surprising that more and more Taiwanese parents want to introduce their children to formal English learning even before the official commencement age. This has increased the number of registered nursery schools in this country to 3, 234 in 2001 from a mere 28 in 1950, and 50 % of these are currently estimated to be engaged in teaching English (Taiwan News, 2004).

Many private after-school institutes, locally known as ‘cram schools’, are also very popular. Their primary goal is to prepare students for the English-language exams that students are required to pass when they are studying in primary and secondary schools and before they get admissions to universities. Passing the exams has become a major task since students’ achievement is determined almost completely by the outcome

(Oladejo, 2006).

Although English is a foreign language in Taiwan, unlike any other foreign language in the country English enjoys a unique status and prestige and it is the only compulsory foreign language, one of the two compulsory languages in state schools. The other one is the national and official language, Mandarin (Oladejo, 2006). Mandarin is the official spoken Chinese in China and Taiwan. Its written form is called Chinese. In this research, I used *Mandarin* to stand for the native spoken language and *Chinese* to refer to the native written language. The use of both English and Mandarin languages will be examined in detail in the later sections.

1.3.5 English teaching and learning in schools

English in the school system in Taiwan is regarded as a language of study. The subject of English is taught as a compulsory course in primary, lower, and upper secondary schools, where the pupils aged from ten to eighteen, undertake approximately 9 years of English learning in schools.

Although, according to the language policy of the central educational authority, the starting age for English learning in primary schools should be in the third grade, in reality, different schools across the country provide English lessons to children at different grades. That depends mainly on whether the schools are in the cities or in the rural areas. In remote locations, it is usual to find many children who have never had English lessons until their first year in junior high school. This implies that such children are many years behind their city counterparts. That is, there is an obvious lack of uniformity regarding the age or education level at which children across the island are introduced to English language in primary schools. This is because almost all language policies are made by the central government, while the local governments are primarily responsible for implementing the decisions. As a result, in cities, local authorities which are relatively financially stronger than their rural cousins can afford to implement all language policies (Oladejo, 2006). This is a very serious problem for English language teaching and learning in primary schools in Taiwan.

In the lower secondary school, English is a required subject for five hours a week for three years. By the end of this stage, students are supposed to achieve a basic knowledge of grammar, including the Present, Past, Future, Continuous, Present Perfect and Past tenses; Passive, Relative clauses, Conditional; Comparison, Modals,

Superlatives, and so on (Chen, 1997). The number of lexical words that the learners are expected to learn is estimated at approximately 800-1000. It is also assumed that the students have achieved syntactic competence by the end of this stage (Chen, 1997). However, most Taiwanese students cannot reach the level expected by schools. Although English is a main subject in the school, there are still other important subjects such as Chinese, Mathematics, Physics, Chemistry, Biology, etc that students have to learn. Under these circumstances, pupils only get 4-5 hours a week to learn each subject. It is a difficult job not only for learners to learn but also for teachers to teach English due to limited teaching time (Chu, 1997).

After the lower secondary school education, the majority of students will enter upper secondary schools, expanding the capability of semantics and pragmatics through an intensive syllabus based on the same learning hours as before. These students in upper secondary schools are primarily trained to pass the Joint University Entrance Examination (JUEE). Before 2001, except for a few experimental cases, admission into all of the institutes was by competitive examination. After 2001, the MOE adopted other admission channels: first, admission based on recommendation; second, test scores on related subjects set by the university. However, the majority of students are still admitted to the universities by taking the JUEE (MOE, 2006). English is one of the subjects which are assessed in the JUEE. This English examination is in written form and includes a variety of test types: multi-choice alternatives, fill-the-gaps, matching questions, translation and written composition (Chen, 1997). Refer to Appendix B to see a sample English examination in the JUEE. Due to the importance of grammar knowledge, reading skills, and writing competence in the Joint University Entrance Examination in the country, therefore, most of the schools use grammar-oriented written materials to educate pupils in order to gain high scores in the examination (Chen, 1997).

1.3.6 English curriculum and teaching materials in upper secondary school

Very different from the focuses of the assessment method, the senior high school English curriculum adopts the principles of the communicative approach in teaching, and emphasizes learner-centredness, communicative functions of the English language and learner strategies in language learning. The goals are specified as (1) to help learners develop basic language skills, including listening, speaking, writing, and reading; (2) to develop students correct learning habits and methods; (3) to cultivate students' interests in learning English; (4) to promote students' understanding of home

and foreign cultures (Chern, 2002).

In the past, primary school and secondary school textbooks had been developed by a committee appointed by the National Institute for Compilation and Translation (NICT) and used nation-wide following an almost identical syllabus. Since September 1999, senior high school textbooks have been developed by privately- run publishers and later reviewed by NICT prior to publication and distribution (Chern, 2002). Standardized textbooks were no longer used and explicit guidance for developing teaching materials are provided in the curriculum standards for textbook writers to develop more materials for use:

1. The design of English textbooks should follow the goals and guidelines of the senior high school English curriculum.
2. The compilation of textbooks should focus on activity integrity and diversity. The texts in textbooks should be funny, informative, practical, and inspirational. All texts should have clear themes and their presentations should be well- structured.
3. The vocabulary, common idioms, and sentence structures should be introduced closely based on texts and the drills and practices for the new-learnt knowledge should be provided at the end of each text.
4. These written drills and practices should include training of speaking, listening, writing, and reading. In accordance with the characteristics of each text, these related practices should be particularly designed.

(Ye, 2006).

Unfortunately, the textbooks developed following communicative language teaching principles still resemble a form-focused, structure-oriented syllabus. As a result, the classroom practice and instructional focus rely on accuracy and test results and promote rote learning in students in teacher –fronted activities (Su, 2000). Teachers in Taiwan prefer the teaching materials which are based on the view of language as formal system. Textbook publishers, therefore, design the materials according to what teachers demand. For most Taiwanese English teachers, language must be mastered through practice of the different parts that make up the whole and pattern practice and drilling are often seen as providing the basis for language learning (Witton-Davies, 2000). This is because when these teachers were students, they had been taught English in this traditional way. The common feature of this failed reform is that teachers have feelings of ‘anxiety and insecurity’, which lead to “a determination to resist the change and maintain the existing context within which the individual feels secure” (Hutchinson and Torres, 1994, quoted in Witton-Davies, 2000:01).

On the other hand, although the Communicative Language Teaching (CLT) has been prevalent in the English curriculum in Taiwan in the last couples of years, it appears that the pedagogical results are not fruitful (Wu, 2006). Many Taiwanese educators and researchers argue that CLT is not suitable in the EFL contexts like Taiwan (Tsai and Lee, 2007). According to Tsai and Lee (2007), the difficulties incurred when adopting CLT in English classroom settings in Taiwan are: limited teaching hours, teachers' insufficient English speaking ability, large classroom size, and grammar-based exam-oriented teaching. Among them, the most important factor which hinders the implementation of CLT is grammar-based exam-oriented teaching. The examinations in Taiwan concentrate exclusively on reading, writing, and grammar. The CLT method does not prepare students for taking the JUEE. In order to ensure that students will perform well on the exams, teachers resort back to using the Grammar Translation Method. As Savignon (1991, cited in Tsai and Lee, 2007) points out, curricular innovations are being undone by a failure to make equal changes in assessment.

Except for the Grammar Translation Method and CLT, common pedagogical approaches in second and foreign language teaching include: The Audio-lingual Method, The Silent Way, The Natural Approach, Total Physical Response. Succinct introductions and explanations are provided as follows:

Grammar Translation Method: Grammar Translation Method, as its name suggests, depends on teaching grammar and practicing translation. Reading and writing are two major focuses in this method while speaking and listening have not attracted the attention of linguists, and vocabulary is typically taught in lists. A high priority is given to accuracy, and an ability to construct correct sentence patterns (Griffiths and Parr, 2001).

The Audio-lingual Method: The audio-lingual method grew out of urgent demands for fluent speakers of other languages in the war-time to produce multilingual personnel for military use. This method principally relies on drills and repetition exercises, since in accordance with behaviourist theories, languages are viewed as a system of habits which can be taught and learnt on a stimulus/ response/ reinforcement basis (Griffiths and Parr, 2001).

The Silent Way: The Silent Way is a teaching method devised by Caleb Gattegno. "It is based on the premise that the teacher should be silent as much as possible in the classroom and the learner should be encouraged to produce as much language as possible" (Richards and Rodgers, 2001:99). The Silent Way

students are expected to become independent and autonomous learners. Its learning hypotheses include:

1. Learning is facilitated if the learner discovers or creates rather than remembers and repeats what is to be learned.
2. Learning is facilitated by accompanying (mediating) physical objects.
3. Learning is facilitated by problem solving involving the material to be learned.

(Richards and Rodgers, 2001:99)

The Natural Approach: The Natural Approach is similar to other communicative approaches (Krashen and Terrell, 1983). Language is thought of as a vehicle for communicating meanings and messages and “acquisition can take place only when people understand messages in the target language (Krashen and Terrell, 1983:19). Also, they view language learning as mastery of structures by stages. “ The input hypothesis states that in order for acquirers to progress to the next stage in the acquisition of the target language, they need to understand input language that includes a structure that is part of the next stage” (Krashen and Terrell, 1983:32). For instance, if an acquirer’s level of proficiency is at the stage i , the input he/she understands should contain $i+1$. The acquirer’s speech ability will ‘emerge’ itself when she/he has built up enough comprehensible input ($i+1$) (Richards and Rodgers, 2001).

Total Physical Response (TPR): TPR which was developed by James Asher, a professor of Psychology, is a language teaching method built on the coordination of action and speech. It aims to teach language through motor (physical) activities. TPR is associated with the ‘trace theory’ of memory in psychology, which claims that the more intensively a memory connection is traced, the stronger the memory link will be recalled. Retracing can be done verbally and/or in connection with physical activities. Combined tracing activities (e.g. a verbal rehearsal together with a motor activity) increase the probability of successful recall. Asher believes that successful second language development as a parallel process to first language acquisition. The speech directed to young children is composed primarily of commands, which children respond to physically prior to their verbal responses. Asher feels second language learners should recapitulate the same process (Richards and Rodgers, 2001).

Communicative Language Teaching (CLT): Hymes (1972 cited in Tsai and Lee, 2007) was the first one to use terminology ‘communicative competence’, the

central theoretical concept of CLT to stand for the language learner's ability to perform certain communicative functions in specific contexts (Wu, 2006). There are four dimensions of communicative competence, which are generally accepted as a major theoretical framework of CLT: grammatical competence, sociolinguistic competence, discourse competence, and strategic competence (Canale and Swain, 1980, cited in Wu, 2006). As Larsen-Freeman (2000:121) claims that "Communicative Language Teaching aims broadly to apply the theoretical perspective of the Communicative Approach by making communicative competence the goal of language teaching and by acknowledging the interdependence of language and communication".

1.3.7 English teaching and learning contexts in upper secondary school

Most English classroom lessons in upper secondary schools are organized on plans which closely follow the sequential and graded textbooks with accompanying audio tapes published by four companies, Sanmin, Kangsi, Far East, and Longteng and approved by the central government, from Volume One to Volume Six for six semesters over the three years of upper secondary school education. Which textbook will be used is based on the decision made by different schools and English teachers. After the decision is made, all English teachers in the same school are required to work very closely to the given syllabus (Chen, 1997). Besides the textbooks, there are some supplementary materials which attempt to enhance what the students have learnt in the preceding lessons, such as listening exercises or extracurricular English magazines. In the listening sessions, not carried out in every school, students go to the language lab and listen to the tapes which accompany the written supplementary materials (Chen, 1997). On the other hand, the purpose of using magazines is to increase the amount of vocabulary that students are expected to learn.

All English teachers in the same school have to follow a uniform teaching schedule which indicates what materials should be taught and when, and when the term examinations take place. Teachers who adopt more supplementary teaching materials are viewed as 'Good teachers'. Most of the teachers, therefore, are under considerable pressure. In addition, there is an invisible competition among schools and teachers to find whose class is more proficient according to the scores that the students attain. In the light of such competition, it is not surprising that the students are reinforced in their learning through a great deal of supplementary grammar training so that they can

be competent in reading and writing English in the exams (Chen, 1997).

The majority of English teachers employ the Grammar Translation Method in classrooms (Wu, 2006). The teaching aims to provide an understanding of the grammar of the language, to train the students to extract the meaning from the reading texts, and to write the new language from the native language by regular practice in translating. The materials offer the learners a wide range of vocabulary, often of an unnecessarily detailed nature (Chen, 1997). The purpose of doing this is to achieve “linear cumulative mastery of grammar and vocabulary and application of this knowledge to new contexts; accurate use of written language forms, some knowledge of literature” (Clark, 1987, quoted in Chen, 1997:03).

Accordingly, in order to encourage pupils to have a good command of grammar and vocabulary, accurate use of written language forms and good knowledge of the literature, English teachers give many tests to the learners. For example, after being taught the new vocabulary every lesson, students are tested for the new lexicon and phrases. As soon as every lesson is finished, they are expected to develop their general intellectual abilities, covering grammar problems and translation; they are also obliged to undertake two middle-of-term and one end-of-term examinations every semester. After graduation, they have to take the Joint University Entrance Examination (Chen, 1997).

1.4 Overview of the chapters

There are nine chapters in the present research. In this chapter, **Chapter 1**, I provide the general description of the research topic, a precise introduction of the Education system in Taiwan, and the structure of the thesis.

Chapter 2 reviews and synthesizes the literature on teacher questioning practice. The theoretical stance of the current research and the literature on the role of first language in class, the scaffolding concept, teachers’ goals, and learners’ responding patterns are presented as well. The chapter examines previous strands of research and analyzes their development. The five research questions were all inspired by my extensive reading of related research studies.

Chapter 3 presents the research methods, data collection procedures and the methods of analysis for the five research questions in the study and justifies their selection from

a variety of educational research tools. The combination of qualitative and quantitative methods and its justifications are described. The chapter also considers the ethical implications of the present research.

The outcomes of the five research questions are demonstrated in Chapters 4, 5, 6, 7, and 8.

Chapter 4 discusses the interactional functions of teacher questions from a range of aspects, including how teachers used questions to self-clarify, to impart knowledge, and to semiotically mediate learners' mental processing and language learning. It also shows teacher questioning practice is beneficial for learners to progress in their zone of proximal development (ZPD).

Chapter 5 discusses the code-switching in subject teachers' questioning behaviours. The explanations of findings are divided into two parts: Mandarin-based teaching and English-based teaching. Both quantitative and qualitative approaches were employed. At the end of this chapter, the teachers' self-interpretations of their language choices are presented.

Chapter 6 investigates the teaching and learning goals of the subject teachers to examine the connection between the scaffolded functions of teacher native-language and target-language questions and their teaching and learning goals. The new definitions of scaffolded functions are demonstrated, which are different from other research studies and which are much more language-oriented in the present research.

Chapter 7 discusses the observed patterns of learners' responding behaviours and illustrates some interesting phenomena relating learners' class participation. Learners' first language use is examined as well since this contributes both to learners' cognitive development and language learning.

Chapter 8 demonstrates the factors which might influence learners' verbal participation in class. Learners' attitudes towards speaking in class, their assumptions of how to behave properly in class, and some specific Taiwanese socio-cultural factors and systems could all exert some influences and cause learners to be either reticent or vocal in classroom interaction with their language teacher.

A final short chapter (**Chapter 9**) discusses the summary of findings, limitations, and implications emerging from the present research and makes recommendations for

further research and suggestions for language teachers and educators.

Chapter 2 Literature Review

The main purpose of this study is to explore how teachers' questioning influences language teaching (in relation to teaching and learning goals) and learning (in association with learners' responses) in EFL settings in Taiwan. In order to build the whole framework of the current research, the review of related literature will be divided into eight major sections. In the first part of this chapter (See 2.1), teacher talk will be introduced first, since teachers' questioning is the most familiar and salient form of teacher talk (Thamraksa, 1997; Nunn, 1999). The characteristics of teacher talk and how it works in verbal exchanges will be presented. The second part of this chapter (See 2.2) discusses the roles teachers' questions play in classroom communication in content and second language classes and, in particular, in foreign language classes, because research dealing with teachers' questioning in content/ ESL classrooms has been found to serve as the basis for studies in EFL classroom settings. In the third part of this chapter, by synthesizing different researchers' viewpoints, the possible problems of the process-product paradigm will be addressed. Learners' language learning and cognitive development should take place in social interaction with their teachers in the classrooms. The notion of language learning as a contextualized, social, and cognitive phenomenon will be emphasized (See 2.3). The fourth section (See 2.4) introduces Vygotsky's (1978) sociocultural theory and its important characteristics, to explain how language learning is socially constructed. In addition, the sociolinguistic perspective plays a supportive role to reveal the imbalanced power relationship and the use of students' mother tongue in classrooms. The fifth section (See 2.5) reviews the literature on teachers' teaching and learning goals. Classroom teaching activities are goal-directed. Teachers' classroom behaviours are based on their goals. It is necessary to understand the literature on teachers' teaching and learning goals and to see how it is linked with their teaching practice. The sixth section (See 2.6) provides related research studies on learners' responding behaviours to examine how teacher questions elicit learners' oral answers, which in turn contribute to their cognitive development and facilitate their English language learning. The seventh section (See 2.7) presents a review of the factors which influence learners' responding behaviours in language classrooms in Asian countries and points out that some factors situated in the particular Taiwanese context might be attributed to Taiwanese learners' passivity. In the final part of this chapter, I would like to make a link from the literature review I have done so far and the research questions which are generated from the extensive reading (See 2.8).

2.1 Teacher talk in the classroom

One primary concern with language learning in classes is the role of teacher talk (Hall and Verplaetse, 2000). Teacher talk is the talk of language use connected with the traditional role played by the teacher in the classroom (Cazden, 1988; Chaudron, 1988). Teacher talk plays an important role not only for the organization of the classroom but also for the process of language acquisition and it is through their talk that teachers can implement their teaching and learning goals either successfully or unsuccessfully (Ellis, 1985; Wong-Fillmore, 1985; Nunan, 1990; 1991). According to Chaudron (1988), there are three specific aspects of teacher talk in the second language classroom: a) the amount of teacher talk; b) teacher speech modification; and c) the nature of teacher discourse.

Research on classroom discourse has reported that teachers tend to dominate classroom talk. According to Flanders (1963, cited in Wintergerst, 1994), two-thirds of class time is attributed to talk, and two-thirds of this talking time is taken by the teacher. This characteristic is found not only in content classrooms but also in ESL or EFL classrooms (Tsui, 1985). Some statements claim that ‘teacher talk is bad’ (Nunan, 1991:190) because learners have few opportunities to produce target language while the teacher dominates the class talk (Chaudron, 1988:52). However, it can be argued that in many foreign language classrooms, “teacher talk is important in providing learners with the only substantial live target language input they are likely to receive” (Nunan, 1991:190).

The second consideration of teacher talk is the speech modifications made by the language teacher. In interactions with non-native speakers, native speakers adjust or modify their speech in their attempt to make it more comprehensible to the second language listener (Long, 1983). Researchers such as Hatch (1980), Long (1981), and Ellis (1985; 1994) find that the speech adjustments of teacher talk are similar to those have been shown in the studies of both motherese, the way that mothers talk with their children (Neuport, 1976), and foreigner talk, the speech addressed by native speakers to non-native speakers (Henzl, 1979). Teachers make modifications while talking to non-native speakers to sustain communication by clarifying information and soliciting student responses (Chaudron, 1988). These specific adaptations include a slower speaking rate, frequent pauses, clear articulation, simplified vocabulary and repetition.

The third area of interest in teacher talk is the discourse of grammar and vocabulary

explanations. There are rather few studies to be examined for these teacher explanations. Chaudron (1988:89) concludes that “greater rigor and a well-defined research agenda are needed for further studies of L2 teacher talk”.

The discourse features of teacher talk such as correction, feedback, and especially the use of questioning have been examined for the roles they play in EFL or ESL classrooms (Hall and Verplaetse, 2000) because it is assumed that when the pupils are being asked a question, they are responsible for responding. Through questioning, teacher talk helps to explicitly focus learner attention on syntactic forms, which in turn facilitates their development of knowledge and linguistic forms in the second or foreign language (Schmidt, 1994). Besides, according to Ervin-Tripp (1976; 1979 cited in McCormick, 1997), teacher questioning is also one kind of ‘directive’. Directives require students to categorize or recall information in the form of a reply. In order to realize how teacher questions elicit learner responses, it is necessary to look more closely at the role that questions play in the classroom IRF exchanges.

2.1.1 Teacher initiation- Student response- Teacher Feedback (IRF)

The exchanges between teachers’ questioning and students’ responding can be presented in IRF exchanges as follows:

- T: Have you got any toy animals at home? Be quick. Raise your hand (she raises her own hand) and show me. Have you got any toy animals? S- {Name of child}
- S: (Standing up) I have got a cat,
- T: No, sit down, in your place.
- S: Yes, I have.
- T: I have got many?
- S: Toys at home.
- T: Toy animals at home.

(Mercer, 2001:244)

The sequence above illustrates some specific patterns which typify most classroom talk. This teacher takes a longer turn at speaking to the whole class. Then, she asks all of the questions. According to observational research, teachers usually ask the majority of questions to elicit “some kind of participatory response from the students” (Mercer, 2001:245). Finally, she evaluates the replies they produce. The teacher uses questions to direct the topic or content of the talk and ensures questions can attract

everyone's attention to the predetermined task. Accordingly, we can find there is a ritual pattern in class talk: a teacher's question, a following student response, and then a teacher's evaluation or feedback. This structural pattern was first defined by the two linguists (Sinclair and Coulthard, 1975) and called as an Initiation -Response-Feedback (IRF) exchange, also known as 'triadic dialogue' (Lemke, 1990).

T: ... Have you got any toy animals? S-{Name of child} I
S: (Standing up) I have got a cat, R
T: No, sit down, in your place. F

(Mercer, 2001:245)

However, IRFs do not typify other kinds of class talk involving different patterns of exchanges (e.g. in which students initiate to the teacher or other students). However, among all kinds of talk, IRFs have been observed as a common feature in classroom talk from kindergartens to universities all over the world.

IRFs are different from daily conversation outside the classroom in terms of teachers' evaluation (Feedback). This characteristic can be well illustrated in the following two examples taken from Mehan (1979:285):

1: 1 Speaker A: What time is it, Denise?
 2 Speaker B: 2:30
 3 Speaker A: Thank you, Denise.

2: 1 Speaker A: What time is it, Denise?
 2 Speaker B: 2:30
 3 Speaker A: Very good, Denise.

In the example 1, the first speaker poses a question that he does not know the answer in advance and tries to obtain genuine information from the second speaker. In comparison with the second example, the first speaker already has the answer in mind before posing a question. Instead of acknowledgement "Thank you, Denise", Speaker A in the second example provides an evaluation "very good, Denise" after the response of Speaker B. Actually, the presence of an evaluation seems to be one of the important features which differentiate the conversations in educational settings from those in everyday situations (Mehan, 1979).

Some classroom discourse researchers argue the IRF exchange is detrimental for

fostering meaningful student participation (Lemke, 1990). However, others see this exchange as a useful tool that teachers can use their status as facilitators to guide a large number of students towards the common goal of dialogic learning (Nassaji and well, 2000; Hellermann, 2003).

2.2 Teacher questioning in ESL, EFL classrooms and from a general perspective

This section will be divided into three sub-sections. Section 2.2.1 provides related literature reviews on teachers' questioning from a general perspective. Section 2.2.2 particularly introduces the two major question types, display/ referential questions, which occur very often in ESL classrooms, and further mentions that both types of questions contribute to ESL learning in different ways. Most importantly, in the final section of 2.2.3, the literature on teachers' questions in English as a foreign language (EFL) settings, which mostly follows up the findings in ESL classrooms, will be presented.

2.2.1 Questions from a general perspective

In this section, the characteristics of teachers' questioning will be reviewed from a general perspective, including questioning strategies, wait-time and turn taking.

2.2.1.1 General description of teacher questioning

Cotton (1988) states that most studies of classroom questioning invoked Socrates and they remind us that questioning has a long history as an educational strategy (Hunkins, 1989; Hargie, 2006). Indeed, based on the Socratic methods, using questions and answers to challenge, expose, and lead to new knowledge is a powerful teaching tool. Several studies also document that question asking is viewed as a valuable medium of instruction to stimulate learners' thinking and learning (Ralph, 1999; Myrick and Yonge, 2002), as well as to control conversational exchanges in classrooms (Dillon, 1982).

In fact, researchers usually find that teachers ask a large number of questions in the classroom during an average school day (Gall, 1970; Dillon, 1982) and most of them are recall questions which just "involve the simple recall of information" (Hargie, 2006:133). As Gall (1970:713) states, "About 60% of teachers' questions require

students to recall facts; about 20% require students to think; and the remaining 20% are procedural”. Gall believes that the restricted curricular design and the lack of teacher training can explain the reasons why teachers overuse recall questions in their everyday classrooms.

2.2.1.2 Linguistic forms of questions

In the study of teacher questioning in English classrooms where English is the medium of communication in Hong Kong, Wu (1993) argues that a question can be characteristically expressed in the interrogative form, but ‘question’ and ‘interrogative’ are not same terms. For instance, ‘Would you speak louder?’ is a syntactically interrogative, but functionally this is a request (Wu, 1993). Besides, the statement ‘Tell me why’ is grammatically imperative, but it tries to seek information from the respondent and can be viewed as a question (Wu, 1993). Questions can be expressed through many linguistic forms as follows:

(1) Interrogative sentences:

e.g. “Who belongs to Group 1?”

(2) Imperative sentences:

e.g. “Tell me why.”

(3) Declarative sentences:

e.g. A: “That means your brother is 11 years younger than you.”

B: “Yes.”

(Wu, 1993:51)

2.2.1.3 Types of questions

The types of teacher questioning are not only composed of recall, thinking, and procedural questions (Review Gall, 1970 in Section 2.2.1.1). Researchers in content and language classes provide different classifications in accordance with the learners’ responses they elicit.

In 1969, an early study conducted by Barnes identified ‘closed’ and ‘open’ questions in the first language classroom. This study is frequently documented and cited in other subsequent language research on question types. Open questions tend to be unlimited, “leaving the respondent free to choose any one of a number of possible ways in which to answer, and at length” (Hargie, 2006:127). In contrast, closed questions can “typically be adequately dealt with in one or two words with that reply even being one

of a limited range of options presented in the question itself' (Hargie, 2006:127). The same classification is 'convergent' / 'divergent' questioning. According to Stevens (1912 cited in Ozerk, 2001), most of teachers' classroom questions are convergent which are dramatically different from divergent ones. Convergent questions are closed or narrow questions, and limit the response from a range of possibilities. Divergent questions are open and broad questions encouraging a variety of responses (Mollica, 1994).

Naiman et al. (1978); Bialystok et al. (1978) distinguish between 'general information' and 'specific' questions in second language classrooms. General information questions leave open space for the respondent to decide the nature and length of the response; Specific questions expect only a limited and specific response. After making a comparison between core and immersion French teachers (in the core classes, second language teaching and learning is the main purpose; in the immersion classes, the main focus is learning of other subjects and the second language is the medium of instruction), Bialystok et al. (1978) find that the immersion teachers ask more general information questions than the core French teachers who ask more specific questions. The implication of this study is that when the classroom is language-oriented, the teacher will tend to ask specific questions to control learners' responses.

With the increasing emphasis on communication in second language classrooms, another distinction has been made between 'display' and 'referential' questions (Long and Sato, 1983); teachers use display questions to ask for information that they already know and seek the unknown information from students by asking referential questions. In conversation outside of the classroom, referential questions are much more common while display questions seem to be dominant in language classrooms (Nunan, 1991). Referential questions might be either closed or open; display questions would tend to be closed (Chaudron, 1988).

As mentioned above, the open; general information; divergent; and referential questions are assumed to promote greater learner productivity, and especially referential questions are viewed by some researchers as a kind of strategy to facilitate meaningful communication between the teacher and students. The later section (2.2.2) will introduce the research on display and referential questions which attract most language researchers' attention in second language classrooms.

Nevertheless, questions are not only classified by the response they solicit, and some of them will be distinguished from others on account of their special functions. They

are rhetorical; procedural; and non-directed and directed questions. Rhetorical questions' are questions which are intended either to be answered by the speaker not the listener, or actually not to be answered at all. Usually a speaker uses them to express epistemic status (Hargie, 2006). In classroom settings where the teacher is a knowledge provider, she usually poses these pseudo-questions and answers them immediately after asking, to impart knowledge to students. Some researchers state that 'procedural questions' are thought of as being not directly related to the content of the class, but they are related to classroom management and its procedures (Richards and Lockhart, 1994). However, as Sahin et al. (2002) point out, procedural questions not only help check whether students are following teachers' instructions, but also enable learners to think and interpret things. In the following example, teacher questions help learners to think what they should do in the next stage and require answers in which learners can use their creativity.

Teacher: Right (...) who's chosen their characters here?

Pupil:

Teacher: A dog and an alien (...) right

Pupil:

Teacher: Right (...) so what's (...) what's going to happen between them?

Pupil:

Teacher: Right (...) what are they going to argue about (...) what is the actual problem they are going to argue about?

Pupil:

Teacher: Right, (Teacher W, Literacy Hour, Observation Transcripts I, p.145, lines 10-19)

Sahin et al. (2002:379)

In addition, Long (1981) points out that the reason why questioning can facilitate interaction is to establish who is the next person to speak. This function is easily established by 'directed questions' which are asked by calling upon a particular student. If questions are asked to the whole class without nominating, they are 'non-directed questions'. The advantage of asking a non-directed question is that everyone feels free to volunteer to respond. However, Tasaka (1998) indicates that directed questions are more likely to elicit learners' responses than non-directed questions for students in some ESL classrooms, because of cultural differences where no one would like to answer teacher questions voluntarily in front of the whole class.

2.2.1.4 Questions in interaction

In order to promote and sustain interaction between native and non-native speakers, three specific questions are identified by Long and Sato (1983). Boulima (1999) provides clear definitions and explanations for comprehension checks, confirmation checks and clarification requests by paraphrasing from Long and Sato (1983c:276), Chaudron(1988:45), and Allwright and Bailey (1991:123-4). A ‘comprehension check’ is used by the speaker to find out if the interlocutor understands what has been said; for example, ‘Do you understand?’. A ‘clarification request’ is a request for further information or help with understanding something the interlocutor has previously said; for example: “What do you mean by that?” A ‘confirmation check’ is the speaker’s query about whether or not the speaker understands the interlocutor’s correct meaning; for example:

Learner: I want one job

Teacher: You are looking for a job?

(Boulima, 1999:72)

In their study, Long and Sato (1983) conclude that the ESL teachers use significantly more comprehension checks in classroom interactions while they are the least frequent in conversations between NSs (native speakers) and NNSs (Non-native speakers) outside classroom settings. Confirmation checks occur most frequently in dyadic dialogue between two learners. Few clarification requests are found in all conditions. Pica and Long (1986) support this conclusion and state that ESL teacher talk indeed contains more comprehension checks but fewer confirmation checks and clarification requests.

2.2.1.5 Modifications of questions (questioning strategies)

According to Mehan (1979), IRF sequences are associated with two coupled adjacency pairs. The Initiation-Reply is the first adjacency pair. When the initiation (“What is your name?”) is posed, it demands a response (“Jenny”). The first pair is completed and formed. Then, this pair becomes the first part of the second adjacency pair. The second part of this second pair is the feedback or evaluation of the Initiation-Reply pair. However, the expected response does not always follow immediately after an initiation or it is just partially correct. And it could be possible that the respondent does not answer at all. Mehan (1979) points out that when the response called for does not appear in the next turn, the teacher will use additional questioning strategies (Mehan, 1979; Wu, 1993) or modifications of questions

(Chaudron, 1988) until the expected response does appear. These strategies include repetition, rephrasing, simplification, decomposition, and probing strategies.

Repetition: A question is repeated in the hope that a verbal response will be elicited.

For example:

T: Have you been to the airport before?

Ss: φ

T: [points to a girl] Have you been to an airport before?

Rephrasing: A question is expressed in another way. For example:

T: Then can anybody tell me the advantages of being an air stewardess? The advantages.

Ss: φ

T: How can they benefit from being an air stewardess?

(Wu, 1993:55)

Simplification: This may be regarded as a kind of rephrasing by means of which a situation is simplified so that students can cope with it. For example:

T: Er, if you were the only child in your family, then what other advantages you may have? What points, what points, what other good points you may have?

(Wu, 1993:56)

There are two other effective strategies indicated by Wu (1993), decomposition and probing strategies. A 'decomposition strategy' is a question which is decomposed into two or more following parts so as to obtain an answer; a 'probing strategy' is a question which is followed up by one or more subsequent questions in order to solicit more responses from a student. They are described in order below.

1 T: Who are they?

S: φ

T: Your? How many sisters?

S: No sister.

T: No sister. How many brothers?

S: Three brothers.

2 T: Do you think it's a good number?

S: Yes.

T: Yes? Why do you think it's good to have two brothers and one sister?

(Wu, 1993:56)

2.2.1.6 Questions and wait-time

Some classroom researchers think of the student as an information processing learner and the internal processes of the students should be worthy of further consideration (Winnie and Marx, 1983 cited in Tobin, 1987). In order to help students to learn, the information contained in teacher discourse should be cognitively processed by learners. Accordingly, the information must be presented at an appropriate rate and it should match with student cognitive processing capabilities. Processing time demanded for cognitively complex discourse is expected to be longer than that for less complicated verbal information. When a teacher establishes a cognitive focus through eliciting, sufficient time must be provided for students to engage (Tobin, 1987; Nunan, 1991).

Rowe (1986) identifies two sorts of wait-time: Wait time I is the period of the pause following a teacher's question but before a student's answer. Wait-time II is the duration of the pause following a student response but before the next turn of teacher's utterance. The use of the crucial three second wait-time documented in the literature can have positive effects on students in content classrooms (Tobin, 1980; Riley, 1986). When teachers try to increase both types of wait-time to more than three seconds, Rowe (1969 cited in Rowe, 1986) finds that wait-time II has a significant effect on the length of student responses and on increasing numbers of unsolicited student responses. With the extended wait-time, there is a lower rate of student failures to respond.

However, usually, on average, before calling upon a student to answer, teachers wait less than one second, and only one second is allowed for this student to respond before the teacher's subsequent intervention. Therefore, many researchers claim that it is necessary to provide in-service teacher training to help teachers extend their average wait-time to help elaborate students' verbal outcomes (Tobin, 1980; Rowe, 1986; Tobin, 1986; Nunan, 1991)

Some researchers often find out that there is the relationship between the cognitive

level of questions and wait-time I and II. In Cotton's (1988) article, she reviews several studies and lists remarkably similar benefits of higher cognitive questions and increased wait-time. Besides, she argues that, actually, they will cause one another. That is to say, the more complex mental processes required by higher-order questions ask for and produce a longer wait-time, both in type I and type II. Gambrell (1983) also points out that asking higher-order questions could be an effective comprehension strategy only when students are given adequate 'think time' to reflect and process the necessary information before responding to teacher solicitations. Conversely, Riley (1986) argues that extended wait-time may be inappropriate for lower-order questions. Riley believes that there is an existing wait-time threshold phenomenon for lower level questions, and the cognitive demand made on students who respond to lower level questions does not ask for extended time for processing.

2.2.1.7 The distribution of questions

As a matter of fact, many researchers have well documented that there is indeed an unequal distribution of classroom questions. When most teachers think they are even-handed in their treatment of students, they might find themselves being biased toward certain students to respond if they could obtain a recording of their own teaching. In general, it is the more able students who get more chances to be called on. These students are more likely to be nominated more frequently than others. If it is agreed that "one learns to speak by speaking, this means that those most in need of the opportunity to speak are probably given the least amount of classroom talking time" (Nunan, 1991:194). Chadron (1988) also points out that lack of attention will at least not facilitate, and may inhibit these students' progress. These differentials in teacher-student conversation that neglect some L2 learners need 'rectification'. And some researchers have also found that teachers tend to restrict their questions to a certain 'action zone' in their classrooms (These questions are usually addressed to the front of the classroom). Nunan (1991) suggests that one way of improving this aspect of teaching is to audiotape or videotape a teacher's own teaching, or get a researcher or colleague to observe the class, and then it is possible for teachers to notice how many questions they pose to each student.

2.2.1.8 Questions and turn-taking

Normally, there is only one teacher and a large number of students in a class. In order to involve all students into conversation, each student usually obtains only one chance to respond to the teacher's question. In comparison with IRF exchanges, Shore (1994)

describes that actually classroom discourse seldom follows the IRF sequences. In her study, Shore finds that the teacher initiates a similar question to many students. The exchanges are “a series of teacher initiation (I)—student response (R), teacher initiation (I)—student response (R), teacher initiation (I)—student response (R) cycles” (Shore, 1994: 167). This turn allocation reinforces the teacher’s control of classroom talk although, paradoxically, it is intended to encourage the participation of all students.

Through turn-taking, the teacher decides who the next speaker is and then asks again. Teacher-student talk is conducted as dyadic conversation, and the teacher switches quickly from one student to the next - a rotating dyad (Griffen and Humphrey, 1978).

2.2.2 The research on questions in ESL classrooms

Among the studies on second language classrooms, two question types, display and referential questions, are found to receive most of the researchers’ attention. Display (known information) questions ask the respondent to display knowledge or information which the questioner already knows beforehand, while referential (information-seeking) questions are questions which seek unknown information from the respondent. This also distinguishes between the occasions when the speaker really wants to learn something and when he wants to measure whether the other persons know what he thinks they ought to know (Mehan, 1979; Long and Sato, 1983; Brock, 1986; Nunun, 1990; Lynch, 1991; Wells, 1993; Boulima, 1999).

On the basis of analysis of question- answer exchanges between teachers and students, White and Lightbown (1984) report that the IRF sequence is the pervasive discourse pattern in the four secondary ESL classes. They state that the teachers observed in these classes did most of the talk and asked most of the questions. Mehan (1979) also comments that the questions these teachers asked are predominantly display questions with the closed type. That is to say, one specific answer can be accepted, in the form of a fact or a simple yes or no. This has been confirmed by Pica and Long (1986). When they conducted research on the speech of experienced and inexperienced ESL teachers, they found that both types of teachers use far more display questions. And it is this preference which greatly distorts genuine NS-NNS communication in the ESL classrooms (Long and Sato, 1983).

Research findings show a positive relationship between the cognitive level of teacher

questions and the cognitive level of student responses (Dillon, 1981; Tobin, 1987; Cotton, 1988; Carlsen, 1991; Edwards and Bowman, 1996; Boulima, 1999). Through proper training, teachers in content classes can increase the number of higher cognitive level questions in their speech, and in turn increase the lengths and complexities of student responses. The same outcome is also confirmed in second language classrooms. In Brock's (1986) study of the effects of referential questions on ESL classrooms where four experienced ESL teachers and 24 non-native speakers are involved, she finds that the two trained teachers were able to increase the frequency of higher cognitive questions compared with the other two teachers who did not receive such training and asked predominantly display questions. In addition, Brock (1986) also points out that student responses to questions which call for recall or factual information are shorter than those to higher-order questions which call for interpretation or opinion (Dillon, 1981).

In Brock's opinion, the use of display (known information) questions will generate discourse which is totally different from everyday conversation and it is worthwhile for language teachers to think well before using them. Conversely, the frequent use of referential questions by teachers creates a flow of information from students to teachers and it makes the class discourse more like real communication outside the classroom. In fact, other ESL researchers have the same suggestions for language teachers and encourage referential questions rather than display questions. They have their theoretical stances. According to White and Lightbown (1984), the difference between referential questions and display questions, or between everyday conversation and classroom discourse, is the existence of the 'information gap' between the speaker and the respondent. The terminology of 'information gap', one of the communicative techniques (Tan, 2005), comes from the idea of communicative language teaching (CLT) in second language classrooms to get students to interact with other people in the second language. So as to fill in this gap, both the speaker and respondent should be involved in two-way information exchanges which lead to genuine language use similar to the real-life communication outside classrooms. The other two stances are based on the Output Hypothesis (Swain, 1985) and Interaction Hypothesis (Long, 1983). Because the use of referential questions increases the amount of learner responses in terms of target language production, students are provided with more opportunities to test their hypotheses of second language, to practice syntactic forms of L2, to modify their output (Hsu, 2001). From the perspective of the Interaction Hypothesis, referential questions trigger the two-way exchanges of information and offer L2 Learners more comprehensible input (Krashen, 1980) through negotiation of meaning. In other words, the use of teachers' referential questions increases the

amount of available comprehensible input and speaking opportunities to the L2 learners, which in turn, fosters second language learning (Hsu, 2001).

On the other hand, display questions do not contain this information gap. Only a one-way flow of information goes from the teachers to L2 students, which limits learners' opportunities to produce the second language (Hsu, 2001). According to the above research results and analysis, the use of display questions from a pedagogical view showed negative effects on second language learning. Nevertheless, this is not always the case. In the researcher's own Masters dissertation (Chang, 2004), it is found that the significantly frequent use of display questions by the teachers makes beginning students in primary schools feel less pressure to respond, although only eliciting shorter or one-word answers. Other researchers also indicate that display questions are indeed beneficial for L2 learners (Nunan, 1987; Poole, 1992; Musumeci, 1996).

In her study of teacher-student exchanges in three language classrooms, Musumeci (1996) finds that display questions can serve several functions in the classroom: to test learners' knowledge, to maintain attention, to arouse curiosity, and discipline. Nunan (1987) also states that, except for communicative language use, non-communicative preparation work is another factor which provides learners with "the necessary prerequisite skills for communicative work" (p.137). Such non-communicative language work is carried out through drill and practice activities where display questions occur predominantly. In addition, Musumeci (1996) finds that it is not whether the question is display or referential, but it is whether it is open-ended or closed, which influenced the length of student responses. Open-ended display questions, like referential questions might, have the effect of eliciting longer student utterances, but the use of open-ended display questions did not encourage more animated verbal involvement and positive reactions on the part of learners than display questions of the closed type.

2.2.3 The research on questions in EFL classrooms

The research studies in English as foreign language classrooms have followed the ESL theories and research patterns and demonstrated some specific findings. Shomoossi (2004) through non-participant observation of five EFL teachers in university settings indicates that teachers used DQs (Display questions) 4.4 times more than the numbers of RQs (referential questions). The distribution of the two question types is

significantly different. Most display questions are asked by teachers regarding textual information while most referential questions are used for personal information (i.e. age, family, education, and so on). In addition, similar to Wu's (1993) findings in English classes in Hong Kong, NOT every individual referential question could be an effective pedagogical tool to elicit longer responses and some display questions also elicited longer answers (Shomoossi, 2004).

Wu (1993) and Moritoshi (2006) draw the same conclusion that students are sometimes unable to answer teachers' questions on their own initiative. In other words, question strategies (or follow-up questions) are effective in eliciting syntactically more complex and longer output. Wu recommends two questioning strategies, probing and decomposing (mentioned earlier in Section 2.2.1.5), and even if research in early ESL classrooms shows that repetition of questions does not help teachers with eliciting learner responses, Moritoshi (2006:19) still suggests that repetition plays an important role to facilitate target language learning "either because of the high volume of sound in the room or to provide a longer processing time."

Some EFL classroom research in Asian countries also shows that students seem to be reluctant to answer questions and they tend to wait to be called upon by teachers. Once called upon, they prefer to be 'modest' by providing short answers so that their classmates will not gain the impression that they are 'showing off' (Wu, 1993; Tasaka, 1998).

These findings above are slightly different from the results that we know from content and ESL classrooms. The present study aims to examine the influences of classroom questioning in EFL classrooms in specific Taiwanese settings, where questions are employed differing between content and ESL classrooms and makes the contribution and implication to teacher questioning in English as a Foreign Language classrooms, where little attention has been paid compared with the prevalent studies of English as a second language classrooms.

2.3 Cognition, social interaction and language learning

The section is divided into three sub-sections. In the first part of this section, I discussed how the quantitative process-product paradigm has been criticized by many researchers. The teachers' questions which solicit learners' responses are roughly and subjectively classified into two levels and quantitative data collected using this

paradigm fail to take contexts into consideration. As section 2.3.2 demonstrates, it is necessary to broaden the input/output theories and to further examine teachers' questions from a socio-cultural perspective. In the final part of this section (See 2.3.3), the notion that language learning is a contextualized, social, cognitive phenomenon will be illustrated and emphasized.

2.3.1 Cognitive issues in Process-Product paradigms

Cazden (1988) states that “we all probably believe that questions at their best can stimulate thought” (p. 100). That questions trigger learners' cognition development is well documented in many research studies across from content to ESL and EFL classrooms (Goffe and Deane, 1974; Redfield and Rousseau 1981; Farrar, 1986; Riley, 1986; Tobin, 1987; Kolvukari, 1987; Carlsen, 1991; Marzano, 1993; McCormick, 1997; Duster, 1997; Hsu, 2001). Researchers believe that questions can elicit learners' responses which stimulate their cognitive processing. The cognitive levels of questions are categorized based on Bloom's (1956) taxonomy of education objectives (Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation), which has been a major influence when considering the cognitive level of teacher questions.

In order to examine of the effects of the cognitive level of teacher questions on learner achievement, dozens of research studies on classroom questioning have been grounded in the process- product paradigm. By reviewing across 18 studies of teacher questioning behaviours, Winnie (1979) concludes that teachers' higher-order questions have no consistent effect on students' outcomes. This is supported by Samson et al. (1987). After the quantitative synthesis of 14 studies they confirm that the obvious and significant relationship between the cognitive level of teacher questions and student achievement has not been demonstrated.

In addition, the following problems are concomitant with the process-product paradigm. First, it is argued that the traditional higher/ lower level question coding scheme is incomplete (Farrar, 1986). According to Gall (1970), a number of systems are developed for classifications of teacher questions. However, most data analysis has simply been classified into two categories—questions that test students' recall of information and those which ask them to think critically. In fact, these have been known by a variety of names. Lower level questions are also called lower cognitive, fact, knowledge, convergent, closed, or factual recall questions, which presumably

require students merely to recall verbatim information taught by the teacher (Winne, 1979). They are associated closely with the levels of Knowledge and Comprehension in Bloom's taxonomy (Bloom, 1956). Higher level questions are also known as cognitively complex, divergent, open, or reason questions which ask students not only to manipulate bits of information previously learned, but also create an answer with logically reasoned evidence (Winne, 1979; Farrar, 1986). Those questions are correspondent with Application, Analysis, Synthesis, and Evaluation of Bloom's taxonomy. However, the distinctions between higher and lower level questions are different from study to study and different researchers also make some personal modifications while coding these questions. Therefore, Rosenshine (1971 cited in Farrar, 1986) states that dividing questions into two types in the process-product research is questionable.

Moreover, process-product studies try to account for student outcomes as a function of teacher behaviours and this is done by classifying teacher behaviours, counting these behaviours over lessons, and then connecting these behaviours with individual students (Carlsen, 1991). However, such a quantitative paradigm of analysis of teacher questioning has been criticized (Banbrook and Skehan, 1990). Process-product studies are "in danger of reducing classroom interaction to a series of question types" (Shore, 1994:159) and ignore specific contexts where the questions are asked (Farrar, 1986; Hsu, 2001). Van Lier (1988) confirmed the issues discussed above and concluded that:

... An analysis must go beyond simple distinctions such as display and referential questions, yes/no and open-ended questions, and so on
... Research into questioning in the L2 classroom must carefully examine the purposes and the effects of questions, not only in terms of linguistic production, but also in terms of cognitive demands and interactive purpose.

Van Lier (1988:225)

That is to say, instead of analyzing 'decontextualized questions', in Farrar's term, on the basis of limited coding schemes, it is necessary to examine and to explore the data in context from the aspect of interaction (Farrar, 1986, Hsu, 2001).

2.3.2 Cognitive issues in interaction

Two important components of interaction, input and output, in second language

learning should be introduced in the first place. The importance of interaction is that it is an input provider to learners (Gass, 1997). The theory of input originally derives from Krashen's comprehensible input hypothesis. Input which is understood by the learner is the cause why second language learning can take place (Krashen, 1980; Krashen, 1982). There are many ways to make input comprehensible. One of them is through 'interactional modification'. That is to say, when learners signal a lack of comprehension, modifications can contribute to their understanding of given input (Long, 1981; Long, 1983; Long, 1987).

Pica (1994) points out that 'negotiation' is another type of interaction which might lead to learning. Through negotiation, comprehensibility is achieved when interlocutors repeat or adapt for their conversational partners (Swain, 2000). In research studies on negotiation, input has been emphasized and it has been focused on how to make it comprehensible. Yet, virtually no research has documented that the greater comprehensibility achieved through negotiation can lead to second language learning. This is a too simplistic view of the language learning process (Lee and VanPatten, 1995) and it diminishes the role of the learner by highlighting the role of the teacher (Platt and Brooks, 1994).

Swain (2000) suggests that in order to fully understand the language learning which occurs through interaction, the focus of the research work should be broadened. Besides comprehensible input, it is worth looking closely at other aspects of interaction that can facilitate second language learning. For example, interaction assists learners with not only negotiation of messages in input but also focus on language forms as well. Through implicit or explicit feedback provided in interaction, learners can acquire proper linguistic forms (Aljaafreh and Lantolf, 1994; Doughty and Varela, 1998; Long and Robinson, 1998; Swain, 1998; Lightbown and Spada, 1999; Swain, 2000; McDonough, 2005; McDonough and Mackey, 2006).

The other important component is output (Swain, 1985). Comprehensible input alone is not sufficient for second language learning to take place. Learners need opportunities to produce the target language (Swain, 1985; Pica et al., 1989) and use their linguistic resources meaningfully (Swain, 1998). According to Swain (1995), output makes learners process language more deeply with more mental effort than input does, and producing language can force learners to "move from semantic processing prevalent in comprehension, to the syntactic processing needed for production" (Swain and Lapkin, 1995:375).

Three functions of output are ‘noticing’, ‘hypothesis testing’ (Swain, 1995) and ‘metalinguistic function’ (Swain, 2000). It is hypothesized that when producing L2, the learner can ‘notice’ a linguistic problem, and it leads the learner to recognize something he does not know or the intended meaning he wants to convey. In such a process, learners move from encountering a linguistic problem to produce target language, to developing a solution to modify their output (Swain, 1993; 1998). This may trigger cognitive processes which might generate new linguistic knowledge for learners or consolidate their existing knowledge (Swain, 2000). The second function of output is that producing language can be one way of testing a hypothesis about linguistic well-formedness and comprehensibility, and especially, erroneous output, because it indicates that a learner has formulated a hypothesis about how the language works and tested it out. Thirdly, when learners reflect on target language use themselves, the output serves a metalinguistic function and enables them to control the linguistic knowledge (Swain, 1995; 2000).

Although both input and output are important components of interaction, Pica et al. (1991) question the role of comprehensible input. In language classes, learners are engaged in signal-response exchanges in interaction, where they attempt to understand the literal meaning of the utterances that language structures and forms encode. Such analysis of the new language in interaction is restricted to uncovering the ways interlocutors unwrap linguistic messages and achieve literal comprehension (Brooks and Donato, 1994). The encoding-decoding system fails to capture how utterances occur in social settings and to discover how speaking is used as a tool for constructing tasks, meaning, and situational definitions (Nunan, 1992).

Swain (2000) states that it is necessary to go beyond the traditional output concept. In her recent work, she stresses the notion of ‘collaborative dialogue’. In this interactional dialogue, learners engage in tasks and help each other to identify and solve linguistic problems. Here, their output, in the form of collaborative dialogue, allows their performance to outstrip their current competence. It is through social dialogue with others, that language use and language learning can co-occur. Here interaction is accomplished between participants and it creates a social relationship between them. In the language production of this talk, meanings are not defined by the activities of a single participant, but co-constructed by both participants (Goodwin, 1995). However, it does not mean that language input is not important at all. In any interaction, a speaker’s given input often leads to a subsequent interlocutor’s output. They connect to each other and cannot be separated. Therefore, it broadens the traditional concepts of input and output (or comprehension and production) theories

and emphasizes co-constructive dialogue where social interaction leads to cognitive processing.

2.3.3 Language learning is a contextualized, social, and cognitive phenomenon

In 1997, Firth and Wagner claim the enhanced awareness of the contextual and interactional perspectives of language use, which can reconstruct all SLA research, and declare cognition is a minor consideration in language learning. This statement was immediately questioned by other researchers (Long, 1997; Kasper, 1997; Poulisse; 1997). The dichotomy of social interaction and cognitive process obscures the relationship between language knowledge which the learner constructs and the social and cultural environments in which language learning takes place. Cognition originates in social interaction with others. “Constructing new language is therefore both a cognitive and a social process” (Watson-Gegeo and Nielsen, 2003:156).

Although Firth and Wagner ignore the importance of cognitive issues in language learning, except for the aspect of social interaction, they assert the association of contexts and language learning. So as to understand language as communication, actual instances of language cannot be extracted from the linguistic or non-linguistic contexts where they occur. Sentences and utterances cannot be separated but should be viewed as linguistic and social actions within a specific context. As Heritage (1984 cited in Liddicoat, 1997) says, the context of talk is both indexical, that is to say, it is created by the talk itself, and then it in turn creates talk. Every action in interaction is shaped by context and is context-renewing because it constitutes a frame for a subsequent action.

Thus, language learning is a contextualized, social, and cognitive phenomenon. This important concept will be introduced and discussed in the current study.

2.4 Language socialization, sociocultural and sociolinguistic theories

This section contains three parts. The first part explains that language learning is not only related to contexts and cognition but also associated with cultural systems. The notions of language socialization and cultural issues will be addressed. That is, for a child, learning a language is influenced by situated social and cultural circumstances. In addition, in the following two sections 3.4.2 and 3.4.3, the major theoretical stance-

socio-cultural theory- and the supportive socio-linguistic perspective will be presented.

2.4.1 Language socialization and cultural issues

The rise from socio-linguistic and contextual to socio-cultural theories in L2 research over the past decades reflects a growing recognition that language learning is a highly complicated process. Among these approaches, language socialization stands for an understanding of the cognitive, cultural and social complexity of language learning (Watson-Gegeo and Nielsen, 2003).

From the perspective of the impact of *socialization into language*, according to Watson-Gegeo and Nielsen (2003), the development of child's linguistic competence is an outcome of the language varieties he is encouraged implicitly if not explicitly to learn for himself, and of the activities that children routinely interact with others. All activities children participate in with others, either adults or other children, are socially organized in cultural meaning systems. Therefore, children learn language in social and cultural contexts which constrain the linguistic knowledge they hear and use. These points can also be applied to L2 adult learners too because there is no context-free language learning, and in all communicative contexts social and cultural dimensions will inevitably affect the specific linguistic forms available or taught and the ways they are represented. In many language classrooms, rather, the influence of the classroom context is often ignored. Most language classroom researchers view classroom contexts as 'unnatural' (Hasan, 2006) even if schooling is a normal and predominant feature of socialization (Watson-Gegeo and Nielsen, 2003).

From the perspective of the impact of *language on socialization*, language socialization research has shown that children learn culture mainly through their participation in linguistically marked events. The acquisition of syntax, semantics, and discourse practices are based on children's socialization in framing and structuring their development of both cultural and linguistic knowledge (Watson-Gegeo and Nielsen, 2003). From a cultural viewpoint, "discourse practices provide a medium through which worldview and social activities are constituted" (Schieffelin, 1990:20).

For many L2 researchers, the analyses of classroom discourse or language behaviours have been grounded on two main theories, sociocultural and sociolinguistic. In the present study, the theoretical framework is based on the former, and the latter will act

as a supporting role to help explore and explain the influences of teacher questioning in EFL classrooms in Taiwan. The characteristics of the socio-cultural and socio-linguistic theories and how they are in relation to the present study will be described in detail in the following sections.

2.4.2 Sociocultural theory

As mentioned earlier, Swain criticizes the limited focus of past psycholinguistic research which stresses given input to learners (Krashen, 1985) and the output produced by learners (Swain, 1985). In her recent research, Swain (2000) points out that this only partially captures some important aspects of the processes in language learning. The input and output do not clearly explicate what actually happened in the language classrooms. Therefore, she suggests sociocultural theory which can deal with the complexity of classroom learning and provide an insight into the moment-by-moment process used by teachers and students in collaborative dialogue (Swain, 1995; 2000). This notion that foreign and second language learning and sociocultural contexts are inseparable is confirmed by dozens of research studies (Chaudron, 1988; Johnson, 1991; Aljaafreh and Lantolf, 1994; Brooks and Donato, 1994; Lantolf and Pavlenko, 1995; McCormick, 1997; Anton, 1999; Anton and DiGamilla, 1998; Wells, 1999; Duff, 2000; Takahashi et al., 2000; McCormick and Donato, 2000; Consolo, 2000; Lantolf, 2000; Mercer, 2001; Pauline, 2002; Watson-Gegeo and Nielsen, 2003; Donato, 2004; Lantolf and Thorne, 2006). Learning language is a constructive process situated in specific cultural and social contexts, which is opposite to the traditional concept of an individual learner acquiring “knowledge and cognitive skills as transferable commodities” (Salomon and Perkins, 1998: 2). Language learning will happen in the teacher-student co-constructed dialogue and socio-cultural theory also offers a proper framework to understand more about classroom language teaching and learning (McCormick, 1997).

Socio-cultural theory appeared during the final decades of the twentieth century from the research carried out by the Russian psychologist Lev Vygotsky (Vygotsky, 1978; Vygotsky, 1981; Vygotsky, 1986) and his colleagues. In sociocultural theory, the linguistic, social, and cognitive developments are viewed as members of a community, which are socio-culturally constructed (Wertsch, 1991; Wertsch and Bivens, 1992; Hall and Walsh, 2002). Wertsch (1990) describes socio-cultural theory is:

a developmental, sociocultural approach to mind. By developmental

I mean an approach grounded in the assumption that one can fully understand mental functioning only by understanding its origins and the genetic (i.e., developmental) transitions it has undergone. By sociocultural I mean an approach that focuses on the institutional, cultural, and historical specificity of mental functioning rather than on universals (P. 112).

That is, human development is inherently linked to the cultural, historical, and institutional settings where it occurs (Wertsch, 1994). In this aspect, learning and development are both social processes and cognitive processes and the occasions for teaching and learning are situated in the discursive interactions between teachers (experts) and students (novices) (Shrum and Glisan, 2000). In the present study, some important characteristics of sociocultural theory will be introduced in order to explain such collaborative teacher–student interaction. They are genetic method, mediation, social and psychological planes, activity theory, primary and inner speech, and the zone of proximal development (ZPD).

2.4.2.1 The genetic method

Vygotsky proposes four genetic domains (phylogenesis, sociocultural, ontogenesis, and microgenesis domains) for proper research on higher mental functions. Among these, most of the research has been carried out in the ontogenetic domains where the focus is on how children integrate and appropriate the semiotic tools, especially language, into their thinking activities as they mature (Lantolf, 2000). It is a historical approach to study something “in the process of change” (Vygotsky, 1978:65) and to understand the origins and transformations the mind has experienced (Wertsch, 1990). Vygotsky thinks that there are two general lines of development within an individual—the natural (biological) line and the cultural (social) line (Vygotsky, 1978; Wertsch, 1985; Lantolf, 2000). The natural line of development generates lower order functions such as natural memory and involuntary attention while the cultural one produces logical memory and voluntary attention. Rather, according to Vygotsky, the point here is to realize how elementary functions become higher order functions through the social line of development (Wertsch, 1985 cited in McCormick, 1997).

2.4.2.2 Mediation

The most important contribution of sociocultural theory is that the human mind is mediated, and higher mental functions, including thinking, planning, problem solving,

learning are mediated by tools (Lantolf, 2000). Mediation is “is understood to be the introduction of an auxiliary device into an activity that then links humans to the world of objects or to the world of mental behaviour” (Lantolf, 1994: 418). There are two kinds of tools: physical (technical or mechanical) and symbolic (psychological) tools (Vygotsky, 1978; Lantolf and Appel, 1994). A physical tool is an externally-oriented device that allows humans to change or influence the external world. A symbolic tool is an internally-oriented device that allows humans to mediate their mental activities. Symbolic tools are diagrams, algebraic symbols, graphs, above all language (Lantolf, 1994), because language “mediates human consciousness and thus imbues us with the ability to organize, control, and alter our mental activity” (Appel and Lantolf, 1994:437). Textbooks, classroom discourse and interaction, teacher and peer assistance, instruction are all forms of mediation provided for language learners in the classrooms (Aljaafreh and Lantolf, 1994; Donato and McCormick, 1997; McCormick, 1997; Anton, 1999; Takahashi et al., 2000; Chavez, 2007).

2.4.2.3 Social and psychological planes

Vygotsky believes that human beings are social by nature, and therefore the development of human cognition first comes through social interaction. That is to say, an individual is born into a society and learns about his world by participating in experiences constituted within that world (Takahashi et al., 2000). Accordingly, Vygotsky formulates the general law of cultural development:

Any function in the child’s cultural development appears twice, or in two planes, first it appears on the social plane, and then on the psychological plane, first it appears between people as an interpsychological category, and then within the child as an intrapsychological category. This is equally true with regard to voluntary attention, logical memory, and the formation of concepts, and the development of volition.

(Vygotsky, 1981:163)

Therefore, the development in children proceeds from the social (intermental) domain to the individual (intramental) domain as “a consequence of the linguistically mediated interaction” (Aljaafreh and Lantolf, 1994: 467) between children and more experienced members, including parents, teachers or older peers. That is, there is a dialectical relationship (Mercer and Littleton, 2007) between the intermental and

intramental, so that the child's understanding of the world develops through interaction with others. The process from external or social functions into internal or mental functions is called as 'internalization' or more properly for sociocultural theory, 'appropriation' (Newman et al., 1989:64). It is the process where patterns of activity on the social plane come to be executed on the psychological plane of an individual, and it is a strong connection and transference from the interpsychological plane to the intrapsychological plane (Wertsch, 1985).

2.4.2.4 Activity theory

The basic explanatory framework to understand how mediated minds are formed is activity theory. Activity theory is seeking for causes of human behaviours, and views causality as "a disposition to respond to certain conditions in certain ways" (Harre and Gillett, 1994:120). The disposition comes from individual 'motives', which are structured culturally, and validated discourse which organizes our world on account of certain meanings. And these motives are reflected by 'goals' (Harre and Gillett, 1994). From the sociocultural viewpoint, Lantolf and Pavlenko (1995) states that learning a language entails more than simple competence in the linguistic forms of the target language. "It encompasses the dialectic interaction of two ways of creating meaning in the world" (p.110) both intrapersonally and interpersonally. The creation of meaning is a process that comes from dialogue, either with the self or with others. Based on this stance, the traditional term, sentence, which focuses on speaker and hearer and "extracts them from their world" (P.110) should be replaced by another term, utterance, which is "the dialogic output of real speakers and listeners engaged in real goal-directed activities" (p.110). That is to say, language learning does not happen in the head of an individual. Rather, it is situated in the dialogic interaction that occurs between individuals engaged in goal-directed activities (Artigal, 1992; Lantolf and Pavlenko, 1995).

2.4.2.5 The Zone of Proximal Development (ZPD)

The most notable symbolic tool, language, mediates the transformation of basic mental functions into higher mental functions (or from the social plane to the psychological plane). Speech serves to direct and mediate the interactive process between two people, experts and children (Lantolf and Appel, 1994). To describe a child's mental development, Vygotsky (1978) distinguishes the difference between the child's actual and potential levels of development. The former characterizes the child's ability to perform a task without the help of another person. The latter development

characterizes a task a child can carry out with the assistance of another person. The distance between these two developments is ZPD:

It is the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers

(Vygotsky, 1978:86)

This cognitive gap, in Pauline's (2002) term, is the distance between what a child (a novice) can do unaided and what the child can do in joint coordination with a more skilled expert (an adult or more capable participant) and can be regarded as a better and more dynamic indicator of cognitive development than what a child accomplishes alone (Palincsar, 1998). Cognitive development occurs as a novice and an expert engage in dialogue interactions in which the expert guides the novice in accomplishing the given tasks. Through their interactions over time, learners internalize the skills and abilities needed and can perform independently (Takahashi et al., 2000). The shift from aided performance to unaided ability demonstrates the beginning of the child's control over his own behaviour, which is called self-regulation. Thus, cognitive development is an issue of individual children gaining symbolically mediated control over their own mental process. Here the role of language in the internalization process as the primary symbolic artifact is crucial (Lantolf and Appel, 1994).

2.4.2.6 Private speech externalizes inner speech

Socio-cultural theory also characterizes that learning is facilitated by the learner's use of internal or external dialogue (Ellis, 1997). The primary (ontogenetically earlier) function of speech is communicative. Speech mediates our relationships with others. The secondary (egocentric) function of speech is intrapersonal. That is, the use of speech mediates our relationships with ourselves (Lantolf and Pavlenko, 1995). The egocentric speech plays a functional role in the development of mental activity. It later on goes underground and transfers into inner speech. Because one's development is conceived of as dynamic and unstable, the inner speech does not remain underground forever, and does resurface as private speech (Lantolf and Appel, 1994), the externalized form of inner speech (Anton and Dicamilla, 1999) and one type of thinking aloud (Shrum and Glisan, 2000), which can be seen as one attempts to

re-obtain control over his own cognitive functions to carry out the given task (Lantolf and Appel, 1994).

2.4.2.7 The application of Sociocultural theory to educational research and classroom interaction

When considering socio-cultural theory for the study of teaching, learning and development in classroom interaction in educational contexts, some issues are emerging. First, the development of socio-cultural theory of mind requires “careful attention to the institutional context of social interaction” (Minick et al., 1993:06). Cultural institutions, for example schools and classrooms, construct the interactions that occur between people. Human development is not separated from them but is organized within these institutions.

Second, language has a special and important role in human development (Mercer, 2001), and it is tightly linked with specific social institutions and with particular social practices (Minick et al., 1993). Mercer (2001) thinks language has three important functions: a) a cognitive tool which enables children to process and organize the knowledge; b) a cultural tool in which knowledge is shared between individuals; c) a pedagogic tool which provides intellectual guidance to children by other people.

Third, “Education is a dialogical, cultural process” (Mercer, 2001:254). The development of students’ knowledge is co-constructed by their relationships in interactions with teachers and other students and by the culture which these interactions and relationships are situated. Students’ educational attainment is achieved in part under their own control and in part under the control of their teachers. This is why the following socio-cultural concept of ‘scaffolding’ is useful.

2.4.2.8 Scaffolding

The original concept of scaffolding is operationalized by Wood et al., (1976). This metaphor here is used as the steps taken to reduce the degree of freedom in carrying out some given tasks so that the child can focus on the difficult skills he is in the process of acquiring (Bruner 1978 quoted in Pauline, 2002). This process does not only happen internally. Sfard (1998) points out that the concept itself is the metaphor of learning as participation, not learning as acquisition and accumulation of knowledge in individuals. It is in social interaction where a more able participant can create, in the form of speech, supportive conditions in which the less able novice can

participate and extend current knowledge or skills to higher ones (Greenfield, 1984; Donato, 1994).

Scaffolding is the process in which experts assist novices with achieving a goal or solving a problem that novices could not achieve or solve alone (McCormick and Donato, 2000). Its help is characterized by six functions (Wood, Bruner and Ross, 1976), which are re-described by several researchers (Donato, 1994; McCormick, 1997; Shrum and Glisan, 2000).

1. Recruitment: drawing novices' attention and interest in the tasks.
2. Reduction in degrees of freedom: simplifying the task and allowing the novices to reach a solution.
3. Direction maintenance: keeping learners motivated and maintaining novices' pursuit of the goals.
4. Marking critical features: Making critical discrepancies between what had been produced and the ideal solution.
5. Frustration control: Controlling frustration and face saving for learners' errors.
6. Demonstration: demonstrating idealized procedures to perform acts or achieve goals.

In classrooms, scaffolding can refer to the “temporary, but essential, nature of the mentor’s assistance” which is supportive for learners to carry out the tasks successfully (Maybin et al., 1992: 186). In addition, scaffolding is temporarily provided assistance until a learner knows how to do the tasks alone (Pauline, 2002). At this moment, it indicates that the child has ‘internalized’ the dialogical assistance provided by the teacher in the previous scaffolded episode of a knowledge co-constructed activity (Donato, 1994).

2.4.3 Sociolinguistic approach

Before sociocultural theory, many researchers have extensively studied the interaction between teachers and students in classrooms from the aspect of a sociolinguistic approach. In the present research, the sociolinguistic approach will be viewed as a supplementary method to explain two issues: asymmetric power distribution between the teacher and students and the use of learners' native language.

2.4.3.1 Asymmetrical power distribution

The belief that discourse patterns in language classrooms are unnatural and are under control of the teacher is widespread (Burton, 1981; Kramsch, 1985; Musumeci, 1996; Stables and Wikeley, 1999; Walsh, 2002; Seidlitz, 2003; Burns and Myhills, 2004). In fact, teachers talk most of the time, initiate most exchanges through display questions, and rarely request speech modification from students. As Musumeci (1996:314) states that “teachers...speak more, more often control the topic of conversation...and appear to understand absolutely everything the students say, sometimes before they even say it”. Besides, in classrooms teachers usually follow a plan of predetermined actions with their views of teaching and learning and teaching objectives. Teachers not only manipulate classroom interaction through a pre-designed agenda but also play a significant role in topic management (Burton, 1981) and control the interpersonal relations in the classroom through the allocation of speaking rights (Cazden, 1988).

On the basis of the sociolinguistic theoretical stance and the combination of discourse analysis and ethnographic procedures, Westgate et al. (1985) claim that the structure of teacher-fronted interaction in language classrooms may cause learners’ de-motivation. In this study, little interactional space is being granted to the students. The lessons are characterized by exemplification rather than explanation. This leads to a lack of content and makes the talk very unnatural. The students, according to Westgate’s observation, require some survival skills, which amount to attempts at avoidance of talk, to deal with within such classroom settings. As Stables and Wikeley (1999) conclude it is the “differentials in power relationships” between teachers and students which contribute to demotivation and poor behaviours on the part of students.

2.4.3.2 The use of learners’ native language and code-switching

From a view of recent discourse analysis studies, how much, when, and why language teachers should use the L1 and TL in their pedagogy is still highly contested. According to Macaro (2001), there are three positions of L1 use in language classes:

- a) The Virtual Position: In order to make the classroom a target language environment, the exclusion of L1 is necessary. L1 use is of no pedagogical value.
- b) The Maximal Position: L1 use is of no pedagogical value. However, perfect teaching and learning conditions do not exist so that teachers have to resort to L1.
- c) The Optimal Position: L1 use is of some pedagogical value. Some aspects of

learning may be enhanced by the use of L1. There should be an exploration of pedagogical principles regarding in what ways L1 use is judicious.

The L2-only position dates back to the 1880s, when most teaching methods adopted the ‘direct method’ of avoidance of L1 use (Cook, 2001). Besides, other contemporary methods such as the ‘total physical response method’ (Asher, 1993) and the ‘natural approach’ (Krashen and Terrell, 1983) have embraced second language exclusivity. Influenced by Chomsky’s theory of innate language acquisition, it is claimed that comprehensible language input triggers language acquisition. Teaching entirely through the target language makes the language real and allows learners to develop their own in-built language systems (Macaro, 2001). However, this position has been questioned by many language researchers (Van Lier, 1995; Macaro, 1997; 2001; 2003; Turnbull, 2001; Cook, 2001).

At the risk of overgeneralization, two positions guided by Liu, Ahn et al., (2004) are framed in the present research: exposure to TL input is important (exclusive or maximal use of TL) and L1 use is useful.

2.4.3.2.1 Exposure to TL input is important

Generally speaking, there are two reasons why target language should be used maximally or exclusively. Firstly, from second language classrooms where TL use influencing student motivation for TL learning has been acknowledged. According to the findings in Turnbull’s (2001) experience in a French as a second language class, his students felt that they had learned more at the end of the year on account of his insistence on maximizing French use in his class. MacDonald (1993) states that teachers should use the target language as much as possible for motivational reasons since students can see how knowledge of TL will be immediately useful for them. This motivation will lead to enjoyment and success, two important factors for language learning, and this cannot be done by relying on too much L1 in classes (McDonald, 1993).

Secondly, the proponents of exclusive or maximal TL use believe that the amount of TL input makes a difference to learners’ target language learning (Larsen-Freeman, 1985; Lightbown, 1991), especially when the teacher is the sole linguistic model for the students and their main source of TL input (Krashen, 1982; Turnbull, 2001). The teacher should provide a rich TL environment in which “not only instruction and drill are executed in the TL, but also disciplinary and management operations” (Chaudron,

1988:121). Otherwise, the teacher is said to “deprive the learners of valuable input in the L2” (Ellis, 1984:133). The “valuable input” here is language that is contextualized and modified according to students’ levels and it is inductive for clarification requests from students (Ellis, 1984). In addition, an integral part of language learning is trying to discover what others are saying. Thus, translation causes two problems. Before target language is translated into native language, it is un-modified, and the learners tend to ignore the TL when they have an alternative to figure out the meaning in their first language (Wong-Fillmore, 1985).

2.4.3.2.2 L1 use is useful

Cook (2001) argues that the long-held tradition of discouraging the L1 in the target language classroom limits the ‘possibilities of language teaching’ (Macaro, 2001) because the sole use of L2 obstructs the rapid connection of words with thoughts, slows down acquisition of meaning in L2, and on account of retarding acquisition of meaning, sole “L2 limits growth in concept development” (Skinner, 1985:383) and denying students access to the L1 deprives them of them an invaluable cognitive tool (Swain and Lapkin, 2000).

Arguing against the notion that a teacher who uses the L1 for classroom interaction is depriving the students of their only experience of the L2 that they will not encounter outside classrooms, Cook (2001) claims that is a logical mistake. It is important for students to develop strategies to work out the meanings of L2 from realistic classroom contexts, but “these actualities are not necessarily incompatible with L1 use in the classroom” (Cook, 2001). Van Lier (1995) also contends that the teacher’s use of learners’ first language helps to create more salient input for the learners. In addition, from interactionist theory, input alone is not enough for language learning to take place. To make language input *intake*, L2 learners need to interact with others to negotiate the meaning of input (Long, 1996) and produce output (Swain, 1985). L1 is an essential tool in the language learning process for L2 learners when they interact with peers and their teachers (Villamil and De Guerrero, 1996) and using L1 on the part of learners also creates a cognitive and social space in which they can work effectively to enhance their learning (Anton and DiGamilla, 1998). L1 use indeed deserves a place in the classrooms (Cook, 2001).

Macaro (2001; 2003) believes that most language researchers view the terminology, ‘the use of the L1 in the classroom’ as pejorative. He strongly recommends that ‘resort to L1’ (or recourse to L1) or translation (using the first language as a base for

understanding and/or producing the second language, Chamot, 1987:46)) should be replaced by the more positive terms, ‘codeswitching’ (switch between two or more languages (Macaro, 2003:42)) or ‘alternance’ used by French language researchers (Macaro, 2003). However, in the following sections of research, all terms will be used, since L1 use has its particular functions, which are acknowledged in this research. In some situations, when target language alone cannot achieve success, ‘a supportive resort to L1’ is positive for language learning.

2.4.3.2.3 Codeswitching in Bilingual, ESL and foreign language classrooms

In fact, the resort to L1 has been well documented in many sorts of language classrooms, including bilingual, ESL and foreign language classrooms. Unfortunately, most research studies in these classrooms are influenced by two wrong concepts: L2 learners are often compared to L1 users, and becoming a native-like speaker is the final goal for L2 language learning (Cook, 1997). However, L1 children achieve native speaker competence in one language; L2 users achieve competence in more than one language (Cook, 1997). However, they should not be treated as identical (Cook, 2001). The second wrong concept can be traced back to traditional bilingual education in the United States (Jacobson, 1990). In traditional bilingual education, the first and second language should be learned and kept separately since the two languages form distinct systems in the mind (Weinreich, 1953, cited in Cook, 2001). That is, L2 learning should occur solely through the L2 instead of linking to the L1. However, this is criticized because the two languages are interwoven in the L2 user’s mind in vocabulary, syntax, phonology and pragmatics (Beauvillain and Grainger, 1987; Obler, 1982; Locastro, 1987, cited in Cook, 2001). L2 use is characterized by code-switching in which both languages are simultaneously on-line.

Teachers’ code-switching behaviours have been addressed in bilingual, ESL, and foreign language research (Piasecka, 1988; Duff and Polio, 1990; 1994; Macaro, 2001). In his study of ESL classrooms, Piasecka (1988) suggests that teachers’ use of students’ native language in Poland is a joint decision between the teacher and students. Piasecka lists some possible occasions for using students’ native language, including classroom management, presentation of grammar, discussion of cross-cultural issues, the assessment of comprehension. Duff and Polio (1990) did a quantitative study to examine the use of native language (English) in thirteen university foreign language classrooms in United States. They find that even if these teachers are all native speakers of the target language, there is variation among teachers in the amount of target language spoken in the classroom, ranging from

10-100%. In 1994, in order to determine the functions for which English is used in classes, a qualitative study of foreign language classrooms, following their first study was conducted. These two researchers identify eight categories of English use: such as administrative, vocabulary, indexing solidarity, and grammar instructions. Native language practice provides translations of unknown target language vocabulary and remedies apparent lack of student comprehension as well (Polio and Duff, 1994).

Compared with teachers' native language use, L1 use of students is often viewed as a problem which should be avoided (Scrivenor, 1994) and most language teachers' views are not in favor of it (Liao, 2002; Liao, 2006). However, more and more studies have suggested a positive and facilitative role of L1 transfer in students' language learning (Kern, 1994; Husain, 1995; Pince, 1996; Cohen and Brooks-Carson, 2001). Based on Vygotsky's (1978) sociocultural theory, Anton and DiCamilla (1998) claim that the L1 use of learners, as a cognitive tool, scaffolds his/her language learning. Brooks and Donato (1994) argue that using L1 helps learners to produce the TL and also sustain interactions in the TL. Swain and Lapkin (2000) report that there are three reasons for L1 use by students: increasing efficiency, facilitating interpersonal interactions and focusing attention, which in turn enable students to accomplish their tasks more successfully.

2.4.3.2.4 Codeswitching in EFL classrooms

A few 'English-only' classes can be traced back to the colonial and neocolonial eras when English is a means to spread control all over the world by the British (Liu et al., 2004). However, such practice has been criticized as a form of 'linguistic imperialism' (Philipson, 1992) or 'cultural imperialism' (Abbott, 1992) and as a tool for excluding those who do not speak English (Auerbach, 1993). In EFL classroom settings, English is studied as a foreign language and the teacher and students share the identical mother tongue. Therefore, L1 use is inevitable. Nizegorodcew (1996) displays some features of the shared L1 between the teacher and students in Polish classes of English as a foreign language. Nizegorodcew believes that the use of the shared L1 alleviates some power from the teacher and makes classroom interaction less formal. The observed teachers who perceived difficulty among their students tend to use the students' first language, in her research. She suggests that the native language should not be avoided utterly in the classroom since it provides a sense of security and comfort to students.

Besides, internationally, there has been general acceptance that English native speaker teachers are no longer pervasive (Cook, 1999; Graddol, 1999) and an increasing view

that the non-native-speaker teacher is more in tune with students by sharing his or her history of learning and mental characteristics (Tang, 1997; Medgyes, 1999). This is reinforced by Tarnopolsky (2000). Language learning in communication does not mean only input, output or intake of verbal information since it is bound up with social and cultural norms of that given community. It is necessary to teach L2 learners rules of speaking or sociolinguistic behaviours which are proper to the target language native speakers (Wolfson, 1989) and to develop learners' ability of 'biliteracy' (Hombberger, 1996).

There are three kinds of necessary communicative behavioral patterns which have to be learned in the interaction of a given community in order to reach this competence: a) verbal communicative behavioral patterns; b) non-verbal communicative behavioral patterns such as whether it is required or not to shake hands on meeting; c) lifestyle communicative behavioral patterns which reflect ways of doing simple everyday things that are done differently in different cultures (Tarnopolsky, 2000).

According to Tarnopolsky, the first type can be taught in ESL or EFL classes by both native and non-native speaker teachers. However, the second and third types can only be taught in EFL classrooms by non-native speaker teachers because the native speaker teachers of English acquired these two communicative behavioral patterns naturally and unconsciously and they did not 'learn' these in classes. EFL teaching "...lies in the requirement to pay much greater attention to developing target culture communicative behavioral patterns (first of all, non-verbal and lifestyle ones) on the basis of comparing them to those of the home culture" (Tarnopolsky, 2000:32). There is no sense in excluding such explicit interlingual comparison. Therefore, it is through the native language, the common knowledge between the EFL teacher and students can facilitate English language learning. As Stern (1992) says, the new language is learned on the basis of a previous language.

Recently, the 'interlingual' (Tarnopolsky, 2000), 'multilingual' (Blyth, 1995) or 'multicultural' (Crawford, 2004) awareness, the result of interlingual comparison, on the part of language learners has been emphasized by researchers or teachers. It is believed that interlingual awareness of students can foster the use of language transfer strategies (Gabrys and Solska, 1997, cited in Tarnopolsky, 2000). Students will know the 'bilingual mode' of the L1 and L2. That is, these two languages should be used simultaneously instead of the 'monolingual mode' in which they are used separately (Grosjean, 1989). Learners need awareness to switch from one language to the other language in accordance with speech functions, rules of discourse (Cook, 1996), and

when they do so, they achieve ‘international literacy’ (Grawford, 2004). Although their attainments are not like those of real English native speakers, they can use both languages in proper communicative conditions. EFL learners have ability to become global citizens in an interdependent world since they learn the global *lingua franca* successfully (Grawford, 2004).

2.4.3.2.5 The uses of native- language questions in language classrooms

In Shrum and Tech (1985)’s observations in first-year English high school Spanish and French classes, they find the duration of post-solicitation wait-time after native-language (English) solicitations is significantly longer than after target language solicitations. There are two possible explanations for this result: a) students think more efficiently in the target language; or b) solicitations in the target language are of a lower cognitive processing level, therefore they require less thought. According to the first explanation, students may use the increased wait-time after English solicitations to change from target to native language. Students are thinking in the target language and the switch to English is a distraction. The second explanation implies that the target language questions are still used principally for drill and mechanical manipulation. Teachers and students are spending most of their time on skill acquisition rather than real language use for communication.

In addition, in Moritoshi’s (2006) analysis of one English language class, through classroom conversation examples, he explains language teachers’ teaching behaviours in terms of teachers’ questions, modifications and feedback. The interesting explanation in his research is that Moritoshi classifies first-language (Japanese) questions as a kind of modification and the target-language questions are mostly repeated and modified initially in Japanese.

In fact, in the researcher’s own view, research on the role of first language and questioning behaviours in language classes exists as two separate fields, rarely interacting. Few studies look more closely at the combination of language choices and questioning behaviours. This unique feature will be examined in the present study to explore how EFL teachers use language in their questioning behaviors and how both native and target language questions help teachers to achieve their teaching goals.

2.5 Literature on teachers’ teaching and learning goals

Since this research is associated with teacher question-asking behaviours in EFL classrooms, which are assumed in relation to teachers' teaching and learning goals, it is necessary to review the literature about teachers' teaching and learning goals and their teaching practice.

Wells (1996) points out that teachers' teaching and learning goals which are related to actions must be viewed as two different processes. The first type of teachers' teaching and learning goals is pre-established. That is, these pre-determined goals are prior and constant through instruction. They are often situated in curricular units and related activities planned to realize curricular outcomes. On the other hand, unplanned and spontaneous teaching and learning goals may appear, through negotiation, during class activities such as peer work or group work in which students execute instructional tasks established by teachers.

Considerable research studies on teaching have indicated that there is indeed a relationship between teachers' teaching and learning goals and their instructional behaviours (Olson, 1981; Roehler et al., 1988; Richardson et al., 1991; Thamraksa, 1997). Olson (1981) argues that teachers often modify their instruction to reflect their teaching and learning goals for students. In the study of the implementation of a new science curriculum, Olson (1981) reports that the teaching and learning goals of the developers of the English Schools Council Integrated Science Project are different from those of the teachers who are asked to implement this project. The purpose of this project is to develop the 'thinking ability' of the students but getting students through their examinations is viewed as the superior goal by the teachers. On account of their different educational teaching and learning goals for students, teachers translate the new curriculum into their familiar practices. Therefore, 'discussion' became 'lectures' or 'recitation' and 'intellectual skills development' became 'examination rehearsal'. The teachers translate the curriculum into their expected teaching and learning goals for students. Additionally, Shrum (1985) also reports that teachers wait for a longer time when posing questions towards high and low performers. On the one hand, the teachers pause longer for the more able students since they expect that they can produce a worthy response if they get sufficient time to formulate a response. On the other hand, they also wait for low performers as they have an impression that these students require more time to think. That is to say, on the basis of students' abilities, the teachers often modify their instructional behaviors to different students to reflect their teaching and learning goals. Additionally, in Shrum's study, she also raised another important issue: the more difficult questions may be directed to the more able students, which leads to the unequal distribution of

teachers' questions (Cross-refer to 2.2.1.7).

According to Buck et al. (1992), instructional practice will be influenced by teachers' perceptions of the culture of the school. By school culture they mean teachers can perceive the dominant values, beliefs, and goals within the school. These values may be conveyed to teachers implicitly and explicitly through school policies and procedures (Buck et al., 1992). In addition, some researchers have reported that school policies which require standardized tests to assess student performance and teacher effectiveness lead to 'teaching to test'. When standardized tests are employed as the major measure of both teacher and student competence, the goals of teaching and learning become to prepare students to do as well as possible on the test (Frederiksen, 1984; Corbert and Wilson, 1989).

Even if teachers' teaching and learning goals are influenced by school culture and they often modified their goals into their instructional practice, it can be confirmed that teachers' expected teaching and learning goals are in relation to their classroom practice. In his study of the implementation of individualized, personalized learning styles in the classrooms, Elliot (1976, cited in Thamraksa, 1997) finds that, through classroom observation, these teachers were goal-directed, since they focus on a set of teaching and learning goals that give meaning to what they do in the classroom. This is supported by Leontiev (1981). Within activity theory, "classroom events are best understood as [goal-directed] actions" (Leontiev, 1981:76).

2.6 Literature on learners' responding behaviours

Answering orally to spoken questions is crucial both for language teachers and students. Teachers can use learners' responses to modify expression and content in the following teacher talk (Nunan, 1990) and in turn to pave the way for teaching development (Suk-a-nake et al., 2003). From the perspective of learners, Ellis (1992) points out that responding serves as a means to obligate learners to make contributions to classroom interaction with communicative language. It is necessary to study the students' oral responses to spoken questions.

In White and Lightbown's study (1984), these two authors provide a series of steps to explain the responding behaviour of learners in ESL settings. According to White and Lightbown, there are four steps in answering a teacher's question. Firstly, this question needs to be understood. A native speaker of L2 can do this with facility, but a second

language learner may need to analyze consciously some or all of the sentence components before he knows what it means. Secondly, he has to retrieve the information he needs to answer from long-term memory, and sometimes this retrieval takes a longer time to do. The third step is to formulate the answer—putting it into words. For the native speakers, it is spontaneous. Nevertheless, L2 learners often need time to find the appropriate words and then to organize them in the response. In the final step, L2 learners need to activate the muscles in order to produce the answer out loud. Decisions about pronunciation have to be made prior to or during the actual responding. They conclude that the responding of L2 learners is a time-consuming and complicated activity (White and Lightbown, 1984). Besides, different learners have different responding patterns. Studies reveal that cognitive styles, one's information processing habits, may be extremely pivotal in determining the learner's success in a given task. Some 'impulsive' learners tend to provide the answer that they come up with first even if it may be incorrect. Some 'reflective' learners tend to ponder all possibilities before an answer is decided (Meredith, 1978).

In Suk-a-nake's et al. (2003) case study of Thai EFL university learners' oral responses to spoken questions, the findings reveal that the use of high-level questions (asking for opinions, evaluation, and judgments on things) is an effective way to elicit longer answers from students. This echoes the results addressed in Brock (1986), Nunan (1987), and Wintergerst (1994)'s studies. Brock finds significant differences between display (low-level) questions and referential (high-level) questions in regards to the length and syntax of the responses elicited from students. Students' responses to display questions were shorter and syntactically less complex, while their answers to referential questions were longer and syntactically more complex. Nunan reveals that learners' responses to display questions are shorter than those to referential questions. In addition, students' responses to referential questions generate a greater amount of genuine communication which often resembles that found in naturalistic settings. According to Wintergerst, teacher questions which elicit longer and more syntactically complex responses contain the following features: wh-questions, either/or questions, and most importantly referential questions that the teacher does not know the answer beforehand. That is, most language researchers classify learners' longer or more syntactically complex responses as evidence of high-level cognitive answers. However, in this research, the use of learners' mother tongue in response to questions is also viewed as a communication strategy which helps learners to contribute to classroom conversations and simultaneously enhances their foreign language learning and cognitive development.

In fact, the notion of ‘communication strategies’ was originally submitted by Tarone (1977) to examine how L2 learners manage to communicate in a second language when they have limited target language knowledge. According to Tarone (1977), there are five communication strategies including avoidance, paraphrase, appeal for assistance, and conscious transfer, but in Tarone’s explanation of this strategy, conscious transfer (learners’ L1 use) has negative effects. However, in Nizegorodcew’s (1996) study, she looks at the native language use in learners’ communication strategies and finds that learners’ appeal for assistance in L1 will give learners a greater sense of security. This cannot be done in the target language.

Another similar notion is learner strategies. L2 learners’ use of translation (transfer from one language to another) as a strategy to facilitate their language learning has been well addressed in foreign language research studies (Prince, 1996; Wen and Johnson, 1997; Hsieh, 2000; Cohen and Brooks-Carson, 2001). Macaro (1997) distinguishes a communication strategy from a learner strategy. Macaro states that the former helps learners to speak and keeps a conversation going while the latter helps them to learn. However, other researchers claim translation helps L2 learners to speak and learn at the same time. Naiman et al. (1978:14) identify a major characteristic of Good Language Learners—“refer back to their native language (s) judiciously (translate into L1) and make effective cross-lingual comparisons at different stages of language learning”. It appears that learners very often use translation as a learning strategy to comprehend and produce a foreign language. Corder (1981) also proposes and reframes the concept of negative L1 *interference* as *intercession* in order to positively view learners’ use of L1 as a strategy of communication. Other similar suggestions and findings have been found by Chamot (1987) and Liao (2006).

In addition, as mentioned earlier, the claim of using learners’ L1 to facilitate language learning and cognitive development is supported by many educational researchers based on Vygotsky’s (1978) sociocultural theory (Brooks and Donato, 1994; Anton and DiCamilla, 1998; Swain and Lapkin, 2000). This research will examine, in teacher-student social exchanges, how students respond to teachers’ questions and how their native language use in their responding contributes to their English language learning in EFL classrooms in Taiwan.

2.7 Other factors influencing learners’ speaking and responding

Wintergerst (1994) finds that activity types (grammar and discussion) and learners’

language proficiency (beginner and advanced) might influence the amount of student talk in class. Mora (1995) claims that in addition to familiarity with the topics, the students' background knowledge, personal circumstances, and cultural constraints are possible factors affecting their responding. Speaking, especially, an unfamiliar foreign language in public is often anxiety-provoking and probably leads to discouragement and a sense of failure (Young, 1990; Loughrin-Sacco, 1992; Shrumin, 2002). Some Asian students in language classrooms are concerned with how they are judged by others and are afraid of making mistakes or 'losing face' (Liu and Littlewood, 1997; Jones, 1999) in front of their classmates. Similar findings have been documented in a large number of ESL and EFL classrooms. Asian students (especially East Asian) learners of English as a foreign/ second language have been reported as reticent, passive, quiet, and shy learners. These students are often labeled as not willing to give responses and are over-dependent on the teacher (Flowerdew and Miller, 1995; Tsui, 1996).

Some researchers attribute Asian students' reticence to 'Confucianism' (Scollon and Scollon, 1995; Kennedy, 2002). The legacies of the Chinese philosopher and educator, Confucius, (551-479 BC) have influenced cultures not only in China but also in other Asian countries for more than two thousand years (Cortazzi and Jin, 1996; O'Keefe and O'Keefe, 1997). The major tenets of Confucian legacies include "respect for hierarchy and age, group orientation and preservation of face...Confucian imperative of working to achieve harmony, to which all others goals are subordinate" (Chen and Pan, 1993:13, quoted in O'Keefe and O'Keefe, 1997). Students in Asian countries respect their knowledgeable teachers. Obedience to authority, passivity in class, and lack of critical thinking (Kumaravadivelu, 2003) on the part of students are all indications of this respect.

However, more and more researchers criticize this explanation and view it as a 'cultural stereotype' and a 'questionable myth' (Liu and Littlewood, 1997; Cheng, 2000; Kumaravadivelu, 2003; Tani, 2007). They provide some opposite research findings. Firstly, students' passivity does not only occur in classrooms in Asian countries. In some research, English speaking North American students do not actively participate in classroom interaction since they also experience some kind of anxiety when learning other foreign languages (Kumaravadivelu, 2003). In addition, some studies in language classrooms in Asian countries also find that students are active and enthusiastic to participate in classroom conversation and to respond to teachers' questions (Littlewood and Liu, 1996; Liu and Littlewood, 1997). The statement that Asian students are passive is obviously over-generalized. As Cheng (2000) claims

some researchers in *some* studies allege *some* Asian students are passive and reticent, but it does not mean *all* Asian students are passive and reticent in *all* classrooms. In addition, Cheng (2000) also argues that Confucius does advocate respect for knowledgeable persons, and nobody can see anything wrong with this deserved respect. However, respecting knowledgeable teachers does not mean students should be quiet and be reluctant to respond to teachers' questions in the classroom. He concludes that the idea of Asian ESL/EFL learners' reticence and passivity is a myth rather than a universal truth.

For the researcher, both sides of this debate have their valuable viewpoints. I agree that the allegation that Asian students in EFL/ESL classrooms are passive and reticent is a dangerous over-generalization. I also believe that active participation is very important in language learning. However, based on my fifteen-year learning experience in classrooms in Taiwan, among my classmates I have observed, few are active to participate in classroom activities, but most of them are indeed reticent and passive not only in English but also in other content classrooms. Some research will interpret these individuals' silent and passive behaviours from psychological perspectives such as motivation, or self-confidence. However, some researchers claim that these psychological effects are often influenced by external social factors and settings (Clement, Dornyei, and Noels, 1994; Peirce, 1995).

Peirce (1995) suggests that, for language learners, 'motivation' should be thought of as 'investment' which signals that learners intend to invest in learning a target language in order to increase their cultural capital and to capture the relationship between them and the changing social world. Experiencing several years of English teaching in universities in Taiwan, Babcock (1993) explains that teaching and learning in Taiwan are deeply influenced by tenets of Confucianism and Chinese cultures. "Man exists through, and is defined by his relationships to others" (Babcock, 1993:05). Self-confidence is related to the concept of 'face' in Taiwanese society. According to Lii-shin (1990, quoted in Babcock, 1993), the concept of face has its meanings about how individuals viewed themselves socially in front of others. That is, in Taiwan, classmates' judgments will influence individual learners' self-confidence in the classrooms. Self-confidence is an individual affective factor but it is also socially grounded.

Confucianism and the Chinese culture influence the society in Taiwan in many ways. Nevertheless, I think both 'culture' and 'society' are living things and will be adapted and changed according to other political, historical, geographic factors over time.

Even if Taiwanese society is deeply influenced by Chinese Confucianism, it does not mean Taiwanese culture is identical to Chinese Culture. That most of the Taiwanese students are quiet in the classrooms cannot be explained simply either by individual psychological affective factors or by the Chinese culture and Confucianism. In this research, the researcher would like to explore how Taiwan socio-cultural factors and the dynamic classroom settings influence individual learners' responding and speaking behaviours in English classrooms in Taiwan.

2.8 Literature review in relation to research questions and methodology

In this section, I would like to illustrate how the research questions are generated from previous literature reviews.

2.8.1 Research question one: What kind of learning opportunities does teacher questioning generate in the classroom?

As mentioned earlier, most present educational research on classroom questioning has been grounded in the process-product (quantitative) paradigm (Alcon, 1993; Barnette, Orletsky, and Sattes, 1994; Edwards and Bowman, 1996; Tasaka, 1998; Ozerk, 2001; Shomoossi, 2004). However, this paradigm has been criticized by other researchers who emphasize the contexts in which the classroom questions occurred should be examined rather than simply counting and classifying teacher questions over lessons (Farrar, 1986; Banbrook and Skehan, 1990; Carlsen, 1991; Wong, 1991; Shore, 1994). A research that takes an in-depth look at the role of teachers' questioning in teacher-student conversations is needed in language classrooms (Hsu, 2001). Therefore, in Hsu's research study, he adopts a data-driven, qualitative research design based on conversation/discourse analysis methodologies guided by a sociolinguistic perspective to interpret classroom questions within the discourse contexts and to allow a fuller account of the purpose, functions and the effects of the questions being asked. In addition, he finds that the teachers in his study use questions to scaffold learner output in problem-solving situations and he suggests that a sociocultural framework is supportive for data analysis and interpretation.

As a matter of fact, extensive research has been conducted from a sociocultural framework: some focus on student-student interaction (Villamil and Guerrero, 1996; Kobayashi and Kobayashi, 2004); some focus on teacher-student interaction from many perspectives, e.g. playfulness, repetition and feedback (Aljaafreh and Lantolf,

1994; Anton, 1999; Sullivan, 2000; Duff, 2000; Burns and Myhill, 2004). By transcribing and analyzing the observed and video-recorded or audio-recorded data, these teacher-student research studies demonstrate that language use between the teacher and students serve as scaffolding and provide effective assistance when learners progress in their zone of proximal development.

Triggered by the above research, the first research question in the present study emerges: How do the teachers' questions influence student language learning? Through this research question, the researcher tries to analyze the interactional purpose of teacher questions and to see if teachers' questions scaffold Taiwanese learners of English to shift from their current language competence to more advanced levels.

2.8.2 Research question two: When and why do the teachers employ code-switching strategies in their classroom questioning?

As discussed earlier, except a few 'Only English' EFL classrooms (Burden, 2000), the use of students' native language in teachers' teaching behaviours is inevitable. However, little research explores this issue since most EFL language learning theories are borrowed from pervasive ESL classrooms where the concept of the 'virtual use' of English (Macaro, 2001) is followed and, most importantly, the teacher does not share the same native language as the students in ESL classroom settings. English is a lingua franca (Seidlhofer, 2004; Burns, 2005; Snow, Kamhi-Stein, and Brinton, 2006), a language of communication worldwide. It is worth examining teacher language choices for questioning in classrooms in non-English speaking countries to which, compared with ESL classrooms, little attention has been paid. Therefore, this leads to the second research question, when and why do the teachers employ code-switching strategies in their classroom questioning?

Considerable research has examined how much and in which contexts teachers use the TL and the L1 in SL and FL classrooms (Duff and Polio, 1990; Polio and Duff, 1994; Macaro, 1997; 2001; Turinbull, 2000; Rolin-Ianziti and Brownlie, 2002; Liu et al., 2004). Liu et al. (2004) explored the code-switching behaviours of English teachers in secondary schools in Korea by audio-taping and transcribing one lesson for each teacher. The open-ended questionnaire (which was designed originally as an interview protocol) was issued and was later followed by six informal interviews with ten participant teachers to get information in detail.

In the two research studies conducted by Duff and Polio, there are two types of variables influencing teacher language choices. Some variables are classroom-external including the L2 proficiency of the students, the teachers' experience (years of teaching, type of training, L2 proficiency) and the policies of institutions. Others are classroom-internal, which contains the functions of utterances or the language used by students in interaction with the teacher. Classroom-external factors do not vary from minute to minute in the classroom but are pertinent to the discourse that unfolds. By interviewing teachers, these two authors attempt to discover whether these external factors influence the teachers' choices of language. Classroom-internal factors are related to what is actually taking place in the classroom at a given time. Only to rely on teachers' own report is not enough, and Polio and Duff suggest to examine how both native and foreign languages are actually being used by observing the classrooms (Duff and Polio, 1990; Polio and Duff, 1994).

In Macaro's (2001) study, he not only observes and transcribes the video-recorded lessons but also employ two kinds of interviews with the teachers. Within 10 days of class video-recordings, the participant teachers are invited individually to discuss with the researcher video-recorded class events (as stimuli). The interviews are taped and transcribed. In addition, at the end of the data collection period, a further audio-recorded interview is carried out to gain more information from the teachers.

On the basis of qualitative analysis of classroom talk, Polio and Duff (1994) and Liu et al. (2004) list the functions of L1 through general categories of behaviours which emerge after careful consideration of the classroom and interview transcriptions both in Asian foreign language classes in the US and English lessons in Korea. In addition, according to Rolin-Ianziti and Brownlie (2002), in order to make a comparison between native language and target language, it is necessary to undertake calculations and to give the distribution of these two languages. Both quantitative and qualitative analysis should be used to discover how teachers use native language in the classrooms. The current research will follow up the research above and further explore and list possible general functions of L1 in teachers' questioning behaviours, and a supportive quantitative analysis will be used as well.

2.8.3 Research question three: What are the teachers' teaching and learning goals in English language teaching? How do both target-language and native-language questions assist the teachers with the achievement of these goals?

The issue of teachers' questioning behaviours in relation to their teaching and learning

goals has been documented in classroom research. In 1997, Thamraksa conducted a descriptive research study to investigate teachers' questioning behaviours in relation to their teaching and learning goals at the tertiary level in Thailand. The data collection instruments used in this research were classroom observations and interviews. Each teacher was observed seven times and interviewed six times during the first semester of the academic year in 1995. The purpose of the six interviews was to collect information from three participant teachers, including past learning experiences, personal information, and so forth. Thamraksa (1997) concludes that the teachers' questions contain a small proportion of narrowing characteristics that delimit the expected answers from students and, most importantly, the teachers' questioning behaviours generally provide opportunities for learners to reach their teaching and learning goals.

Guided by the framework suggested by Wells (1996) for understanding the interaction of goals, instruction, and classroom discourse and Leontiev's (1981) opinions that classroom events are goal-directed actions, McCormick (1997) carried out a research study in ESL classrooms based on Vygotsky's sociocultural theory. By using multiple sources of data collection including pre- and post- observation interviews and verbal reports to obtain the teachers' pre-determined instructional goals, McCormick explored the relationship between the teacher's teaching and learning goals and her use of questions to scaffold students' learning. A case-study approach is the primary research methodology in McCormick's study with some elements of ethnographical research and discourse analysis incorporated into the methodology. The research findings indicate that a strong relationship between the teacher's teaching and learning goals and her use of questions scaffolds classroom participation and learning. In addition, this research informs future researchers about the appropriateness of scaffolding as a framework to investigate teacher questions, the importance of teachers' teaching and learning goals, and suggests careful consideration when using questions in language classroom settings (McCormick, 1997).

Triggered by the research above, the third research question appears. In the current research, both target-language and native-language questions will be classified and the researcher will examine how both types of questions observed in classes scaffold students' English language learning and help teachers to achieve their teaching and learning goals.

2.8.4 Research question four: How do the learners respond to the teachers' questions? Do they respond in English or their native language? Does use of the

native language help their English language learning?

Teacher questions are of crucial importance since questions require responses which obligate learners to contribute to classroom interaction (Ellis, 1992). Research on learners' responding in language classrooms is limited, and most are based on counting how many words learners produce in response to questions or the relationship between learners' responding and the cognitive level of teachers' questions (Brock, 1986; Nunan, 1987; Wintergerst, 1994; Singto, 1995; Farr, 2002). The number of words in students' utterances is often the indication of the quality of their responding. However, in the current research, the researcher would like to broaden this perspective and to examine learners' responses from different angles.

In the study conducted by Suk-a-nake et al. (2003), they tried to investigate how students at different levels of English language proficiency respond to separate types of questions. As well as counting the number of words in students' responses, the authors also employed other data collection instruments. At the beginning of this research, all participants took the Quick Placement Test, and they were divided into three groups: low, middle, and high, based on the interpretation of the scores on the test. Three focal students were selected for the pilot study and four students for the later main study. The researchers had informal group interviews with these three groups separately to elicit more information. The results in this research reveal that students at all levels are not yet complete speakers and listeners so that they find a number of questions difficult for them.

The research on native language use in teachers' questioning behaviours is limited and the literature on L1 use in learners' responding behaviours is lacking as well. Liu's et al. (2004) study of EFL classes in Korea, through the use of classroom observation and a multi-choice questionnaire from students, found that the students responded using the same language as the teacher. The data show these students were much more likely to reciprocate their teachers' language use. In addition, the students' choices of language in response depended on the question's difficulty and complexity. That is, if the question is difficult and complex, the students tended to answer it in Korean.

On the basis of Vygotsky's sociocultural theory, the following three research studies focus on learners' first language use in conversation in pairs. By analyzing tape-recordings of language use in peer work, Brooks and Donato (1994) examined the discourse of eight pairs of third-year high school learners of Spanish as they were engaged in a two-way information gap activity. A similar study was also conducted by

Swain and Lapkin (2000) to examine the use of first language made by 22 pairs of grades 8 French immersion students, by transcribing tape-recorded data. L1 use was a tool to produce target language, to focus on form and to make sense of the content of talk (Brooks and Danato, 1994; Swain and Lapkin, 2000).

By transcribing tape-recordings of L1 occurring in the discourse of L2 learners while they are engaged in L2 writing tasks, Anton and DiCamilla's data demonstrate the importance of the L1 as a psychological tool enabling language learners to perform three functions. First, using the L1, these learners provided each other with scaffolded help. Second, the L1 was used to establish and maintain intersubjectivity (Rommetveit, 1985; Wertsch, 1985). Third, the L1 use is to externalize one's inner speech.

The three research studies above (Brooks and Donato, 1994; Anton and DiCamilla, 1998; Swain and Lapkin, 2000) working within the framework of socio-cultural theory, challenge the traditional view of interaction theory. Modification and negotiation are not enough to facilitate language learning, as Anton and DiCamilla (1998) suggest: the study of how learners use the L1 as an important semiotic tool in interaction is needed, especially among L2 learners with the same L1 background and a lower level of proficiency in the target language.

The implication from the above three studies for the current research is that L1 responses elicited from teacher-student exchanges can also be viewed as a cognitively mediated tool to externalize learners' inner speech and to move learners from 'interpsychological' to 'intrapsychological' planes.

2.8.5 Research question five: Which other factors might influence the learners' responding behaviours in the classrooms?

In reaction to Ramburuth and McCormick's (2001) suggestion that learners' speaking patterns could be linked to socio-cultural and environmental factors, in the current study, the researcher also believes that the factors from the specific Taiwanese environment and classroom dynamics will influence learners' responding behaviours, and the affective factors of individual learners are socially grounded. Similar perspectives can be found in the studies of Peirce (1995), Clement et al. (1994), LoCastro (2001).

Clement et al. (1994) conducted quantitative research applying social psychological constructs to the acquisition of English in Hungarian settings. By a questionnaire

addressed to 301 students, they tried to assess students' attitudes, anxiety, motivation towards learning English. Clement et al. (1994) reveal that these factors are characterized by classroom cohesion and evaluation and conclude that foreign language learning is a complex social process.

A quantitative analysis is useful to find possible factors behind learners' speaking behaviours. However, Schmidt (1996) states that research adopting qualitative techniques might more effectively generate insights which are closer to learners' views and interpretations. Both Gillette (1994) and Peirce (1995) are examples of this type of study. In LoCastro's (2001) study, in order to examine the individual differences in second language acquisition, including attitudes, learner subjectivity, and L2 pragmatic norms, she selected focal groups and collected data from group discussions, essays, and language awareness worksheets. Content analysis was carried out to analyze all of the data which provide insights into the informants' perceptions and attitudes. A questionnaire to students also provided an additional quantitative source.

In Hsu's (2001) qualitative research in two ESL oral communication classes, in order to discover what factors influenced learners' questioning and responding behaviours, four focal subjects were selected from each class for further investigation. They responded to two questionnaires, took two oral English proficiency tests, and participated in two semi-structured interviews with the researcher. The results of this study indicate that English proficiency influences learners' questioning in terms of the types and frequency. Other factors, such as attitudes towards speaking in class, perceptions of classroom climate, environmental and emotional factors, and assumptions about how to speak a language, are attributed to the complexity in student question asking and answering patterns (Hsu, 2001).

In the current research, the particular Taiwanese socio-cultural factors (including the variables from classroom dynamics and the external environment) influencing Taiwanese EFL learners' responding patterns will be explored. Some focal students will be selected to complete the questionnaire and to be interviewed by the researcher individually. Moreover, the response behaviours of these focal students taken from classroom observation will provide supportive information.

Chapter 3 Methodology

This chapter describes the research in the present study from the initial deliberations as to how to approach the topic and the research questions (Section 3.1), the design of the research tools (Section 3.2), to data collection procedures (Section 3.3), and analysis and interpretation of the data. (Section 3.4).

3.1 Research design

The current research was designed as a principal qualitative classroom-centred multiple-case research with a supplementary quantitative numeric data analysis (Sections 3.1.1 and 3.1.2). In order to obtain findings to answer the five research questions, three major research tools, observation, interviewing, and the questionnaire were employed (Section 3.1.3). Through methodological triangulation, these three techniques and their sub-research tools support each other and make the research findings much more reliable (Section 3.1.4). In the final section, 3.1.5, I will explain validity and reliability of the current research.

3.1.1 Methodological stance

My methodological viewpoint was determined by the purpose of the current research. The purpose of this research is to examine how teachers' naturally occurring questioning behaviours affect and assist classroom English language teaching and learning, which are linked with teachers' instructional goals and learners' responding behaviours. This research does not simply concentrate on the input to the classroom or on the output from the classroom. It tries to examine what happens inside the classroom when the teacher and learners work together, since the principal theoretical stance in this research is that language learning and cognitive development occur in teacher-student co-constructed activities. It should be defined as a classroom-centred study (Allwright and Bailey, 1991) which “ views the classroom as the ‘object’ of research, and not simply the ‘setting’ for research” (Salmani-Nodoushan, 2006:148). Instead of testing specific hypotheses about cause-effect relationships, classroom-centred research emphasizes generating hypotheses (Gaies, 1983) and describing what actually happens in teacher-student interaction in language classrooms with a purpose of identifying the variables that promote language learning and

development (Allwright and Bailey, 1991; Thamraksa, 1997). Research on classroom language teaching and learning can be done either by observation, or by introspection, or by a combination of these two (Salmani-Nodoushan, 2006). Observation involves keeping a record of what goes on in the observed classroom, with a supplementary digital recorder. An observer will also be able to take useful field notes and keep a written record of a lesson (Allwright, 1983). Besides observation, it is considered necessary to ask subjects to introspect and reflect on their experience. The researcher can do this by interviewing them or by giving them questionnaires to respond to (Allwright, 1988).

In addition, the approach of case studies was also used in the present research. According to Cohen et al. (2000), it can provide unique examples of real people in real situations, enabling readers to understand ideas more clearly. The approach of case studies penetrates situations in the way that is not always susceptible to numerical analysis. Instead of a single-case-study model, the present research adopted a multiple-case design, since in multiple cases each individual case study is composed of a 'whole' study, in which facts are gathered from a variety of sources and conclusions drawn on those facts (Tellis, 1997).

Based on the nature and the purpose of this research, I considered a classroom-centred multiple-case approach. The methodology I used is a combination of both observation and introspection. Observation can be used to record the teacher and student classroom language behaviors, via technological tools and field notes, for later transcription and analysis. Likewise, introspection can obtain as much information as possible regarding the teachers' teaching and learning goals, experiences and perceptions, and the students' viewpoints and thoughts. Besides, in this classroom-centred multiple-case research, the contexts and the contents in which questioning and subsequent responding occur will be examined so as to react to Carlsen's (1991) suggestion that "research on questioning must acknowledge that the meaning of questions is dependent on their context in discourse, that the content of questions cannot be ignored, and that questions may reflect and sustain status differences in the classroom" (Carlsen, 1991: 157). Through the classroom-centred/ multiple-case research approach, the in-depth and comprehensive findings on naturally occurring teacher questioning and student responding in English classrooms in Taiwan are provided.

3.1.2 The qualitative approach and the complementary quantitative approach

These two paradigms of educational research can be said to exist distinctly in terms of the way each tradition collects data and treats collected data (Brannen, 1992). In qualitative research, in seeking to achieve insights into the respondents' social worlds, the researcher uses herself as the instrument, attending to her own cultural assumptions as well as to the data. The researcher is expected to be flexible. Conversely, in the quantitative tradition, the instrument is a pre-determined and finely-tuned technological tool which limits the researcher's flexibility (Brannen, 1992). From the aspect of data treatment, the quantitative researcher defines variables and categories. These variables are associated together with framing hypotheses before the data are collected and then are tested on the data. These quantitative data, therefore, are from large representative samples and the findings may ultimately be generalized to similar populations (Jacobs et al., 1999). In contrast, the qualitative researcher starts with defining very general concepts. With the on-going process of the research, the qualitative researcher changes the definitions over time (Brannen, 1992). Thus, a major advantage of the qualitative approach is that it allows for the discovery of new ideas and unexpected occurrences (Jacobs et al., 1999). The samples from qualitative research are not meant to represent large populations. Instead, small and purposeful samples of articulate respondents are used since they can provide useful information (Sale et al., 2002).

Unfortunately, both approaches have limitations. Quantitative researchers with only numeric data may find it difficult to meaningfully interpret their research findings to their audience. On the other hand, in most qualitative research studies with their small-scale exploratory nature, it is usually not possible to aggregate a large quantity of data and to conduct statistical analyses (Jacobs et al., 1999). Therefore, academics have begun to argue that qualitative and quantitative approaches can be employed complementarily (Salomon, 1991; Gosling and Edwards, 1995) and have suggested researchers incorporate the two traditions and draw on the strengths of both in a single research study (Salomon, 1991; Creswell, 1994; Jacobs et al., 1999).

However, Sale et al. (2002) submit an opposite viewpoint. They believe that mixed-method research is now being adopted uncritically by many researchers who overlook the underlying assumptions behind the qualitative-quantitative debate. Carey (1993) further claims that although these two approaches are often combined in a single study, it does not mean that it is always appropriate to do so. As the researcher mentioned earlier, the current research is a classroom-centred multiple-case research. Classroom-centred research is descriptive in nature. It is usually involves observation, recording, and transcription which lead to thick description (Van Lier, 1988). Those

aims and characteristics are similar to those of the qualitative research or interpretative approach (Cohen et al., 2000) and data analysis is typically done with words or textual data rather than numerical data (Miles and Huberman, 1994).

Moreover, as the researcher mentioned earlier in Section 2.8, the research questions and the research framework in the current research were generated from the related literature review I have done so far. These research reviews very often encouraged teachers' naturally occurring classroom questioning behaviors and classroom interaction patterns to be studied from a qualitative, in-depth, descriptive perspective (McCormick, 1997; Anton, 1999; Duff, 2000; Hsu, 2001). Besides, the teachers' questioning behaviours in the current study are examined from the perspective of social interaction and socio-cultural theory. The well-known quantitative studies (or process-product studies) of classrooms have been discussed earlier and have been considered not suitable for the current research (see discussion in Section 2.3.1). Therefore, at the beginning, I decided to use a qualitative classroom-centred multiple-case research. However, as Brannen (1992:04) said, "The cart often comes before the horse, with the researcher already committed to a particular method before he or she has taken due time to consider the repertoire of methods suited to exploring the particular research issues." Therefore, I thought that I would have made a mistake by limiting my research to pure qualitative research. I considered using a principal qualitative classroom centred/ multiple-case research method together with a complementary quantitative numerical data analysis for Research Question Two and Three to avoid personal biases as far as possible.

3.1.3 Addressing research questions

The five research questions generated from the literature review (See Section 2.8) are as follows:

1. What kind of learning opportunities does teacher questioning generate in the classroom?
2. When and why do the teachers employ code-switching strategies in their classroom questioning?
3. What are the teachers' teaching and learning goals in English language teaching? How do both target-language and native-language questions assist the teachers with the achievement of these goals?
4. How do the learners respond to the teachers' questions? Do they respond in

English or their native language? Does use of the native language help their English language learning?

5. Which other factors might influence the learners' responding behaviours in the classrooms?

The purpose of the first research question is to find out the functions of teacher questions during teacher-fronted co-constructed classroom activities to see if these questions affect learners' language learning and verbal participation. I decided to take a more comprehensive and in-depth look at the role of classroom questioning in English classrooms in Taiwan through the use of observation (See the detailed discussion of all research tools in the next section, 3.1.4). This enables researchers to understand the contexts, to be open-ended and inductive to see events that might be unconsciously missed, and to uncover things and information that participants might not provide in interview or questionnaire situations (Cohen et al., 2000). Observation also allows the researcher to examine the naturally occurring questions in naturalistic settings and generate the functions of the teachers' questions from the observed data. The emerging information from observation will lead to important discoveries for data analysis and interpretation.

In the debate about the use of the mother tongue, the proponents like Butzkamm (2003) and Cook (2001) suggest that many classroom functions can be implemented in the L1, and L1 use deserves a place in the language classrooms. On the other hand, the opponents such as Turnbull (2001) argue that if the teachers are, in Cook's (2001) words, 'licensed' to use the L1 in their teaching, it will result in an over-use of the L1. The emerging issue for this debate is *when* teachers use the first language in their pedagogy and what impact this has on the learner's learning (Turnbull and Arnett, 2002). This research tried to specifically focus on the use of target- language and native-language questions on the part of the teachers. Thus, for collecting data for the first part of research question two, I consider using observations in classrooms, and looking at the teachers' L1 use over lessons. Besides, the recent studies have started to understand teacher's beliefs, attitudes, and reasons *why* they use TL and L1 in their classes either by interviews (Macaro, 2001) or by questionnaires (Levine, 2003; Liu et al., 2004). According to Liu et al. (2004), the reason why these authors used questionnaires, not interviews, to obtain information on the teachers' viewpoints on L1 use in class is that the researchers and the participant teachers are colleagues. In order to alleviate the uncomfortable feelings of the subjects while conducting face-to-face interviews, the researchers decided to use questionnaires. In Levine's (2003) research study, Levine points out that the use of questionnaires is anonymous so that it

encourages greater honesty and it leads to more reliable results (Cohen et al., 2000). However, the main disadvantage of questionnaires is that the interviewer is unable to answer questions regarding any misunderstanding experienced by the interviewee since, in some cases, the same interview questions have different meanings for different people (Cohen et al., 2000). Therefore, I considered using interviews to obtain information from the participants to solve the second part of research question two. By providing access to what is inside one's head (Merriam, 1988), interviewing makes it possible to measure what a person knows and what a person thinks (Tuckman, 1972, cited in Cohen et al., 2000). Nevertheless, Cohen et al. (2000) remind me that interviewing is prone to subjectivity and it should be used together with other methods (Hopkins, 2002). In the current research, the combination of observations and interviews allowed me to obtain research data of greater depth and to examine when and why the teachers employ code-switching strategies in their classroom questioning. Both qualitative and quantitative approaches were employed for data analysis.

Interviewing is also a good technique to gain research data for the first part of Research Question Three. In doing so, a few participants were interviewed in order to get in-depth understanding, which cannot be retrieved from a questionnaire (Cohen et al., 2000), of teachers' English teaching and learning goals. For the latter part of the research question three, I made multiple observations. Then, I selected complete teacher-fronted activities for transcribing (See the rationale for selecting complete teacher-fronted activities in Section 3.4.6), assigned the six functions of scaffolding to teachers' questions, and calculated their frequencies. I employed the quantitative approach to analyze the data that were originally qualitative in form—transcriptions. Based on the results gained from both quantitative and qualitative data analysis, I tried to provide a detailed description of how teachers use both target-language and native-language questions to achieve their English teaching and learning goals.

Since this research is different from other research on students' responding behaviours, counting the number of words in students' utterances is not used as a principal method to measure students' verbal contribution. Instead, the L1 use is thought of as a useful psychological process (Storch and Wigglesworth, 2003) which helps externalize learners' inner speech. However, three major research studies on learners' L1 use from the socio-cultural viewpoint focused their data collection tools on audio-recorded and transcribed learner-learner conversation in pairs (Brooks and Donato, 1994; Anton and Dicomilla, 1999; Swain and Lapkin, 2000). Compare with them, I believed that observation would be the better approach to get in-depth information about the interactional conversation between the teacher and students in class. The use of L1 in

students' responses to the teachers' questions can be easily obtained from observation to see if students use the same language as the teacher or they switch their language in accordance with the complexity of teacher questions (Liu et al., 2004). In addition to the information from observation, I thought it is necessary to understand student accounts of their language use (Burden, 2000) in response to teacher questions. Another method which can be a supplement to observation is required. Otherwise, this research question will not be answered completely. According to Hopkins (2000), when conducting an interview with learner(s), there is mutual uncertainty between researcher and pupils. Students unfamiliar with the researcher may feel reluctant to provide relevant information. On the other hand, a questionnaire might limit possible opportunities for asking probing questions to get information for greater depth (Cohen et al., 2000). I considered combining these two research tools, a questionnaire and interviewing, so that the collected research data can be triangulated.

Following the rationale mentioned above, besides observed classroom events, I used the data from the interviews with teachers and students and the questionnaires to students to obtain explanations about possible factors which might influence the learners' responding in class. In addition, by inserting transcription of classroom events observed by the researcher together with teacher and student interpretation, that will make three viewpoints; none of them can claim to have the 'truth' (Allwright, 1983), but all points of view need to be taken into account to understand possible factors causing diversity in learner responses.

For obtaining research data for these five research questions, I tried to gather data using a variety of techniques—observation, interviewing and a questionnaire so as to get multiple perspectives or points of view. This triangulation in the process of interpretation of data as well as in the collection of them builds in layers of description, therefore leading to a 'richly detailed description' (Lodico et al, 2006:268) and validates collected research data (Goldman-Segall, 1995; 1998) about how teacher questioning behaviours assist and affect language teaching and learning in EFL classrooms in Taiwan.

3.1.4 Choice of research tools

As mentioned above, the selected research tools for the current research aim to retrieve rich information so as to respond to these five research questions. The relationship between each research question and suitable research tools can be shown

as follows:

Table 1: Research questions and suitable research tools

Research Questions	Suitable Research Tools
1. What kind of learning opportunities does teacher questioning generate in the classroom?	Classroom observation.
2. When and why do the teachers employ code-switching strategies in their classroom questioning?	Classroom observation. Interviews with the teachers.
3. What are the teachers' goals in English language teaching? How do both target- language and native- language questions assist the teachers with the achievement of these goals?	Classroom observation. Interviews with the teachers.
4. How do the learners respond to the teacher's questions? (Do they respond in English or their native language? Does the use of the native language help their English language learning?)	Classroom observation. The questionnaire to the students. Interviews with the students. Interviews with the teachers.
5. Which other factors might influence the learners' responding behaviours in the classroom?	Classroom observation. The questionnaire to the students. Interviews with the students. Interviews with the teachers.

That is to say, classroom observation, interviewing, and the questionnaire will be three major research tools in the current research. However, before conducting these three research tools, some issues should be clarified beforehand and some sub-research tools deserve further considerations.

Observation

Prolonged engagement and extensive observation are central to gain an in-depth understanding of the classroom (Fasse and Kolodner, 2000) to see how teacher

questioning and learner responding behaviours work in social classroom interaction. I decided to play the role of ‘complete observer’ (Lodico et al., 2006) and stand apart from that which is being observed (Mulhall, 2003). That is, I will not participate in any classroom activities, neither make any attempt to alter the situation being observed nor require any activities that are not part of the regular lesson (Thamraksa, 1997). As Gay (1992) and Slavin (1992) suggest, I am an outsider and try to remain as objective and unobtrusive as possible.

The data produced by observation should be retained in the form of **field notes**, which are written descriptions of what the researcher observes in the field (Lodico et al., 2006). According to Mulhall (2003), how to write field notes depends on the value the researchers place on them. Some emphasize writing detailed field notes close to their field observation and producing “grounded” analyses specifically related to the original field (Emerson et al., 2001). Conversely, others claim that field notes are secondary to becoming immersed in a community (Mulhall, 2003). I prefer the latter, since if too much time is devoted to writing detailed notes, the deeper experience of being within a community will be lost (Mulhall, 2003). Therefore, I should try to record important specific events, but, at the same time, try to deeply experience the culture and ‘physical environment’ (Lodico et al., 2006) in the classrooms. Additionally, the extensive reading I have done also helps build up my preliminary knowledge. This will play a major role in determining which events are worthy of annotation (Wolfinger, 2002).

Video recording is another supplementary tool when classroom observation is conducted since many non-verbal ‘visual interactional cues’ (Dufon, 2002) cannot be observed clearly by the researcher. According to Paterson (2003), video recorded data are presumed to be more credible than what is directly observed by human researchers. When taking field notes, the researcher can hardly write down everything the interlocutors said because of the slower speed of writing as compared with speaking. Video recording can provide complementary and denser linguistic information than field note taking (Dufon, 2002). Moreover, a video-tape buys us time (Pirie, 1996). Through the use of repeatable frame-by-frame review, video recorded data can facilitate the micro-analysis of behaviours and interactional patterns to develop in-depth description of the utterances (Paterson, 2003) produced by teachers and students in the current research. Additional external microphones are also necessary. Dufon (2002) reflects on her video-recording use in the classroom research and states that when she was in the field, recording participants in open spaces or at greater distances from the camera, the built in microphone of the digital camera did not

always pick their voices up well. She suggests that simultaneous **audio recording of classroom observation** is useful. The advantages and disadvantages of field notes, video recording, and audio recording (excerpted from Hopkins (2002)) are shown in the following table.

Table 2: Advantages and disadvantages of field notes, video recording, and audio recording

Sub-tools of observation	Advantages	Disadvantages
Field notes	<ol style="list-style-type: none"> 1. Very easy to keep; no outsider needed. 2. Provides a good on-going record. 3. Helps to relate incidents and explores emerging trends. 	<ol style="list-style-type: none"> 1. Conversation impossible to be recorded by field notes. 2. Can be very subjective.
Video recording of observation	<ol style="list-style-type: none"> 1. Behavioural patterns of teacher and students can be seen. 2. Enables situations to be reviewed constantly. 	<ol style="list-style-type: none"> 1. Can be very distracting.
Audio recording of observation	<ol style="list-style-type: none"> 1. Very successfully monitors all conversations. 2. Provides sufficient material at ease. 3. Versatility – can be transported. 	<ol style="list-style-type: none"> 1. Does not record silent activities. 2. Can disturb pupils due to its presence.

The two disadvantages of field notes can be simply solved by using video and audio recording technique since these two techniques are supposed to be much more objective and almost all of the voices and behaviours can be recorded. Video/audio recording is indeed very intrusive, but this intrusion can be minimized by introducing these techniques over time allowing participants to get used to it and by constantly checking with them that they do not mind the recording of classroom activities and conversation (Hopkins, 2002).

Interviews with teachers

Interviewing is a very important data collection tool in the current research and it is very often used to verify observation (Saville-Troike, 1989; Lodico, 2006). Which type of interviews should be used is the major problem I first encountered. Many types of interviews are defined by different researchers, including ethnographic interviews, in-depth interviews, and so on (LeCompte and Preissle, 1993). However, I think the labels for classifications are different among different researchers despite the fact that they have similar characteristics and concepts. Therefore, I considered using the interviews employed by McCormick (1997). They are **pre-observation and post-observation interviews**. McCormick (1997) tried to gain teachers' English teaching goals from pre/post-observation interviews together with other tools. I thought these tools could also help me gain English teachers' teaching and learning goals in classrooms in Taiwan. Then, I started to design the amount of structure I wanted in the interviews. Although the structures of interviewing can vary from structured to semi-structured to unstructured, in the current research, the semi-structured format was used (Lodico, 2006). "In a semi-structured interview researchers usually prepare a list of the questions to be asked but allow themselves the opportunity to probe beyond the protocol" (Lodico, 2006:124). In the current research, both pre-observation and post-observation interviews were designed in this format. Besides, **audio recording of interviews** assisted the researcher with recording the conversations with subject teachers to preserve the integrity of the data (Lodico, 2006).

Stimulated recall interview of video-recorded classroom observation has been conducted in educational research (Stough, 2001; Chittenden, 2002) and second/foreign language teaching studies (Gass and Mackey, 2000; Gass, 2001; Lindegren, 2002). "It is an introspection procedure in which (normally) videotaped passages of behaviours are replayed to individuals to stimulate recall of their concurrent cognitive activity" (Lyle, 2003:861). This tool can supplement video recorded data with the unspoken thoughts and feelings of a participant (Dufon, 2002). So as to increase validity, researchers have to minimize the time delay between event and recall (Gass and Mackey, 2000). The researcher is advised to ensure as much as possible the questions/prompts do not alter the cognitive process being employed at the time of the event (Gass and Mackey, 2000). Again, **audio-recording of stimulated recall interview** will support interview data for further analysis as well.

The following table demonstrates the advantages and disadvantages of pre/post-observation interviews and stimulated recall interviews.

Table 3: Advantages and disadvantages of pre/post-observation interviews, stimulated recall interviews and audio recording of interviewing

Interviews and sub-tool	Advantages	Disadvantages
Pre/post-observation semi-structured interviews	The observation makes the researcher realize what the teachers did but it is hard to know the purpose and thinking that lay behind it. By using an interview teachers can speak out and it offers the researcher general understanding of what actually happened in classes (Drever, 1995).	Although a semi-structured interview is very flexible, how to pose the follow-up questions to elicit more and detailed information from interviewee needs more practice (Drever, 1995).
Stimulated recall interview of video-recorded classroom observation	After the observation, the interviews with the teacher can produce information to verify what they previously did in their classrooms (Drever, 1995).	The reflective verbal report obtained from stimulated recall interviews cannot truly provide the teacher's thinking as it happened (Johnson, 1992).
Audio recording of interviewing	Long verbal conversations can be retrieved completely by simply playing back tapes (Hopkins, 2002)	Making transcriptions can be very time-consuming (Hopkins, 2002).

In order to use probing questions effectively in semi-structured interviews, it is important to have a protocol that will help guide the collection of data in a systematic and focused manner (Lodico, et al., 2006). The protocol for each interviewing will be described in the next section. Similarly, through ensuring that the questions/prompts do not alter the cognitive process being used, the disadvantage of stimulated recall interviewing can be minimized. That is, this tool could be valuable when accompanied by 'carefully structured recall designs' (Lyle, 2003). Transcription from either video

recording or audio recording will take the researcher some time to transcribe and analyze, but I think effective time management is important and the method of transcribing should be used judiciously.

The questionnaire and subsequent interviews with focal students

The current research aims to issue **a questionnaire to students first** and then **a following audio-recorded interview to students individually**. The reason why I conducted a questionnaire before an interview is that students unfamiliar with the researcher may be reluctant to divulge relevant information (Hopkins, 2002). In my opinion, conducting a questionnaire first can relieve the anxiety caused by uncertainty on the part of students. Unlike a questionnaire, interviewing cannot be conducted with the whole class or a great number of students, so that I could only focus on some of them. In order to stimulate talk from multiple perspectives, interviewing of focus groups is very often used to encourage talk about the subject of interest (Morgan, 1997). However, I do not think interviewing focal groups is the proper tool for the current research. According to Bogdan and Biklen (2007), the main problem in interviewing focal groups could be that individuals may not share important experiences they have had since they are too embarrassed to share them in the group. Moreover, in spite of the intensive fieldwork I have done, in my own opinion, I could not acquaint myself with the voices of all of the members in the group. If I try to transcribe audio-recorded data from interviewing the focal group, it would be hard for me to identify which voice comes from which student. This would be a big problem for further data analysis, because, in this research, I planned to explain the observed responding behaviours of individual students in the classroom by using the data from the interviews with them. I need to know perfectly which opinion and attitude belongs to which student. Interviewing focal groups is not feasible for this research study. Then, I decided to carry out the questionnaire and the subsequent interview with a few ‘focal students’, in Hsu’s (2001) terms, individually. That is, during the interview with individual focal students, I used the items on the questionnaire that the focal subjects answered beforehand as the prompts to elicit further information from them. The advantages and disadvantages of a questionnaire and interviews (Hopkins, 2002) with focal students can be demonstrated as follows:

Table 4: Advantages and disadvantages of the questionnaire and the subsequent interview with focal students

A questionnaire, interviews, and the	Advantages	Disadvantages
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sub-research tool		
A questionnaire to focal students	A questionnaire is quick to fill in and easy to follow by young students.	It is very difficult to explore answers in depth through question items on the questionnaire. Its effectiveness depends very much on the reading ability and comprehension of students.
Semi-structured interviews with focal students.	Compared with the teachers from the same school, an outsider researcher may easily obtain information from students. An outsider researcher may be much more objective than school teachers in explaining student behaviours.	There is mutual uncertainty between a researcher and pupils. Student unfamiliar with the researcher may feel reluctant to provide relevant information. It is possible that students are fearful to provide some authentic ideas or information which they think the researcher does not like.
Audio recording of interviewing	Please refer to Table 2.	Please refer to Table 2.

Through a pioneer questionnaire before subsequent interviewing, focal students can acquaint themselves with the questions I am going to ask. The combination of these two tools can compensate for their weaknesses which occur when they are employed alone and reinforce their strengths at the same time.

Besides observation, interviewing and a questionnaire, other supplementary documents (e.g. teaching materials and examination paper) surrounding the curriculum in school are very useful. The use of such materials can provide background information in the field (Hopkins, 2002). The advantages and disadvantages of supplementary documents (excerpted from Hopkins (2002)) can be shown as follows:

Table 5: Advantages and disadvantages of supplementary documents

Sub-research tool	Advantages	Disadvantages
Supplementary documents	1. Explain the curriculum or teaching methods. 2. Provide context and background of a field.	1. Certain persons may not be unwilling to share documents. 2. Certain documents may be difficult to obtain.

In other cases, certain participants may refuse to provide ‘confidential’ documents. However, in the current research, once I got permission for access to the field and gained participant consent, the supplementary documents such as course timetables and textbooks could be easily obtained thanks to the authority structure in schools in Taiwan. These disadvantages would be easily overcome.

As shown in this section, the collaborative use of observation, interviewing, a questionnaire and sub-research tools can support each other and, more specifically, data sources will be deployed and ‘triangulated’ to expand the knowledge I am looking for. In fact, the term, triangulation, was first borrowed from the social sciences to convey the idea that establishing a fact you need more than one source of information (Bogdan and Biklen, 2007), since to exclusively rely on one method may bias or distort the researcher’s picture of the reality he/she is investigating (Lin, 1976, Cohen et al., 2000). There are different types of triangulation, including investigator triangulation, environment triangulation, and so on (Guion, 2002). Among these methodological triangulation is widely used and it involves the use of multiple qualitative and/or quantitative methods to examine a study (Guion, 2002). In the current research, methodological triangulation of interviewing, observation, a questionnaire, and other sub-research tools will shed some light on how teacher solicitation behaviours assist and affect language teaching and learning in English classrooms in Taiwan.

3.1.5 Validity and reliability issues

The concept of triangulation mentioned above is related to validity and reliability issues which originally came from quantitative research.

A quantitative researcher attempts to fragment and delimit phenomena into measurable categories that can be applied to all of the subjects or similar and wider situations (Winter, 2000). That is, the researcher's methods involve the "use of standardized measures so that the varying perspectives and experiences of people can be fit into a limited number of predetermined response categories..." (Patton, 2002:14). Therefore, "a quantitative researcher needs to construct an instrument to be administered in standardized manner according to predetermined procedures" (Golafshani, 2003:598). But the question here is how we can know the measuring instrument measures what we suppose to measure. In the broadest sense, designing a test is required in order to ensure repeatability of the research results. These are related to the notions of reliability and validity in quantitative research (Golafshani, 2003). Joppe (2000:01) defines reliability is:

...The extent to which results are consistent over time and an accurate representation of the total population under study is referred to as reliability and if the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable.

Embodied in this quotation is the idea of replicability or repeatability of research results. On the other hand, Joppe (2000:01) also provides the explanation of what validity is in quantitative research:

Validity determines whether the research truly measures that which it was intended to measure or how truthful the research results are. In other words, does the research instrument allow you to hit "the bull's eye" of your research object?

However, as I mentioned earlier, except for complementary quantitative numeric analysis for the research questions two and three, the current research is classroom-centred multiple-case research which is primarily based on qualitative analysis. Many qualitative researchers claim that the concepts of reliability and validity in quantitative research should be re-considered before being applied in the qualitative research paradigm (Glesne and Peshkin, 1992; Golafshani, 2003).

According to Stenbacka (2001), since reliability concerns measurements, it has no

relevance in qualitative research. If reliability is discussed in qualitative research as a criterion, the consequence is that the study is not good. Other researchers such as Lincoln and Guba (1985) suggest that dependability in qualitative research closely corresponds to the notion of reliability in quantitative research and they also state that “since there can be no validity without reliability, a demonstration of the former [validity] is sufficient to establish the later;]” (Lincoln and Guba, 1985:316). This is supported by Golafshani (2003). Nahid Golafshani believes that to maximize the validity leads to the reliability of qualitative studies and suggests that the use of triangulation to maximize validity is appropriate. Employing multiple methods, observation, interviewing and the questionnaire, in the current research will lead to more valid and reliable research data (Crishna, 2006).

In addition, there are other methods to test or maximize validity in more specific and appropriate terms. Davis (1992) suggests that the term, *credibility*, can be used in the qualitative research on second language acquisition parallel to internal validity which “seeks to demonstrate that the explanation of a particular event, issue, or set of data which a piece of research provides can actually be sustained by the data” (Cohen et al., 2000:107). *Transferability* (Davis, 1992), on the other hand, is similar to external validity which “refers to the degree to which the results can be generalized to the wider population, cases, or situations” (Cohen et al., 2000:109).

In qualitative research, *credibility* is parallel to internal validity (Davis, 1992). *Credibility* refers to the participants’ perspectives of events matching up with the researcher’s portrayal of them in the research report. In other words, has the researcher accurately represented what the participants do, think and feel and the processes that influence their actions, thoughts, and feelings? (Lodico et al., 2006). To increase credibility, the researcher should invest a sufficient amount of time into building trust with respondents and learn their culture. Then, the researcher can document the influences that may impinge on the phenomenon which is being studied and identify the characteristics relevant to the research problems or issues (Davis, 1992). I will explain how I abated the effects of a researcher observer being present in classrooms and how I established trust and rapport with participants when describing the designs of the research tools in the following sections.

For qualitative studies, researchers focus on *transferability* not external validity. External validity for quantitative researchers involves the degree to which the findings can be generalized to other contexts (Davis, 1992). On the other hand, the qualitative researcher is expected to provide a “thick description” to allow readers to determine

whether transfer is possible or not. Therefore, transferability is how well the study has made it possible for readers to decide if similar processes will work in their own communities by understanding in depth how they occur at the research site (Lodico, 2006). In this way, I will try to provide sufficient descriptive data, as much as I can, for the readers of the current research to make such judgments possible.

3.2 Research tools

The detailed procedures of how to design field notes, interviews, and the questionnaire will be presented later (Sections 3.2.1, 3.2.2, 3.2.3, and 3.2.4). In Section 3.2.5, I will explain ethical considerations and the design of consent forms. Since the student participants are not English speakers, it is necessary to provide them the Chinese version of the questionnaire. How to translate the questionnaire from English to Mandarin, and the research findings from Mandarin to English, will be discussed in Section 3.2.6. Finally, I will precisely summarize the whole framework of the present research.

3.2.1 Design of field notes

According to Bogdan and Biklen (2007), the descriptive field notes represent the researcher's best effort to record objectively the details of what has occurred in the field. The descriptive aspects of the field notes encompass the following areas (Lodico et al., 2006; Bogdan and Biklen, 2007):

1. An explanation of the physical setting. This would include an overall description of the space (e.g. the number of students).
2. A description of the participants in the setting. This includes not only who is in the setting but also a description of their roles.
3. Depiction of activities. The researcher should observe the activities the participants are engaging in.
4. Reconstruction of dialogue. The notes will contain summaries or characteristics of the conversations that go on between subjects.
5. Participant nonverbal behaviours. The conversation should be observed not only for what is being said but also how it is being said.

After the first observation, the information for the first two points can be easily

obtained. However, classroom activities, verbal interaction, and non-verbal behaviours change every lesson. It is necessary to record the information for all of them every time when I observe the class. After careful consideration, I designed the framework for the field notes (See Appendix C). The framework can be divided into Part 1 (Teacher behaviour) and Part 2 (Learner behaviour). In Part 1, two important issues, questioning behaviours which influence learner verbal participation and language choices in questioning behaviours, will be recorded. In Part 2, two categories regarding student behaviours are worthy of annotation. They are student responding behaviours to teacher questioning and language choices in learner responding. Classroom activities and non-verbal behaviours were recorded as well, but I did not design additional categories for them, since this research particularly focuses on social verbal interaction between the teacher and learners in class.

According to Pirie (1996), in any research, with every question we ask we create a bias in the data. We see what interests us and we look with a purpose. The field notes we take are already interpretation of the events that we study (Swann, 2001). She suggests that this bias can be decreased by the use of video recording. Video recording has been claimed as the method to capture everything that happens in the classroom, therefore allowing the researcher to postpone that moment of decision making and focusing. The combination of field note taking and video-recording during classroom observation will help me to obtain rich data which are filled with pieces of evidence and clues that I can begin to put together to make analytical sense out of what I study (Bogdan and Biklen, 2007).

3.2.2 Designs of pre/post-observation semi-structured and stimulated recall interviews

Semi-structured interviews are generally organized around a set of predetermined open-ended questions, with other probing questions occurring from the conversation between interviewer and interviewee (DiCicco-Bloom and Crabtree, 2006). The framework of these predetermined questions is also called the interview protocol (Lodico et al., 2006). The interview protocol helps to ensure a certain degree of standardization during the process of data collection. That is, through the protocol, the researcher knows what questions he/she needs to ask and each interviewee is asked the same question in the same way as much as possible (Lodico, 2006 et al., 2006). In the current research, I designed the protocols for pre-observation and post-observation interviews in order to obtain much more valid information (Appendixes D and E). The

question items were adapted from research studies in different research fields (Thamraksa, 1997; McCormick, 1997; Hus, 2001; Liu et al., 2004).

The focuses of the pre-observation interviews in the current research are the background of participant teachers and their general descriptions of their classes. The protocol includes five parts: personal information, teaching procedures and English teaching goals, how to improve student listening and speaking competence, language choices, and perception of student participation and ability. The first part of this interview protocol came from Thamraksa's (1997) study. In Thamraksa's study, in order to obtain information on the English teaching goals and background of participant teachers, six interviews were conducted. I synthesized and adapted the question items from the six interview protocols and applied them in the current research. Slightly different from those questions in pre-observation interviewing, some question items in the post-observation interview are to summarize the findings from classroom observation and try to ask teachers' opinions and explanations of what I observed in classes. An example of these questions is 'As I observed, I found you use a) Mandarin/English, b) mostly English, c) mostly Mandarin. Why did you do so?'

The question items related to English teaching goals in both pre-and post-observation interviews were modified from McCormick's (1997) study. Examples of these questions include 'More specifically, what are your English teaching goals including reading, writing, listening, speaking, grammar, vocabulary and other aspects? How do you achieve them?' In McCormick's research study (1997), with the use of semi-structured interviews with the teachers, McCormick generated and classified teachers' teaching goals from the interviews and found teacher questioning indeed assisted them to achieve their goals. In the current research, I thought these question items could also be used to identify teacher teaching and learning goals in English classroom settings in Taiwan.

The question items in both pre-and post-observation interviews related to language choices were adapted from those on the questionnaire to subject teachers in the study conducted by Liu et al. (2004). Through using the excerpts of observed classroom events together with the explanation of the reasons why and when the teachers use the target and first language in classes from the questionnaire, their research (Liu et al., 2004) generated the functions of target language and first language in teacher utterances. I employed these question items in my interviews and, with the assistance of these questions, I planned to uncover the possible reasons why teachers use code-switching strategies in their questioning behaviours.

The question items on student participation came from Hsu's (2001) interview protocol. In pre-observation interviews in the current research, questions such as 'Are you pleased with student responding behaviours?' aimed to attain a full understanding of individual teachers' perception of student verbal participation from a general, whole-class aspect. Questions such as 'In particular, were you happy with the responding behaviours of the focal students?' were placed in the post-observation interview since when conducting pre-observation interviews, focal students were not yet selected.

In the current research, the concept of learner English proficiency and cognitive development occurring in learners' social interaction with their teachers has been emphasized. I considered it is necessary to use question items which are related to how to improve student listening and speaking abilities through whole-class discussion, since I thought that, in whole-class discussion, question asking and responding behaviours between the teacher and individual students may be a feasible method to improve their English speaking and listening proficiency. Through conducting interviews, I could elicit useful information from participant teachers.

Stimulated recall interviews (Appendix F) were conducted based on the video-recording from single classroom observations. The content of the interviews focused on the events which had happened in the single classroom observation and I tried to ask for explanations and reflections from the teacher about what he/she thought at that time. As a matter of fact, this kind of interview should be conducted as soon as possible after the class is observed (Gass and Mackey, 2000). However, unfortunately, in practice, I did not think I could interview every participant teacher immediately after each classroom observation. I decided to conduct two stimulated recall interviews for each teacher and these interviews would be held within three days after the recorded observation. The question items in the stimulated recall interview are very similar to those in the pre/post observation interviews. The reason why I repeatedly asked interviewees similar questions in the three kinds of interviews (pre/post- observation interviews and stimulated recall interviews) is that I tried to find out the consistency of the information the interviewees have provided and these questions prompted the teachers to elaborate more on issues or topics that they had not gone into in detail (Thamraksa, 1997).

3.2.3 Design of questionnaire

The purpose of the questionnaire in the current research is to acquaint the focal students with the questions I am going to ask in the following interviews in order to elicit more information from them. Meticulous attention must be paid to ensure the questionnaire is designed appropriately. Many researchers provide lists of step guides to a questionnaire design (Stone, 1993; Cohen et al., 2000; Leung, 2001; Williams, 2003). After modifying and synthesizing these guides, the following steps emerged and helped me to develop my own questionnaire:

- (1) Decide what data I need and study the population.
- (2) Decide how the questionnaire will be administered.
- (3) Select items for inclusion.
- (4) Select types of questionnaire items
- (5) Design the layout.
- (6) Pre-test a first draft questionnaire.

In the current research, I used the technique of ‘purposive sampling’ (Williams, 2003) to select a few focal students and divided them into less vocal, averagely vocal, and more vocal groups (Hsu, 2001). These student participants were chosen because they have three different characteristics and they will help me to uncover their preference in response to their teachers’ questions from three different viewpoints, and other factors which might influence their responding behaviours in classrooms can also be identified.

There are two major ways of administering questionnaires. They may be self administered (respondents complete questionnaires on their own) or read out by interviewers (Leung, 2001). The advantages of self administered questionnaires are: (a) they can be completed at the respondent’s convenience, (b) they can be administered in a standard manner. On the other hand, the advantage of interview administered questionnaires is that they allow clarification of ambiguity. In the current research, I planned to issue a questionnaire to focal students first, and subsequent interviews with them individually. This is very similar to the method of interview administered questionnaires but they are not exactly the same approach. In my research, the respondents completed their own questionnaire by themselves and, then, based on the responses they provided on the questionnaire, I asked probing questions in interviews to elicit detailed information from them. When conducting face-to-face interviewing, I also identified and clarified their ambiguity to avoid possible misunderstanding of question items (Baker, 2003) and cross- checked the data (Stone, 1993) to see if there

is consistency between the oral and written responses of focal students.

The question items in the current research aim to find out the research data for Research Questions Four and Five. That is to say, I tried to discover the attitudes of students towards their language choices in utterances in response to teacher solicitations and other factors which might influence their speaking and responding behaviours in class. I did not design all question items by myself. I modified most of them from other researchers. Because there are many similar questionnaires in existence, which can suit my purpose, there is no point in reinventing the wheel (Stone, 1993; Williams, 2003). In my questionnaire, the question items 5, 6, 7, 15, and 16 were adapted from Young's research (1990); the question items 8, 17, 18, 19, 21, 26, 31, and 34 were modified from Hsu's research (2001); the question items 22, 23, 24, 27, 28, 29, 30, and 32 were adjusted from Fassinger's research (1995). The question items 12, 13, and 14 were triggered by the research findings of Liu et al. (2004) since, in their research, they found the complexity and language use in teachers' questions directly influenced language choices on the part of learners. The question items 9-14 are related to the issue of code-switching behaviours. The other question items are related to the factors which exert influences on learners' responding behaviours.

After deciding which questions should be included, the following step is to formulate a question item. The questions items in questionnaires can be in open-ended or closed formats. In the closed format, respondents are forced to choose between several given options (Leung, 2001). The degrees and intensity of the given response options can be managed in rating scales (Cohen et al., 2000). There are many rating scales. In this research, the Likert scale was used. In a Likert scale, the subject is asked the extent to which they agree or disagree about an issue. The responses of the Likert scale are given in the form of a rating scale (usually a 5-point scale), for example (Williams, 2003:248):

Strongly Agree Agree Undecided Disagree Strongly Disagree

Many research studies suggest that the options such as 'I don't know' or 'undecided' should not be ignored due to human uncertainty and indecisiveness (Stone, 1993). However, other studies have shown that including such response options may lead to lots of non-committal answers (Williams, 2003). Mitchell (1999 cited, in McGorry, 2000) further points out that Asian respondents tend to prefer the middle of the scale. As I mentioned earlier, the purpose of the questionnaire in this research is to be a pioneer research tool before interviewing. I expected students to understand and to

respond to all of the questions in the questionnaire, and later on it would be easy for me to ask more detailed information from them in face-to-face interviewing. A normal five-point scale cannot be employed. Because, based on my understanding of Taiwanese students, I assumed that when the option --‘undecided’ is given in my questionnaire, Taiwanese students may use this option to answer most of the questions, and then, in the subsequent interviews, I could not ask them to clarify their opinions since they have not even decided their responses. Therefore, in my questionnaire, the scales only have four points: strongly agree, agree, disagree, and strongly disagree.

In an open-ended question, respondents write free responses in their own words to explain and avoid the limitations of pre-set categories of response (Cohen et al., 2000). It is very suitable for seeking narrative information (Marshall, 2005) and for smaller scale research in order to invite a genuine, personal comment from the respondents (Cohen et al., 2000). The advantages and disadvantages of these two types of questionnaire items can be demonstrated as follows (Cohen et al., 2000):

Table 6: The advantages and disadvantages of closed questions and open-ended questions

	Advantages	Disadvantages
Closed questions	Closed questions are quick to complete and straightforward to code, and how articulate the respondents are does not affect the data.	They do not enable respondents to add any comments and explanations to the responses they choose and there is a risk that these responses may not be exhaustive.
Open-ended questions	Open-ended questions could invite honest, personal comments from the respondents in addition to simply ticking boxes in the given options.	The responses of open-ended questions are difficult to code and to classify.

According to Leung’s (2001) suggestions, it is feasible to use a mixture of the two formats (Stone, 1993; Leung, 2001) and it is a very good practice in a questionnaire based on closed questions to leave space for respondents to give their comments at the

end of each section (Williams, 2003). In this research, I employed the mixed format. On the one hand, I can code and count the results from rating scales. On the other hand, the written comments of respondents will be included or be quoted verbatim in my finding report.

The appearance of the questionnaire is vitally important. I arranged each question item with plenty of space in order to make my questionnaire not too compressed (Cohen et al., 2000). Besides, I also gave instructions at the beginning of the questionnaire in bold type and informed student respondents that they are very welcome to leave their comments for each question. At this stage, the questionnaire seemed to be ready for use. But, even if I designed it carefully, there will be some flaws and I am the last person likely to spot them (Stone, 1993). Therefore, I circulated the draft questionnaire to two Taiwanese friends. One is doing a PhD in related research in English language teaching and the other is doing a PhD in Computer Science, a very different subject from mine. They gave me some feedback and comments. The first friend, thanks to her familiarity with the use of a questionnaire in Educational and language research, thought the layout of my questionnaire was problematic. There were nine pages in total. In her opinions, the student respondents might not be patient enough to complete it. She suggested me to place all question items in one page in order to maintain the attention and interest of subjects. The other friend questioned the space left for the comments of students in my questionnaire. He did not think the participant students would really leave their comments and this design was in vain. Nevertheless, I thought the space for comments is essential. When I issued the questionnaire to the focal students, I would tell them I am going to ask them more information in the interviews based on the answers they provided on the questionnaire. I assumed this should encourage them to read and to respond the questions carefully and they would be willing to leave their written comments as notes and preparations so as to answer the related questions in the interviews. If I put all the question items in one page, the appearance of my questionnaire is too crowded for the respondents to provide full comments. I preferred to leave enough space for them and placed the questions on several pages. Although I appreciated my friends' help, after careful reflection, I did not make any changes in my questionnaire. Appendix G is the final version of the questionnaire.

3.2.4 Design of semi-structured interviewing with focal students

Like the pre-determined question items in interviewing with teachers, when

conducting the semi-structured interviews with focal students, I also had an interview protocol (Appendix H) which is related to points of focus to act as ‘possible lines of enquiry’ as is suggested by Wilson and Powell (2001). In this protocol, the question items 3, 5, 10, and 11 were adjusted from Hsu’s research study (2001). Most importantly, I used many probing questions in the interviewing to elicit more information about the responses and comments of focal students on their preceding questionnaires.

In addition, interviewing with children or adolescents is significantly different from interviewing with adults. For these young focal students, they may feel anxious and unsure of what to expect or how things will happen in the interviewing (Cameron, 2005). Therefore, as Wilson and Powell (2001) suggest, some useful ‘ground rules’ should be established early in the interview to guide young respondents in answering my questions. This may include simple things like what to call the interviewer or much more complex things like how to talk about issues. For example, I stated ‘If you don’t understand something please tell me.’ at the beginning of every interview with individual focal students. These things seem simple and many adults take them for granted. However, for a young respondent who lacks background understanding of how to behave in the interview setting, it is useful to offer him/her some ideas about how to deal with the interviewer (Cameron, 2005).

Confidentiality of the data is an important factor which may affect the ease and completeness of focal students’ responses (Faux, 1988; Cameron, 2005). When conducting interviews, I expected to use an audio-recording device. The focal students may worry that their responses and identities may be duplicated and shared by others. I need to explain the use of audio-recording and the anonymity of the collected data. Additionally, consent forms for both parents and students are required. The ethical considerations will be discussed in the next section.

3.2.5 Ethical considerations and design of consent forms

I classified the issues of ethical consideration under the Section of Research Tools (3.2) not Section of Research Design (3.1), since I thought the consent form would be an important kind of research tool before I actually conduct my research and employ other subsequent research tools in the field.

In fact, ethical issues exist in any kind of research. The research process creates

tension between the aims of research to get the truth or make generalizations for the benefits of others, and the participant's rights and values which are potentially threatened by the research (Cohen et al., 2000; Orb et al., 2001). However, the harm can be reduced through the application of appropriate ethical principles (Orb et al., 2001). Among those ethical principles, it is particularly important that the consent be informed (Lodico et al., 2006). In my research, both participant teachers and students were observed and video-recorded. Three kinds of interviews were conducted and tape-recorded with teachers before observations commenced, after observations have been carried out and during the time period of classroom observations being conducted. Some students were selected as the focal students to complete the questionnaire and the researcher carried out subsequent tape-recorded interviews with them individually. At the very beginning, consent had been obtained from teachers, student, and, most importantly, parents. Since the subject students are young and vulnerable, I thought it is also necessary for their parents to provide informed consent on the student's behalf before the start of the research. The framework of consent forms for students and their parents were modified from Lankshear and Knobel's model (2004), and the consent form for teachers was adjusted from Thamraksa's research (1997). The consent forms issued to the teachers aim to invite them to participate in this research and make sure that these participant teachers must be willing to be observed, interviewed, video-recorded and tape-recorded. Also, I attempted to ensure these teachers understand that their participation will not be linked to evaluation of their teaching performances. For the students, through the consent forms, they understood that they were subjects of observation. In addition, they may be or may be not selected as a focal student to complete the questionnaire and the subsequent interview with the researcher. Whether they participate or not will not influence their process and assessment in the schools. In the parents' consent forms, I emphasized that this study will not interfere with the learning of their child in school.

According to Lankshear and Knobel (2004), at least two types of statement should be developed for seeking consent. One is the form signed by the participants. The other is an information letter which explain what the research is doing, what risks may be involved, what the subjects will be protected from, the researcher's contact information for responsibility and so on. These two types were applied in all consent forms in my research. The forms with signatures were retained by the researcher; the information letters were kept by the participants. Please refer to Appendixes I, J, and K for the formats of these three consent forms. Moreover, when seeking consent from parents and students, I issued the Chinese versions of the consent forms (Appendixes L and M), since a consent form should be in the language that the signatories can

understand and relate to (Lankshear and Knobel, 2004).

In addition, there are some other ethical principles should be considered (Lankshear and Knobel, 2004):

- a) avoid deception;
- b) ensure confidentiality and anonymity;
- c) respect subjects' rights and dignity;

In order to avoid deception, theoretically, all participants must be aware of the exact purposes of the study and what it will involve. However, the problem is when the participants know the topic, it may lead to the effect of 'cooperative-subject effect' (Kirk, 1982). "This source of bias is caused by the influence that a researcher's expectations and motives have on a subject's performance. As a consequence, the subjects often respond in way expected by the researcher" (Hsu, 2001:38). That is, if the participants know exactly what I expect prior to the research, it is possible to assume that they may consciously or unconsciously perform accordingly. This would bias the research results to some extent. That is the reason why some researchers comment that a degree of deception might sometimes be necessary in order to conduct any research involving human subjects (Cohen et al., 2000). In the current research, I decided not to tell the participants the exact research topic and purposes at the beginning. Instead, the general ideas of the research were described. After completing the research, I provided the participants with copies of my PhD upgrade paper in which the exact research topic, research purposes, and further methods of data analysis were described.

Subjects should be assured in writing that their identities will be masked as much as possible in any report of the research outcomes and processes. This traditional criterion of ethics was also applied in the current research and it aims at minimizing negative repercussions for participants in light of outcomes of the study (Lodico et al., 2006).

Additionally, it is especially important to demonstrate respect during the formal research for both participant teachers and students. This helps maintain my trusting relationship with them during a formal study so that they feel free to answer honestly and know that this will not affect their academic performance evaluations on school reports (Lankshear and Knobel, 2004). For example, when students refused to take part in classroom observations, I re-arranged their seats or the position of the camera

to assure that they were not filmed. If they decided to refuse, their actions were not recorded and they are not included in the researcher's final results or any articles.

3.2.6 Translation issues of research tools

After designing all research tools, the final step is how to conduct them with those participants whose first language is not English. Since the subject teachers in this research are English teachers, when I conducted interviews in Mandarin with them and could not find equivalent Mandarin words or phrases on the spot, I used English words or phrases directly. Likewise, for interviews with students who have learned English for several years, it is not very hard for them to understand some English words I used to clarify my intended meanings in the interviewing. However, I decided to issue the students with the Chinese versions of the questionnaire since I considered if I had issued the original English version, due to students' emotional factors, they might feel reluctant to complete it.

In fact, translation problems emerge in cross-cultural research (Sperber et al., 1994; Lee et al., 1999) principally when the researcher cannot understand the participants' own words and needs third-party translation (Esposito, 2001). Fortunately, the situation in this research is that I am fluent in the language of the communities I am working in (Temple and Young, 2004). I should be well situated to do cross-language data analysis and do not need an extra translator. Nevertheless, there are two major types of translation problems I should overcome. The first task is how to translate question items in the questionnaire from English to Mandarin which is understood by the student participants. The second major translation task is how to translate the communicated meanings from the collected Mandarin research data into English (Twinn, 1997).

Language differences cause the most obvious distortion in translating questionnaires, therefore require rigour in ensuring linguistic and cultural equivalence (Werner and Campbell, 1970 cited in Chang, 1999). However, not all concepts are universal and not everything is translatable (Jones and Kay, 1992). When translating the English questionnaire into a Chinese one, I experienced some words where I had to stop and think about the equivalent meaning (Temple and Young, 2004). Take the question item 29 in the questionnaire as an example, 'My classmates discourage others from appearing too confident.' In order to translate this sentence, I spent some time to find the equivalent Chinese word for 'discourage'. In Chinese, there is a similar and

equivalent word for ‘courage’, but the definition and meaning of ‘discourage’ appear quite differently in different English-Chinese dictionaries. Some lexicographers explain that the meaning of ‘discourage’ is equal to that of ‘let someone down’ or ‘prevent from’ in Mandarin. However, if we read through the original question again, these Chinese meanings above cannot exactly fit with the intended meaning of the English word ‘discourage’. Finally, I decided to use the Chinese word ‘勸阻’ which closely means that one stops or does not allow someone to do something. In addition, in order to produce the grammatical Chinese sentences without semantic problems at the same time, sometime it is necessary to reverse the positions of a main clause and its subordinate clause. I tried to produce meaning-based translations rather than word-for-word translations (Esposito, 2001). See the Chinese version of the questionnaire in Appendix N.

Translating research data from Mandarin Chinese into English for data analysis is the second task I encountered. Although I think this paragraph should be placed in the later section of data analysis, to provide a well-represented argument of translation problems in the current research, I decide to discuss this issue here.

An important finding emerging from Twinn’s (1997) study is that the use of either Chinese or English makes no significant difference to the major categories generated during the data analysis. In Twinn’s study, in-depth interviews were undertaken in Cantonese with a convenience sample of six women to uncover their perceptions of factors influencing their uptake of Pap smears. She claims that for the data analysis, there was no little difference in the generation of themes within categories. However, Twinn states that there is indeed the complexity of translating data from Chinese into English. In the current research, I used three steps to translate research data that I collected from fieldwork (See Appendix O). In the first step, I transcribed and presented the selected original Chinese data. Then in the following step, I did word-for-word English translations. In the final step, I corrected the grammatical mistakes and presented the translated data in standardized good English. That is, I tried to present the reader meaningful and culturally acceptable translations, not only literal ones (McGorry, 2000).

However, even if I tried to present better translated data in the second language from the source language to my full ability, I cannot ensure that perfectly equivalent translations are provided, because, as Temple and Young (2004:165) say, “there is no single correct translation of a text.”

3.2.7 Framework of the current research

For the reader's convenience, in this section I decided to succinctly present the whole framework of methodology which was discussed in detailed earlier and how I designed the timetable of data collection and placed this research framework in English classroom settings in Taiwan.

This study is classroom-centred/ multiple-case research to analyze naturally occurring questioning behaviours in four English as a foreign language classrooms (EFL) in upper secondary schools in Taiwan. Data were collected using a variety of methods: classroom observations, pre-observation/ post-observation interviews and stimulated recall interviews with teachers, and a questionnaire and subsequent interviews with selected focal students.

Before conducting this research, the teachers, students, and parents would be asked to give informed consent. The researcher would ensure that every participant understands that they can withdraw from this research at any time. Their personal information will be kept confidential and the results of this research will be used for educational purposes only.

For classroom observations, twenty sessions in four English classes should be observed. In addition to taping, the researcher should take field notes during observation.

For interviewing with teachers, pre-observation interviews should be conducted before any data collection in the classroom. Through discussing the events of observed data with the researcher within 72 hours of taping, eight stimulated recall interviews (twice for each teacher) should help teachers relive an original situation and to consider their actions at that time (Bloom, 1953, cited in Patrikainen and Toom, 2006). Finally, after all data collection, post-observation interviews should be undertaken.

After the first two weeks of observation, for each class, the researcher should select three focal students who represent three different groups: less vocal, average, and more vocal groups. The focal students should complete their questionnaire first and then the researcher would conduct subsequent interviews with them individually based on their answers from the questionnaire to elicit more information.

Appendix P is the original schedule of data collection. It presents the timetable in

which I expected myself to contact participants and conduct every research tool.

The framework in this section is the original design before processing any data collection. However, there is a gap between the theory and practice (Kaufman, 2003). When I was conducting the research, I encountered some problems that I had not considered beforehand, and in order to cope with them, I made some changes on research tools and procedures. This will be discussed in later sections.

3.3 Data collection

In the next following sections, I will demonstrate the data collection procedures. I will explain first how I had access to the research sites and sought participants' consent. Especially, how and why did I use passive parents' consent forms? Then, the participant portfolios will be presented in tables (Section 3.3.2). In order to have rough understanding of the four participant classes, in section 3.3.3 I will provide the structures of the classes and their teaching materials. In the final section, I will illustrate in order how I employed each research tool in the current research.

3.3.1 Gaining permission for the research sites

The first step of data collection was to gain permission in order to have access to the research sites. However, as a novice researcher, I had not undertaken formal research projects in classroom settings. Also, although I used to be a trainee teacher in Computers in the vocational high school, I had not formally taught English in classrooms. At the beginning, it was hard for me to find suitable research sites and participants because of my limited teaching and research experience. Then, I contacted my previous English teacher in the university. Through his recommendation, I gained contact information of several of his students who are currently English teachers in secondary schools in Taiwan. I selected four of them as participant teachers in this research. The first criterion for this selection was of a much more practical nature:

If we can, we need to pick cases which are easy to get to and hospitable to our inquiry, perhaps for which a prospective informant can be identified...

(Stake, 1995: 04)

The teachers in this study were selected with these considerations in mind. The

location of the teachers' classes must be easy for the researcher to get to. The teachers and the schools that they work should be hospitable to my further inquiry. The second criterion for these participants is that all of them were English teachers for Year 2 students (aged between 16-17) in upper secondary schools. I tried to ensure that the participant students were of the same age and had similar characteristics as much as I could.

I then approached each of these four teachers individually and provided more information about the purpose of the study and the methodology by which data collection would be carried out. Also, I assured these teachers that their participation in the current research study would in no way link to the evaluation of their teaching performances. After giving me their written consent, the participant teachers reported to the schools and security staff for my permission to enter these schools.

After gaining permission from teachers and schools, the next step is to obtain informed consent from students and their parents. When I consulted the participant teachers, they thought it is not feasible to seek parents' written signatures simply by issuing them the consent forms, because, in the Taiwanese cultural context, signing a consent form would cause parents anxiety and they would get the impression that the researcher is going to do something very dangerous or something full of risk to their child. For the parents, I am a complete stranger, it is also very hard to build rapport and trust with them. Besides, in the parents' consent form I designed, I did not mention clearly the exact purpose of this research. All of these will reinforce their uncertainty and decrease the response rate. One of the teachers told me that ethical consideration is not a well-developed concept in Taiwan. Even if the Ministry of Education conducts similar research in schools, only oral consent from students, teachers and schools is required, since in Taiwanese society the students in upper secondary schools are old enough to take the responsibility in this kind of school-based research.

After discussing with all the teachers, I decided to make some changes in the design of the parents' consent form, as the participant teachers suggested. First, I deleted the second page of the parents' consent form. That is, I only issued the parents the first page, the information letter. This is also called 'passive consent'. The parents are informed to provide their approval for the child to participate in the research, but they did not return their written consent to me (Cameron, 2005). The parents were required to respond only if they did not want their child to participate in the current research (Esbensen et al., 1996). Researchers in school-based studies claim that passive consent

procedures do not necessarily violate parental rights, but multiple methods of parental notification should be used (Ellickson and Hawes, 1989). That is, if the schools are cooperative by providing student addresses, in addition to sending forms home with students, extra information letters could be mailed home to parents. This is because that the major debate about using passive consent forms is when consent forms are sent home with students, a substantial number of parents may never receive the forms (Esbensen et al., 1996). However, due to confidentiality issues, the participant schools in the current research were not willing to provide the mailing addresses of students. I did not mail the parents additional letters. Alternatively, I tried to find other methods to maximize the amount that the parents were informed and the amount that the parents were willing to allow their child to participate.

Before I formally observed each class, I visited each class twice. I was introduced by the teachers to their classes, explained the purpose of the research and the research procedures to the whole classes, and, at the time, I asked for students' oral consent to participate. None of them refused to participate. Then, I allowed the whole classes to ask me questions. For these students, they were more curious about my personal information than the research procedures. Most questions they asked were not related to the current research. The purpose of this visiting was to acquaint myself with the classes. I assumed that once the rapport was established, the students should be much more cooperative.

After the first observation of each class, I formally issued the consent forms to all students. The students already had much clearer understanding and were willing to provide me their written consent. Meanwhile, I explained ethical issues to students and issued them parental consent forms. They were asked to take the forms home on the same day and if their parents had any questions, they had to offer explanations in the first place. All students were required to report to their English teacher on the next day. I assumed that even if some parents hesitated to participate, they would respect their child's intentions and teacher's recommendations. (In the amended Chinese version of the parent consent form, I indicated the research is supported by their child's English teacher and the school). No disapproval from parents was reported.

Although I tried my best to inform the parents, I admit that some parents may not have received the forms and if active consent (parents signed and returned a form giving permission for their child to participate in research (Cameron, 2005)) had been used, they would have refused (Esbensen et al., 1996). As Huizinga (1995, cited in Esbensen et al., 1996) suggests, when active consent is sought, as many as 10% of parents

would fall into this category. However, I thought ethical considerations should take specific Taiwanese socio-cultural contexts into consideration and in this case passive consent was much more suitable for the current research.

3.3.2 Participant portfolios

In the following, I will present the profiles and the general information about the participant schools, teachers and students. All participants were assigned pseudonyms. The summary of these profiles can be seen in Table 7, 8 and 9.

Table 7: Participant school profiles

	School A	School B	School C
Location	Taipei	Taipei	Taipei
Type	Upper & lower secondary school	Upper secondary School	Upper secondary School
Authority	Municipal	National	National

The location of these three schools is in Taipei city where the researcher lived during the period of the research. That is, I had easy access to all research sites. In addition, they have lots of characteristics in common. They are all state, co-educational, and academic (not vocational) secondary schools. Among them, School A is the relatively new type of school. Two different programmes, lower secondary and upper secondary courses are both provided in school A.

Table 8: Participant teacher profiles

	Teacher A	Teacher B	Teacher C	Teacher D
School	School A	School A	School B	School C
Class	Class A	Class B	Class C	Class D

Age	Late 30s	Late 20s	late 40s	Late 40s
Gender	F	F	F	F
Education	M.A.	M.Ed.	M.A.	M.A.
Teaching Years	8	2	23	23

Teacher A

Teacher A is in her late 30s. She received a Bachelor's degree in English and American Literature in Taiwan. Then she continued her post-graduate studies in another University and obtained a Master's degree. She majored in English literature not English language teaching. Prior to joining School A, she used to be an English teacher in a private vocational school for one year. Currently, she is the English teacher of Year 2 students in school A. At the time of the study, she taught three classes and spent 15 hours teaching per week. She was also the homeroom teacher of Class A (See the detailed descriptions of four participant classes in the later section 3.3.3).

Teacher B

Teacher B is in her late 20s. After receiving a Bachelor's degree in English language and literature in Taiwan, she then continued her TESOL Master's degree in technology-based language teaching in Britain. This teacher used to be a substitute English teacher in another upper secondary school for six months. After that, she joined School A one year and a half ago. Compared with the other three participant teachers, Teacher B has less teaching experience. Teacher A and teacher B are colleagues and work in the same school. Like Teacher A, Teacher B in School A is the English teacher for Year 2 students. At that time, she also taught three classes and undertook 15 teaching hours per week. She was also the homeroom teacher for Class B.

Teacher C

Teacher C is in her late 40s. After obtaining a Bachelor's degree in English language teaching from a normal university (teacher university) in Taiwan, she was appointed to be an English teacher in a lower secondary school. She stayed in that school for nine years. Then, she pursued her Master's degree in English teaching in another university

in Taiwan and started to teach in the upper secondary school, School B, 14 years ago. At the time of the research period, this teacher already had 23 years of teaching experience. In school B, Teacher C taught two classes and she spent 10 hours teaching per week. However, Teacher C was not the homeroom teacher for the participant Class C.

Teacher D

Teacher D is in her late 40s. She completed her Bachelor’s and Master’s courses in the same normal university (teacher university) in Taiwan. She has taught English for approximately 23 years. Prior to joining School C, she taught in several private and state schools. This teacher has been a member of the committee who develop the English teaching materials and textbooks for students in upper secondary schools for several years. Moreover, she has also been engaged both academically and administratively in several teacher training programmes. In School C, Teacher D taught two classes and spent 10 hours on teaching per week. One of these two classes is a special class only for students who have talent in at least one kind of musical instrument. This is Class D which was selected by Teacher D as the class to be observed by the researcher. Teacher D was not the homeroom teacher for Class D.

All of the participant teachers are female. That is because the majority of English teachers in secondary schools are female. The current study, however, does not involve the investigation of ‘female’ language or anything related to gender issues.

Table 9: Focal student profiles

Student	Class	Gender
FS1	Class A	M
FS2	Class A	F
FS13	Class A	F
FS4	Class B	F
FS5	Class B	M
FS6	Class B	M
FS7	Class C	F
FS8	Class C	M
FS9	Class C	M
FS10	Class D	M
FS11	Class D	F

Focal subjects

Based on my original plan, three students from each class should be selected, that is, 12 focal students in total. According to their level of volubility in class, as shown in their verbal participation during classroom conversation with teachers, these students should be divided into three groups: less vocal, average, more vocal. However, when I actually visited the classes, I found it was very hard to make selections, because the students in these four classes were all quiet and most of time they only spoke when they were called upon or they were spoken to. Then, I decided not to classify them into different groups. After modifications, 12 students were still selected based on their willingness and, in some cases, if no one would like to be a volunteer, selections were held randomly. See the explanations why FS3 was replaced by FS13 in Section 3.3.4. Among these subjects, there are more male students than female ones. This is because compared with their female classmates, male students were much more willing to be interviewed by the researcher. I did not think these slight changes would influence the later research findings. These student samples from each class will still help me gain a more in-depth understanding of the impacts of possible factors on the responding behaviours and language choices of different students.

3.3.3 Structures of lessons

In secondary schools in Taiwan, the duration of a lesson lasts for fifty minutes. After each lesson, a ten-minute break is allowed. Teacher A, B, and D used the same textbook (Shih et al., 2007), 'English Reader for senior high schools', which was published by The Far East Book Company. The textbook (Chen, 2007), 'English', used by Teacher C was published by the Sanmin Company. Both textbooks were approved by the central authority for Year Two upper secondary school students. Each subject class includes 35-38 students. In all subject classes, the number of girl students is all slightly more than that of boy students. I believe that that was just a coincidence and, in some secondary school classes in Taiwan, boy students outnumber girl students.

Class A, B and C were structured similarly and the instructional activities were

organized in the same way. At the beginning of every lesson, the students stood up and made a bow to their teachers. Then the teachers began the lesson by reviewing the previous day's homework, continuing with an unfinished instructional activity, or giving the students a quiz. Teacher-fronted monologue occupied most of the classroom time in these lessons (Roy and Swaminathan, 2002).

In Class D, the teacher first introduced a new topic of a discussion or a class activity to the whole class. Student pair and group work followed. The students usually worked on a given task with a handout and the teacher circulated among students to answer their questions. Student presentation and whole class discussion usually followed group or pair work. After student presentations, Teacher D gave comments and feedback and led the whole class for a discussion and reflection.

At the end of these four classes, the teachers typically summarized the important knowledge, gave a brief preview of the next lesson's content, or assigned homework.

3.3.4 Data collection procedures

The current research aims to discover how teacher questioning behaviours influence language teaching and learning in English classroom settings in Taiwan. The data were collected in the second semester of the academic year 2006. The duration of the data collection was 12 weeks, starting from the middle of March till the beginning of June. Additionally, the data collection techniques in the current research were varied, including observation, several types of interviews and the questionnaire. To well describe the data collection procedures, these techniques will be presented in the order in which these techniques appeared in the research.

Pre-observation interviews

Before the videotaping of the class sessions, I conducted audio-taped semi-structured interviews with all the participant teachers. These interviews were 40-50 minutes in length, and they helped collect data regarding teachers' general information, teaching and learning goals, their perceptions about language use and student participation in class, and so on. These interviews took place in a variety of places, including a library, a language lab or a classroom. The choices of both locations and the meeting time were made based on teachers' willingness and convenience.

Observation

The schedule of the observation of each class could not follow my original wishes, since some teachers preferred to be observed on specific days (e.g. Teacher A and B were more willing to be observed on Tuesday or Wednesday). The observation time was negotiated with each participant teacher. Therefore the timetable of data collection is different from the original plan (Appendix Q). I recorded 6 class periods for each class on video and audio tapes. There were in total 24 recorded class periods in the database. I tried to balance the amount of recorded data collected from these four participant classes.

I also took field notes which contained general records of classroom conversation and activities. In doing so, I seated myself next to the back door in the corner of the room. This position allowed me the widest view of the entire classroom. Moreover, I always brought the textbooks and all supplemental teaching materials that I collected from the teachers before every observation and these made me able to catch up with whatever topics were discussed in each lesson. In my field note taking, I attempted to record the events as objectively as possible by avoiding the use of judgmental and evaluative language, as Day (1990) suggests.

As I mentioned earlier, in order to pick up the soft voices of the students in the large classrooms, using one digital video-camcorder was not enough. I also used four digital audio recorders with in-built microphones. The four audio recorders were placed in each corner of the classrooms. That is, I had four sets of audio tapes and one video tape for each recorded class period. However, even if I tried to use multiple recording devices to collect as much language data as I could, I found it was very hard to record language from the students. Most of the time, the students whispered to teachers' solicitations or spoke in a very low voice in classes.

Journal entry format

Different from my original plan, this technique, borrowed from McCormick's research (1997), was added as one of the research tools. It involved the retrospections by the teachers on their goals for each lesson and how they tried to achieve these goals (See Appendix R). These data provided general background information for each lesson and enabled the researcher to interpret accurately teacher questioning behaviors which are supposed to associate with their teaching and learning goals. Although the teachers should complete the journal comments immediately after each lesson, due to practical

considerations, they were asked to complete each journal entry on the day of the observation and returned it to the researcher in the next observation meeting.

The questionnaire

The timetable of issuing the questionnaire was based on the same timetable of classroom observation. For example, the day, 26th of March 2007, was the first time that the observation was conducted formally. I observed the classes of Teacher A and Teacher B. I brought one copy of the questionnaire and issued it to the first focal student, FS1 in the morning. FS1 completed the questionnaire in the breaks. When I brought him his questionnaire, I told him not to share his opinions or answers with other focal students and most importantly, he must answer the questionnaire and leave comments, since this questionnaire served as the questions in the following interviews to elicit needed information from him.

Interviews with focal students

On the same day, after the questionnaire was issued, a semi-structured interview was conducted and audio-taped in the lunch break. Although ethical issues were already explained beforehand, when interviews were undertaken, some focal students were still worried about their identification by the tapes, I assured them again that the research data will be protected and only the researcher has access to the data base. In some cases, when the focal students were not available to be interviewed on the same day, the interviews were carried out on the next day. I did 13 interviews with focal students in total because after interviewing FS3, I deleted the research data by accident, and FS3 was not able to do one more interview with me. I, then, conducted the interview with FS13, another student from Class A, to replace FS3.

First stimulated recall interviews

According to my original research plan, the researcher should view and discuss the video tape with the teacher within 72 hours of the taping. Nevertheless, practically, these interviews were undertaken based on the timetables of the participant teachers. Some of them were conducted within two days after the video-taping; some were postponed for several days. The range of the duration was from 24 hours to 5 days. When conducting the stimulated recall interviews, if in the scheduled lesson teacher-fronted whole-class discussion (which was focused on in the current research: see discussion 4.4.1) did not appear, the researcher discussed the video tape of the

following class containing such activities with the teachers. Before carrying out the interviews, I viewed the tape and reminded myself which questions I should ask by taking notes of events and the time and took a pre-determined list of questions at hand. When doing interviews, the tapes were viewed on my computer, which records the hours, minutes, and seconds of the events so that I can locate the points of interest in the classroom data quickly. After observing the classes several times and doing pre-observation and first stimulated recall interviews, I found all the participant teachers had their fixed teaching and learning goals and made their language choices in some particular occasions. I also noticed that, in spite of the need for consistency of research data, repeatedly asking similar questions in interviews makes subject teachers slightly impatient and weary. I decided to remove the second stimulated recall interviews from my research plan. That is, I only carried out stimulated recall interviewing once for each teacher.

Post-observation interviews

In the concluding interview, the researcher specifically asked about what types of questions teachers used and why they used these questions in their classes, and the role of questions as a tool to achieve the teacher's goals in the classroom. A comparison and contrast of the data from observation, the questionnaire, and the interviews with teachers and students provided a basis for more accurate and valid interpretations of the classroom data about how teacher questioning behaviours influence language teaching and learning in classes.

3.4 Data analysis

The research data collected for this study included the field notes, journal entry formats, video/ audio recordings of 24 class periods. Besides, there are three kinds of audio-recorded interviews with four teachers, and a questionnaire and subsequent interviewing with 12 focal students. Among them, observed data from the classrooms, and information from the questionnaire and interviews with teacher and student subjects serve as the main database for analysis. In the following sections, I will explain how I deal with and interpret the data so as to answer the five research questions.

3.4.1 Classroom data

Data reduction was my first step when I was trying to analyze the video/audio recorded classroom data due to the quantity of transcribed discourse. According to Miles and Huberman (1994) and Wells (1996), data reduction involves selecting class periods and class episodes from the original database, which are pertinent to the research questions. Four class periods containing no teacher-fronted activities were eliminated from the analysis. The researcher then viewed the remaining data of 20 class periods (four for Teacher A and B, six for Teacher C and Teacher D) to identify the activities in which the teacher worked directly with the entire class. That is, in the current research, only teacher-fronted activities were examined. Teacher-fronted activities are defined as “the classroom activities where the teacher is very much the focal point of the class work, exercising considerable control over the activity and the language that is elicited from the students” (Garrett and Shortall, 2002:27). In Section 3.4.6, the illustration and the examples of teacher-fronted activity boundaries are shown in the table.

All of the recordings of teacher-fronted activities were transcribed by the researcher verbatim. The procedures of transcribing consisted of two steps. I first viewed and transcribed the video-recorded data of each teacher-fronted activity to get a basic transcription. Second, I went through the other four audiotapes from the recorders that were placed in four corners in the classroom to check for completeness and make necessary modifications. The purpose of doing this was to get student language data as much as possible since these data were usually inaudible or unintelligible compared with language data of teachers in the videotapes.

Additionally, classroom activity contexts and contents were described based on the information from the teaching materials used in class, my field notes and the journal entry formats from teacher subjects.

3.4.1.1. Transcription conventions

Before any analysis of classroom data, the transcribed data should be displayed in a format that enables the researcher to make interpretations (Miles and Huberman, 1994). Transcription conventions were made in order to analyze the data from the video-recorded teacher-fronted activities. According to Rogers, Green, and Nussbaum (1990), the information about who asked the question of whom and where and when this question was asked should be included in order to understand the questioning

process in classroom discourse. Therefore, I identified the teachers and students in transcripts by assigning them different pseudonyms. An unidentified student is represented as S?; Ss for several or many students speak in chorus; @#\$\$%^&* stands for multiple speakers at the same time but their utterances are unintelligible; S1-n are the order of the respondents in an activity or content units (see the definition of a content unit in Section 3.4.4). The notations of speaker identification in the transcripts present how knowledge was co-constructed among classroom participants through question asking and responding and how such knowledge contributed to the changes of the language use on the part of learners (Hsu, 2001).

I also documented the two different lengths of pauses (+) and (++) within speaking turns since the importance of ‘wait time’ in teacher solicitations, which has been reported in second and foreign language classrooms. The research data in Hsu’s (2001) study show that both participant teachers in his research often strategically lengthen the final sound of their utterances as questions to signal students to ‘fill in the blank’. The same language behaviour was also uncovered in my research data and presented in the transcripts (notated e.g. my::). In addition, the notations of rising intonation (↗) were included in the transcription, since sometimes they indicated the teachers’ questioning behaviours.

‘...’ stands for the silence of students after teacher questioning. (...) is the omission of the off-task events which were not transcribed. Utterances which were not comprehensible after several times of repeated listening were rendered as three X’s, e.g. XXX. Passages that were unclear but about which I could make a reasonable guess based on responses to those passages were indicated by placing them between two slashes, e.g. /sorry/. Utterances spoken in a lower voice were put between percent symbols, e.g. % ok %; in contrast, utterances spoken in a higher voice were presented in a bold type, e.g. **Ok**.

Since non-verbal behaviours were natural dimensions of discourse that could carry out or emphasize meaning to the interlocutor, frequent occurring nonverbal behaviours such as laughter ((LF)), nodding ((ND)), drawings of lots ((DR)), pointing at the next speaker ((PO)) were included in the transcripts. In addition, it happened very often that participants read a phrase or a sentence from the written texts or the subject teachers wrote down something important on the blackboard. Both of them were presented in quotation marks, e.g. ‘so he finished his breakfast in a rush’. I also used my intuition as the researcher of foreign language classrooms to comment on some noteworthy events or features and indicated them in brackets within the transcripts, e.g. <Give

up>.

Other speech features that capture the detail of classroom discourse such as overlapping utterances or contiguous utterances were not included in the transcription since, based on the collected video/audio-recorded data, they seldom appeared. The subject teachers did not interrupt the students when they were speaking up in class. Appendix S provides the transcription conventions employed in the current research.

3.4.2 Interview and questionnaire data

Interviewing both teachers and students would lead to a great deal of complex narrative data. The analysis method should be used after careful consideration. According to Rabiee (2004), a one hr interview could take 5-6 hours to transcribe in full, leading to several pages of transcription. Therefore, the first step of analysis is to reduce data (Robson, 1993). Data are not reduced unreflectingly. Instead, the purpose of the research should drive the reduction. Krueger and Casey (2000) suggest that the analyses of interviews begin by going back to the intention of the study and requiring a clear fix on the purpose of the research. Through getting rid of extra and irrelevant information, I could make sense of what is going on and manage the data.

In addition, the data analysis in interviewing is the interplay between the researcher and the data. That is, there is an extent of subjective selection and interpretation of the generated data (Strauss and Corbin, 1998). In order to minimize the potential bias in analyzing and interpreting as much as possible, based on Krueger and Casey's (2000) suggestion, the analysis method should be systematic and sequential. Many researchers such as Krueger (1994) provide their analysis framework with a clear series of steps, which could help first-time researchers to deal with the large amount of qualitative data much more easily. After understanding and synthesizing these suggested steps, my own two stages to analyze the data emerged.

First, I familiarized myself with the data which had already been reduced and transcribed. This could be easily achieved by listening to tapes and reading the transcripts several times. The purpose of such familiarization is to immerse the researcher in the details and get a sense that every interview should be viewed as a whole before breaking it into parts (Rabiee, 2004).

Then, I re-organized all of the data collected from different subjects, sorted out quotes,

and put them under separate headings for each of the interview questions based on the preplanned interview protocols. This allowed the researcher to compare the subjects' interview responses and identified similarities and differences (Hsu, 2001).

The data from the questionnaire surveys were divided into three parts: first, questionnaire items 9-14 are related to learners' code-switching behaviours; then except for these six questions, the first 14 question items in the current questionnaire are linked with the factors related to learners' attitudes towards the role of English language and speaking and responding in class. Finally, the remaining question items are associated with the dynamic classroom settings in which the teacher and students work and talk together. Next, I analyzed the data by checking the consistency in written comments and narrative responses of the focal students from different classes. Then, I could compare and identify similarities and differences in their responses and listed the result in Appendix T.

3.4.3 Discourse/ Conversation analysis

According to Nunan (1991), the distinction between conversation analysis and discourse analysis is by no means clear-cut and, in some cases, conversation analysis is subsumed under the general heading of discourse analysis (Hatch, 1992). While discourse analysis is conducted on both spoken and written language, conversation analysis is concerned exclusively with spoken language (Nunan, 1992). On the one hand, conversation analysis which is guided by a socio-linguistic approach particularly focuses on the close observation of the conversational behaviours of speakers during talk-in-interaction and on their real-time preferential practices that underline such behaviours (Markee, 2000; Hsu, 2001). On the other hand, discourse analysis, which is often based on the socio-cultural theory, emphasizes the use of language as a social mode of thinking-a tool for teaching-and-learning, creating joint understanding, constructing knowledge, and dealing with problems collaboratively (Mercer, 2004). Inspired by Hsu's (2001) merged data analysis paradigm, I synthesized these two methods. Conversation/ discourse analysis was adopted as the methodology to analyze the collected research data on classroom interaction between teacher and student subjects. This data analysis method is employed to analyze the data and to discuss the findings for all research questions.

3.4.4 Data analysis-Research question one

As mentioned earlier in Section 3.1.3, I tried to find out how teacher questions generate learning opportunities for student verbal participation and language learning through classroom observation in order to examine their naturally occurring questions in the classrooms and to generate the functions of these. Therefore, **conversation/discourse analysis** and **content units** were employed.

Conversation/ discourse analysis in the current research focuses on the study of extended talk in natural settings rather than individual sentences in isolation (Riggenbach, 1999). For generating the functions of teacher questions in order to answer the first research question, this approach is relying entirely on naturally occurring data, with no attempt to ‘fit’ the data to predetermined classifications. Evidence that such categories exist and are utilized by the participants must be shown by examples from the data (Walsh, 2002). Here are three phases for me to generate categories. First, I noted down important and tentative ideas about teacher solicitations when transcribing classroom data. Second, I went over these notes and identified general patterns of teacher questioning by reviewing video-recordings and by reading the transcripts and these tentative ideas again and again. Third, I organized the patterns of teacher questions into related categories. These categories were then modified several times to ensure that they captured the teacher subjects’ questioning behaviours as presented in the data. These classifications include:

- a) comprehending teacher questions,
- b) questioning practices which help generate answers,
- c) practices which assist learners with producing comprehensible output, and
- d) questions to transmit and test the knowledge.
- e) questions to semiotically mediate and scaffold learners’ cognitive processing and language learning.

Other concepts conversation/ discourse analysis focuses on are the contexts and contents in which the questions occur. The contexts of the classroom questioning are, according to Carlsen (1991:159), “constructed and modified by speakers in the give and take of conversation”. That is, who asked the question of whom, when and where the question was asked, what purpose the question served, and how subjects’ responses influenced the ways in which the interaction kept going must be examined (Rogers et al., 1990). Additionally, the content of a question should be interpreted with reference to the contexts in which the question is posed (Carlsen, 1991). Conversation/ discourse analysis in the current research viewed classroom question-answer sequences as constructions mutually generated by teachers and students, rather than

exclusively teacher behaviours (Hsu, 2001). When presenting the findings of how teacher questioning behaviours influence learners' verbal participation and learning in the later chapter, I indicated the discourse contexts and contents in brackets after the heading of excerpts and I also added a series of numbers on the left side to indicate how the verbal conversations continued to develop. Here is an example:

Example 1 (Making a comparison to clarify the question)

(The reading materials Teacher A is teaching is: 'In ancient Rome, people slept in their everyday clothes. In England, people did not wear clothes in bed. They wore a cap to keep their head and ears warm. Later, men wore nightshirts and women wore long nightdresses and hats.')

- 1 TA: What did men and women wear later in England on bed?
- 2 S3: ...
- 3 TA: Before that, they did not wear anything but caps, right? And, now, later what
- 4 did they wear?

Moreover, I demonstrated the first classification of teacher solicitations: comprehending teacher questions, via single speaking turns or incomplete exchanges (as shown below) so as to well present how teachers made efforts to make their main questions clear.

Example 2:

(Teacher A is teaching reading. She asks questions related to the contents of the texts to the class.)

- 1 **TA: And tell me. There are four posts, one on each corner around the**
- 2 **bed, right? And tell me. What are these posts for?**

Through the incomplete but focused single speaking turn in the above example, I attempted to express the findings of how teachers made their questions comprehensible and deleted its following speaking turns that I thought might distract readers' attention.

For other classifications, a **content unit** (Hsu, 2001) rather than isolated questions or single speaking turns was used as the main unit of analysis. A content unit was developed by Hsu through modifying the original 'episode' (Koivukari, 1987, quoted in Hsu, 2001). A content unit particularly highlights the content or topic of a question

in relation to the discourse context in which it occurs (Hsu, 2001). This emphasis on contexts and contents was also thanks to their important roles in the study of teacher questions in classrooms for the first research question.

According to Hsu (2001:62), “A content unit is a piece of discourse that consists of a main question and all the verbal moves made by classroom participants that are directly related to that question in content”. A content unit may not only include a two-part question-answer exchange but go beyond sequences of connected talk associated with a main question. The following piece of transcription includes two content units:

Example 3:

- 1 TB: 我想請問同學，destroy 這個字的過去式是什麼(+)? 10 號。Destroy 的
- 2 過去式要怎麼寫？
- 3 S1: ...
- 4 TB: 直接加::
- 5 S1: ed
- 6 TB: ed, 直接加 ed, 好, 非常好! 那什麼時候直接加 ed? 什麼時候去 y 加 ied
- 7 (+)? 還記得嗎? 我講過, 如果 y 前面是::
- 8 Ss: 母音。
- 9 TB: 母音。如果 y 前面是母音, 就直接加 ed。
- 10 TB: 下一個。什麼是 landslide? 什麼叫 landslide?
- 11 Ss: ...
- 12 TB: Land 是什麼? Land 是什麼?
- 13 Ss: 土地。
- 14 TB: 土地。Slide 是什麼?
- 15 S?: 滑掉。
- 16 TB: 滑掉。什麼叫土地滑掉?
- 17 Ss: /土石流/。
- 18 TB: 土石流就是, 呃, 土地流失的現象。

- 1 TB: What is the past tense of the word, destroy (+)? Number 10. What is the
- 2 past tense of destroy?
- 3 S1: ...
- 4 TB: Directly add::
- 5 S1: 'ed'.
- 6 TB: 'ed'. Directly add 'ed'. Good. Very good. When should we add 'ed' directly?

- 7 When should we delete 'y' and then add 'ied'(+)? Do you remember? I
 8 already told you when 'y' is in the back of ::
 9 Ss: A vowel.
 10 TB: A vowel. When a vowel is in front of 'y', add 'ed' directly.
 11 TB: Next one. What is a landslide? What is a landslide?
 12 Ss: ...
 13 TB: What is land? What is land?
 14 Ss: Land.
 15 TB: Land. What is slide?
 16 Ss: Slide.
 17 TB: Slide. So what is a landslide?
 18 Ss: Landslide.
 19 TB: Landslide is, uh, an amount of earth or rock falling down.

There are two content units in this transcript. Teacher B initiated two verbal conversations in the lines 1 and 11 respectively. Therefore, when doing data analysis and presenting findings, this transcript will be divided into two content units (Example 4 and Example 5). The first one is related to the main questions, 'What is the past tense of the word, destroy (+)?'

Example 4:

- 1 TB: What is the past tense of the word, destroy (+)? Number 10. What is the
 2 past tense of destroy?
 3 S1: ...
 4 TB: Directly add::
 5 S1: 'ed'.
 6 TB: 'ed'. Directly add 'ed'. Good. Very good. When should we add 'ed' directly?
 7 When should we delete 'y' and then add 'ied'(+)? Do you remember? I
 8 already told you when 'y' is in the back of ::
 9 Ss: A vowel.
 10 TB: A vowel. When a vowel is in front of 'y', add 'ed' directly.

The other content unit is related to the main question: 'What is a landslide?'

Example 5:

- 1 TB: What is a landslide? What is a landslide?

- 2 Ss: ...
- 3 TB: What is land? What is land?
- 4 Ss: Land.
- 5 TB: Land. What is slide?
- 6 Ss: Slide.
- 7 TB: Slide. So what is a landslide?
- 8 Ss: Landslide.
- 9 TB: Landslide is, em, an amount of earth or rock falling down.

As showed in these two content units, the main question generated other probing questions in the following turns. These questions together with the responses that they elicited are all related to the main question in content. If I only examine each of these questions in isolation without considering the broader discourse context, I only gain a fragment of the extended verbal exchanges and lose the whole picture that shows how teachers influence learners' verbal participation and language learning through a series of questions (Hsu, 2001). Using conversation/ discourse analysis and content units for data analysis for the first research question enables me to generate the functions of teacher questioning, which are not found though the analysis of a single and isolated question without taking its broader discourse content into consideration. Additionally, the translations following the original content units are presented in italics. The underlines in those translations indicate that the original transcripts were Chinese.

3.4.5 Data analysis-Research question two

Analyses for research question two were both quantitative and qualitative. Following the research studies of Ogane (1997) and Seidlitz (2003), group activities, classroom quizzes, and teacher monologue were not included for the analysis of language use in classrooms. In the current research only language use in teacher-fronted activities was examined. Transcripts which contain teacher-fronted activities from the 20 classroom periods (refer to Section 3.4.1 to review the selection principle) were used as a basis for counting. The measurement was undertaken only for teachers' discourse (excluding students' utterances).

For calculating the amount of L1 and L2 use, previous studies have explored various procedures. Rolin-Ianziti and Brownlie (2002) chose the method of 'counting words' to quantify the amount of English and French use in classrooms. Although Rolin-Ianziti and Brownlie (2002) adopted this method since it was fairly

unproblematic for the purpose of a cross-linguistic comparison between English and French, due to syntactic discrepancies between Chinese and English, I did not think this method was appropriate for the current research. Crookes (2002) provided two units, the t-unit and the c-unit, for discourse analysis in classroom. The t-unit is “one main clause plus whatever subordinate clauses happen to be attached or embedded within it” (Hunt, 1996:735). The c-unit is very similar to the t-unit, but it has the advantage that isolated phrases or words with communicative purposes, which are not accompanied by a verb can be coded (Loban, 1966 cited in Crookes, 2002). I thought **the c-unit** was the much more appropriate to count teachers’ spoken language use of both English and Chinese in the present research because not all teachers’ speaking turns contained verbs. In the following example, both teacher’s initiation and feedback can be coded as a single c-unit, especially though the feedback, ‘Rescue.’ is just a simple word.

Example 6:

TD: 什麼叫 rescue?

S1: 救援。

TD: 救援。

TD: What is rescue?

S1: Rescue.

TD: Rescue.

In spite of the seeming clarity of the definition of c-unit, there were some ambiguous cases that I had to consider where c-units start and stop. I chose to include transition words with the following c-unit if these two parts together formed one semantic unit (Seidlitz, 2003). For instance, ‘So, at the beginning, what did the Newport family hear?’, was counted as one c-unit since the word ‘so,’ seemed to introduce the next utterance and cannot be separate from it. When the words such as ‘ok’, ‘good’ were spoken alone, each of them was counted as one c-unit. In addition, ‘oh’ (喔)’ and ‘em’ (恩) were not counted for either English or Chinese because of their phonetic similarity across the two languages. Utterances which were not clear were not used and their percentage can be shown in Appendix V.

Each c-unit produced by subject teachers was classified as one of the following.

E1: An English c-unit.

- E2: An English c-unit embedding one or few Chinese words or phrases.
 Mix: A c-unit with an almost equal mixture of English and Chinese.
 M1: A Chinese c-unit.
 M2: A Chinese c-unit embedding one or few English words or phrases.

Below are examples of the types, E2, Mix, and M2:

Example 7:

E2:

TC: Em, 因爲 much of its nutrition might go away.

TC: *Em, because much of its nutrition might go away.*

Example 8:

Mix:

TC: 這就是在呈現一個‘until’的用法，but I remember we had already learned that part of grammar.

TC: *This shows you the usage of ‘until’, but I remember we had already learned that part of grammar.*

Example 9:

M2:

TB: 所以請你們把這一句話的 bird flu 劃起來。

TB: *So please underline ‘bird flu’ in this sentence.*

Here is the speaking turn produced by Teacher A to demonstrate how I defined and coded English and Mandarin categories

Example 10:

TA: 第三題。‘The convenient store’是什麼呢？(+) 什麼是‘convenient store’？(+) 便利商店。Ok. ‘Install’就是安裝。‘hoping to warn the thief’ 什麼是‘thief’？(+) 小偷。什麼是‘warn’？(+) 警告。怎麼樣可以警告小偷？安裝監視器，對不對？ 小偷看到監視器就會打退堂鼓。好。再來，我們看一下第六題。‘The saleslady’是什麼？銷售員。也可以說是 salesperson or salesman。好。這裡特別指女生的銷售員。‘is doing her best’劃起來。就是盡力怎麼樣。‘to please the customer’。好。‘Please’是什麼意思？取悅，對吧？取悅什麼樣的消費者呢？(+) 有潛力的消費者。

TA: Question 3. What is 'the convenient store'? What is the 'convenient store'?
 (+) The convenient store. Ok. 'Install' is install. 'hoping to warn the thief'
What is a 'thief'? (+) A thief. What is 'warn'? (+) Warn. How to warn a
thief? Install a monitor, right? A thief who sees a monitor will give up. Good.
Then, let's look at the question six. What is 'the saleslady'? The saleslady.
You can also say a salesperson or a salesman. Good. Here it specifically
indicates the female salesperson 'is doing her best' underline. That means
doing someone's best 'to please the customer' Good. What does 'please'
mean? Please, right? Please what kinds of customers? (+) The potential
customers.

In this part of transcription, it included 29 c-units:

- E1: 1) Ok. 2) 'hoping to warn the thief' 3) 'to please the customer'
 E2: 4) 'is doing her best' underline.
 Mix: 5) 'Install' is install.
 M1: 6) Question 3. 7) The convenient store. 8) A thief. 9) Warn. 10) How to
warn a thief? 11) Install a monitor, right? 12) A thief who sees a
monitor will give up. 13) Good. 14) Then, let's look at the question six.
 15) The saleslady. 16) Good. 17) Here it specifically indicates the
female salesperson. 18) That means doing someone's best. 19) Good.
 20) Please, right? 21) Please what kinds of customers? 22) The
potential customers.
 M2: 23) What is 'the convenient store'? 24) What is the 'convenient store'?
 25) What is 'thief'? 26) What is 'warn'? 27) What is 'the saleslady'?
 28) You can also say a salesperson or a salesman. 29) What does
'please' mean?

The category of E1 includes the English utterances that the teacher was reading from the texts, such as 'hoping to warn the thief' in the above example. In the E2 classification, an English utterance embedding one Chinese word was coded, 'is doing her best' underline (here the word 'underline' was spoken in Mandarin). In the category of Mix, the utterances followed by the Mandarin or English translations were coded. For example, 'Install' is install. Utterances spoken in Mandarin were all coded in the M1 category. In the M2 category, the utterances like: what is 'the convenient store'? were counted. Although when only word numbers were considered, English words in this utterance are slightly more than Chinese ones, however, in this utterance, since the teacher was using Mandarin to ask the learners the meaning of 'the

convenient store', I considered this was a Mandarin utterance embedding an English lexical word.

For the qualitative analysis of English and Mandarin language use, I tried to follow Polio and Duff's (1994) protocol. This analysis is exploratory. I did not use the classifications of utterance functions of English and Mandarin established by others or limit myself to working at the sentences level. Instead, I examined the data through the teachers' speaking turns, content units, or an activity in order to consider how teachers used the languages in their repertoires. I focused mainly on teachers' speech but also considered the contexts, students' verbal contribution, and background information. General categories of language behaviours emerged after careful consideration of recorded classroom data. In addition, I inserted the teachers' explanations from interviewing to reveal the reasons of the language choices of the participant teachers in class. Through the data both from observation and interviewing, numeric and qualitative analyses helped me to find the answers why and when the teachers employed code-switching strategies in their questioning behaviours.

3.4.6 Data analysis-Research question three

In this study, goals were explained as different language skills (reading, writing, and so on). To understand how the teachers used both target- language and native-language questions to scaffold teaching and learning, the researcher needs to identify teachers' teaching and learning goals first.

Data related to the teachers' goals were collected through a variety of techniques. During stimulated, pre-and post-observation interviews, I asked the teachers questions regarding their goals for English teaching. After each class, the teacher participants wrote journal reports following a format provided by the researcher that included responding the question: what are your main goals for this lesson? After transcribing and analyzing, I will present the emerged teaching and learning goals in Section 6.1. To provide triangulation, the goals which were expressed by the teachers from at least any two of four data sources (initial interviews, final interviews, stimulated recall interviews, and journal entry formats) or which were spoken of twice in a single interview by the teachers were identified. Data triangulation from these different sources helped me to reduce the likelihood of misrepresentation of the teachers' expressed teaching and learning goals (Creswell, 1994; McCormick, 1997).

After understanding the teaching and learning goals, the next step is to define the different teacher-fronted activities in integrated classes where all language skills were trained simultaneously. The table below illustrates two examples of teacher discourse or non-verbal behaviours marking the boundaries of each activity. These markers are not the ones the teachers themselves used to differentiate between segments of the lesson, but they were apparent to the researcher after reviewing observations several times. By doing so, focused data analysis and interpretation could be conducted (McCormick, 1997).

Table 10: Examples of teacher-fronted activity boundaries

Teacher	Beginning of activity	End of activity
TA	((DR))	<u>Let's look at the next paragraph.</u>
TC	<u>Page 120. I want someone to read answers for us.</u>	<u>Well done. Thank you.</u>

Once the goals and activities were identified, I assigned a scaffolding function to each question which occurred in the activities, based on the definition of scaffolding functions. Wood, Bruner, and Ross (1976) provide six functions of scaffolding, representing how an adult assists a child in tutorial settings, from an educational psychology viewpoint. However, the current research specifically described how the teachers used these questions to scaffold language teaching and this study also looked at scaffolding beyond the dyad and tried to apply its functions to the teacher-fronted classrooms. I made some changes to make the definitions and categories of these functions much more language-oriented so as to apply to an EFL classroom context. The six scaffolding functions were re-classified and re-defined (see Appendix U) and they were presented as: recruitment (R), reduction in degrees of freedom (RDF), direction maintenance (DM), marking critical features and demonstration (MCFD), and frustration control (FC). See detailed amendments and explanations in Appendix U. In addition, 'E' and 'M' differentiated the questions which had been spoken mainly in English or Mandarin (different from the c-unit counting method in which all teachers' utterances were classified (data analysis for research question two), in this section I only focused on teachers' solicitations). Besides, the researcher tried to primarily examine the connections between teachers' teaching and learning goals and

their questioning practices rather than language use in class. The classifications of the language types of teacher questions are different from those in the previous discussion of the research question two. Here, native-language questions are Mandarin-based questions which are mainly composed of Mandarin language or sometimes include a little English language, while target –language questions are English questions which mainly constitute English language or sometimes contain a little Mandarin language. For instance, (R-E) indicates an English question with the scaffolded function of recruitment; (FC-M) refers to a Mandarin question with the frustration control function. The teachers' questions then were examined mostly within the context of content units.

3.4.7 Data analysis—Research questions four and five

The data analyses for research questions four and five are presented together, since their data sources appeared to overlap and, most importantly, the students' responding behaviours are sometimes influenced by other factors that the research question five tried to discover.

The data for the analyses of the research questions four came from the observation transcripts and the questionnaire results (the question items 9-14), and the retrieved information from the interviews with focal students and subject teachers. The analyses for the research question five are also transcripts, interview data from the focal students, and the findings from the questionnaire items (except for the question items 9-14). In addition, the interview data taken from subject teachers provided the supportive explanations from a different perspective.

The transcript data for student responding behaviours will be examined via a conversation/discourse analysis and the content units mentioned earlier, following the similar procedure outlined earlier in the analysis of teacher questioning.

Based on Hsu's (2001) suggestions, I compared the subjects' responses, identified similarity and differences, and presented the responses in Appendix T. The results include focal students' attitudes towards language use in class; the socio- cultural factors in classrooms and the society in Taiwan; and the different dynamic classroom interaction in each class, which may all exert influences on English language learners' responding behaviours.

The interview data from both focal students and teachers are organized under separate headings for each of the interview questions. This allows the researcher to compare the subjects' interview responses and identify similarities and differences.

The analyses for the data from the observation transcripts, the interviews and the questionnaire were conducted using the 'constant comparative method' (Thorne, 2000), the strategy which involves taking one piece of data and comparing it with the others which may be similar or different in order to develop conceptualizations of the relations between various data. Through this method, the research findings that emerged from one data source could be compared and triangulated with other sources of data so that I could provide reliable research findings for the last two research questions.

Chapter 4 Findings: The learning opportunities teachers' questioning behaviours generated in class

This chapter addresses the first research question by looking at how teacher questions might influence learners' cognitive processing and language development with regard to the opportunities they generate for learners' verbal contribution in the form of question-answer exchanges in classroom social interaction. The findings include: Comprehending teacher questions (Section 4.1), questions which help learners generate answers (Section 4.2), questions which assist learners with producing comprehensive output (Section 4.3), questions to transmit and test the knowledge (Section 4.4), questions which semiotically mediate learners' cognitive and language development (Section 4.5), and the summary of the findings (Section 4.6).

4.1 Comprehending teacher questions

Teacher questioning serves as a medium for eliciting output from the learners since the extent to which the learners can comprehend a teacher question may exert an influence on their cognitive processing (Hsu, 2001). Then, when the cognitive processing activates, it in turn affects the output that the learners produce. When the teacher subjects anticipated possible misunderstanding and difficulties that learners were likely to face in comprehending their questions, in order to facilitate learners' understanding, they utilized some strategies to self-clarify to avoid the possible trouble source before or immediately after posing their questions. In Excerpt 1, when leading one student to answer one question in a reading activity, Teacher A provided an illustration of 'posts' in a pseudo-tag question to make her following main question much clearer.

Excerpt 1 (Providing the illustration in a pseudo-question to self-clarify the question)

- 3 TA: And tell me. There are four posts, one on each corner around the
4 bed, right? And tell me. What are these posts for?

Later, in another reading activity in the same class period, from the learner's silence, Teacher A was able to discover possible difficulties the learner encountered and contrasted her main question with a compared pseudo-question to clarify her intended meaning.

Excerpt 2 (Making a comparison to clarify the question)

(The reading materials Teacher A is teaching is: ‘ In ancient Rome, people slept in their everyday clothes. In England, people did not wear clothes in bed. They wore a cap to keep their head and ears warm. Later, men wore nightshirts and women wore long nightdresses and hats.’)

- 1 TA: What did men and women wear later in England on bed?
2 S3: ...
5 TA: Before that, they did not wear anything but caps, right? And, now, later what
6 did they wear?

In this excerpt, the intended question that Teacher A tried to pose is ‘what did men and women wear later in England on bed?’ When the first question in the line 1 did not work effectively, Teacher A then provided a compared example together with a tag question, ‘Before that, they did not wear anything but caps, right?’, The aim of this question was not really to elicit responses from the learner. Instead, by using it, teacher A attempted to make her subsequent main question much more salient and to facilitate the learners’ understanding.

In Excerpt 3, after posing a question together with a definition in the target language, English, Teacher C appeared to detect a potential trouble source caused by learners’ limited English proficiency in the solicitation she had just asked. She therefore, provided the Mandarin Chinese version of the definition, embedding the target lexical item, ‘faucet’, she wanted to impart to the class within the same speaking turn, serving to help prevent the potential linguistic problems from hindering the learner’s comprehension of the question.

Excerpt 3 (Using translation to clarify the question)

- 1 TC: What is a faucet? ‘No water came out of the faucet.’
2 沒有水從 faucet 裡流出來。
3 S?: 水龍頭。
4 TC: 水龍頭。

- 1 TC: *What is faucet? ‘No water came out of the faucet.*
2 *No water came out of the faucet.*
3 S?: *A faucet.*
4 TC: *A faucet.*

Also, Teacher D merged several techniques simultaneously in her utterance to prevent the anticipated source of trouble. Teacher D in the following excerpt clarified her elicitation by using comprehension checks, supplying visual cues, and deconstructing the original question.

Excerpt 4 (Employing multiple-strategies to clarify the questions)

(When teaching the class the new vocabulary, storm cellar, in the lesson seven:

Tornadoes, Teacher D tries to ask the meaning of this vocabulary. According to the definition from the online encyclopedia, Wikipedia (2007), storm cellars are underground structures located below buildings. They are reinforced structures into which residents can go for protection from a strong wind-storm. They are common in areas where [tornadoes](#) or hurricanes occur often.)

- 1 TD: What's the storm cellar for (++)? Do you know what is the storm cellar?
- 2 (Writes down 'storm cellar') What is the storm cellar (++)? (Points at
- 3 'storm cellar' on the blackboard) What's the meaning of the storm (++)?
- 4 What is the meaning of the storm? Snow storm.
- 5 S?: XXX
- 5 TD: In Winter, in North America or Canada, they might have a snow storm.
- 6 S?: 暴風雪
- 7 TD: Yes. So, what is a storm cellar for?

After her first initiation, 'what's the storm cellar for?', Teacher D anticipated the unfamiliar lexical item, 'storm cellar', which might cause learners' misunderstanding and later influence learners' responding in the following dialogue. She then checked the students' comprehension of this troublesome vocabulary immediately in the lines 1-2. Besides, she also provided a visual hint by writing this lexical item on the blackboard and pointed at this phrase and repeated the question to check the learner's comprehension once again. After a pause, in the lines 3-4, she decided to deconstruct the question, 'what is the storm cellar?' by only asking the meaning of the word, storm, repeating it, and provide an example. In the later learner's speaking turn in the line 6, she successfully elicited the Chinese name of a snow storm. She confirmed it and went back to the original question which was already posed at the very beginning of this sequence. That is, in this sequence from the line 1 to the line 7, the main question is 'what's the storm cellar for?'. In order to avoid possible communication breakdowns due to the troublesome English phrase, 'the storm cellar', Teacher D checked learners' comprehension of it, provided visual hints, and deconstructed this phrase by seeking

the meaning of the storm from learners first. After all of the techniques were employed and potential problems and difficulties were sorted out, she, then, reiterated the original question in the line 7.

The above four examples show that during teacher questioning periods, the decision about clarifying and illustrating the questions was made by the teachers in order to enhance learners' comprehension. Although these strategies that the teachers used to avoid the anticipated source of trouble from hampering learners' comprehension might be unnecessary, they reveal that the teachers' tendency to be 'on the safe side' (Hsu, 2001).

4.2 Questions which help students generate answers

If learners have no difficulty comprehending a teacher question, the next challenge that they still encounter may be to figure out what the answer should be through their limited knowledge of target language. However, this knowledge is not yet fully developed and therefore, learners may not always generate appropriate answers. To make the learners' task of answering questions more manageable so that they are more likely to produce responses, Teacher A in the observed classroom data was found to provide explicit visual hints as guidance for learners' responses.

Excerpt 5 (Questions which generate answers via explicit visual guidance)

- 1 TA: What kind of bed, uh, what kinds of materials used to make a bed? Yes.
- 2 ((ND))
- 3 S5: Metal.
- 4 TA: Metal. Yes. And what else?
- 5 S5: ...
- 6 TA: Before metal, what did people use to make a bed?
- 7 S5: ...
- 8 TA: 就像前面這個床 (Points at the picture of a wooden bed in the textbook)
- 9 叫什麼?
- 10 S5: ...
- 11 TA: 用什麼做的? What did people use to make a bed before metal?
- 12 S5: Wood.
- 13 TA: Wood. Right. 好。

- 1 TA: *What kind of bed, uh, what kinds of materials used to make a bed? Yes.*
- 2 ((ND))
- 3 S5: *Metal.*
- 4 TA: *Metal ↗. Yes. And what else?*
- 5 S5: ...
- 6 TA: *Before metal, what did people use to make a bed?*
- 7 S5: ...
- 8 TA: *Like the bed here. (Points at the picture of a wooden bed in the textbook)*
- 9 *What does it call?*
- 10 S5: ...
- 11 TA: *What is it made from? What did people use to make a bed before metal?*
- 12 S5: *Wood.*
- 13 TA: *Wood. Right. Good.*

After S5 offered one answer to a teacher's display question, Teacher A used the probing questions, 'What else?', and 'Before metal, what did people use to make a bed?' in the both line 4 and line 6 to elicit the other answer from S5. However, these prompts failed to solicit any contribution from the learner. Therefore, in the line 8, the teacher provided explicit guidance by supplying visual cues in the textbook and the reformulation of her main question in the line 11, 'What did people use to make a bed before metal?' Eventually, S5 successfully produced the expected answer 'Wood' in the next turn.

Here is another example in which Teacher A provided explicit guidance in the form of visual hints in order to help the learner to generate the appropriate answers.

Excerpt 6 (Questions which generate answers via explicit visual guidance)

- 1 TA: *What did men and women wear later in England in bed?*
- 2 S3: ...
- 3 TA: *Before that, they didn't wear anything but caps, right? (Points at the word*
- 4 *'caps' on the blackboard) and, now, later what did they wear?*
- 5 S3: ...
- 6 TA: *(Writes down 'men→' and 'Women→')*
- 7 S3: *Men wore nightshirts.*
- 8 TA: *Nightshirts. How about Women? (Writes down 'nightshirts' beside 'men*
- 9 *→')*
- 10 S3: *Women wore long nightdresses.*

11 TA: Women wore long:: nightdresses, right? (Writes down ‘nightdresses’ beside
12 ‘women→’)

To reduce the cognitive demands imposed by the question, Teacher A guided the learner by offering a comparison to clarify her main question (Refer to Excerpt 2 to see the detailed procedure) in the line 3, and then constructed this question with visual guidance on the blackboard in the lines 3, 4, 6, 8, 9, 11, and 12. This, in turn, offered a scaffold for S3’s cognitive process and verbal responses to build up, and therefore, appeared to help make the learner’s task of answering the teacher question more manageable (Hsu, 2001).

In fact, in all of the subject teachers’ classes, similar visual supplementation was very common. Teaching and learning found in my database were written-based. Teachers and students preferred the visual stimulation of reading. The lectures were carried out with a variety of types of visual backup of written words (handouts, textbooks, and, especially, blackboard notices). Much information was presented via the blackboard with the students sitting in rows facing the teacher and the blackboard (Zhenhui, 2001; Strother, 2003).

Excerpt 7 (Questions which generate answers via implicit guidance)

(The reading texts Teacher D is teaching: Some people said that a spaceship had crashed on some farmland and the three to five alien bodies had been found. The bodies were being kept by the government in a secret place. The government denied the story, but many people still believed it was true.)

1 TD: Do you know where? Where they put bodies? Have the government dealt
2 with the bodies (++)? How did the government deal with these bodies? 來 ,
3 S3.
4 S3: ...
5 TD: How did the government deal with these bodies?
6 S3: ...
7 TD: Where?
8 S3: XXX
9 TD: XXX. No. ((PO)) Where?
10 S4: They denied the story.
11 TD: They denied the story. Ok. And where? Do you know where they put
12 bodies?
13 S4: Farm land.

14 TD: They put bodies in farm land ↗. No. I don't think so. Take a look. Take a
 15 look. Read one more time. Did it say anything about where they put bodies?
 16 S5: 沒有說。
 17 TD: 沒有說。可是好像也有說。
 18 S6: In a secret place.
 19 TD: Yes, in a secret place. We just know they collected the bodies and put them
 20 somewhere. Question mark. We do not know where they are. Alright.

1 TD: *Do you know where? Where they put bodies? Have the government dealt*
 2 *with the bodies (++)? How did the government deal with these bodies?*
 3 *Come on, S3.*
 4 S3: ...
 5 TD: *How did the government deal with these bodies?*
 6 S3: ...
 7 TD: *Where?*
 8 S3: XXX
 9 TD: *XXX. No. ((PO)) Where?*
 10 S4: *They denied the story.*
 11 TD: *They denied the story. Ok. And where? Do you know where they put*
 12 *bodies?*
 13 S4: *Farm land.*
 14 TD: *They put bodies in farm land ↗. No. I don't think so. Take a look. Take a*
 15 *look. Read one more time. Did it say anything about where they put bodies?*
 16 S5: *It did not say anything.*
 17 TD: *It did not say anything. But it seemed to say something.*
 18 S6: *In a secret place.*
 19 TD: *Yes, in a secret place. We just know they collected the bodies and put them 20*
somewhere. Question mark. We do not know where they are. Alright.

This excerpt demonstrated how Teacher D involved different learners into the ongoing dialogue and guided them through her questioning in the form of follow-ups to direct the expected response from learners. After S3's unexpected answer, the teacher nominated another student, S4, to respond in the line 9. However, this student appeared to misunderstand the question, providing an inappropriate reply, 'they denied the story', which triggered Teacher D's reformulation of the question. S4 in the following turn, then, ventured an answer 'Farm land'. This contribution is still, unfortunately, incorrect for the teacher. She tried to help students to figure out the

answers from the information given in the textbook in the line 14 and 15. S5 then claimed that based on the texts there is nothing which was mentioned about where the government put the bodies of aliens. To respond this claim, the teacher's statement later, 'But it seemed to say something', implied that the answer seemed to be within the texts. In the line 18, S6 successfully offered the correct answer, 'in a secret place'. From the exchanges above between the teacher and the learners, it shows that the teacher steered her questioning implicitly and gradually towards the targeted direction to solicit output from the learners.

In the following sequence, the teacher implicitly provided hints to the learners by asking them to take the particular context into consideration in order to figure out what the expected answer to the teacher's question is.

Excerpt 8 (Questions which generate answers via implicit guidance)

(Teacher B is teaching new vocabulary, 'rush', in the textbook)

- 1 TB: 假設大家要去哪裡？假設大家要去操場，只有你一個人很慢！然後大家
- 2 就說，你快一點啦，你快一點啦！
- 3 Ss: @#\$\$%^&*
- 4 TB: 後面的轉過來喔！頭轉過來，等一下再討論可以嗎？
- 5 Ss: 可以。
- 6 TB: 好來。轉過來！同學會一直煩你，然後你會說，不要趕我啦！不要催我！
- 7 ((DR)) 怎麼說呢？XXX，6號，好，來。
- 8 S1: Don't rush me.
- 9 TB: Don't rush me. 好，很好。 Ok. Don't rush me. 不要催我。

- 1 TB: Where is everyone going? If everyone is going to the playing field, but only
- 2 you are walking very slow, then everyone may say, hurry up, quickly.
- 3 Ss: @#\$\$%^&*
- 4 TB: The students in the back turn around. Turn around. Can you discuss it
- 5 later?
- 6 Ss: Ok.
- 7 TB: Ok. Turn around. When your classmates keep asking you to hurry up,
- 8 you will say, don't rush me, don't rush me. ((DR)) How to say that in
- 9 English? XXX, Number 6.
- 10 S1: Don't rush me.
- 11 TB: Don't rush me. Good, very good. Ok. Don't rush me. Don't rush me.

As this example illustrated, by providing a real-life situation that the learner can associate with, the teacher elicitation succeeded in generating the expected answer. For the learners whose current levels of target language are not proficient enough, the provision of a familiar situation or context may render the task of answering the question more manageable for them, therefore, increasing the likelihood of eliciting learner output.

A closer inspection of the teacher's questions in four excerpts above reveals that in the process of eliciting learner responses, the teachers guided the learners via explicit visual cues, by implicitly linking with familiar situations or by specifying the direction towards the expected answers.

4.3 Questions which assist learners with producing the answer in the target language that is comprehensible to others

Even if learners can comprehend teachers' questions and figure out the answers, it does not mean that they can produce responses in the target language that are comprehensible to others (Hsu, 2001) The data from Class D showed that in order to comprehend learner responses, Teacher D used follow-up questions as prompts to elicit further information from the learners.

Excerpt 9 (follow-up questions elicit further information to achieve needed comprehensibility)

(After watching the film, *Twister*, which was released in 1996 and directed by Jan De Bont, for around five minutes, Teacher D asks the students to reflect on the plots they just watched. In this film, when a tornado came closer to the family, the father rushed into his daughter's room and took his daughter to a safe place.)

- 1 TD: (to S2) What did you see?
- 2 S2: XXX
- 3 TD: Father::
- 4 S2: Go to his daughter.
- 5 TD: Go to his daughter ↗. I do not understand. What do you mean for that?
- 6 S2: XXX
- 7 TD: Oh, father rushed into his daughter's what?
- 8 S2: Room.

9 TD: Room.

In the line 2 in this excerpt, the learner provided something unintelligible in response to the teacher's elicitation. To make the learner's response comprehensible to others, Teacher D provided the partial answer 'Father'. This student then in the next turn completed the utterance by filling in the blank (Anton, 1999). Unfortunately, this contribution was not comprehensible to the teacher and it triggered the teacher to repeat the response with rising intonation to highlight the error (Lyster, 2002; Cullen, 2002), to make the comment on her misunderstanding 'I do not understand', and to make a direct request for clarification, 'What do you mean for that?' After S2 continued modifying his prior output in the line 6, eventually, Teacher D began her next turn with 'Oh,' signifying a change-of-state in her partial understanding (Heritage, 1984) and this was followed by her formulation of S2's utterance with a wh-question at the end to express that S2's partial reply still remained unidentified and to further elicit a comprehensible answer in learner's subsequent turn.

The following sequence provides another example to illustrate how the teacher's follow-up questions served as prompts to clarify the learner's intended messages by soliciting needed information from the learner.

Excerpt 10 (follow-up questions elicit further information to clarify learner's intended messages)

(FS11 is a member of the team 1 and she is presenting for the group discussion. The discussion topic is: Why are aliens mysterious to human beings?)

- 1 TD: Why you think they are mysterious (++)? Why? Why they are mysterious?
- 2 FS11: XXX
- 3 TD: I can't understand. Louder. (Some students are chatting) Hey, look here. (to
- 4 the students who are chatting) Listen. Because What? (to FS11)
- 5 FS11: Because they are many questions.
- 6 TD: Because they are many questions ↗. We have many questions about them or
- 7 they have many questions about us?
- 8 FS11: We.
- 9 TD: ((ND)) We have many questions about them. Yes.

After FS11 whispered an unclear reply, Teacher D explicitly requested for clarification in reaction to the incomprehensible response: 'I can't understand. Louder.' in the following line 3 and line 4. FS 11 later reformulated her output in a much clearer and

louder voice, but it was not a sufficient semantic response, -‘Because they are many questions’. Teacher D seemed to solve the puzzle and recognized FS11’s message even if the modified response in the line 5 was still ill-formed. Teacher D did not ignore this incomprehensible output or ‘let it pass’ (Lee, 2006). Instead, she decided to clarify meaning from the learner by formulating FS11’s contribution with rising intonation and added an or-choice question within the same speaking turn to make FS11 self-clarify the original response. FS11 finally provided the one-word answer ‘We’, and the teacher immediately confirmed and elaborated in a full sentence which is comprehensible and audible to the whole class.

Teacher follow-up questions to clarify misunderstanding caused by the learner’s erroneous pronunciation were also found in the following two sequential contexts.

Excerpt 11 (Questions to clarify phonetically ambiguous responses)

(Teacher D introduces the class to a new lesson, ‘ Chiufen: A Cultural Treasure of Taiwan’, by asking the question, ‘What do you think about this small town?’)

- 1 TD: S1, how do you think about this small town?
- 2 S1: /Delicious Food/.
- 3 TD: What? I can’t hear.
- 4 S1: XXX food.
- 5 TD: The food there.
- 6 S1: The food there XXX
- 7 TD: The food there is very::
- 8 S1: Delicious.
- 9 TD: What?
- 10 S?: Delicious.
- 11 TD: Delicious.

In this excerpt, S1’s unclear articulation in the line 2 was met by the teacher’s request for clarification, ‘What? I can’t hear’, in her next speaking turn. Following this request, S1 attempted to articulate the response again. However, this contribution was still incomprehensible to the teacher, because Teacher D could only formulate the partial response in the line 5. Then, S1 tried to repeat the teacher’s feedback with something phonetically ambiguous to convey the message. In the line 7, the teacher appeared to roughly understand what the learner tried to say and provided the opportunity for S1 to modify his pronunciation by extending her formulation from ‘The food there,’ in line 5 into ‘The food there is very::’ in line 7. The utterance ‘The food there is very::’

signaled the learner to fill an articulate answer in the following dialogue. In the next learner's turn, the word 'delicious' was spoken clearly. It was very interesting that the teacher's follow-up was not acknowledgement 'good' but a clarification request 'what?' again. That is, S1's articulation in the line 8 caused a continuing hearing problem for the teacher. Finally, an unidentified student spoke out the answer in a much clearer way. The teacher then confirmed it with the repetition of this troublesome word, 'delicious'.

Excerpt 12 (Questions to clarify phonetically ambiguous responses)

(After group discussion, Teacher D seeks for learners' answers about the delicious food in Chiufen city)

- 1 TD: S1, food.
- 2 S1: Terrible.
- 3 TD: Terrible?.
- 4 Ss: ((LF))
- 5 S1: Taro ball.
- 6 TD: Oh, Taro::
- 7 S1: Ball.
- 8 TD: Ok, taro ball.

In this sequence, the teacher's next turn following S1's incomprehensible response is a implicit request for clarification, Terrible?. Drew (1997) calls this type of request an *open class repair initiation* since it did not specify the source of difficulty. The laughter embedded in the line 4 displayed that the class might recognize the misunderstanding caused by erroneous pronunciation. S1 then repaired what he has said in a more target-like way, Taro ball in the line 5. Then, Teacher D showed her understanding and repeated one part of the output, leading S1 to fill in the blank.

As the above excerpts demonstrate, teachers' follow-up questions as feedback help clarify learners' contributions and pronunciation, which are reflected in the efforts that the learners put into to make modifications before the teachers indicate that they understand what has been said. Many language researchers have considered these kinds of exchanges—repairs producing reformulations—the key to successful language development (Gass and Selinker, 2001).

4.4 Questions to transmit and test the knowledge from the learners

In the classroom data I collected, the teacher subjects very often used display questions to impart and test the knowledge from learners. In spite of the preference of language researchers for a referential question, a display question plays a very important role in disciplining (Musumeci, 1996) and preparing students' necessary preliminary linguistics knowledge for further use (Nunan, 1987). Besides, the teachers were found to solicit questions from learners in order to recognize where their problems were and to directly teach them needed knowledge. Finally, target-like exemplifications provided by teachers were valuable tools for guiding and correcting language usages for language students to engage in 'grammatical consciousness raising' (O'Dwyer, 2006) dialogues in English as a foreign language classrooms in Taiwan.

Excerpt 13 (Testing and transmitting learners' knowledge by display questions)
 (The reading texts Teacher C is teaching are: Our brains are also responsible for everything we see. The movement, shape, colour, and size of everything around us is processed inside our brains. The complexity of building these images in our brains all happens in the blink of an eye.)

- 1 TC: 第三句的動詞是哪一個？
- 2 Ss: ...
- 3 TC: 哪一個字？
- 4 S?: /Happens./ (Whispers to TC)
- 5 TC: Yes. 有人講答案了！'happens' 寫 V, V 就是這一句話的動詞。那意味著
- 6 'happens' 前面所有的東西加起來是什麼詞 (+)？主詞。

- 1 TC: Where is the verb of the third sentence?
- 2 Ss: ...
- 3 TC: which word?
- 4 S?: /Happens./ (Whispers to TC)
- 5 TC: Yes. Someone spoke out the answer. Note down 'happens' as V.
- 6 V is the verb of a sentence. So, that means that all of these in front the word,
- 7 'happens', is what (+)? The subject term.

When leading the class to read the texts in an English magazine, to test learners' knowledge of sentence structures, Teacher C tried to ask learners which one is the verb of the third sentence, 'The complexity of building these images in our brains all happens in the blink of an eye'. After her rephrasing caused by the silence of the class,

someone attempted to provide the answer in a very low voice. Then, the teacher's following instruction and statement, 'Note down happens as V. V is the verb of a sentence.' showed her confirmation of this satisfactory reply and at the same time she imparted the knowledge to the whole class. However, her knowledge transmission was not yet finished. She posed another pseudo-question about the position of the subject term in the lines 6 and 7 to directly teach the class the grammatical structure of this sentence.

Similar situations can be found in the following two sequential dialogues.

Excerpt 14 (Testing and transmitting learners' knowledge by display questions)
(This activity is new vocabulary and phrase teaching. The teacher is teaching the phrase, 'on the way to'. The example of the usage of this phrase, 'The new museum is well on its way to being finished. Soon it will be open to the public.', is provided in the textbook. TC tries to teach the class that the verb behind 'to' should be changed as the verbal noun because 'to' here is the preposition.)

- 1 TC: 你有沒有發現什麼？爲什麼'to'後面的V 要加 'ing' 呢？
- 2 S?: XXX
- 3 TC: 因爲 'to'在這裡的詞性是什麼詞？
- 4 Ss: 介係詞。
- 5 TC: 介係詞。Preposition. Very Good.

- 1 TC: Have you noticed anything? Why does V behind 'to' need to be
- 2 changed as 'V-ing'?
- 3 S?: XXX
- 4 TC: That's because here 'to' is what?
- 5 Ss: The preposition.
- 6 TC: The Preposition. Preposition. Very good.

In this sequence, without explicitly providing the syntactical function of 'to', the teacher adopted display questions to test the class knowledge by asking two questions: Have you noticed anything? Why does V behind 'to' need to be changed as V-ing ?. After an unidentified answer, the teacher rephrased her guiding question in an even more explicit way in the line 4, which in turn elicited the correct response in the line 5.

Excerpt 15 (Testing and transmitting learners' knowledge by display questions)
(The sentence in the textbook the teacher is teaching is: 'Martin Luther King sought a

future far more free of oppression for his fellow blacks.’ Teacher C is testing the class on which words can replace ‘far’ in the sentence to modify the comparative so as to impart the knowledge to the class)

- 1 TC: 可以用哪一個字來取代‘far’呢(++)? 用哪一個字來取代‘far’?
- 2 S?: Even.
- 3 TC: Even. 好。請寫 even。還有哪一個字可以取代 Even?
- 4 S?: Much.
- 5 TC: Much. 對不對? 可以用 far, 也可以用 Even, 也可以用 much, 還可以用什麼呢?
- 6
- 7 Ss: ...
- 8 TC: A lot. 對不對? 用 far, even, much, 還有 a lot 來修飾比較級。

- 1 TC: Which word can be in place of ‘far’(++)? Which word can be in place of
- 2 ‘far’?
- 3 S?: Even.
- 4 TC: Even. Good. Please note down ‘even’. Which word can be in place of
- 5 ‘even’?
- 6 S?: Much.
- 7 TC: Much. Right? We can use ‘far’, ‘even’, and ‘much’. What else?
- 8 Ss: ...
- 9 TC: A lot. Right? ‘Far’, ‘even’, ‘much’, and ‘a lot’ can modify the comparative.

In the above dialogue, the teacher was explaining the grammar of this sentence, ‘Martin Luther King sought a future far more free of oppression for his fellow blacks’, in the textbook. She built up the grammatical knowledge for the class not through direct teaching, but her solicitations. She first tested the class ‘which word can be in place of ‘far’?’. After one correct answer, ‘even’, was provided, she posed the following question, which word can be in place of ‘even’. Then, the learners searched their current knowledge to offer another correct answer. She then continued asking, except for ‘even’, ‘far’, ‘much’, what can be used to modify the comparative? At the end of the sequence, she summarized all of the lexical terms, which can modify the comparative, to the learners and provided them complete knowledge.

In addition to display questions, the teacher subject also employed the questions to ask for learners’ questions. In this way, teachers would know how to build up the needed knowledge which is in tune with learners’ demands.

Excerpt 16 (Questions which transmit knowledge of the target language by seeking for learners' questions)

(The question Teacher C is teaching in the Cloze test is 'Germanic settlers brought the language to the islands (9) during the 5th century B.C. The answer options for this question are as follows:

9. (A) pastime (B) anytime (C) sometime (D) every time.)

1 TC: Any questions? XXX, do you have any questions? XXX, questions? XXX,
2 questions? S1?

3 S1: 第九題。

4 TC: 好。那我們一起讀第九。第九題的答案是'sometime'，你是不是
5 選'pastime'?

6 S1: ((ND))

7 TC: 'pastime'並不是指過去的某個時間，它是指嗜好，娛樂，知道嗎？好。
8 Collecting stamps is my pastime. 集郵是我的消遣活動。Pastime 是消遣。
9 Sometime 才是指某個時候。'Germanic settlers' 是指德國來的墾荒者。
10 'brought the language to the islands' 將這項語言帶到這個島。'sometime
11 during the 5th century' 在西元五世紀的某個時候，對不對？'Sometime' 12
是某個時候；'Pastime'是消遣。好。

1 TC: Any questions? XXX, do you have any questions? XXX, questions? XXX,
2 questions? S1?

3 S1: Question Nine.

4 TC: Ok. Let's read Question Nine. The answer for the ninth question is
5 'sometime'. You chose 'pastime', didn't you?

6 S1: ((ND))

7 TC: 'pastime' does not mean certain time in the past. It means a hobby or
8 entertainment. Understand? Ok. Collecting stamps is my pastime.
9 Collecting stamps is my pastime. 'Pastime' is a hobby. 'Sometime' means a
10 certain time. 'Germanic settlers' means Germanic settlers. 'brought the
11 language to the islands' means brought the language to the islands.
12 'sometime during the 5th century' means sometime during the 5th century
13 Right? 'Sometime' is sometime; 'Pastime' is pastime. Ok.

By asking learners for their questions when they were answering the Cloze test, Teacher C allowed the students to find the problems on their own and opened the floor (Bauersfeld, 1992) to the whole class. S1 took this chance to pose his question and sought for teacher's assistance. Then Teacher C led the class to read the ninth question

one more time and provided the correct answer, 'sometime'. She detected that S1's problem might be caused by the unknown vocabulary, 'pastime'. This word is composed of two words, 'past' and 'time' that the learner already knew. The learner might easily make the connection and might think 'pastime' could mean a certain time in the past. Therefore, the teacher asked S1: 'You chose 'pastime', didn't you?' S1 confirmed that by nodding his head in the line 6. From the lines 7 to 13, the longer speaking turn on the part of the teacher demonstrated that the teacher attempted to teach and explain the learners the differences between 'sometime' and 'pastime'. That is, Teacher C used questions which elicited learner questions in order to invite the learner to reflect upon and to speak out problems on his own, and then she could impart him needed knowledge of the target language on the spot.

Excerpt 17 (Questions which transmit knowledge of target language by seeking for learners' questions)

(The question the teacher is teaching in the Cloze test is: 'If we (9) all this data at once our brain will be overwhelmed'. The answer options are as follows:

9. (A) takes in (B) taken in (C) take in (D) taking in)

1 TC: Any questions? 第幾?

2 S?: 第九。

3 TC: 第九題::是 C。take in 就是吸收。'If we take in all this data at once' 如果
4 我們將這些資料一次，'at once'就是一次同時。一次同時吸收這個資料
5 的話，那我們的腦，'our brain'，'will be overwhelmed'，將沒有辦法負
6 荷。第九題是'take in'。誰在問第九題呢？

7 S?: S3.

8 TC: S3, 你選什麼呢？

9 S3: 我選 C 啊！

10 TC: 你選 C，那答案是 C 啊！

11 S3: 因為我在寫考卷時把它圈起來。<代表學生在寫這一題時有問題>

12 TC: 所以你不確定這個答案，爲了要 confirm 一下是不是？這一句話的主
13 詞是 'we'，後面的'take'不用加 s。用'take in'。那不能用 taking 啊。taking
14 or taken 不是動詞啊。'we'後面要放動詞啊！這一題有問題的舉手::。
15 No body. 那這一題選錯的舉手。

16 S4: (Put her hand up)

17 TC: S4, 你選錯喔！

18 S4: 我選 B。

19 TC: 你選 B 喔, taken in, 是不是？ Because 'we' is a subject, 所以 take 是動
20 詞，如果是 taken，它不是動詞喔！S4, 主詞的後面要接動詞喔！好。

1 TC: Any questions? Which one?
2 S?: Question nine.
3 TC: The answer for Question nine is:: C. 'Take in' means take in. 'If we take in
4 all this data at once', if we take in all this data at once , 'at once' means at
5 once. Take in all this data at once. Our brain , 'our brain' , 'will be
6 overwhelmed' , will be overwhelmed. The answer for the ninth question is
7 'take in'. Who asked this question?
8 S?: S3.
9 C: S3, which answer did you choose?
10 S3: I chose C.
11 TC: You chose C, but C is the correct answer.
12 S3: Because I circled this question when I was answering it. < It means the
13 students have difficulties in sorting this question out>
14 TC: So, you were not sure about the answer you chose. You want to confirm it,
15 don't you? The subject term in the sentence is 'we', so that no need to add
16 's' at the end of 'take'. Choose 'take in'. 'Taking' cannot be the answer.
17 Both 'taking' and 'taken' are not verbs. Put the verb behind 'we'. Does
18 anyone have questions for this? No body. Who chose the wrong answer?
19 S4: (Put her hand up)
20 TC: S4, you chose the wrong answer.
21 S4: I chose B.
22 TC: You chose B, taken in, right? Because 'we' is a subject, so 'take' is the verb.
23 'taken' is not a verb. S4, a subject term should be followed by a verb. Ok.

At the beginning of the dialogue, the teacher did not know what problems the students encountered. She then asked the class directly: 'Any questions?'; 'Which one?'. After one student specifically pointed out the ninth question, Teacher C started to provide a series of explanations and translations of the vocabulary and the phrases in her following speaking turn. In the line 9, the teacher asked S3 which answer he chose. She found that the problem the learner had was that the learner was not sure the reason why 'take in' is the correct answer. Then, this time she supplied S3 with grammatical knowledge in much more detail. She first explicitly taught the learner that 'we' is the subject and it is 'take', not 'takes' should be used as the verb. And other answer options, 'taking' and 'taken', are not verbs. They cannot be placed after a subject. In the line 18, Teacher C asked again: 'Who chose the wrong answer?' Then she rephrased the knowledge again and taught S4 that a subject should be followed by a verb. That is, the teacher attempted to find out where the learners' problems were by

asking them questions and then she would provide instruction and proper assistance to help the class learn directly.

In addition to the display questions and the teacher questions asking for learners' questions, which were employed frequently in class, in the database the teachers also set up standard examples through questions to impart knowledge of target language which then was consciously assimilated by the learners.

Excerpt 18 (Using questions to transmit learners' knowledge via target-like examples) (TC is teaching the sentence: 'Neighbours are not as friendly in an industrialized nation as those in an agricultural country.' To explain that 'those' is used as the pronoun for plural nouns and 'that' is used for a singular noun, she makes up an example sentence, the smell of the fish is not as fragrant as that of perfume, to the class)

- 1 TC: 這句話是什麼意思呢？ (Writes down 'the smell of the fish is not as
 - 2 fragrant as that of perfume') 先說 that 是什麼意思？That 是代表哪一個
 - 3 字？
 - 4 Ss: The smell
 - 5 TC 哪一個字？
 - 6 S?: Smell
 - 7 TC: **The** smell. (Writes down 'the smell' near to the word 'that') 就是說，魚的
 - 8 味道當然不是像香水一樣香。這個例子怪怪的，對不對？Um, 那改一
 - 9 下。恩，改什麼？
 - 10 S?: Flower.
 - 11 TC: Flower. The smell of the rose, (Writes down 'rose' in place of fish) lavender.
 - 12 (Writes down 'lavender' in place of 'rose') 薰衣草。薰衣草的味道並沒有
 - 13 像香水一樣香。The smell of the lavender is not as fragrant as that of the
 - 14 perfume. 好。
-
- 1 TC: What does this sentence mean? (Writes down 'the smell of the fish is not as
 - 2 fragrant as that of perfume') First, tell me what is the meaning of 'that'?
 - 3 Which word does 'that' stand for?
 - 4 Ss: *The smell.*
 - 5 TC: Which word?
 - 6 S?: *Smell.*
 - 7 TC: **The** smell. (Writes down 'the smell' near to the word 'that') That's to say,
 - 8 the smell of the fish is not as fragrant as that of the perfume. This example

- 9 *is strange, isn't it? Um, let's make some changes. Um, any ideas?*
- 10 S?: *Flower.*
- 11 TC: *Flower. The smell of the rose, (Writes down 'rose' in place of 'fish')*
- 12 *lavender. (Writes down 'lavender' in place of 'rose') Lavender. The smell of*
- 13 *the lavender is not as fragrant as that of the perfume. The smell of the*
- 14 *lavender is not as fragrant as that of the perfume. Ok.*

In this excerpt, Teacher C was teaching and explaining the sentence in the textbook: 'Neighbours are not as friendly in an industrialized nation as those in an agricultural country'. To help the learners assimilate the usages of the pronoun, 'that', she provided the example at the beginning and then immediately posed several questions: 'What does this sentence mean?', 'What is the meaning of 'that'?', 'Which word does 'that' stand for?', to test the class about the new knowledge they just learned. This example indeed elicited the learners' correct reply in the following exchanges. Then, Teacher C noticed that the first example is not semantically appropriate, 'This example is strange, isn't it?' She made adjustments and provided another new example at the end of the sequence, which was much more syntactically and semantically correct, to transmit the new knowledge deliberately to the class.

The following dialogue is more evidence that the teacher used target-like examples to impart formulaic expressions through her questioning behaviours.

Excerpt 19 (Using questions to transmit learners' knowledge via target-like examples) (The teacher is teaching the phrase 'prefer A to B'. After explaining A and B in the sentence should be a noun or a verbal noun, she tests the class knowledge by giving an example in the form of a question: So, how to say I prefer tea to coffee?)

- 1 TB: 所以我比較喜歡茶而不喜歡咖啡應該要怎麼說? ((DR))30 號。
- 2 S1: XXX
- 3 TB: I::
- 4 S1: Prefer
- 5 TB: Prefer::茶要怎麼說?
- 6 S1: Tea
- 7 TB: Tea::
- 8 S1: to
- 9 TB: to::
- 10 S1: Coffee
- 11 TB: Coffee. 很好, 非常好。7 號, 我比較喜歡 A 而不喜歡 B, 請你造一個

- 12 句子。
- 13 S2: ...
- 14 TB: 隨便造一個句子，用 prefer to。
- 15 S2: XXX
- 16 TB: I prefer sleeping to studying. 好，非常好。講到所有同學的想法。((LF))
- 17 Ss: ((LF))
- 18 TB: 文法上是對的。((LF))

- 1 TB: So, how to say I prefer tea to coffee? ((DR)) Number 30.
- 2 S1: I
- 3 TB: I::
- 4 S1: Prefer
- 5 TB: Prefer:: How to say tea in English?
- 6 S1: Tea
- 7 TB: Tea::
- 8 S1: To
- 9 TB: To::
- 10 S1: Coffee
- 11 TB: Coffee. Good, very good. Number 7, I prefer A to B, please make a sentence.
- 12 S2: XXX
- 13 TB: Any sentence you like. Use 'prefer to'.
- 14 S2: I prefer sleeping to studying.
- 15 TB: I prefer sleeping to studying. Good. Very Good. You mention the thought in
- 16 every classmate's mind.
- 17 Ss: ((LF))
- 28 TB: The sentence is grammatically correct. ((LF))

To help the learner master the newly taught knowledge and the usage of this phrase, she posed the question, 'So, how to say I prefer tea to coffee?', in Mandarin to elicit English translation from S1. From the lines 2 to 11, the exchanges between the learner's output and teacher's repetitions showed that Teacher B assisted S1 with applying the new knowledge he just learned step by step by saying one-word answers in every single exchange. Later, the teacher nominated another student to apply the linguistic knowledge by making a correct and full sentence with the same phrase again. That is, the examples 'I prefer tea to coffee.' and 'I prefer sleeping to studying' were exemplifications to demonstrate that Teacher B was building up learner knowledge of target language through exchanges in her social conversation with learners.

From the above excerpts, it is shown that teacher subjects in these four English classes test and transmit grammatical rules, conventions, or formulaic expressions for the learners to master both by employing the display questions, by seeking for learner questions, and via the standard exemplifications of target language in their question-answer verbal dialogues.

In this section, although I used ‘transmission’ and ‘testing’ to express the functions of teacher questions which influence learners’ verbal participation and language learning, I do not mean to express the concept that English teachers in classrooms are only authorities transmitting knowledge to students and testing their rote-learning, and the students are passive recipients of it. In contrast, I want to express that when we closely examine question-answer sequences between teachers and students, the learners’ language development are not simply imparted by the teachers, but socially constructed by both participants. It is through the teaching of the rules of English language via the display questions, the elicitation of learner questions, and standard examples in teacher-student social conversation led by subject teachers, that the learners can learn correct language usages, to engage in grammatical consciousness raising, and to make reflective changes to the linguistic map of how their new language works (Rutherford, 1987, cited in O’Dwyer, 2006).

4.5 Questions are symbolic linguistic tools which semiotically mediate and scaffold learners’ mental and language development

In previous sections, one important function of teacher questions is verbal scaffolding which helps the learners understand the given tasks, elicits their intended meaning, and also assists the teachers with delivering the knowledge of the target language to learners. The data in this section further show that teacher questioning practice can serve to assist the learners to perform at a higher level of language production, which they may not achieve alone. For the scaffolded assistance to be effective, Aljaafreh and Lantolf (1994) point out that it should be dialogic (accomplished through teacher-learner co-constructed interaction), contingent (provided only when needed), and graduated (offered at the appropriate level required by the learner). The following two events present the process in which the teachers, through their questions, mediate learner’s language learning and facilitate them to share the responsibility of knowledge generation and to move towards self-regulation.

While guiding the learners to arrive at the appropriate answers to the questions, I

found that Teacher B employed the strategy, ‘scaffolded inference questioning’ (Hsu, 2001) in her collaborative exchanges with her students. To implement this strategy, Teacher B’s questioning practice followed a unique procedure. She first offered the learners a lead to the answer, and then she prompted the learners to figure out the answer by inferring from the lead. Although, usually, the lead was implicit, it pointed to a direction for the learners to follow in the resolution of the given task. Excerpt 20 demonstrates how this scaffolded inference questioning practice was carried out.

Excerpt 20 (Utilizing questions to mediate learners’ linguistic performance and cognitive functioning via scaffolded inference questioning)

(The question item the teacher and the class are focusing on is: Just as picturesque and romantic as the scenery of Chiufen _____ ((A) is (B) are) the story behind it.)

- 1 TB: 第八題錯的舉手？
- 2 Ss: (Many students raise their hand.)
- 3 TB: 很多同學在第八格的這個部分是錯的。那我現在問同學為什麼 ‘are’
- 4 是錯的？
- 5 Ss: ...
- 6 TB: 你們上次在段考時考過一題‘Behind the hill are mountains and XXX’。
- 7 我記得你們考過這一題。那個時候為什麼動詞是 are？因為地方副詞放
- 8 到句首。所以這句話動詞是::
- 9 S?: is
- 10 TB: 對。很好。把上句話倒過來說就是 Mountains and XXX are behind the
- 11 hill. 所以考卷上這句話倒過來怎麼說？為什麼？
- 12 S?: The story behind it is just as XXX as of Chiufen. 因為主詞補語在句首。
- 13 TB: 非常好。

- 1 TB: Who chose the wrong answers for the question eight?
- 2 Ss: (Many students raise their hand.)
- 3 TB: Many of you chose the wrong answers. Do you know why we cannot
- 4 choose ‘are’?
- 5 Ss: ...
- 6 TB: I remember that in last middle-term examination, there was a sentence
- 7 , ‘Behind the hill are mountains and XX’. Why the verb for that sentence is
- 8 ‘are’? This is because the adverb of place is at the beginning of that
- 9 sentence. So now what is the verb for this sentence?
- 10 S?: is

- 11 TB: Good. Very good. If we reversed the sentence which appeared in the last
 12 middle-exam, it is “Mountains and XXX are behind the hill.” So, how to
 13 reverse this sentence ?And why?
 14 S?: The story behind it is just as XXX as of Chiufen. In the original sentence,
 15 the subject complement is placed at the beginning.
 16 TB: Wonderful.

The leads in this excerpt are questions related to the question item, ‘Behind the hill are mountains and XX’, in the last middle-term examination. The scaffolding process provided by Teacher B in the lines 6, 7, 8, 9, 11, 12, and 13, pushed the unidentified student to infer the answer from the information provided in the leads. By doing so, she has moved beyond her current level of cognitive and linguistic functioning to reach a level that enabled him or her to arrive at an appropriate solution of the given task.

Teacher questions are also important tools to help learners move towards self-regulation. As a learner progresses in his own ZPD from aided performance to unaided ability or shift from other-regulation towards self-regulation, they are assumed to increase the control over their linguistic performance by mediating the assistance provided by teachers to accomplish a task or solve a problem (Takahashi et al., 2000; Hsu, 2001). The scenario in the Excerpt 21 demonstrates this scaffolding function of teacher questions.

Excerpt 21 (Questions which make the learner self-regulate through appropriation of the teacher’s questions)

- 1 TC: 記得 until 的用法嗎？
 2 Ss: ...
 3 TC: 我舉個例子，直到我們失去了健康，才了解它的重要。給我翻譯。
 4 S1: We don’t realize the importance of health until we lose it .
 5 TC: 好。很好。還有其他方法可以說這一句話，對不對？如果把 not until
 6 擺句首要怎麼說？
 7 S1: Not until we lose our health.
 8 TC: And then? 否定字在句首，整個句子要倒裝。所以？
 9 S1: Not until we lose our health do we realize its importance.
 10 TC: Good. 用’do we’。倒裝句。再來，還有其他說法嗎？
 11 S1: it is not until.
 12 TC: It is not until 後面加 that 接一個句子，對不對？所以要怎麼說？

- 13 S1: It is not until we lose our health that we realize its importance.
- 14 TC: Excellent. Very Good.
- 1 TC: Do you remember how to use 'until'?
- 2 Ss: ...
- 3 TC: For example, we don't realize the importance of health until we lose it .
- 4 Say that in English.
- 5 S1: We don't realize the importance of health until we lose it.
- 6 TC: Good. Very good. There is another way to say it , isn't it ?If I would like to
- 7 put 'not until' at the beginning of the sentence, how to say it?
- 8 S1: Not until we lose our health.
- 9 TC: And then? When 'not until' is at the beginning of the sentence, the original
- 10 sentence becomes an inverted sentence. So?
- 11 S1: Not until we lose our health do we realize its importance.
- 12 TC: Good. Use 'do we'. The inverted sentence. Any other expression?
- 13 S1: It is not until.
- 14 TC: 'It is not until' should be followed by 'that', and then after 'that' is a
- 15 complete sentence. How to say that in English?
- 16 S1: It is not until we lose our health that we realize its importance.
- 17 TC: Excellent. Very Good.

In the preceding exchange, as it can be seen that the teacher's questions were appropriated by S1 while Teacher C led the learner to produce the different expressions with the term, 'until'. As soon as the learner demonstrated the ability to accomplish the given tasks, Teacher C's provision of scaffolded assistance was withdrawn. Through co-constructed conversation with Teacher C, S1 has successfully generated three appropriate and satisfactory responses: 'We don't realize the importance of health until we lose it.'; 'Not until we lose our health do we realize its importance.'; 'It is not until we lose our health that we realize its importance.'. Therefore these provided evidence of her increased competence with independent working and movement towards self-regulation (Hsu, 2001).

4.6 Summary of findings

This section presents how teachers' questioning practices influenced learners' language learning and cognitive processing. Data show that the participating teachers deployed their questioning together with a variety of strategies or guidance to help

learners from the five perspectives: to comprehend teacher questions, to figure out the responses, to help learners produce the answers which are comprehensible for others, to transmit and test the knowledge of target language, and to work as symbolic tools to mediate learners' language learning.

To enhance learners' comprehension of a question as target language input, the teachers repaired anticipated sources of trouble before posing their main questions or made modifications after their solicitations by providing illustrations, translation, or visual support or by making comparisons, asking for comprehension, or deconstructing the main questions. While guiding learners to figure out the answer, the teachers provided explicit assistance via visual hints, offered similar situations for learners to connect with, or gradually steered the direction of questions towards the expected answer. The data also showed that in order to make learners' utterances comprehensible for others, Teacher D asked the learners for direct clarification. Through her questioning, the teacher directed the learners' attention to the problematic elements in their language production and tried to push the learners to modify their output to achieve comprehensibility. In addition, a teacher question is also a vital approach for learner's language learning and knowledge transmission. The subject teachers were observed to deliberately teach learners knowledge by using display questions, by soliciting learner questions, and via the exemplifications in their questioning behaviours. Also, teachers' use of scaffolded inference questioning could help learners to achieve higher levels of cognitive functioning and language production. By mediating (or appropriating) the problem-solving assistance provided in teachers' questions, learners could increase control over their linguistic performance and move toward self-regulation (Hsu, 2001).

Chapter 5 Findings: Occasions when and reasons why the teachers switched codes in their questioning practices

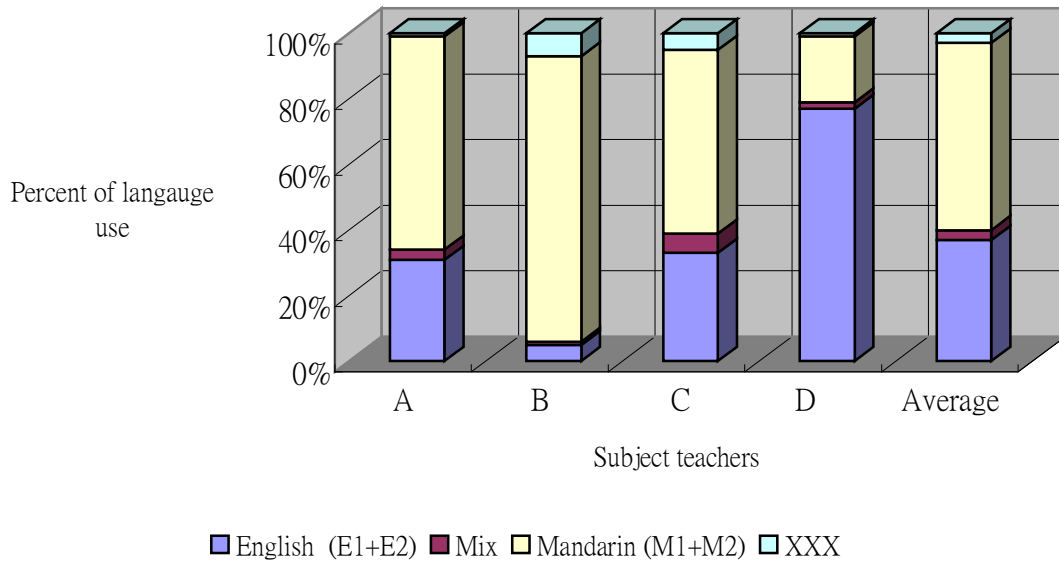
Although the data analysis for the research question two was mainly based on the qualitative paradigm, as I mentioned earlier, a quantitative approach was also employed to uncover the distribution of English and Mandarin language use in the four participant classes at the beginning of this section (Section 5.1). In the section 5.2, I present the qualitative interpretations of the occasions of subject teachers' code-switching in their questioning practice either from Mandarin to English or from English to Mandarin. Then, in the third part of this chapter, first the teachers' self-explanations of their language choices in classes are demonstrated, and I further provide more the reasons why they switched codes in their solicitations (Section 5.3). The succinct summary of the chapter can be found in Section 5.4.

5.1 Quantitative analysis of teachers' language use

The data for the following numeric analyses of language use of four subject teachers came from the teacher-fronted activities (Section 3.4.6 provides the examples of teacher-fronted activity boundaries) in 20 classroom periods (four for Teacher A and Teacher B; six for Teacher C and Teacher D). The tables in Appendix V report the percentages of English c-units (E1), English c-units with few Chinese words (E2), Chinese c-units (M1), Chinese c-units with few English words (M2), and c-units with an almost equal mixture of English and Chinese (Mix) in these twenty classes. I did not count the percentages of unidentified utterances (which is presented as 'XXX' in the diagram 5.1), since they can be figured easily by subtracting the percentages of other types.

The diagram 5.1 presents the average percentages of each type of language use for each teacher (the exact percentages are in tables V1 and V2 in Appendix V). The amount of target language (E1+E2) the teachers used in the recorded teacher-fronted activities varied considerably from teacher to teacher, ranging from 5% to 77%, with an average of 37%. This 37% mean is much lower compared with the findings in other similar research studies in foreign language classrooms (Duff and Polio, 1990; Marcaro, 2001) or in EFL classrooms (Liu et al., 2004).

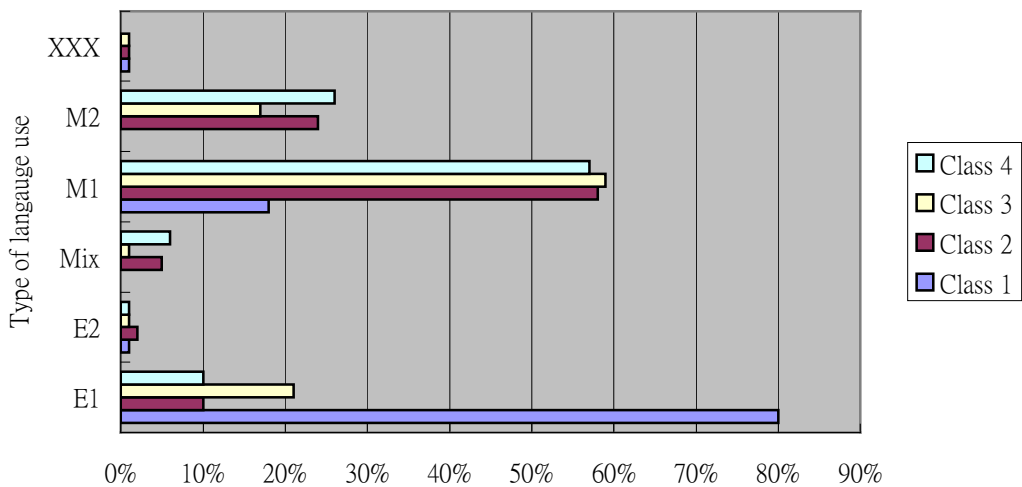
Figure 5.1 Average percentage of language used in subject teachers' classes



When looking more closely at the table V1 in Appendix V, I found that even the same teacher used a significantly different amount of English in different classroom periods. I re-organized the data in the table V1 and re-presented them in the tables V3, V4, V5, and V6 in order to demonstrate the discrepancies in every single class period of each subject teacher.

Language use in Class A

Figure 5.2 Percentage of language used in Teacher A's classes



As the chart above shows, the English language use (80%) in Class Period 1 is significantly more than that in other class periods (refer to Table V3 in Appendix V to see the exact percentage). When I reviewed the transcription from Class Period 1, I found this class period includes lots of teacher-fronted reading activities. After the teacher led the class to read every paragraph from the given texts, Teacher A asked the class English questions which are related to the content of the paragraph. Then the teacher nominated students to respond her questions by the drawing of lots which was done with small wooden sticks with students' school numbers. Almost the whole activity was conducted in English. That is the reason why the amount of English use in Class Period 1 is the most among Teacher A's recorded lessons.

TA: For me, when I teach reading, first I lead the class to read the texts, and then I ask questions about the contents. I ask for the contents first. Later, I use the grammar translation method. Understanding the framework and the content (of the texts) in English is important for reading comprehension.

In Class Period 2, a long grammar activity was undertaken. Teacher A imparted the knowledge of grammar to learners through their native language, Mandarin. Again, in Class Period 4, the teacher explained the linguistics knowledge and asked for learners' queries about the question items on the examination sheet in a post-quiz activity. Except when reading English from texts, Teacher A used more Mandarin to explain grammar and provided vocabulary translation.

Class Period 3 included both reading and grammar activities. Teacher A was observed leading reading activities in English and teaching grammar in Mandarin. Since in Class period 3, the activity of grammar occupied most class time, the percentage of English use was not high (21%).

I: When do you usually use Mandarin?

TA: Explaining Grammar.

I: Why don't you explain grammar in English?

TA: They do not know the specific English grammar terminology. Explaining grammar in English needs more time. Their English competence is not good. When I explain grammar in Mandarin, they are already confused. How can I do it in English? Using English to explain grammar will cause chaos.

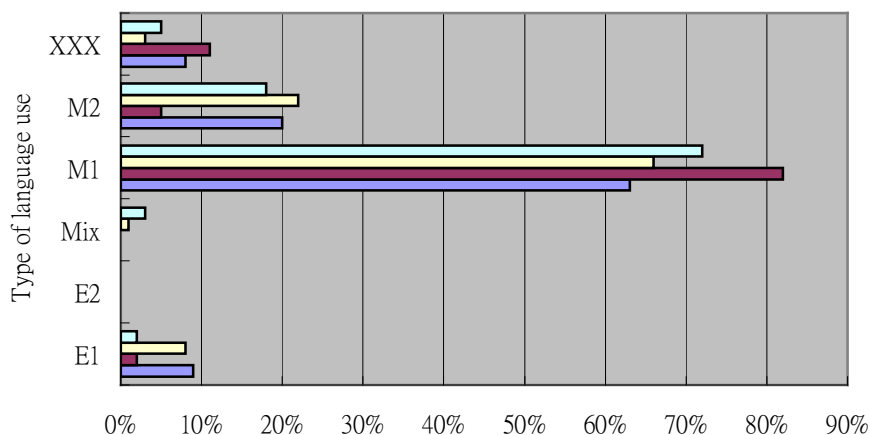
As a matter of fact, the classes I observed all included several different activities. The four subject classes in the present research are all ‘integrated classes’ which do not only focus on certain language skills (McCormick, 1997). Usually, different classroom activities such as reading, vocabulary or grammar teaching occur in one single class period. In the table below, I listed the frequency of observed teacher-fronted classroom activities which occurred in every class period in order to demonstrate the relationship between the percentage of language use and the frequency and the types of classroom activities.

Table 11: Percentage of language use and frequency of teacher-fronted activity in Teacher A’s classes

Class	Type						Activity
	E1	E2	Mix	M1	M2	XXX	
1	80%	1%	-	18%	-	1%	4 Reading
2	10%	2%	5%	58%	24%	1%	1 grammar 1 introduction
3	21%	1%	1%	59%	17%	1%	1 reading 1 grammar
4	10%	1%	6%	57%	26%	-	1 post-quiz

Language use in Class B

Figure 5.3 Percentage of language used in Teacher B's classes



In Teacher B’s recorded classes, almost all activities were carried out in Mandarin (refer to Table V4 in Appendix V for detailed numeric information). Teacher B used English only when reading from the texts or repeating learners’ English verbal responses. These results were different from the impression gained from interviewing.

I: When do you use English?

TB: When the schedule is not overloaded, I have spare time to teach many activities I designed. I use English extensively.

However, these designed activities Teacher B mentioned were not observed when I visited the class. It could be possible that I just simply missed these occasions or, as she said in the interview presented later, that her teaching is confined to the schedule and she does not have spare time to use English. Mostly teacher-fronted activities occurred with a huge amount of teacher monologue. When transcribing the data from these activities, I used the transcription notation ‘(...)’ all the time to indicate the omission of teacher monologue. In the class periods 1 and 3, the transcribed teacher-fronted activities were fragments. They were not included in the following table. Other complete teacher-fronted activities and their relationship with the language use of Teacher B can be shown below.

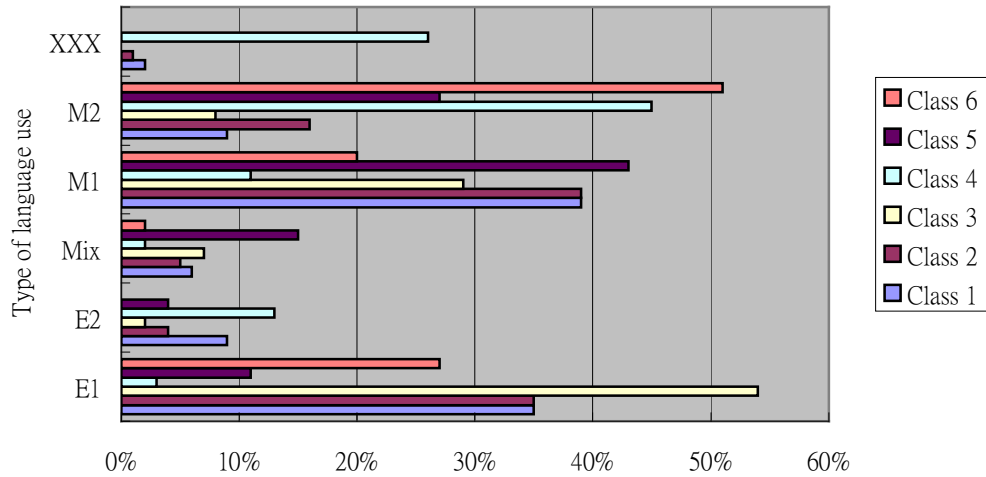
Table 12: Percentage of language use and frequency of teacher-fronted activity in Teacher B’s classes

Class \ Type	E1	E2	Mix	M1	M2	XXX	Activity
2	9%	-	-	63%	20%	8%	1 reading 1 introduction
4	2%	-	-	82%	5%	11%	1 post-quiz

In this table, though I presented the complete activities in every class period, I did not mean to convey the message that only complete teacher-fronted activities were transcribed and analyzed. In fact, the fragments of incomplete teacher-fronted activities were included in almost every transcript. They were also shown with content units (see the definition in Section 3.4.4) and used for analyses. The table above simply tried to demonstrate the types of classroom activities and how they were linked with English and Mandarin use in class.

Language use in Class C

Figure 5.4 Percentage of language used in Teacher C's classes



When compared with Teacher B, Teacher C seemed to use much more English in recorded class periods (see the exact percentage in Table V5 in Appendix V). However, I believed that this teacher used more English in recorded class periods than the amount I assumed was typical in other unobserved classes. The reason why Teacher C used more English for the recording than she usually did can be uncovered from her pre-observation interviewing with me. After several probing questions, the Teacher C might have got an impression that English use by the teacher is focused on in the present research and tried to help me by using more English in Class C.

TC: I use lots of Mandarin to teach English. When I use English, I am frightened. It takes more time.

I: Do you use English in class?

TC: Sometimes, when I think I should use English, I use it.

I: Can you give me an example?

TC: For example, when I need them to do something, I speak in English.

I: Can you explain that much more clearly?

TC: When I ask them to underline the important grammar in the texts, I use English. This is 'classroom English'. When I teach in Mandarin, I can talk with students my own experiences which are related to the information in the texts. When I teach in English, I teach only the texts. If I really want to share my personal experiences, I switch from English to Mandarin. Ok. I promise you I will use more English when you come to visit.

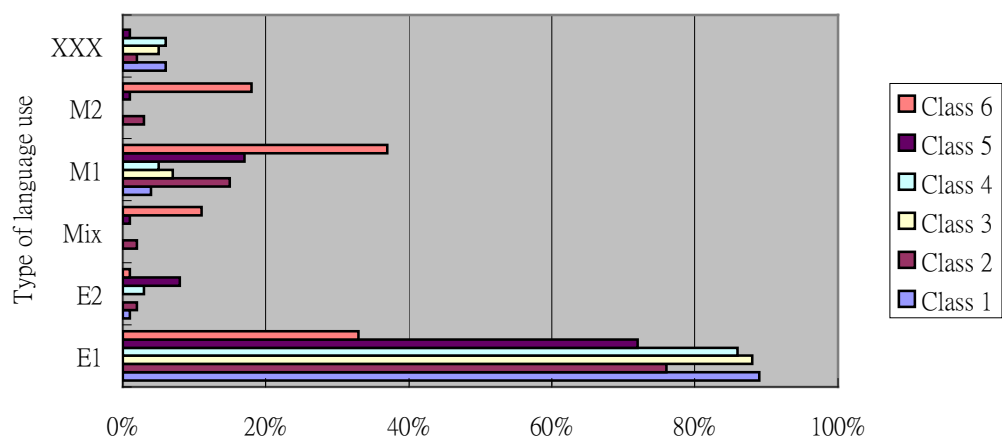
In the class periods 1 and 6, teacher-fronted activities included a large proportion of teacher monologue. Again, I tried to identify remaining useful data and presented them in the form of content units. Other complete teacher-fronted activities and language use in every class period were presented in the following table.

Table 13: Percentage of language used and frequency of teacher-fronted activities in Teacher C's classes

Class \ Type	E1	E2	Mix	M1	M2	XXX	Activities
2	35%	4%	5%	39%	16%	1%	1 grammar
3	54%	2%	7%	29%	8%	-	1 homework reviewing
4	3%	13%	2%	11%	45%	26%	1 pre-quiz
5	11%	4%	15%	43%	27%	-	1 post-quiz

Language use in Class D

Figure 5.5 Percentage of language used in Teacher D's classes



On average, Teacher D used significantly more English than other subject teachers did (the detailed information is listed in Table V6 in Appendix V). Nevertheless, there was an exception. In Class Period 6, Teacher D used less English (33%). The identified teacher-fronted activity in this class period is a post-quiz activity. During this activity, Teacher D led the class to review the question items on the examination paper, asked

for learners' enquiries, and provided grammar or vocabulary explanations. She used much more Mandarin to carry out the whole procedure. The finding can be triangulated through the similar data in the interview with Teacher D:

I: How much is the percent of your English use in class?

TD: In most cases, it's about 70-80 percent.

Table 14: Percentage of language used and frequency of teacher-fronted activities in Teacher D's classes

Class \ Type	E1	E2	Mix	M1	M2	XXX	Activities
1	89%	1%	-	4%	-	6%	1 film discussion
2	76%	2%	2%	15%	3%	2%	2 student presentation
3	88%	-	-	7%	-	5%	3 reading
4	86%	3%	-	5%	-	6%	1 introduction
5	72%	8%	1%	17%	1%	1%	1 introduction
6	33%	1%	11%	37%	18%	-	1 post-quiz

5.2 Qualitative analysis of teachers' language use

According to Guthrie (1987, cited in Kim and Elder, 2005), the proportion of the TL used in classroom activities should not be the sole basis for judging the linguistic quality of the classroom environment. Well-developed research analyses on language use should also look at how speakers make choices on language use and take the particular contexts into account. This can be implemented through the data taken from interviews with teachers and the discourse/conversation analysis of language use through the following excerpts with its background information.

From the resulted obtained from the quantitative analyses above these four subject teachers can be roughly classified into two groups. Teacher A (except for the reading activities), Teacher B and Teacher C used significantly more Mandarin in classes. On the other hand, language use in Teacher D's class was almost exclusively English

(except for the post-quiz activity). At the risk of overgeneralizing, I present the occasions of the code-switching in teachers' questioning behaviours from these two perspectives, Type One (data from Class A, B, C, and the post-quiz activity from Class D)—Switching from Mandarin to English; Type Two (data from Class D and the reading activities from Class A)—Switching from English to Mandarin.

5.2.1 Type one—Switching from Mandarin to English in teachers' questioning practice

The generalized occasions of English use in the questioning practices in the activities which were carried out almost entirely in Mandarin taken from Teacher A, B C, and D (in her post-quiz activity), are shown below.

Text reading and teaching

The most common situations in which the teachers switch from Mandarin to the other code occurred when the teachers taught, read, or asked questions related to the texts to the classes.

Excerpt 22:

1 TB: 'Queen Victoria slept on a bed with seven mattresses on top of each
2 other.' 'with'劃一下，中文是有的意思。'Seven mattresses'是受詞。'on
3 top of each other' 是什麼詞？受詞補語，對不對？

1 TB: *'Queen Victoria slept on a bed with seven mattresses on top of each
2 other.'* 'with' underline. It means with in Mandarin. 'Seven mattresses'
3 is the object. What is the grammatical function of 'on top of each
4 other'? The object complement, right?

Teacher B used to teach English in Mandarin. Reading texts and asking the knowledge related to texts were the situations in which she switched codes and used much more English in her questioning behaviours. Similar cases also happened frequently in Class A and Class C.

This occurrence of English language use was also linked with a particular phenomenon - there was a lack of stimulating learning materials, and textbooks have

always played a key role in Taiwan's educational system. The subject teacher worked closely following the textbook in English lessons where it has been observed that "the textbook is taught, not the students" (Reynolds, 1974, quoted in Evans, 1997).

Getting English responses from the students

Some researchers claim that the students respond using the same language as the teacher much more often than they respond not using the same language as the teacher (Liu et al., 2004). In my database, I found teachers switched from Mandarin to English in order to elicit English responses from the students since these students were much more likely to reciprocate their teacher's language use and to provide English verbal contribution.

Here is the activity taken from Class A. Teacher A tried to introduce a new lesson, Tornado, to the class. She asked students questions so as to provide them with the background information for the lesson.

Activity 1:

- 1 TA: 好。那台灣有沒有龍捲風呢？(+)
 - 2 Ss: @#\$\$%^&*
 - 3 TA: 有，在善化那個地方對不對？好。我們來看一下一百九十九頁底
 - 4 下的問題。What does a tornado look like? (+) What does it look
 - 5 like?
 - 6 Ss: ...
 - 7 TA: What does it look like?
 - 8 Ss: ...
 - 9 TA: I feel it looks like an ice cream cone. What does it look like?
 - 10 S1: XXX
 - 11 TA: A vacuum. Good. 再來，in what season do tornados often occur? 在哪
 - 12 個季節 Tornados 經常發生？
 - 13 S2: XXX.
 - 14 TA: 春夏之際，對吧？Do tornadoes ever occur in Taiwan? Yes，對不對？
 - 15 好。
-
- 1 TA: Good. Does a tornado occur in Taiwan? (+)
 - 2 Ss: @#\$\$%^&*
 - 3 TA: Yes, in Shanhua, right? Ok. Let's look at the questions on the bottom of

- 4 *Page 199. What does a tornado look like? (+) What does it look like?*
- 5 Ss: ...
- 6 TA: *What does it look like?*
- 7 Ss: ...
- 8 TA: *I feel it looks like an ice cream cone. What does it look like?*
- 9 S1: *XXX.*
- 10 TA: *A vacuum [A vacuum cleaner]. Good. Next one, in what season do*
- 11 *tornadoes often occur? In what season do tornadoes often occur?*
- 12 S2: *XXX.*
- 13 TA: *Between Spring and Summer, right? Do tornadoes ever occur in Taiwan?*
- 14 *Yes, right? Good.*

This was a very short teacher-fronted activity taking about two minutes before the coming break. Teacher A seemed to end this part of classroom interaction in a rush, since at the end of the activity, she answered the last question by herself so as to speed up the remaining parts of the activity. When posing the first question in the line 1, the teacher used Mandarin. Although I could not recognize the answers from the next speaking turn on the part of the students, through Teacher A's following Mandarin feedback, I thought students might provide the anticipated Mandarin answer. Then, the obvious code-switching immediately happened in the same speaking turn. The teacher posed several questions 'What does a tornado look like?' 'What does it look like?' in the lines 4, 6, and 8 in English. In the line 9, the student's English response was successfully elicited, which can be told by the teacher's subsequent repetition and acknowledgment 'A vacuum. Good.' In the line 10, the teacher asked another question 'Next one, in what season do tornados often occur?' and repeated it in Mandarin. In the line 13, she formulated the answer once again. Through the activity above, it can be seen that Teacher A used Mandarin to solicit Mandarin responses and asked in English for learners' English output. When the teacher switched codes from Mandarin to English from the line 4 to the line 11, she tried to exert 'a reciprocal reinforcing effect' (Polio and Duff, 1994) on the students.

Giving instructions related to the classroom tasks

To carry out a classroom task, the students must understand what they have to do. Some teachers resort to L1 after having tried in vain to keep the activity going in the L2 (Macaro, 1997). Cook (2001) also claims one of the important functions of mother tongue is to organize tasks for students. Contrastively, in this study, Teacher C and Teacher D (in her post-quiz activity) were observed to use English to give instructions

frequently.

Excerpt 23:

(TC is teaching the usage of 'until'. She gives the class two examples, 'I went out with him until recently', 'I didn't go out with him until recently', and asks for the Mandarin translations of them.)

- 1 TC: 'I went out with him until recently.' 跟 'I didn't go out with him until
2 recently.' What is the difference? (++) 'I went out with him until recently.'
3 S1: 直到最近我才沒有跟他出去。
4 TC: 很好。直到最近我才沒有跟他出去。S2, how about the second sentence? 'I
5 didn't go out with him until recently.'
6 S2: 直到最近我才跟他出去。

- 1 TC: '*I went out with him until recently*', and '*I didn't go out with him until*
2 *recently*'. What is the difference? (++) '*I went out with him until recently*.'
3 S1: *I went out with him until recently*.
4 TC: *Good. I went out with him until recently.* S2, how about the second
5 *sentence? 'I didn't go out with him until recently.'*
6 S2: *'I didn't go out with him until recently.'*

In addition to reading from English texts, the teacher switched to the target language code twice. One is 'What is the difference?'; the other one is 'how about the second sentence?' Through her questions, the teacher tried to guide the learners to respond in order to complete the given tasks. Another example can be seen in Teacher D's class below.

Excerpt 24:

(The question item that Teacher D is teaching in the second part of the quiz paper is:

18. () The rescue team _____ the campers _____ food the clothing.
(A) provided...for (B) provided...with
(C) gave...for (D) supplied for)

- 1 TD: Ok. Any questions from this part? (++) Do you have any questions?
2 Ss: ...
3 TD: No. Ok. How about grammar? The second part.
4 S?: 十八。

5 TD: Ok. Let's take a look at 十八。 'The rescue team' What is the meaning of
 6 rescue? 什麼是 rescue? ((PO))
 7 S1: 救援。
 8 TD: 救援，對不對？ (to the whole class) Ok. Rescue team. 救援隊。 'The
 9 camper' 什麼叫 the camper? (++) Camp 是什麼？ (+) 露營對不對？
 10 那 campers 呢? (+) 是露營的人。 'food and clothing' 是食物跟衣服。
 11 供給要用 provide with 或是 supply with。 Ok. Understand? And, any more
 12 questions?

1 TD: *Ok. Any questions from this part? (++) Do you have any questions?*
 2 Ss: ...
 3 TD: *No. Ok. How about grammar? The second part.*
 4 S?: *The eighteenth question.*
 5 TD: *Ok. Let's take a look at the eighteenth question. 'The rescue team' What is*
 6 *the meaning of rescue? What is rescue? ((PO))*
 7 S1: *Rescue.*
 8 TD: *Rescue, right? (to the whole class) Ok. 'Rescue team'. The rescue team.*
 9 *'the campers' What is the meaning of 'the campers'? (++) What is camp?*
 10 *(+) Camp, right? So, what is the meaning of 'campers'? The campers.*
 11 *'food and clothing' are food and clothing. We use 'provide with' or*
 12 *'supply with' to express providing someone with something. Ok.*
 13 *Understand? And, any more questions?*

(Please note the excerpt above is not a complete activity. Also it includes 2 content units and one incomplete content unit. They reason why I chose this part of the transcription is to clearly demonstrate that Teacher D made use of the target code to give instructions to the class.) According to the quantitative analysis, Teacher D used more Mandarin in this post-quiz activity (compared with other recorded activities), especially when she tried to explain the vocabulary in Mandarin: 'The camper' 什麼叫 the camper?'. However, if we look more closely, the English language in her questioning practice in this activity also played the role for giving instructions and keeping the activity moving on. The questions such as, 'How about grammar? The second part' in the line 3 and 'And, any more questions?' in the line 12-13 are all questions to direct students to work on the given tasks.

5.2.2 Type Two—Switching from English to Mandarin in teachers' questioning

practice

In the following examples, I present the situations where Teacher D and Teacher A (in her reading activities) switched from English to the native code and generalized the possible functions of first language use in their solicitations when they were conducting English classroom activities.

Grammar instruction

Excerpt 25 presents the situation in which the teacher switched code (from English to Mandarin) in an attempt to clarify and correct the ungrammatical sentence the student had produced.

Excerpt 25:

(The representative student is presenting the discussion from his group work about ‘Why do people want to know about aliens?’ through the projector. One of his answers is ‘Many people believe they’re exist’. The teacher attempts to point out the mistake through a series of exchanges.)

- 1 TD: What is wrong here? ‘**They are exist.**’ ‘**They are exist.**’ (to
2 the whole class).
3 Ss: ...
4 TD: 用‘are’嗎?
5 S?: ‘exist’是動詞。
6 TD: Em, 所以不要用‘are’, 對不對? 好。So, many people believe they exist.
7 還有哪一種改法? (to the whole class)
8 Ss: ...
9 TD: 你可以說 they **do** exist. 加強語氣。知道嗎? 你不可以用 are, because
10 both ‘are’ and ‘exist’ are:: what?
11 S?: Verb.
12 TD: Verb, and ‘are’ cannot modify ‘exist’. We have to use ‘do’, right? For
13 presenting the present tense. Understand? Ok.

- 1 TD: *What is wrong here? **They are exist. They are exist.** (to*
2 *the whole class).*
3 Ss: ...
4 TD: *Can we use ‘are’?*
5 S?: *‘exist’ is a verb.*

- 6 TD: *Em, do not use 'are', right? Ok. So, many people believe they exist. How*
7 *do we emphasize the verb? (to the whole class)*
- 8 Ss: ...
- 9 TD: *You can say they do exist. Emphasize it. Understand? You cannot use*
10 *'are', because both 'are' and 'exist' are:: what?*
- 11 S?: *Verb.*
- 12 D: *Verbs, and 'are' cannot modify 'exist'. We have to use 'do', right? For*
13 *presenting the present tense. Understand? Ok.*

In this excerpt, the teachers made several uses of code-switching from English to Mandarin to test, impart, and clarify learners' knowledge of the grammatical structures (e.g. Can we use 'are'? How do we emphasize the verb?). This echoes the findings of teachers' first language use in vocabulary and grammar teaching in other foreign languages (e.g. Polio and Duff, 1994) and EFL classrooms (e.g. Greggio and Gil, 2007).

Requesting meaning clarification from the students

When conducting the activities in English, Teacher D at some moments reverts to Mandarin in her solicitations to overcome communication difficulties.

Excerpt 26:

(One member of Team 2 is presenting their answers about 'why do people want to know about aliens?' One of the reported answers the student produced is 'And the humans get reason from our natural quality, and they inspire our imagination which seeks our tech.' The teacher tries to clarify the intended meaning of this sentence and she often used Mandarin in her questioning practice to do so.)

- 1 TD: *Can you explain? I don't understand this part. Can you explain? (+) Hey*
2 *girls. (to Team 2) Explain what you mean. I don't understand. What do you*
3 *mean by that?*
- 4 Ss: ...
- 5 TD: *'We humans get reason' What does 'get reason' mean? (++) What do you*
6 *mean for that?*
- 7 S3: *XX*
- 8 TD: *發源。*
- 9 S4: *XXX.*
- 10 TD: *Oh, 起源於好奇心是不是？*

11 S4: ((ND))
 12 TD: 然後勒？
 13 S3: XXX.
 14 TD: Ok. ((ND)) the reason, why we want to know aliens, **comes from**, the
 15 reason comes from our what? Our curiosity. Ok. Natural quality 是什麼意
 16 思？
 17 S3: Nature。
 18 TD: What nature? 你要得到什麼性質？
 19 S3: XXX.
 20 TD: Oh, ok. 好。It comes from what, our curious nature. Curious nature 就好
 21 啦。Understand? 不要寫那麼多字。Ok? 變成中翻英了。From our
 22 curious nature. And that 不是 they. And that inspires, 不是 inspire 是
 23 **inspires**, inspires our imagination. Ok. 然後，下面那一句。I do not
 24 understand. What does it mean? 'which seeks our tech' What do you
 25 mean? (To Team 2)
 26 Ss: ...
 27 TD: XXX, 那是什麼意思？
 28 S?: XXX
 29 TD: Oh, 那要怎麼說啊？
 30 S?: XXX
 31 TD: Ok. The reason why humans want to know about aliens comes
 32 from our curious nature, and that inspires our imagination and we want to
 33 get some help from their high-tech. Ok. Understand? Alright. Good.

1 TD: *Can you explain? I don't understand this part. Can you explain? (+) Hey*
 2 *girls. (to Team 2) Explain what you mean. I don't understand. What do you*
 3 *mean by that?*
 4 Ss: ...
 5 TD: *'We humans get reason' What does 'get reason' mean? (++) What do you*
 6 *mean for[by] that?*
 7 S3: XX
 8 TD: The source.
 9 S4: XXX.
 10 TD: *Oh, out of curiosity?*
 11 S4: ((ND))
 12 TD: Then?
 13 S3: XXX.

14 TD: *Ok. ((ND)) the reason why we want to know [about] aliens comes from,*
 15 *the reason comes from our what? Our curiosity. Ok. What does 'natural*
 16 *quality' mean?*
 17 S3: *Nature.*
 18 TD: *What nature? What do you mean?*
 19 S3: *XXX.*
 20 TD: *Oh, ok. Ok. ° It comes from what, our curious nature. 'Curious nature' is*
 21 *fine. Understand? Don't write too much. Ok? It becomes word for*
 22 *word translation. From our curious nature. And use 'that' not 'they'. 'And*
 23 *that' do not use 'inspire'. Use 'inspires', inspires our imagination. Ok.*
 24 *Then 'Next one. I do not understand. What does it mean? 'which seeks our*
 25 *tech' What do you mean? (To Team 2)*
 26 Ss: *...*
 27 TD: *XXX, what does that mean?*
 28 S?: *XXX*
 29 TD: *Oh, how do we say that in English?*
 30 S?: *XXX*
 31 TD: *((LF)) Ok. The reason why humans want to know about aliens comes*
 32 *from our curious nature and that inspires our imagination and we want to*
 33 *get some help from their high-tech. Ok. Understand? Alright. Good.*

The answer the student produced in the above excerpt was full of grammatical mistakes: 'And the humans get reason from our natural quality, and they inspire our imagination which seeks our tech'. In order to clarify the meaning of this response, the teacher first requested for clarification in English from the line 1 to the line 6. Then, maybe triggered by the student's Mandarin response in the line 7, she started to clarify meaning in Mandarin through a series of elicitations in the lines 10, 12, 15, 16, 18, 27, and 29. Eventually, the Teacher D understood what the student expected to say and formulated the answer: 'The reason why humans want to know about aliens comes from our curious nature and that inspires our imagination and we want to get some help from their high-tech'. Teacher D's code-switching (from English to Mandarin) in her questioning helped her understand students' opinions and intended meaning.

Mandarin translation

The teachers in language classes also frequently translate into the mother tongue what they have just said in the target language, perhaps believing that such translation (like TV captions) would help learners to understand the target language well (Liu et al.,

2004). Same cases of this caption-like L1 strategy also happened in my research findings.

Excerpt 27:

- 1 TD: Have anyone went there before? (+) Have anyone went there before? (+)
2 Ss: ...
3 TD: This place is very famous in the north of Taiwan. Actually, it should be
4 In the northeast. Ok. 東北方。九份。Have anyone went there before? (+)
5 Have anyone went there before? (+) 有沒有去過九份?
6 Ss: 有。
7 TD: 有, yes, raise your hand. (some students put their hands up) Good. Alright.
- 1 TD: *Have anyone went there before? (+) Have anyone went there before? (+)*
2 Ss: ...
3 TD: *This place is very famous in the north of Taiwan. Actually, it should be*
4 *In the northeast. Ok. The northeast. Chiufen. Have anyone went there*
5 *before? (+) Have anyone went there before? (+) Have anyone went to*
6 *Chiufen before ?*
7 Ss: *Yes.*
8 TD: *Yes. Yes. Raise your hand. (some students put their hands up) Good.*
9 *Alright.*

After her first speaking turn failed to elicit the expected response, the teacher asked 'Have anyone went there before?' in English and then in Mandarin again in the lines 4-5. In addition to the Mandarin translation of English questions, she also provided the Mandarin explanation of unfamiliar English vocabulary such as, the northeast. This type of practice actually helped the student to respond to her question, though some researchers argue that it not only short-circuits the learners' L2 comprehension process but also denies the learners valuable language input which can be provided through modifications or contextualization of the target language (Liu et al., 2004).

5.3 Teachers' explanations of language use in class

In this section, I am going to present the teachers' opinions and explanations about their language use from a general perspective and try to discover more specifically about why they switched codes in their questioning practices. Again, I put the data into

two groups: One is the Mandarin-based teaching group (including Teacher A, B, and C) and the other is the English-based teaching group (Teacher D).

5.3.1 Group One: Mandarin-based teaching group

After I analyzed the interview data, I found that there are three major reasons why Teacher A, B, and C used significantly more Mandarin in their English classes. They are: teachers' and students' English proficiency, restrictions to the teaching time, and the effects of the JUEE (Joint University Entrance Examination).

Research by Duff and Polio (1990) and Crawford (2004) reports a low percent of TL use even among their native speaker teacher participants, which suggests that teacher proficiency in the TL may not be the major determinant of the amount of their TL use. However, in my study, the findings that Teacher A and Teacher C relied on the L1 might be caused by their limited fluency or mastery in the TL. Even though she had already been an English teacher in the lower secondary school for 14 years, before joining School B, Teacher C still needed to go to the cram school to enhance her English speaking ability because she had difficulty in teaching English using only English for one class period in front of the panel, which is the most important requirement to obtain this teaching position in upper secondary schools in Taiwan.

TC: My spoken English is so so. When I taught English in the lower secondary school, I used Mandarin only. I attended the cram school to practice my English speaking since I needed to teach only in English to the panel in order to get this job. After obtaining this job, I seldom use English in class.

Teacher A also gave me the reason why she uses Mandarin most of the class time.

TA: (...) My English intonation is not perfect, since I do not have many chances to speak English.

Teacher B, on the other hand, explained to me that although to communicate or to express opinions in English is a little bit hard for her, to teach in English in the classroom is an easy task. For her, it is students' limited English competence causes which her exclusive use of Mandarin.

TB: (...) When I applied for this job, I gave an English-only lecture to the panel. Teaching in English in class is a piece of cake for me, but the students would be completely lost. In this school, these students' English proficiency is not at good levels. (...)

In addition, the L1 use is an efficient time saving strategy (Harbord, 1992; Liu et al., 2004). For these teachers English use takes more time and slows down the pre-determined schedules especially as the curricula are overloaded in senior high schools.

TA: In this school, I try my best to use English. However, we are restricted to the time. The English teaching schedules in senior high schools are overloaded. We do not have enough time.

TC: I do not have enough time. I feel I am chasing the schedule all the time. I do not speak English. It takes too much time.

Teacher B provided a much clearer answer why English teaching takes more time compared with Mandarin instructions.

TB: (...)When using English for teaching, the teaching schedule would be delayed, since I spend more time making sure the students follow what I say. When I teach in Mandarin, I just need to say it once; in contrast, while teaching in English, I need to make sure that the students are not lost several times.

English education in Taiwan placed an emphasis on grammar, reading, and writing (to translate sentences either from Mandarin to English or from English to Mandarin) skills and only these are tested in the JUEE (refer to Appendix B to see the samples). Therefore, English teaching inevitably focuses on these three major skills and attempts to cultivate students' grammar ability to help them with reading and translating materials written in English. Such a phenomenon is denoted as 'washback' or 'backwash'. It indicates that the external tests or public exams have exerted an influence on teachers and students with an associated impact on what happens in class (Chen, 2002). Because speaking and listening abilities are not tested in the JUEE, but grammar, reading, and writing are focused on and can be taught quickly and effectively through Mandarin, accordingly, time-consuming and unnecessary English conversations between teachers and students seldom occur, which in turn leads to

limited English language used by the teachers in classes.

TB: (...) We do not practice English conversation in class. I only ask them to read the English texts out. In the JUEE, speaking and listening abilities are not tested. (...)

TA: In Taiwan, English teaching and learning is for the tests, not really for communication purposes. If our English examination could focus equally on all language skills, I think I would have totally different teaching styles. I really want to teach English through genuine communication in English with students, but I can't. In the current situation, teaching and learning in schools is only for exams. The primary purpose of all senior high schools is to help students pass the JUEE.

TC: In fact, English listening and speaking training are insufficient in the current curricula. Students' speaking and listening abilities are not tested. Even if my students are good at speaking and listening, no one will acknowledge my contribution. The parents only care about how many scores their child achieve and ask teachers to teach more grammar.

The further statement from Teacher C points out many problems and limits caused by the external environment and the public test and they all influence the amount of English she uses in class.

TC: Using more English is not a problem, but it causes students' unsatisfactory performance in the exam. That is so humiliating for me. Using English to teach also spends more time. We would fall far behind the schedule. Teacher D teaches in English, since she doesn't care about students' test results. If you want to use more English, you are under heavy pressure which comes from the school, parents, and your colleagues. They only care about students' results in tests. Teaching in Mandarin can save time, make sure everyone follows, and help me to catch up with the schedule. We use methods that can help students to obtain good scores in the exams, and among them Mandarin is the effective one.

Teacher C's fear and the associated shame or embarrassment of poor results from her students' performance in public exams lead her to teaching to the test (Alderson and

Wall, 1993). The researchers indicate this is known as ‘negative washback’ and claim teachers constantly use whatever methods they feel most expedient to help their students to prepare for the examination.

5.3.2 Explanations why the teachers employ code-switching strategies in their questioning practices—Group One

I analyzed the data from the interviewing and observed classroom activities in order to discover why teachers employed code-switching strategies in their questioning behaviours.

There are some situations (Section 5.2.1) in which the teachers switch from Mandarin to English in their questioning practices: doing text reading and teaching (Teacher B), getting English contributions from the learners (Teacher A) and giving instruction related to the classroom tasks (Teacher C).

When Teacher B (Excerpt 22) claimed that she uses 99 percent Mandarin in class B, I still found she switched to English and posed questions which are related to the given texts, to the whole class. This again emphasizes the importance of teaching materials in the Taiwanese educational system and she also clarified in her post-observation interview that these Mandarin questions related to texts function as triggers for learners’ interest.

Teacher A (Activity 1) asks questions in different languages according to the classroom activities. During reading activities especially, she asked English questions in order to get reciprocal English contribution from students. When asked about the reasons, she provided the following explanations:

TA: When they are doing reading, using English questions helps the students to understand the contents of the texts in English. I do not want them to rely on Mandarin when they are reading articles. I wish they could use English to find the answers in texts and to respond.

Teacher C (Excerpt 23) also confessed that she utilizes the mother tongue most of the time and the Mandarin questions have another important function, to elicit further discussion of life experiences related to the texts. For her, English question uses are a kind of ‘classroom English’, tied to giving simple instructions (e.g. asking students to

underline important information in texts) in the given tasks.

TC: Sometimes When I teach them English, I ask Mandarin questions to elicit discussions and I am also doing 'life education' at the same time. I want to convey messages which I think are important to them.

TC: When I ask them to underline the important knowledge in the texts, I use English. This is 'classroom English'. When I teach in Mandarin, I can talk with students about my own experiences which are related to the information in the texts. (...)

5.3.3 Group Two: English-based teaching group

According to Teacher D's statements in the interviewing, she is very proud of her speaking competence and she claimed about 70-80 percent English use in her classroom language, which accords with the observed data from the recorded and transcribed activities. For Teacher D, teacher or student English proficiency, time restrictions, and the influences of the examination do not exert an impact on her language use. The allegation that using less English in class is thanks to low student proficiency and limited teaching time is for her the excuse of the majority of English teachers in Taiwan. She claimed that these English teachers just simply do not want to use English in class.

TD: The reason why so many teachers have lots of excuses not to use English is that they do not want to try it (try to use more English). Even if they try to use English a lot, they do not insist on it for every lesson. Finally, they will fall into the pitfall that they believe that their students cannot understand when they use English extensively and using English delays the teaching schedule. I have heard lots of excuses like these. These excuses will exist for ever.

Teacher D believes that even if both student English competence and teaching time are limited, as long as the teacher insists on using more English, the students will get used to it; this gradually speeds up the needed teaching time.

TD: When I taught in English in the Year 1, to be honest, these students (the Year 2 students in class D) did not catch up with everything I said. They

were nervous and lost during my English-only lectures, but gradually, they got used to it. Now they think English learning is very interesting.

TD: The problem here is most English teachers in Taiwan do not want to change their teaching methods. The beliefs these teachers hold influence their teaching a lot. Teaching in English indeed takes more time. However, when you practice more, you will make good progress on your speaking ability. You can teach in English fluently and effectively. At that time, it won't take too much time for you to conduct classroom activities in English.

In addition, 'washback' effects do not influence her teaching and language use. From a long-term goal, she thinks her extensive English language use makes a contribution to students' English language learning, and the English language competence should not only be assessed by the scores.

TD: The school only prefers good results in the examination. It is a shame. For me, I think I chose the right methods. I use English all the time. They make good progress step by step from Year 1 to Year 2. However, their listening and speaking abilities are not tested. That is, they focus on the results of reading and writing abilities, but this is not right. We need to have long-term goals for English teaching and learning, not only teaching and learning for exams.

But she still acknowledged the functions of students' mother tongue in class.

TD: When English explanations are not clearly understood, the function of Mandarin is to help the students figure out the meanings.

5.3.4 Explanations why the teacher employs code-switching strategies in her questioning practices—Group Two

The function of Mandarin in Teacher D's class is to assist learners with figuring out the meanings. Teacher D claimed that only when students really do not understand English explanations, using a little Mandarin is acceptable. Therefore, Teacher D only provided the explanations for the functions of her English questions:

TD: During the introduction of a new lesson, I lead the class to discover the contents of the lesson by asking English questions. These questions lead them to think. In fact, there are several kinds of questions asked in class. Sometimes, I just ask for a certain answer and they can find answers in the texts. Sometimes, I ask them questions and there are no definite answers. I just simply ask for their opinions.

However, according to the observed data, as well as for clarifying her own English explanations for the learners, Teacher D also switched from English to Mandarin in her solicitations when giving grammar instructions, providing equal translation in Mandarin, and requesting meaning clarification from her students (See Section 5.2.2). Such ‘unprincipled L1 use’ (Liu et al., 2004) happened a lot.

Excerpt 28

- 1 TD: Later on, they say what? They said no, no, no. This is not a flying
2 saucer. What’s it?
3 Ss: ...
4 TD: At the very beginning, the army released messages, information to the
5 local news paper, and local new paper wrote something, put something
6 on the newspaper, but then they said no, no, no. That’s not true. That’s
7 not flying saucer. What’s it? (++) What’s it? 記得嗎? What’s it? XXX
8 記得嗎? That’s not a flying saucer. What’s it?
9 S1: XXX.
10 TD: Oh, weather::, weather what?
11 S1: Balloon.
12 TD: Weather balloon. That’s a weather balloon.

In the above excerpt, the teacher posed the Mandarin question: ‘記得嗎?’ (Remember that?) twice. In this case, the teacher uttered many English phrases and words, but the first language use ‘記得嗎?’ seemed not to be governed by her principles of language use. That is, she switched from English to Mandarin to say something very simple, which she could have said easily in English. This practice contradicted her strategies of L1 use only to overcome communication difficulties.

According to Ferguson (2003), classroom code-switching includes three major categories:

- 1) Code-switching for curriculum access (e.g. to help pupils understand the subject matter of the lessons).
- 2) Code-switching for classroom management discourse (e.g. to motivate, discipline and praise pupils and to signal a change in footing).
- 3) Code-switching for interpersonal relations (e.g. to humanize the affective climate of the classroom and to negotiate different identities).

Ustunel and Seedhouse (2005)

In my research findings, most teachers' code-switching in their questioning practices (either from Mandarin to English or from English to Mandarin) fell into the first category. Teachers switched codes in order to provide translation, overcome communication difficulties, encourage and elicit learners' English contribution and give instructions related to texts. The other two categories indeed also appeared, but they usually occurred in teachers' feedback, correction, or other forms of teacher talk, which are not focused on in the current research.

5.4 Summary of findings

The teachers in this study used English language in widely varying amounts, from as little as 5% to as much as 77%, and the average target language use was rather low (37%) compared with other similar research in foreign language and EFL classrooms. I thought the types of classroom activities are linked with language choices made by the teachers. Except for reading activities, Teacher A preferred using Mandarin to carry out other classroom activities. Mandarin is also favourite for both Teacher B and Teacher C for conducting all classroom activities, and Teacher C might have used more English in observed class periods (see Section 5.1), due to the influence that the subject might respond in ways expected by the researcher (Kirk, 1982, cited in Hsu, 2001). For Teacher D, although the major medium of instruction is English, during the post-quiz activity, she used significantly more Mandarin to explain the knowledge of grammar and vocabulary. According to the data retrieved from the interviews, English proficiency of teachers and students, limited teaching time, and the effects of the examination are the major reasons why Teacher A, B, and C used a great amount of Mandarin in classes. However, Teacher D has an opposite opinion; she believed that a little Mandarin is acceptable only when the students are lost. The teachers of Type One switched from Mandarin to English in their questioning practices when they were doing text reading and teaching, trying to get English responses from the students, and

giving instructions related to the classroom tasks. On the other hand, the teachers of Type Two switched from English to Mandarin in their solicitations when they were giving grammar instruction, requesting meaning clarification from the students, and providing Mandarin equivalent translation. These occasions of code-switching offer answers for the first part of the research question two: when the teachers employed code-switching in their elicitations. In addition, Teacher A, B, C and D provided explanations in interviews so as to uncover the second part of the research question why they switched codes. Teacher A emphasized the importance of English questions to elicit English contribution on the learners' part in reading activities. Teacher B worked very closely to texts and believed the Mandarin questions related to texts function as triggers for the interest of learners. English questions for Teacher C are for 'classroom English' use. If she tried to convey life experiences to students, Mandarin questions are effective. Although Teacher D claimed she only used Mandarin when her students have trouble understanding her, based on the observed data, she still used Mandarin in other occasions. Finally, I found all code-switching practices in teachers' questioning behaviours fell into Ferguson's (2003) first category, code-switching for curriculum access, but this might be because the focus on the current research is teacher questioning rather than other discourse features of teacher talk.

Chapter 6 Findings: Subject teachers' teaching and learning goals and the practices that these goals are achieved through teachers' scaffolded native-and target-language questioning

In Chapter 5, I present the findings that the teachers switched codes in their questioning practices in certain occasions for certain reasons. Van Lier and Matsuo (2000) state that Vygotsky views L1 as an important thinking tool, since L1 use may enrich the usability of the L2 that is available for active learner participation. In this section, therefore, both target-language and native-language questions were viewed and demonstrated as verbal assistance that arises in dialogue between experts (teachers) and novices (students) in goal-directed activities, serving to help learners to perform at a higher level of language production than they might otherwise (McCormick and Donato, 2000; Hus, 2001).

At the beginning of this chapter (Section 6.1), I present the teaching and learning goals of the four subject teachers, which were identified from four data sources, pre-/post-observation interviews, stimulated recall interviews and journal entry formats. Then, I assigned and counted the scaffolding functions of teachers' questions from the observed teacher-centred activities. Section 6.2 and 6.3 show how Teacher A achieved her reading and grammar goal via the English and Mandarin questions respectively. In the section 6.4, I will lead the readers to understand how Teacher B used her scaffolded Mandarin questions to achieve her teaching and learning goal relating to reading comprehension. Also, how Teacher D used her both English and Mandarin questions with a variety of scaffolded functions to achieve her speaking and listening expectations for Class D is demonstrated in the section 6.5. In the final section 6.6, I summarized the research findings of this chapter.

6.1 Identifying teachers' teaching and learning goals

According to McCormick (1997), there are four types of goals in class: course goals, skill/ sub-skill goals, class goals, and activity goals. I adopted this classification and only employed the first two types in the present research. The four data sources for identifying teaching and learning goals came from: pre-observation interviews (pre), post-observation interviews (post), journal entry format (journ), and stimulated recall interviews (stimu).

Table 15: Teachers' main course goals

Subject teacher	Main course goal	Source
Teacher A Teacher B	Helping students pass the JUEE and the intermediate level of the GEPT	pre, post, pre, post
Teacher C	Helping students pass the JUEE	pre, post
Teacher D	Encouraging English expression from learners and facilitating comprehension and comprehensibility	pre, post, stimu, journ

In an English as a foreign language classroom, there are four main language skills: reading, writing, speaking and listening (McCormick, 1997). Other grammar, pronunciation, and vocabulary skills are classified as sub-language skills. In the following table, I present the teachers' goals of language skills and sub-language skills and the data sources. Please note that these goals (course goals and language skills goals) were identified only when they appeared in at least two of the four data sources or when they were expressed by the teachers at least twice in one single data source.

Table 16: Teachers' specific language skill, sub-language skill goals and data sources

Subject teacher	Skill/sub-skill goal or other expectation	Source
Teacher A	Reading Grammar Writing	pre, post, journ
Teacher B	Vocabulary Reading	pre, post, stimu journ
Teacher C	Reading	pre, post,
Teacher D	Listening	pre, post, stimu

Based on my impression obtained from interviews with the teachers, the four subject schools do not have any clear guidance or policies for English language teaching. Usually, English curricula in senior high schools are set up by English teachers at the start of every school year. In school A, the English teachers encourage all Year 2 students to undertake the intermediate level of the GEPT (see the description of this test in Chapter 1). Therefore, in the interviews with Teacher A and Teacher B, both teachers stated that their general teaching and learning goals were influenced by this expectation.

TA: (...) Year 2 students are advised to take the intermediate level of the GEPT at the end of this school year (...)

TB: (...) To pass the intermediate level of the GEPT is our general English teaching and learning goal for Year 2 students. We are in full support of this. The school does not give us clear guidance, but we English teachers set up general goals and guidelines for the students of different grades. Now in general, the English teaching and learning goal for Year 1 students is to pass the primary level of the GEPT. For Year 2 students, they are advised to pass the intermediate level. Of course, the English teaching goal for Year 3 students is to do well in the JUEE. They make progress to achieve these goals step by step (...)

That is, during the time of the research period, Teacher A and Teacher B expected students to take the intermediate level of the GEPT at the end of the school year and after they finish their three-year senior high school courses to take the JUEE. The JUEE exerts a big influence on the teaching and learning goals of Teacher A, B, and C, as has been shown in Chapter 5. On the other hand, Teacher D believes that teaching and learning for the exams is a waste; for her, the major teaching and learning goal is to help students clearly express themselves in English and understand English conversation occurring in class.

TD: They need to understand English interaction appearing in class as much as possible. No matter what I say or other students' opinions.

TD: The major goal is that I wish they could clearly express in English, even if, sometimes, their expressions are not fluent, but they still try to make their

utterances comprehensible to others.

Based on Teacher D's expressions above, these illustrated her main teaching and learning goals from two perspectives: 'comprehension' and 'comprehensibility'. 'Comprehension' is the students' understanding of the language of the teacher and other students while 'comprehensibility' refers to the students' abilities to make themselves understood to the teacher and other students (McCormick, 1997).

Speaking and listening competence are not tested in the JUEE. Even though in the GEPT test, the four language skills are all tested, when being asked about the teaching and learning goals, Teacher A still expressed that she emphasizes enhancing reading, grammar, and writing competence on the part of students and has difficulty in providing speaking and listening training for the students.

TA: For me, my English teaching and learning goals are the same as the goals of the intermediate level of the GEPT. However, listening and speaking training are very hard to provide due to the English teaching and learning environment in Taiwan.

TA: For the writing goal, I encourage them to use the vocabulary they learned to write articles. (...)

TA: For the grammar goal, we have very systematic methods to achieve it. Grammar teaching is the most important part in the curriculum. (...) For the reading goal, I hope the students could think and understand the framework and the content of the article in English first. It is very important for reading comprehension.

The language skill—reading ability and, especially, the sub-language skill—vocabulary knowledge, are focused on in Teacher B's teaching and learning goals.

TB: For achieving the reading goal, they are advised to learn at least 4,000 words (4,000 frequently occurring English words based on the suggestions from the central authority). For these students, the problem for their reading comprehension is their amounts of vocabulary are limited. When too many unrecognized words occur, they cannot understand texts.

When I asked the teacher what is her exact teaching and learning goal regarding vocabulary, Teacher B stated that she only expects the students to ‘recognize’ the vocabulary taught in school.

TB: They do not need to remember how to spell or how to use the words they learn. I only expect they could recognize and understand the meanings of them. When they are doing reading tests in the exams, they could have a rough understanding of the texts. I focus on enriching the amount of their ‘passive vocabulary’. Even if they do not know how to use these words and they cannot use them in the writing compositions, since more than 50 percent of scores are related to reading comprehension, they still obtain good scores in the JUEE.

In general, vocabulary has been classified into receptive/passive and productive/active vocabulary (Fan, 2000). According to Nation (1990, cited in Fan, 2000:01), “passive vocabulary knowledge means the ability to recognize a word and recall its meaning when it is encountered, while active vocabulary knowledge is the ability to write the needed vocabulary at the appropriate time.” Probably, due to the training provided in her master’s courses in Britain, Teacher B differentiated between these two kinds of vocabulary knowledge in the interviews, and stated that her teaching and learning goal regarding vocabulary is influenced by the exam-oriented situation in Taiwan. Therefore, to enlarge the size of passive vocabulary on the part of students is what she is eager to do now.

After the scheduled observations, I asked Teacher C in the post-observation interview about whether her teaching emphasizes reading, grammar, and vocabulary. Teacher C stated enhancing students’ reading ability is the most important teaching and learning goal for her:

TC: I think my teaching goal is primarily focused on reading comprehension. I teach students grammar and vocabulary because two of these enhance students’ reading competence.

When reviewing the above table 15, it is found that reading ability is the major teaching and learning goal for Teacher A, B, and C and none of them stated clear teaching and learning goals for speaking and listening abilities. In addition, although in the JUEE both reading and writing skills are tested (CEEC (College Entrance Examination Center), 2008), I found writing training in Class A, B, C and D is limited.

Even if Teacher A and Teacher D stated that they frequently ask students to practice writing, and I did observe on some occasions the students practiced making full sentences with new vocabulary, the complete activities of writing are hard to identify. Teacher C and Teacher B further admitted that writing training is not yet provided for Year 2 students:

- I: As I observed, the writing training in your class is not enough, right?
- TB: Yes. Now the students are not familiar with grammar. Their English writing is terrible. If writing training is provided at this moment, the students cannot write satisfactory articles. Then, they will not have a sense of achievement. After they learn enough sentence patterns and grammar, it is the time for writing practice.
- TC: We have not provided writing training for Year 2 students. They do not practice English writing too much. Last semester, they wrote one essay only. This semester they already wrote one essay and they are expected to write another one at the end of Year 2. Currently, they are still learning grammar.

Improving speaking and listening abilities is the important teaching and learning goal for Teacher D.

- TD: For the goal of listening, I expect that they can make sense of what I teach and say in English in class. For the speaking goal, I wish they could roughly express what they think.

In the following table, I re-arranged the teachers' expressed teaching and learning goals (Tables 14 and 15) and the observed complete activities (activities associated with language skills/sub-language skills) identified in the previous chapter (Table 10, 11, 12, and 13) in order to do further analyses and to assign the scaffolding functions to teachers' solicitations.

Table 17: The teachers' expressed teaching and learning goals and observed activities of language skills

Teacher	Activity (observed)	Course goal (expressed)	Goal of language skill (expressed)
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A	1. Reading 2. Grammar	Helping students pass the JUEE and the intermediate level of the GEPT.	Reading Grammar Writing
B	1. Reading	Helping students pass the JUEE and the intermediate level of the GEPT	Vocabulary Reading
C	1. Grammar	Helping students pass the JUEE	Reading
D	1. Film Discussion 2. Student presentation 3. Reading	Encouraging English expression from learners and facilitating comprehension and comprehensibility	Listening Speaking

When I browsed the websites of the related institutes (CEEC, 2008; LTTC (The Language Training and Testing Center), 2008), I found there is no clear testing guidance set for the JUEE and GEPT candidates. The descriptions the boards provide in order to explain the contents of these tests are very general rather than specific. Although helping students do well and pass these tests is the important course goal for Teacher A, B, and C, I cannot examine the connection between these course goals and questioning practices, since the goal, ‘passing the JUEE or the GEPT’, is too abstract to do further analyses. Therefore, I decided to illustrate all subject teachers’ teaching and learning goals from the perspectives of language skills and sub-language skills.

In Teacher A’ s self-expression, writing activities are very common and improving writing ability is one of her main teaching and learning goals for the students, but when I observed the class, these events seldom appeared. The observed complete activities associated with language skills or language sub-skills are reading and grammar activities in Class A. In Teacher B’s class, her identified classroom activity is reading activity. No complete vocabulary activities were observed in spite of her focus on passive vocabulary teaching. The principal teaching and learning goal for Teacher C is improving reading competence. However, when I visited the class during the observation period, no complete reading activities were found. Only one complete grammar activity was recorded. Teacher D stated that she improves the students’ speaking and listening abilities through class discussion and topic presentation by the

students. One complete reading activity was identified even though she did not particularly mention enhancing reading ability as her teaching and learning goal. Therefore, I found there are discrepancies between what I observed and what the teachers stated. This illustrates the problem of understanding a long-term process in teaching through short-term observations, an issue to which I return in Chapter 9. Therefore, I attempted to interpret the data that I had collected and to provide detailed analyses about how teachers use native-language and target-language questions to achieve their predetermined teaching and learning goals (language skills and sub-language skills). Where teachers' observed behaviour diverged from their stated intentions, I discarded this discrepant data. For example, in Teacher C's class, though the expressed teaching and learning goal is to enrich reading competence, the recorded activity is grammar activity. After careful consideration, I discarded the analysis of Class C because of the difference between the observed activity and the expressed goal, which makes me doubt the conduct of my analysis. In Teacher D's class, I present and examine activities of film discussion and student presentation, but the reading activity is excluded since Teacher D never stated reading training is focused on in her teaching. That is, the activities I am going to analyze are reading and grammar activities in Class A; reading activity in Class B; and film discussion and students presentation in Class D, since these were the activities nominated as goals. The goals which I am going to examine how teachers use questions to achieve, are goals regarding reading comprehension and grammar in class A, the teaching and learning goal of reading comprehension in Class B, and speaking and listening teaching and learning goals in Class D. These can be shown in the table below:

Table 18: The goals and activities which are going to be analyzed

Teacher	activity	Course goal	Goal of language skill
A	1. Reading 2. Grammar	Helping students pass the JUEE and the intermediate level of the GEPT.	Reading Grammar
B	1. Reading	Helping students pass the JUEE and the intermediate level of the GEPT	Reading
D	1. Film Discussion 2. Student	Encouraging English expression from learners and facilitating comprehension and	Listening Speaking

In the following tables, I provide much more clear teachers' self-explanations which came from their interview data for language skill/ sub-language skill goals.

Table 19: Explanations of goals of language skills/sub-skills

Teacher	goal	explanation	source
A	Reading	Increase the students' reading comprehension; Help students think and realize the content of texts in English first.	pre, post, journal
	Grammar	The students learn and familiarize the grammar knowledge required in senior high school.	
B	Reading	Enhance the students' reading competence; Support the students if their lack of comprehension is due to limited linguistic knowledge or other factors.	pre, post, stimu, journal
D	Listening	Increase the students' listening comprehension. Make sure the students are able to listen and understand English conversations in class.	pre, post stimu, journal
	Speaking	Improve the students' abilities to speak English confidently.	

After realizing the teaching and learning goals, in the following section of this chapter, I will answer the second part of the research question three, to examine the relationships between the scaffolding functions of teacher questions and the teachers' teaching and learning goals. As I stated, the primary data sources for teaching and learning goals include the pre-, post-, stimulated recall interview, and journal entry formats. The primary data sources for question functions are transcripts of observed teacher-fronted activities. The framework for analyzing this part of the research question is the language skills (reading, listening, and speaking) and the sub-language skill (grammar). Frequencies of question functions are shown in the tables to quantify

the patterns of function use. The goals and question functions for each skill and sub-language skill are analyzed in detail.

6.2 Realizing the teaching and learning goal related to reading comprehension through questioning practices—Teacher A

Teacher A’s teaching and learning goal in the area of reading comprehension is to increase the students’ reading competence and to help them understand the texts through English first. The class transcript data yielded five teacher-fronted activities relating to reading comprehension in Class A. Across all questions during in-class teacher-fronted reading activities, the frequency of scaffolding functions is as follows:

Table 20: Frequency of scaffolding functions of questions during TA’s reading activities

Scaffolding function	n
Recruitment (R-E)	60
Recruitment (R-M)	0
Reduction in degrees of freedom (RDF-E)	46
Reduction in degrees of freedom (RDF-M)	2
Direction Maintenance (DM-E)	58
Direction Maintenance (DM-M)	0
Marking critical features and demonstration (MCFD-E)	24
Marking critical features and demonstration (MCFD-M)	0
Frustration control (FC-E)	0
Frustration control (FC-M)	0

Across all reading activities, the English-language questions with the functions of recruitment, direction maintenance, and reduction in degrees of freedom dominate the arrays of class questions used by Teacher A.

Throughout all reading activities, Teacher A initiated many English recruitment questions relating to the texts in order to test students’ reading comprehension. These initiations, I assume, drew the learners’ attention to the given tasks and the functions of these questions are congruent with Teacher A’s goal of helping the students

understand the contents of texts in English.

Excerpt 29:

(After leading the class to read the paragraph in the textbook, Teacher A nominates a student and asks an English recruitment question.)

- 1 TA: When did a bed become a piece of furniture? (R-E)
- 2 S1: XXX
- 3 TA: Right. After 1750. Right.

When an initiation fails to elicit a learner's response, the subsequent questioning strategies would be necessary. In these five reading activities, questions that reduced the degrees of freedom were also identified. Among these (rephrasing, simplification, and decomposition), rephrasing occurred a lot in Teacher A's reading activities. Additionally, in all the direction maintenance questions (repetitions, confirmation checks, clarification requests and probing), the repetition type also outnumbered others. These two question types (English repetition and rephrasing) with the functions of direction maintenance and reduction in degrees of freedom worked as questioning strategies and usually appeared after the teacher's failed first-time initiation in order to make sure the students followed the tasks, to maintain their attention, and keep the reading activity going.

Excerpt 30:

- 1 TA: So, tell me. How did she get to the top of the bed? (R-E) How did Queen
- 2 Victoria get to the top of the bed? (RDF-E)
- 3 Ss: ...
- 4 TA: How did Queen Victoria get to the top of the bed? (DM-E)
- 5 S2: /She has steps./
- 6 TA: She has steps besides the bed to reach the top.

This excerpt shows that after the initial recruitment question (How did she get to the top of the bed?), Teacher A rephrased her question with the function of reduction in degrees of freedom in the same speaking turn (How did Queen Victoria get to the top of the bed?). Also, in the line 4, the teacher repeated the question once again to maintain the attention of the class, which in turn elicits the student's unclear but expected answer in the line 5. The questioning strategies posed by the teacher A helped the learners to realize the texts and to think and respond in English.

The MCFD questions that marked critical features and demonstrated correct information or knowledge were also present in the reading activities. Teacher A frequently posed tag questions right after her reformulations of the students' replies, which played a role of rephrasing the students' prior unclear response into a much more correct form, and it is through the teacher's louder and clearer reformulations that the knowledge was audible to the rest of the class and the correct target-like usage was demonstrated.

Excerpt 31:

- 1 TA: So, tell me. In ancient Rome, what did people, what did people wear to
 2 sleep in bed, on bed? (R-E) Yes. ((PO))
 3 S1: XXX
 4 TA: Everyday clothes, right? (MCFD-E) (writes down 'everyday clothes')

The tag questions did not really aim to solicit students' replies. Instead, these tag questions, which occurred after the reformulations, tried to assist Teacher A with the achievement of her reading goal to increase the learners' reading comprehension.

No questions with the frustration control function were found. This might be because I classified comprehension checks as frustration control questions in the present study, but they were not observed. In Teacher A's reading activities, Teacher A did not impart any target-language knowledge to the class. She simply used questions to 'test' whether the learners understood the texts they just read. Therefore, communication breakdowns or misunderstanding would not happen and the questions used as comprehension checks seem to be unnecessary in her reading activities.

The table below demonstrates which questions were spoken in what language with what sort of scaffolding functions in Teacher A's reading activities:

Table 21: Summary of question types, language types, and scaffolding functions which occurred most in Teacher A's reading activities:

Question type	Language type	scaffolding function
First initiation	English	R
Rephrasing	English	RDF

Repetition	English	DM
Tag question	English	MCFD

Based on the interview data with Teacher A, she teaches reading activities in English so as to encourage the students not to rely on their mother tongue too much. She, most of the time, posed questions in English. These English questions used in her reading activities are congruent with Teacher A's reading comprehension goal for the class.

6.3 Realizing teaching and learning goal related to grammar through solicitations— Teacher A

Teacher A's grammar goal is to help the learners to learn and to acquaint themselves with the grammatical knowledge required in senior high school. This goal was articulated by Teacher A during pre-/ post-observation interviews and her journal entry formats. The class transcripts yielded two complete teacher-fronted grammar teaching activities. Both activities were related to the teacher's whole-class lectures of grammar teaching. Across all questions during Teacher A's grammar activities, the frequency of scaffolding functions is as follows.

Table 22: Frequency of scaffolding functions of questions during Teacher A's grammar activities

Scaffolding function	n
Recruitment (R-E)	0
Recruitment (R-M)	31
Reduction in degrees of freedom (RDF-E)	0
Reduction in degrees of freedom (RDF-M)	32
Direction Maintenance (DM-E)	0
Direction Maintenance (DM-M)	27
Marking critical features and demonstration (MCFD-E)	0
Marking critical features and demonstration (MCFD-M)	15
Frustration control (FC-E)	0
Frustration control (FC-M)	3

The dominance of Mandarin recruitment, reduction in degrees of freedom, and direction maintenance questions in teacher-fronted grammar activities is similar to their use in Teacher A's reading activities. Mandarin recruitment questions again acted as new initiative questions and played the role of recruiting students' attention to the given task before all subsequent exchanges.

The RDF questions scaffold the grammatical teaching while maintaining the sub-language skill goal of grammar knowledge development. All Mandarin RDF questions, especially, the decomposition type, appeared very often.

Excerpt 32:

- 1 TA: 關鍵在 happen 的用法要怎麼用？(R-M)
- 2 有沒有自願的？(R-M)
- 3 Ss: ...
- 4 TA: Happen 是用主動還是被動？(RDF-M)
- 5 S11: 主動。
- 6 TA: 主動。他以什麼做主詞？(RDF-M) 人、事、物？(RDF-M)
- 7 S11: 事。
- 8 TA: 事情。對。事情發生用主動喔！不要用 It's happened.

- 1 TA: The most important thing is how to use 'happen'?
- 2 (R-M) Any volunteers? (R-M)
- 3 Ss: ...
- 4 TA: Use the active voice or the passive voice when using 'happen'? (RDF-M)
- 5 S11: The active voice.
- 6 TA: The active voice. What kind of subject should be used? (RDF-M)
- 7 People or things ? (RDF-M)
- 8 S11: Things.
- 9 TA: Things. Yes. When we express something happens, we use the active
- 10 voice. Do not say 'it's happened'.

As Excerpt 32 demonstrates, in order to impart and familiarize the students with the usage of the word 'happen', Teacher A decomposed her initiation into two sub-questions: 'Use the active voice or the passive voice when using 'happen'?' (RDF-M) and 'what kind of subject should be used?' (RDF-M) In addition, in the line 7, the teacher simplified the task by decomposing her sub-question once again in the

form of the or-choice question: ‘people or things? These questions guided S11 to become familiar with the grammatical rules, which in turn corresponded to the teacher’s sub-skill goal of familiarizing the learner with the required grammatical knowledge.

In all direction maintenance (DM) questions, probing questions were predominant. The following excerpt illustrates Teacher A’s use of DM Mandarin probing questions:

Excerpt 33:

(The sentence Teacher A is teaching is ‘If they had not been safely protected below the ground, they would surely have died.’ She tries to test the learner about the grammar of the subjunctive mood, which the learner is supposed to know well in senior high school.)

1 TA: ‘If (+) had not been’與後面的‘would have died’這是再說一個重要的句型。很明顯喔！

3 S10: XXX

4 TA: 對。假設語氣。假設什麼時間的事情？(DM-M)

5 S10: 過去。

6 TA: 過去，對不對？假設與過去事實相反用::(DM-M)

7 S10: 過去完成式。

8 TA: 對。過去完成式。

1 TA: ‘if (+) had not been’ and ‘would have died’, this is an important grammatical pattern. Very obviously!

3 S10: XXX

4 TA: Yes. The subjunctive mood. What is its tense? (DM-M)

5 S10: The past tense.

6 TA: The past tense, right?(MCFD-M) If we want to express something, against the facts happened in the past with the subjunctive mood, we use:: (DM-M)

8 S10: A past perfect tense.

9 TA: Yes. A past perfect tense.

The above example shows the teacher employed the following direction maintenance questions, ‘what is its tense?’ and ‘If we want to express something against the facts happened in the past with the subjunctive mood, we use::’ so as to lead the learner to utter the usage of the subjunctive mood, and these probing questions functioned to keep the learner in pursuit of Teacher A’s particular grammar teaching and learning

goal.

MCFD Mandarin questions still occurred in the form of tag questions together with the teacher's reiterations of prior learners' contributions. On the other hand, frustration control questions were identified in Teacher A's grammar teaching activities and usually they appeared as comprehension checks at the end of content units to prevent the learners from feeling frustrated and to make sure they are with her.

Excerpt 34:

(The texts that Teacher A is teaching in her ongoing grammar activity is: 'Moments later, they saw a swirling cloud. As it came closer, it grew darker and darker. The winds grew stronger.')

- 1 TA: 'Grew darker'跟'grew stronger', 有一個重點::(R-M)
2 S3: 連綴動詞。
3 TA: 對, 連綴動詞。在這裡等於 became, 不管是 grow 或是 become 後面
4 都可以加形容詞。了解嗎? (FC-M)
5 S3: ((ND))
- 1 TA: 'Grew darker' and 'grew stronger', there is an important grammatical
2 rule here:: (R-M)
3 S3: A linking verb.
4 TA: Yes, 'grew' is a linking verb. It is equal to 'became'. We can add an
5 adjective directly after both 'grow' and 'become. Can you understand?
6 (FC-M)
7 S3: ((ND))

The Mandarin comprehension check, 'Can you understand?', in this content unit displayed an endeavour made by Teacher A to avoid possible frustration on the part of the learner. It is through the questions like this, that the teacher invited the learners to participate in their own understanding of the essential grammatical structures in texts since she anticipated the class to be able to familiarize and learn the required knowledge of target language grammar.

Table 23: Summary of question types, language types, and scaffolding functions which occurred most in Teacher A's grammar activities

Question type	Language type	scaffolding function
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First initiation	Mandarin	R
Decomposition	Mandarin	RDF
Probing	Mandarin	DM
Tag question	Mandarin	MCFD
Comprehension Check	Mandarin	FC

Based on the interview data with Teacher A, she gives grammar lectures in Mandarin so as to save teaching time and to impart the essential grammatical rules effectively to the class. She posed Mandarin questions all the time in her grammar activities. Based on my observation and the teacher's reflection, the discrepancies between the native-and target-language questions used in reading and grammar activities respectively correspond with Teacher A's expected teaching and learning goals.

6.4 Realizing teaching and learning goal related to reading comprehension through questions— Teacher B

Teacher B's teaching and learning goal in the area of reading comprehension is to increase the learners' reading competence and to help them realize if their lack of comprehension is due to linguistic or knowledge factors. The class transcript data yielded one teacher-fronted activity relating to reading in Class B. The frequency of scaffolding functions in this activity is as follows:

Table 24: Frequency of scaffolding functions of questions during Teacher B's reading activity

Scaffolding function	n
Recruitment (R-E)	0
Recruitment (R-M)	15
Reduction in degrees of freedom (RDF-E)	0
Reduction in degrees of freedom (RDF-M)	8
Direction Maintenance (DM-E)	0
Direction Maintenance (DM-M)	8
Marking critical features and demonstration (MCFD-E)	0
Marking critical features and demonstration (MCFD-M)	0

Frustration control (FC-E)	0
Frustration control (FC-M)	0

In this activity, the Mandarin R, RDF, and DM questions were predominant once again. Especially, Teacher B initiated different recruitment questions to different students and the exchanges between the teacher and the students strictly followed the ritual I-R-E (or I-R-F) classroom language pattern.

Excerpt 35:

(The texts the teacher is teaching are as follows:

First paragraph:

The young and the old often have very different ideas about life. The young, we might say, are full of energy and ready to grasp the moment. The old, who have been made wiser by experience, are generally more cautious.

Second paragraph:

Perhaps this is most true when it comes to love. Oftentimes, a young boy or girl will easily fall in love—and just as easily fall out of love.)

- 1 TB: ((DR)) 第一段大概是在講什麼，十七號？(R-M)
 2 S1: XXX
 3 TB: 年輕人跟老人家有不同的人生觀。好。很好。((DR)) 那不同在哪裡，
 4 二十九號？(R-M)
 5 S2: XXX
 6 TB: ((ND)) **Energy** 是不一樣的。好。((DR)) 第二段講到一個事實。二十三
 7 號，尤其是對哪一件事來說呢？(R-M)
 8 S3: Love.
 9 TB: 愛，講到愛。((DR)) 在愛情方面呢年輕人比較怎麼樣，二十六號::
 10 (R-M)
 11 S4: XXX
 12 TB: 比較容易陷入愛情。Ok
- 1 TB: ((DR)) What's the main idea of the first paragraph, number 17? (R-M)
 2 S1: XXX
 3 TB: The young and the old often have very different ideas about life. Good.
 4 Very good. ((DR)) What is the difference, number 29? (R-M)
 5 S2: XXX
 6 TB: ((ND)) **Energy** is different. Good. ((DR)) A important thing is mentioned

- 7 in the second paragraph. Number 23, what is it? (R-M)
- 8 S3: *Love.*
- 9 TB: Love. It's love. ((DR)) Regarding love, the young will:: (R-M)
- 10 Number 26.
- 11 S4: *XXX.*
- 12 TB: The young will easily fall into love. Ok.

This excerpt includes 4 content units, starting from every initial recruitment question to involve several learners into the subsequent exchanges with Teacher B. Although some researchers (Andersen et al., 1999; Nunn, 2001) claim that this IRF ‘elicit exchange’ (Sinclair and Coulthard, 1975) has many negative characteristics, these R questions in the excerpt above functioned by drawing the learners’ attention to the task and to the elements or ideas of the written texts.

The use of Mandarin rephrasing and probing strategies with the functions of reduction in degrees of freedom and direction maintenance also happened, and scaffolded classroom communication.

Excerpt 36:

(The texts Teacher B is teaching are:

“A more mature person, on the other hand, will know that true love takes time to grow, and that it rarely happens quickly. He or she also knows that love can bring not only happiness, but also sorrow and regret, and therefore, it should be approached with wariness and patience.”)

- 1 TB: 它說呢老人家比較不容易陷入愛情，因為愛情不但帶給你快樂，還帶
2 給你:: (R-M) 三號。愛情除了帶給你快樂，還有什麼？(RDF-M)
- 3 S5: XXX
- 4 TB: XXX ((LF))
- 5 Ss: ((LF))
- 6 TB: 恩，快樂。只帶給你快樂嗎，還有呢？(DM-M) 愛情還可以帶給你什
7 麼？(RDF-M)
- 8 S5: 不知道。
- 9 TB: 不知道喔！看第九行到第十行的部分。第九行到第十行。
- 10 S5: 後悔跟 sorrow。
- 11 TB: Sorrow 是什麼意思？(DM-M)
- 12 S5: 悲傷。
- 13 TB: 悲傷。很好。

- 1 TB: It mentions that the old do not easily fall in love since love brings you not
2 only happiness, but also: (R-M) Number 3. Except happiness, what else
3 can love bring you? (RDF-M)
4 S5: XXX
5 TB: XXX ((LF))
6 Ss: ((LF))
7 TB: Em, happiness. Except happiness, what else? (DM-M) What else can love
8 bring you? (RDF-M)
9 S5: I don't know.
10 TB: You don't know. Look at the texts between the lines 9 and 10. Between the
11 lines 9 and 10.
12 S5: Regret and sorrow.
13 TB: What does 'sorrow' mean? (DM-M)
14 S5: Sorrow.
15 TB: Sorrow. Very good.

Like the findings in Teacher A's reading activities, Mandarin rephrasing (the line 3 and the lines 7-8) and probing (the line 7 and the line 13) of the teacher's questioning occurred frequently. Rephrasing questions helped Teacher B make sure the learners can comprehend her initiations while the probing question attempted to elicit S5's linguistic knowledge of new vocabulary—'grief and sorrow' (the lines 7-14) in order to avoid S5's lack of reading comprehension thanks to his limited target language competence. Teacher B's questioning behaviours indeed accorded with her teaching and learning goal.

MCFD and FC questions were not found in this activity. This might be because the sample size, (one teacher-fronted activity) of the analysis for the question functions and the teaching and learning goal in Teacher B's reading activity, is too small. All questions occurring in this reading activity are Mandarin questions. As the teacher stated, she seldom uses English to teach, and Mandarin questions play vital roles in achieving her teaching and learning goal regarding reading comprehension.

The below table presents the summary of what frequently occurring questions were produced in which language with what scaffolded functions in Teacher B's reading activity.

Table 25: Summary of question types, language types, and scaffolding functions occurring most in Teacher B’s reading activity

Question type	Language type	scaffolding function
First initiation	Mandarin	R
Rephrasing	Mandarin	RDF
Probing	Mandarin	DM

6.5 Realizing teaching and learning goals related to listening and speaking competence through verbal exchanges—Teacher D

For the teaching and learning goal regarding listening competence, Teacher D expects to improve the students’ ability to understand English conversations occurring in class (comprehension). For the speaking goal, Teacher D wants the students to speak English confidently and clearly (comprehensibility). These goals were articulated in her pre-observation, post-observation, and stimulated recall interviews with the researcher and her journal entry formats from every class. The classes I observed did not contain teacher-fronted activities which were really called ‘speaking’ and ‘listening’ activities, but according to Teacher D’s explanations, the activities of teacher-fronted film discussion and teacher –led student presentation were two events designed to improve the students’ speaking and listening proficiency. I also think the training of speaking and listening is hard to separate and they should be examined together in order to get much clearer and more sensible findings. Therefore, the teacher-led film discussion and students’ presentation events were used as the database for examining the connections between the teacher’s teaching and learning goals and the questioning practices from the perspective of the two language skills—speaking and listening. The frequency of scaffolding functions of the questions in these two activities is as follows:

Table 26: Frequency of scaffolding functions of questions during the teacher-fronted film discussion and student presentation in Class D

Scaffolding function	n
Recruitment (R-E)	19
Recruitment (R-M)	1

Reduction in degrees of freedom (RDF-E)	33
Reduction in degrees of freedom (RDF-M)	6
Direction Maintenance (DM-E)	25
Direction Maintenance (DM-M)	12
Marking critical features and demonstration (MCFD-E)	2
Marking critical features and demonstration (MCFD-M)	2
Frustration control (FC-E)	5
Frustration control (FC-M)	3

Across these two activities, RDF and DM questions dominated the array of questions used by Teacher D. English recruitment questions still acted as initiations to solicit the students' English contribution. Compared with the R questions in the activities identified from the classes of Teacher A and Teacher B, the only difference is that Teacher D used more referential questions than display questions. She obviously asked significantly more genuinely open wh-questions where she did not know the answers beforehand. The referential meaning-based questions the teacher asked had clearly created information gaps which need to be filled by the learners (Talebinezahd, 2008), and which in turn gave them opportunities to have genuine English communication with Teacher D. These questions scaffolded speaking practice on the part of learners. This phenomenon can be seen in Excerpt 37 and 38.

Excerpt 37:

(S1 is making a presentation. The presentation topic is: Why do people want to know about aliens. One of the student's answers is: They are mysterious.)

- 1 TD: Why are they mysterious? (R-E)
- 2 S1: Because people didn't see it XXX.
- 3 TD: Because we never see them.

Excerpt 38:

- 1 TD: *Why human beings are interested in aliens? (R-E) What are you interested*
- 2 *in aliens? (to the whole class) (RDF-E) What do you want to know about*
- 3 *aliens? (RDF-M)*
- 4 S?: *Their looking.*
- 5 TD: *How they look like.*
- 6 S?: *Lifestyles.*

- 7 TD: *Their lifestyles.*
 8 S?: *XXX.*
 9 TD: *Gender. Ok.*

Also, the question tags with the function of marking critical features and demonstration (MCFD), and the comprehension checks with the function of frustration control (FC) were also present in these two activities, and these were similar to the findings in Teacher A's grammar activities. They functioned by marking critical features of English language and preventing communication breakdowns in order to make sure the learners followed the conversation in class.

Excerpt 39:

(This excerpt is the same as Excerpt 25 in Chapter 5. In order to save space and to avoid presenting the same excerpt several times, I only give the English version of it. Differently to Excerpt 25 in the previous chapter, the scaffolding functions of questions are identified right after every practice in the following excerpt.)

- 1 TD: *What is wrong here?(R-E) **They are exist. They are exist.** (to the whole*
 2 *class).*
 3 Ss: *...*
 4 TD: *Can we use 'are'?(DM-M)*
 5 S?: *'exist' is a verb.*
 6 TD: *Em, do not use 'are', right? (MCFD-M) Ok. So, many people believe they*
 7 *exist. How do we emphasize the verb? (DM-M) (to the whole class)*
 8 Ss: *...*
 10 TD: *You can say they **do** exist. Emphasize it. Understand?(FC-M) You cannot*
 11 *use 'are', because both 'are' and 'exist' are:: what?(RDF-E)*
 12 S?: *Verb.*
 13 TD: *Verbs, and 'are' cannot modify 'exist'. We have to use 'do',*
 14 *right?(MCFD-E) For presenting the present tense. Understand?(FC-E)*
 15 *Ok.*

Teacher D tried to teach the class that it is 'do', not 'are', which can emphasize the verb 'exist'. MCFD-E and FC-E questions in the lines 13-14 are indeed questions to mark critical features and to prevent misunderstanding. They assisted the learners with comprehending the conversations occurring in class. However, if we look more closely at the uses of MCFD and FC questions in the lines 6 and 10, these questions spoken in Mandarin played a different role in the teacher-student exchanges. The

MCFD-M question in the line 6 was not a real question but a verbal effort made by the teacher in order to transmit to the class the usage of ‘are’ in the sentence, and to further demonstrate the correct usage through the learners’ mother tongue in the form of a tag question. In addition, in the line 10, Teacher D uttered ‘Understand? (FC-M)’. The Mandarin FC question here was also Teacher D’s endeavor to assure everyone followed after she tried to deliver the grammar knowledge in Mandarin to the class: “You can say they do exist. Emphasize it.” That is, on the one hand, both English and Mandarin MCFD and FC questions are questions to improve listening ability, and this corresponds with the teaching and learning goal regarding listening comprehension (the ability to understand others) which was expressed by Teacher D. On the other hand, Mandarin MCFD and FC questions are also strategies employed by the teacher D to impart grammar knowledge. Teacher D in her pre-observation interview with me stated that:

TD: I have not designed any classroom activities regarding grammar to particularly teach the class grammar knowledge. Instead, my grammar teaching is merged into other classroom activities. I do not teach English grammar on purpose.

Although I did not get the confirmation from Teacher D, based on my observation and transcription analysis, I think the Mandarin MCFD and FC questions were Teacher D’s practical strategies to correct the students’ grammar mistakes and the appropriate opportunities to teach target-like usages and grammar ‘by chance’.

Question types which include repetitions, confirmation checks, clarification requests, and probing all occurred and functioned as direction maintenance to particularly demonstrate Teacher D’s effort to work on the students’ comprehensibility (the ability to make oneself to be understood by others).

Excerpt 40:

(This excerpt is the same as Excerpt XX in Chapter XX. Here only its English version is shown. The teacher tries to elicit more information in order to clarify the exact meaning of the learner’s verbal contribution: “And the humans get reason from our natural quality XXX, and they inspire our imagination which seeks our tech.”)

1 TD: *Can you explain?(R-E) I don’t understand this part. Can you*
 2 *explain?(DM-E) (+) Hey girls. (to Team 2) Explain what you mean. I don’t*
 3 *understand. What do you mean by that?(RDF-E)*

4 Ss: ...

5 TD: 'We humans get reason' What does 'get reason' mean?(DM-E) (++) What
6 do you mean for[by] that?(RDF-E)

7 S3: XXX

8 TD: The source.

9 S4: XXX.

34 TD: Oh, out of curiosity? (DM-M)

35 S4: ((ND))

36 TD: Then?(DM-M)

37 S3: XXX.

38 TD: Ok. ((ND)) The reason why we want to know [about] aliens **comes from**,
39 the reason comes from our what?(DM-E) Our curiosity. Ok. What does
40 'natural quality' mean?(DM-M)

41 S3: Nature.

42 TD: What nature?(DM-E) What do you mean?(RDF-M)

43 S3: XXX.

44 TD: Oh, ok. Ok. ° It comes from what, our curious nature. 'Curious nature' is
45 fine. Understand?(FC-E) Don't write too much. Ok? (FC-E) It becomes
46 word for word translation. From our curious nature. And use 'that' not
47 'they'. 'And that' do not use 'inspire'. Use '**inspires**', inspires our
48 imagination. Ok. Then , Next one. I do not understand. What does it
49 mean?(DM-E) 'which seeks our tech' What do you mean? (To Team 2)
50 (RDF-E)

51 Ss: ...

52 TD: XXX, what does that mean?(DM-M)

53 S?: XXX

54 TD: Oh, how do we say that in English? (RDF-M)

55 S?: XXX

56 TD and Ss: ((LF)) Ok. The reason why humans want to know about aliens comes
57 from our curious nature and that inspires our imagination and we want to
58 get some help from their high-tech. Ok. Understand?(FC-E) Alright. Good.

I arranged the different types of DM questions occurred in this excerpt and put them in order according to their frequencies:

1. Clarification request type: What does 'get reason' mean?; What does
'natural quality' mean?; What does it mean?
2. Probing type: Then?; The reason why we want to know [about] aliens **comes**

from, the reason comes from our what? What nature?

3. Repetition type: Can you explain?; What does that mean?
4. Confirmation check type: Oh, out of curiosity?

Among these question types, clarification requests and confirmation checks occurred while in the classes of Teacher A and Teacher B they never happened. The confirmation check, ‘Oh, out of curiosity?’ was a sort of request that the teacher asked for the learner’s confirmation (in the following speaking turn, S4 was nodding his head to give his approval.) that a specific concept had been referenced (Gass and Selinker, 2001), which was also the effort Teacher D made to ensure that the learner’s verbal contribution proceeded intelligibly (Wardhaugh, 2002; Pijan, 2006). On the other hand, a clarification request is, according to Jepson (2005), both a repeat-restatement of the content of the learner’s turn and a further request for explanation-articulation of what the learner meant in that turn. As shown in the excerpt 40, the use of clarification requests fostered active participation in ‘responsive dialog’ (Anton, 1999, quoted in Pijan, 2006). Anton (1999) notes that when L2 learners converse non-proficiently in the language they are in process of learning, there is a need for more and frequent engagement of the strategies of meaning negotiation. The clarification requests and confirmation checks that Teacher D employed in this verbal sequence were the strategies to elicit the learners’ authentic, communication-oriented, and meaningful production, which, I assume, contribute to their speaking practice of the target language.

When cross-referencing to the findings in Section 5.3.4, Teacher D in her self-expressions stated that the function of Mandarin use in her classes is to overcome communication difficulties. However, based on my observation, her Mandarin language use was ‘unprincipled’, in Liu et al. (2004)’s term, (see the discussion in the previous chapter). This also reflected in her Mandarin DM questions. For instance, the question, ‘What does ‘natural quality’ mean?’, can be spoken in English since the learners must be very familiar with her English clarification request. This ‘what does something mean?’ question pattern happened frequently. However, when reading over the transcript once again, this question still elicited a reply though it was not expressed clearly. Through this question, the teacher carried on her following exchanges guiding the learner towards self-comprehensibility. Then, eventually, Teacher D indicated her understanding, ‘ok’ in the line 20.

Although I cannot detect differences between the employments of the DM questions in Mandarin and in English posed by Teacher D, it was through these questions in the

exchanges, that the teacher gave the learners opportunities to practice speaking and to make the learner's opinion much more understood by her and other students. These questions were employed in accordance with the teacher's teaching and learning goal related to speaking proficiency by the students.

RDF questions were present in the forms of English rephrasing and Mandarin simplification; especially, Mandarin simplification of questions, though they seldom occurred, seemed to work effectively. The below excerpt shows how one simplification question scaffolded the learner's comprehensibility.

Excerpt 41:

(S2 is making a presentation to the whole class. One of his answers is 'they are mysterious that we know nothing about them.' Through questions, Teacher D clarifies S2's intended meaning.)

- 1 TD: What do you mean? (R-E) This sentence does not make sense.
2 S2: ...
3 TD: 不知道? (DM-M) Do you find anything, um, problems in their
4 description? (RDF-E) Anything wrong there? (RDF-E)
5 S2: ...
6 TD: <give up> Take a look. 'They are mysterious because we know nothing
7 about them.' 是要用 that 還是要用 because ? (RDF-M)
8 S2: XXX
9 TD: 好。 They are mysterious. Why they are mysterious, **because** we know
10 nothing about them. Is that what you mean? (DM-E)
11 S2: ((ND))
12 TD: Ok. Good.
- 1 TD: *What do you mean? (R-E) These sentence does not make sense.*
2 S2: ...
3 TD: *You don't know ? (DM-M) Do you find anything, um, problems in their*
4 *description? (RDF-E) Anything wrong there? (RDF-E)*
5 S2: ...
6 TD: *<give up> Take a look. 'They are mysterious that we know nothing about*
7 *them.' Use 'that' or use 'because' ? (RDF-M)*
8 S2: XXX
9 TD: *Good. They are mysterious. Why they are mysterious, **because** we know*
10 *nothing about them. Is that what you mean? (DM-E)*

11 S2: ((ND))

12 TD: Ok. Good.

In this example, after the teacher's first initiation failed to solicit the learner's response, Teacher D rephrased her initiation twice in English in the lines 3 and 4. Most RDF-E questions appeared as this rephrasing type. However, these rephrasing questions still led to the silence on the part of the learner. The teacher then simplified and posed the question in the form of the or-choice question in Mandarin in the line 7. The simplification question successfully made S4's verbal contribution clear to her and the class and, except for few failed rephrasings, the use of the RDF questions generally corresponded with Teacher D's teaching and learning goal relating to learners' speaking proficiency. The following table summarizes the findings from these two activities.

Table 27: Summary of question types, language types, and scaffolding functions occurred most and the related sub-language skills in Teacher D's activities of film discussion and student presentation

Question type	Language type	Scaffolding function	Sub-language skill
First initiation (referential questions)	E	R	Speaking
Clarification request	E.M	DM	Speaking
Rephrasing	E	RDF	Speaking
Tag questions	E.M.	MCFD	Listening
Comprehension check	E.M	FC	Listening

6.6 Summary of findings

The findings which are presented in this chapter can be roughly divided into two major parts: the identified teaching and learning goals of the subject teachers and the practice that the goals were achieved via their scaffolding English or Mandarin questions.

The teaching and learning goals were identified by examining the four data sources: pre-observation interviews, post-observation interviews, stimulated recall interviews

and journal entry formats. Multiple data sources attempted to reduce the possibilities of misinterpreting the participants' original opinions and to triangulate the research findings taken from the interview approach that many researchers treat as a more subject research tool. For the main course goals, both Teacher A and B look for Year 2 students to pass the GEPT. Teacher A, B, and C all anticipate their students to do well in their college entrance examination (JUEE), while Teacher D holds a different supposition and expects to improve her students' two kinds of competence, comprehension and comprehensibility, so as to understand English conversation and to be able to produce good English which is understood by others in class. Since there are no clear test ambits for the GEPT and JUEE, I tried to illustrate the teachers' teaching and learning goals from the aspect of language skills and sub-language skills. According to the interview data, reading, grammar and writing proficiency are the goals important for Teacher A, though no observed sessions related to writing training in Class A were found; enriching the size of passive vocabulary on the part of students is what Teacher B is eager to do; above all language skills, reading competence is the major teaching and learning goal for Teacher C; contrary to the teaching and learning goals of the other three teachers, the one that Teacher D emphasizes is the students' mastery of listening and speaking abilities. Although I tried to examine the connection between the teachers' teaching and learning goals and scaffolded functions of their questions, I found the expressed teaching and learning goals did not match up with the observed teacher-fronted classroom activities I identified. Therefore, I only provided detailed analyses of the data I had collected. That is, I only discussed the scaffolded functions of teachers' questions in reading and grammar activities taken from Class A, one reading activity from class B, and two activities of film discussion and student presentation from Class D.

The class transcript data allowed me to quantify the frequencies of scaffolding functions of the teachers' questioning practice. In Teacher A's reading activities, first initiations (R questions), repetitions (DM questions), rephrasing (RDF questions), and tag questions (MCFD questions) occurred to scaffold classroom communication. They were all posed in English and, based on my analysis, I think these questions are congruent with Teacher A's reading goal which expects the class to think and realize the contents of the texts in English rather than their mother tongue. Apart from Mandarin initiations and tag questions, Mandarin decomposition (RDF questions), probing (DM questions) and comprehension check (FC questions) also occurred in two observed teacher-fronted grammar activities in Class A. It is found that Teacher A posed Mandarin questions at all times in her grammar activities. These questions guided the learners to be acquainted with the grammar rules, which in turn

corresponds with Teacher A's sub-language skill goal regarding grammar teaching and learning. Maybe thanks to the small sample size, in Teacher B's reading activity, only first initiations (R questions), rephrasing (RDF questions), and probing (DM questions) were identified. All the questions were uttered in Mandarin. Mandarin scaffolding questions play vital roles in her teaching and learning goal to support the students if their lack of reading comprehension is due to limited linguistic knowledge.

English tag questions with the MCFD functions and English comprehension checks with the FC functions are questions for Teacher D to check learners' comprehension and to make sure they follow classroom conversation, and sometimes to deliver knowledge to the class. The use of these questions I observed is in accordance with the listening comprehension goal set up by Teacher D. Reference questions with the function of recruitment (R questions) and clarification requests (DM questions) facilitate genuine negotiation of meaning in class and rephrasing questions (RDF questions) give learners more opportunities to work on their comprehensibility. Although Teacher D's rationales for employing English and Mandarin scaffolding R, RDF, and DM questions in these two activities are 'unprincipled', in general, they correspond with Teacher D's teaching and learning goal relating to improve speaking proficiency.

Chapter 7 Findings: The patterns, language use and scaffolded functions of the first language in learners' responding behaviours

Responding to teachers' spoken questions orally is crucial for the learners of a target language (Suk-a-nake et al., 2003), since teachers' questioning elicits learners' responses that demonstrate their linguistic knowledge, and obtains maximum classroom participation. It is through the responses teachers solicit that teachers can monitor students' progress and determine if the teaching and learning objectives have been achieved (Jan and Talif, 2008). Therefore, it is necessary to explore the practices of learners' responding behaviours in the language classrooms. As I mentioned earlier, this research does not examine learners' responses either by simply classifying them into higher-/ lower-level answers or numerically analyzing their oral contributions. Instead, the in depth explanations of learners' responding behaviours are presented from various perspectives, including the types of learner responses (Section 7.1), the language use in the responding behaviours (Section 7.2), and scaffolding functions of learners' first language answers in response to teachers' questions (Section 7.3). A brief summary is in the section 7.4.

7.1 The observed responding behaviours of the learners

In this section, I provide some characteristics of learners' responses I observed in the four subject classes and the supportive explanations from both teacher and student subjects were inserted into these events to avoid possible misinterpretations based on my solo observations from a outsider's viewpoint. The recorded types of student responses are presented in order in accordance with their frequencies. They are inaudible utterances, one-phrase (Carless, 2007) or one-word answers, and one-sentence utterances (Kondo-Brown, 2002).

7.1.1 Students' responding behaviours—the inaudible utterances

This type of learners' responses occurred most in the research findings. Although, as well as the in-built microphone of the camera, I also put four digital voice recorders in the corners of the four subject classrooms so as to record the conversation occurring in class, it was still hard to pick up the students' voices. In the transcribed teacher-fronted activities, most students' responses were, most of the time, unintelligible and they

were presented in the form of 'XXX' in the content units. This phenomenon happened in all of these four classes.

Excerpt 42:

- 1 TA: When did the tornado happen? When did the tornado happen? ((PO))
- 2 S1: XXX.
- 3 TA: It happens on a warm spring day.

When I interviewed the four teachers, Teacher B, C and D agreed that they cannot catch what their students are saying. They very often 'guess' the responses by their lip shapes or the classmates surrounded by the respondents may repeat the responses for them. This phenomenon seldom exists in the break time as Teacher B stated that:

- TB: ...Well, I do not understand. Usually, they speak louder in the breaks, but they speak in a low voice in class. I think they are shy and they are afraid of making mistakes in class.
- I: So, usually they speak loud, but in class they murmur instead.
- TB: Yes, exactly.

Teacher C has another different explanation about the frequent unintelligible responses. For her, my presence might cause the class to be quiet.

- TC: I think your presence in the class might be the reason why the students whispered when they were responding to my questions since they knew everything they said were recorded and, perhaps, this frightened them. When you were not here, they behaved differently. They were vocal and spoke in a loud voice.

On the other hand, Teacher A contradicted other teachers' opinions and insisted that she can absolutely understand her students' responses and my standing position in the room and insufficient contact with the class led to my wrong impression.

- I: I found most students spoke in a whisper. Do you know the reasons?
- TA: This is because you stood in the back of the classroom. If you stand in the front, it will be different. Although their responses are sometimes incomplete, I understand their responses since they uttered 'key words'. I can tell from the shapes of their mouths or tiny voices. We have got some

specific rules and habits of how to respond to a question in class. I think an outsider like you hardly understands them.

The ‘key words’ mentioned by Teacher A pointed out another important type of learners’ responding behaviours in language classrooms—one-word or one-phrase answers.

7.1.2 Students’ responding behaviours—one-word/ one-phrase answers

As Cazden (2001) suggests, the researcher should be very careful not to interpret one-word or one-phrase answers as the learners’ lack of knowledge, but to treat them as the evidence that they make efforts to engage themselves in classroom participation and also as the demonstrations of learners’ progress in their cognitive and linguistic development.

Excerpt 43:

(Teacher A is explaining how to differentiate the functions of ‘what’ and ‘that’ in sentences. ‘What’ stands for either a subject or an object in a sentence while ‘that’ is followed by a complete sentence. The task the teacher gives to FS1 is:

4. The actress said she was tired of being in the media spotlight and _____ she longed for a more private life.)

- 1 TA: 再來第四題 ((DR)), 五號, 要填什麼?
2 FS1: What.
3 TA: 要怎麼解釋?
4 FS1: ...
5 TA: 你看, ‘What she longed for a more private life’ 怎麼解釋?
6 FS1: ...
7 TA: Long for 是渴望。她渴望一個人的私生活, 對不對? 這個 ‘what’ 怎麼
8 解釋? 這是一個完整的句子嗎?
9 FS1: Yes.
10 TA: 對啊! 沒有! 所以要填什麼?
11 FS1: That.
12 TA: That. 對。The actress said she was tired of being in the media spotlight
13 and **that** she longed for a more private life.

- 1 TA: Next one, ((DR)) , number 5, what is your answer?
- 2 FS1: *What.*
- 3 TA: How to translate this sentence?
- 4 FS1: ...
- 5 TA: How to say that in Mandarin, 'what she longed for a more private life'?
- 6 FS1: ...
- 7 TA: 'Long for' means long for. She longed for a more private life, right? Can
 8 we use 'what' here? Is this a complete sentence?
- 9 FS1: *Yes.*
- 10 TA: Yes, so what is the correct answer?
- 11 FS1: *That.*
- 12 TA: *That. Yes.* The actress said she was tired of being in the media spotlight
 13 and **that** she longed for a more private life.

In this content unit, from the wrong answer 'what' at the beginning in the line 2 to the learner's expected response 'that' in the line 11, FS1 either kept silent or uttered only one word to respond to Teacher A's questions. However, I think this student indeed carefully considered Teacher A's several prompts following his wrong answer. In the line 8, the teacher posed the question, 'Is this a complete sentence?'. FS1 responded in a one-word answer, 'Yes', which reflected that the learner took up the knowledge the teacher provided prior to the task, 'that' is followed by a complete sentence, and then FS1 finally knew that 'that' can be placed to fill in the blank of this sentence. Only assessing learners' responses by counting the numbers of their word production cannot explain the learners' learning and thinking processing. Learners' silence or one-word answers do not mean they do not understand the given information or they are not intelligent and higher-level respondents (Mohr and Mohr, 2007). Even if some researchers do prefer to elicit much longer and more meaningful verbal contributions, the frequent one-word responses in the current research were found as the evidence that learners make good progress in their English language development.

7.1.3 Students' responding behaviours—one-sentence utterances

One-sentence utterances appeared very often in the grammar activities in Class A and Class C. After the teachers introduced the classes to a new English sentence pattern, they asked the students to practice the exercises provided in the textbook and to respond in chorus. Usually, the students were required to respond in full sentences so as to be familiar with the newly- learnt knowledge.

Excerpt 44:

(The sentence pattern Teacher C is teaching is:

be always/ constantly + V-ing

The given exercise in the textbook is:

3. Cindy left her umbrella on the bus again. She _____
_____. (lose/umbrella))

1 TC: Number 3. Cindy.

2 Ss: Cindy left her umbrella on the bus again. She is always losing
3 her umbrellas.

4 TC: Good. She is always losing her umbrellas.

Different from one-word answers, the one-sentence utterances like the response above helped develop English language proficiencies on behalf of the learners and also, as Teacher C stated in her explanations, enlarge learners' response repertoires in order to encourage the maximum classroom participation.

7.1.4 Other observed phenomena related to learners' responding behaviours

Apart from the observed types of learners' responses above, I found some interesting phenomena which are associated with learners' verbal responding in classes: Teachers selected respondents by the drawings of lots and the students spoke only when they were spoken to.

The four subject teachers all used an identical method to select respondents for their questions—the drawing of lots. The students' school numbers were labeled or written in these lots which were placed in a wooden or tin can in each class. After posing a question to the classes, the teachers draw one lot and read out the number. The student whose school number is read out stands up and he/she is responsible for uttering the answer for this turn. Choosing respondents by drawing lots happened a lot especially in the classes of Teacher A, B and C. This method gave equal speaking opportunities to the learners and maintained the attention of classes.

TB: The drawing of lots can keep the students awake. They won't fall asleep because they know they may be the next one to respond.

TC: There are forty students in one class. I think calling upon students by the lot gives everyone an equal chance to speak up in class.

TA: Because these students are absent-minded, if they know I will call on someone randomly, they will pay more attention to the given tasks. Without the drawing of lots, some of them may still volunteer to answer. However, the problem is if I only choose the students who put their hands up to respond, other students might think it is not related to their business and they may be distracted and cannot catch up the ongoing activity.

Moreover, the students in these four cases all tended to wait for teachers' nominations, and they spoken only when spoken to (Sinclair and Coulthard, 1975). I seldom observed volunteers responding to teachers' initiations.

7.2 The learners made use of English and Mandarin in their responding behaviours

The data for the second part of the research question four came from classroom transcripts, the oral and written responses for the question items 9-14 in the questionnaire, and the subsequent interview data with focal subjects. The focal students' responses to the question items 9-14 are presented in Table T1. These question items (9-14) were inspired by the findings of the research which was conducted by Liu et al. (2004). They claim two important incidences in their research outcomes. One is that the students responded using the same language as the teacher more often than they responded not using the same language as the teacher. Therefore, the data show the students were more likely to reciprocate their teacher's language use. The other is the students' choice of language in response depended on the question's difficulty and complexity. That is when the question is complex and difficult, the students were prone to answer it in their mother tongue.

In the present research, all focal students all agreed that responding in English helps them improve English (the question item 9). However, the consequence regarding learners' choices of language use to give in return their teachers' is ambiguous. As mentioned earlier in Activity 1, teachers utilized English questions with the intention of eliciting learners' English contributions. Therefore, in most cases the students were observed reciprocating their teachers. The majority of the focal subjects agreed on the question items 12 and 13. They stated that when the teacher speaks to you in English, it is good manners to respond in English and vice versa. However, I also identified

many incidences when the students did not reciprocate their teachers. The students responded in Mandarin to teachers' English questions in the following first two examples, and the other two examples display the occasions they produced English contributions to Mandarin questions.

Excerpt 45:

- 1 TD: Do you remember what it is? S1, do you remember? That's not flying
2 saucer. What's it?
3 S1: 氣象風向球。
3 TD: Oh, weather balloon.

- 1 TD: *Do you remember what it is? S1, do you remember? That's not flying*
2 *saucer. What's it?*
3 S1: A weather balloon.
4 TD: *Oh, weather balloon.*

Excerpt 46:

- 1 TA: Have you ever jointed any money raising activity XXX?
2 Ss: 有。
3 TC: Which one?
4 S?: 九二一。
5 TC: 九二一募款喔！Who? Raise your hands. Have you ever raised money?
6 S1: (puts her hand up)
7 TC: What kind of money raising?
8 S1: XXX.
9 TC: Oh, that's very meaningful.

- 1 TA: *Have you ever joined any money raising activity XXX?*
2 Ss: Yes.
3 TC: *Which one?*
4 S?: The 921 earthquake.
5 TC: The 921 earthquake. *Who? Raise your hands. Have you ever raised*
6 *money?*
6 S1: (puts her hand up)
7 TC: *What kind of money raising?*
8 S1: XXX.

9 TC: *Oh, that's very meaningful.*

Excerpt 47:

1 TB: 禽流感英文怎麼說？

2 Ss: ...

3 TB: 流行性感冒怎麼說？

4 Ss: Flu.

5 TB: 所以禽流感怎麼說？

6 Ss: Bird flu.

1 TB: *How to say bird flu in English?*

2 Ss: ...

3 TB: *How to say flu in English?*

4 Ss: *Flu.*

5 TB: *So, how to say bird flu in English?*

6 Ss: *Bird flu.*

Excerpt 48:

1 TC: 魅影怎麼說？

2 Ss: Phantom.

3 TC: 啊，我想到了。你們有沒有看過歌劇魅影？歌劇魅影的英文怎麼說？

4 S?: The phantom of the opera.

5 TC: 很好。

1 TC: *How to say phantom?*

2 Ss: *Phantom.*

3 TC: *Oh, have you watched the phantom of the opera? How to say the phantom of opera in English?*

5 S?: *The phantom of the opera.*

6 TC: *Good.*

Although I could not find the respondents in the excerpts above to answer my enquiries above why they did not reciprocate their teacher's language, the interview and the questionnaire data from focal subjects provided some possible explanations. When being asked the question about when the teacher posed English questions, FS4, FS5, FS9, and FS12 disagree about responding in English (the question item 12).

FS4 and FS5: I am not willing to respond or speak in English because I speak English with a very strong Taiwanese accent.

FS9: It takes me much more time to respond in English than Mandarin.

FS12: As a matter of fact, I often respond in Mandarin. Responding in Mandarin helps me make myself clear. My teacher doesn't understand my English answers.

On the other hand, FS8, FS11, and FS13 do not prefer to respond to teachers' Mandarin questions in Mandarin (the question item 13). They all thought even though the questions are posed in Mandarin, responding in English as much as possible is essential. This is an English class, everyone should speak and talk in English so as to maximize their target language use.

To some extent, the question's complexity might exert an influence on learners' choice of language (Liu et al., 2004). As the first two excerpts in the section show, these are two examples which were excerpted from reading activities in which the teachers were using English referential questions to elicit the learners' opinions which were not related to given tasks. The students probably found the vocabulary or knowledge needed beyond their current command of English and responded in their mother tongue. On the contrary, the last two examples taken from vocabulary activities tried to recall and test the learners' vocabulary acquaintance through easy Mandarin display questions that could be answered in fairly simple English by the students. Therefore, the students would likely utter one-word or one-phrase English responses with ease. FS1, FS8 and FS11 would, however, tend to respond to difficult questions in English and produced longer responses even if the questions are complicated (question item 14). They all believed that speaking a lot in English is the basic requirement for English language learning. FS 8 further affirmed that he asks the teacher for English translations of unknown vocabulary, and then he tries to reply in full and longer sentences in English.

When being asking about whether they do not want to respond in English since they think their English is not good enough, there is a salient disagreement between focal subjects (question item 10). Here are the explanations from some students:

FS8: The curriculum is designed according to our abilities. I think I can handle

it.

FS11: It is wrong not to respond the teacher's questions just because my English is not good. In contrast, I need to speak more and practice more to improve my poor English. Practice makes perfect.

FS4, FS7, and FS10, however, do not want to respond in English, partly because they think their English is not good, and partly because they are not confident to speak English in class.

Speaking a foreign language in front of the class causes learners' anxiety and some researchers claim that mother tongue can alleviate this kind of apprehension (Horwitz, 1995; Levine, 2003). Most focal subjects agreed on the question item 11, but for FS2 and FS11, no matter whether responding in Mandarin or English, they never felt self-assured.

7.3 The use of Mandarin as private speech scaffolded the learners' cognitive and English language development

With the recent attention to the role of the first language in EFL and ESL classes, many researchers challenge long-held anti-L1 attitudes (Carless, 2007; Scott and La Fuente, 2008) and claim that L2 learners should be viewed as multi-competent language users instead of deficient L2 users when compared to native speakers (Cook, 2001; Belz, 2002). The role L1 plays in L2 learning is not only 'language transfer' (Kellerman, 1995) but also as a cognitive tool. According to Vygotsky (1986), speaking is a cognitive activity. The focus of attention in the socio-cultural theory is on interpreting how speaking maintains that individuals speak to carry out task-relevant actions and created a shared social reality (Donato, 1994). In the present research, speaking in the mother tongue on the part of learners is focused on. I tried to discover, when they are engaged in co-constructing activities with teachers, how the learners employed valuable 'L1 private speech' (Centeno-Cortes and Jimenez Jimenez, 2004) in their responding behaviours to mediate their mental processing and target language development.

Based on my observation, learners' L1 private speech in the database can be categorized into: cognitive, social, and affective functions. The first function is directly related to Vygotsky's idea of use of private speech as a problem-solving strategy, and in particular for guiding monitoring, and managing the given tasks. As

for the social function, the learners externalize private speech in helping all participants (the teacher and the peers) arrive at a collective understanding of the problem. Finally, private speech can also have the affective function when the learners of English language externalize their feelings and attitudes towards the tasks (McCafferty, 1994).

7.3.1 The cognitive (intra-psychological) function of L1 private speech in learners' responses

In the following example taken from Teacher D's class, L1 private speech uttered by the learner was a verbal thinking (Centeno-Cortes and Jimenez Jimenez, 2004) and was observed to enable him to think about, to make sense of, and to control the given task.

Excerpt 49:

(The ongoing task is a matching activity. The teacher gives the learner the first part of sentence, and asks the learner to choose one of following answers which could fit with the sentence and makes the sentence meaningful.

12. 'They will be able to spot us'

- a) when he spilled hot water on his hands.
- b) if we wear bright red and orange clothing.
- c) wish to meet up with us for coffee after dinner.
- d) remember to be careful of the electrical wires.)

Excerpt 50:

- 1 TD: S5, which one is correct?
- 2 S5: ...
- 3 TD: Think about that.
- 4 S5: 老師，我想選 C。好像是對的。啊，不對，如果我選 C 這句話就有兩個動詞了。
- 5
- 6 TD: Yes, that's right.
- 7 S5: 恩，所以 D 也不能選。選 A 的話這句話翻譯起來怪怪的，不通順。我想是 B 吧。
- 8
- 9 TD: Good. B is the correct answer.

- 1 TD: S5, which one is correct?
2 S5: ...
3 TD: Think about that.
4 S5: Miss, I would like to choose C. I think it's correct. Ah, no, no, if I choose
5 C, there would be two verbs in this sentence.
6 TD: Yes, that's right.
7 S5: Em, so I think D is not the answer as well. Answer A does not fit with the
8 sentence, and it makes the sentence nonsense. I think B is the best one.
9 TD: Good. B is the correct answer.

In the lines 4, 5, 7, and 8, it is obvious that S5 appeared to be addressing no one other than himself. L1 use for him is a cognitive tool and the statements made by the learner can be classified as 'metatalk' (Brook and Donato, 1994), the talk by the participant about the task at hand. The metatalk in the above example serves to enable the learner to establish control of the task by explicitly commenting on his own current linguistic knowledge and mediate his own English language learning.

7.3.2 The social (inter-psychological) function of L1 private speech in learners' responses

However, in the collaborative activity between the teacher and students, L1 private speech provides not only cognitive functions, but social functions as well. In the below examples, L1 private speech enables learners to construct a shared perspective of the task, that is, to achieve 'intersubjectivity' (Rommetveit, 1985), and L1 private speech which is uttered by the learners allows them to retrieve vocabulary and grammatical information from their interlocutor, the teacher, which in turn makes learners capable of working effectively in their zone of proximal development (ZPD).

In excerpt 51, by means of the L1 the learner developed strategies for making the task manageable, and discussed what needs to be done with the teacher to solve problems (Anton and DiCamilla, 1999).

Excerpt 51:

(Teacher C tries to familiarize the class with the usage of 'take' and asks the learners to practice through the role plays. Here are the tasks:

1. A: Did you finish the assignment?
 B: Yes, I did. _____ (two days)
2. A: When did they get here?
 B: Three o'clock in the afternoon. _____ (four hours)

- 1 TC: Could you please do the below task for me? You two. (Points at two
 2 students)
- 3 S1: 老師，誰做 A 誰做 B?
- 4 TC: Em, S1, you are Mr. A. S2 is Miss B. Now, number one.
- 5 S1: Ok. ((LF)) XXX.
- 6 S2: 老師，不公平。B 的部分比較難。
- 7 TC: Ok, change your roles. You are B (to S1) and you are A (to S2).
- 8 Ss: ((LF))
- 9 S1: 老師，我是要回答整句的，還是回答重要部份就好？
- 10 TC: Answer in full sentences. Go.
- 11 S2: 'Did you finish the assignment?'
- 12 S1: 'Yes, I did.' It took me two days to finish the assignment.
- 13 TC: Number two.
- 14 S2: 'When did you get there?'
- 15 S1: 'Three o'clock in the afternoon.' It took them four hours to get here.
- 16 TC: Thank you. Three.
- 17 S1: 老師，可以換人嗎？
- 18 TC: Ok.

- 1 TC: *Could you please do the below task for me? You two. (Points at two*
 2 *students)*
- 3 S1: *Miss, who is A and who is B?*
- 4 TC: *Em, S1, you are Mr. A. S2 is Miss B. Now, number one.*
- 5 S1: *Ok. ((LF)) XXX.*
- 6 S2: *Miss, this is unfair. Part B is harder.*
- 7 TC: *Ok, change your roles. You are B (to S1) and you are A (to S2).*
- 8 Ss: ((LF))
- 9 S1: *Miss, can I answer key words only?*
- 10 TC: *Answer in full sentences. Go.*
- 11 S2: *'Did you finish the assignment?'*
- 12 S1: *'Yes, I did.' It took me two days to finish the assignment.*
- 13 TC: *Number two.*

- 14 S2: 'When did you get there?'
- 15 S1: 'Three o'clock in the afternoon.' It took them four hours to get here.
- 16 TC: Thank you. Three.
- 17 S1: Miss, can I stop here? You can choose another respondent.
- 18 TC: Ok.

The learners in the above example attempted to negotiate the given tasks with their teacher in Mandarin in the grammar activity. It is through the use of L1 by the learners, the learners and the teacher can reach mutual understanding of how to carry on and accomplish the given tasks. Speaking in the mother tongue in this case created shared social words and intersubjective encounters (Rommetveit, 1979 cited in Anton and DiCamilla, 1999).

Excerpt 52:

- 1 TD: 'Turn the jar upside down, and the rest of the honey will gradually come
2 out.' Understand?
- 3 S1: Jar 是什麼東西?
- 4 TD: Jar. J-A-R. Jar 就是罐子啊! 怎麼翻?
- 5 S1: 把這個罐子放顛倒, 其他的蜂蜜 XXX 跑出。
- 6 S2: upside down 是什麼詞?
- 7 TD: 副詞。Adverb. So, can you make a sentence with it?
- 8 S2: We XX put out chair upside down for XXX.
- 9 TD: We have to put our chairs upside down on the table for doing our
10 cleaning. You do that everyday, don't you? Good.

- 1 TD: 'Turn the jar upside down, and the rest of the honey will gradually come
2 out.' Understand?
- 3 S1: What is a jar?
- 4 TD: Jar. J-A-R. Jar is a jar. How to translate this sentence ?
- 5 S1: Turn the jar upside down, and the rest of the honey will XXX come out.
- 6 S2: What is the grammatical function of 'upside down' ?
- 7 TD: It's an adverb. Adverb. So, can you make a sentence with it?
- 8 S2: We XX put out chair upside down for XXX.
- 9 TD: We put our chairs upside down on the table for doing our
10 cleaning. You do that everyday, don't you? Good.

In the lines 3 and 6, S1 and S2 overtly addressed the problems of accessing the vocabulary and grammatical knowledge. The questions which were stated in Mandarin by S1 and S2 in the lines 3 and 6 can be viewed as the social function seeking for the assistance from the teacher.

7.3.3 The affective function of L1 private speech in learners' responses

L1 private speech also had an affective function especially when the learners externalized feelings about the tasks, such as nervousness and frustration (McCafferty, 1994) as shown in the example below. The statement, 'I do not know. I do not know how to say that in English.' is the visible evidence that S3 was suffering from the disappointment and was expressing her feelings in her mother tongue.

Excerpt 53:

- 1 TD: Ok. S3, how about you? You said you have been there.
- 2 S3: 都被講完了，我沒東西講了。
- 3 TD: 九份不會只有這樣而已。
- 4 S3: 我不知道。老師我不會用英文講。
- 5 TD: Think about that.
- 6 S3: Lots of rain.
- 7 TD: Rain?
- 8 S3: ((ND)) XXX.
- 9 TD: I see. So, you do not like this place.

- 1 TD: *Ok. S3, how about you? You said you have been there.*
- 2 S3: *All answers were spoken out.*
- 3 TD: *There should be more answers.*
- 4 S3: *I do not know. I do not know how to say that in English.*
- 5 TD: *Think about that.*
- 6 S3: *Lots of rain.*
- 7 TD: *Rain?*
- 8 S3: *((ND)) XXX.*
- 9 TD: *I see. So you do not like this place.*

7.4 Summary of findings

In this chapter, I explored the learners' responding practices from three perspectives: the responding patterns, the mother tongue and the target language use in their responses, and the functions of L1 private speech.

Based on my observations of these four subject classes, three frequent responding patterns were identified. They are inaudible, one-word/ one phrase, and one-sentence utterances. Unintelligible responding patterns happened very frequently in my research findings. The explanations of this phenomenon were taken from interview data with teachers. Teacher C clearly indicated that my presence frightened the learners and led to their low voices in class and Teacher A, on the other hand, pointed out that my standing position in the room and insufficient contact with the class misled myself. She thought she perfectly understood learners' responses. The research findings also suggested that the learners' one-word / one-phrase responding is the evidence that the learners make efforts in their cognitive processing and it should not be neglected. When the subject teachers tried to make the class familiarize the newly-learnt English sentence patterns, the elicitation of one-sentence utterances would be preferred, as Teacher C stated that such practices enlarge learners' response repertoires so as to allow the maximum learners' verbal contributions. Furthermore, all subject teachers were observed to select respondents through the drawing of lots and this strategy prevented the learners from distraction and gave everyone equal opportunities to be called upon. I seldom observed volunteers who responded to the teachers' questions without nominations and the learners in these four classes tended to speak when they were spoken to.

The learners, in most cases, were found to reciprocate their English teachers' language use, but sometimes they responded in Mandarin to English questions or they uttered English answers to Mandarin questions. FS4, FS5, FS9, and FS12 preferred to respond in Mandarin to English questions since they are not confident with their English ability. In contrast, FS8, FS11, and FS13 tended to provide English responses to Mandarin questions as much as possible because they believed that maximizing target language use contributes to their language development. The question complexity also influenced learners' language choices. That is, it was found in the present study the learners had tendencies to employ Mandarin in respond to complex teacher questions. However, FS1, FS8 and FS11 had different opinions and thought no matter how hard the questions are, the language students should produce English contributions in order to make practical use of their target language in class.

The three identified functions of L1 private speech are cognitive, social, and affective functions. From the cognitive perspective, L1 private speech functioned as ‘metatalk’ serving to enable the learner to make sense and to establish the control of the given task. From the social aspect, L1 private speech also assisted the teacher and the students with achievement of ‘intersubjectivity’ and reaching a mutual understanding of the problem. Finally, L1 private speech in the current research also plays as an affective tool to externalize learners’ uncomfortable feelings in order to get rapport from the teacher.

Chapter 8 Findings: The factors which exerted influences on the learners' responding behaviors

In my research outcomes, the students were generally prone to be quiet. They got few opportunities to speak in class, since listening to the teacher came top as the most frequent activity in class (Liu and Littlewood, 1997). Also, the data revealed that the students were reluctant to volunteer answers and they had a habit of waiting to be called up before answering (Wu, 1991). In order to discover the most important contributing factors which lead to learners' passive responding behaviours, multiple research tools were employed, including the questionnaire, the interviews with subject teachers and students, and the classroom observation and digital recording.

The identified factors that exerted influences on learners' responding behaviours came from two major aspects: the factors which are related to learners' attitudes towards speaking and responding in class, which are socially constructed (the question items 4-8 and 15-20), and the factors which are associated with dynamic classroom interaction in which the teacher and students get involved together (the question items 21-34). I will discuss these two types in Section 8.1 and 8.2, and Section 8.3 is the summary of this chapter.

8.1 The factors related to learners' attitudes towards the role of English language and speaking and responding in class

The question items 1-3 are related to learners' attitudes towards the role of English in the society in Taiwan. According to Sullivan (2000), an important tenet of Vygotskian socio-cultural theory is that motives for learning in a particular setting are intertwined with socially and institutionally defined attitudes. I assume here, the learners' attitudes towards English language are linked to their motivations for learning English. Then, their attitudes towards English language might further affect their responding behaviours. Even though the first three question items are not directly related to learners' responding behaviours, it is necessary to look more closely at the role of English language in the Taiwanese society from focal subjects' perspectives.

In response to the question item 1, most of the focal subjects all agreed that they like studying English and they believe that English is important. The only exception came from FS9. For him, English is just a compulsory school subject. In spite of the

importance of English in the business world and pop culture, it has little to do with the daily life of a high school student. Additionally, some students felt this question item was unclear for them. 'I like to study English' and 'English is important' are different matters. The statement 'I like to study English' does not certainly lead to the following declaration 'because English is important' and vice versa. For example, FS7 agreed that 'English is important', but she does not like studying English. This is a double question and she suggested that it should be divided into two independent questions.

All of the focal subjects agreed with the question item 2: 'I think English is an international language and it has an important place in the modern world'. Here are some explanations.

I: Can you explain why do you think English is important?

FS6: For example, if I get lost in a foreign country, through communication in English, I can still find the way to go home, since English is a universal language. How can I get through it quickly if I don't speak English?

FS10: The world is a global village. In the future, I may have lots of chances to talk with foreigners. English is the medium of communication.

FS12: The latest news and information are presented in English, so that English has an important role in the modern world.

Historically, Taiwan has been an economy-driven nation since the 1980s and learning English as an international language that provides access to the world community is vital for this island economy. Therefore, it is believed that having a good command of English will fuel upward mobility in terms of social status and occupation in Taiwan (Lin, 2008). This was also approved by most of the focal subjects. When being asked about whether 'speaking English helps them get a better job in the future', most of them agreed with this description (Question item 3). For instance, employees in Taiwan are constantly encouraged to improve their English proficiency through TOEIC (the Test of English for International Communication) or local GEPT (the General English Proficiency Test) for job hunting or promotion.

FS3: Lots of companies asked employees to take GEPT or TOEIC tests. If I speak better English, I will get more job opportunities or better pay.

For FS11 (from Class D where all students have talents for playing the piano, the

guitar or other musical instruments), speaking good English contributes to a promising musical career.

FS11: Because I play the piano very well, I may pursue advanced studies in European or Western countries where the art of piano playing is well-developed. I expect to perform in front of audiences all over the world, so that English is important. I spent lots of time practicing them (English and piano), since I know these benefit my future career.

As Peirce (1995) suggests, the learners' motivation for learning a foreign language is very often viewed as 'investment', which signals that learners intend to invest in learning the language in order to increase their cultural capital in the society. English language in Taiwan has functions connecting the relationship between the language learners and the changing social world outside the classroom.

Interestingly, among all the responses, only FS1 thought higher English proficiency does not always lead to a better job position, since more and more western people do business with China, so that the number of people who study Mandarin Chinese for commercial purposes is increasing. He thought Mandarin mastery is much more important in the future economic prospects. Similar findings can be found in Ho's (1998) research studies to explain why English-speaking pupils have no motivations to learn other foreign languages when English is the worldwide lingua franca.

Question items 5, 8, and 17, are related to learners' self-confidence in their English ability. Taiwan is a place which Kouraogo (1993) refers to as an 'input-poor environment', since most communication in the English classroom, and outside the classroom, is carried out in Mandarin. When I designed these question items, I presumed students should agree on these statements thanks to their lack of confidence in spoken English, but, unexpectedly, I obtained a variety of answers and opinions. Some students (FS4, FS6, FS7, and FS 12) indeed claimed that they are not confident in their English proficiency and they would not want to answer a question since their answers might be incorrect (question item 8), while most of the focal students thought no matter whether their answers are correct or not, they will answer the teacher's questions since the teacher will correct their mistakes and they can learn more from the correction.

When the teacher asks a question in class, FS1, FS2, FS5, FS8, FS9, FS11, and FS13 preferred to respond to it (question item 17), when other focal students assented to this

statement and stated that they preferred NOT to respond. The reasons why they approved this description are as follows:

FS6: If I respond too much, other classmates will hate me. They will think I seek the limelight.

I: So, you don't want others to get the impression that you are seeking the limelight. You keep silent though you know the answer.

FS6: Yes. That's right.

FS12: I am not confident in my English responding ability. If it is a Mandarin class, I am confident. Even though I know the answer, I am not very familiar with its English expression. Probably, I will make mistakes and I cannot say an English answer well.

FS12's situation is very similar to the phenomenon, 'anxiety from high performance expectations', which is pointed out by Liu and Littlewood (1997). That is, when some learners speak English, they have a strong concern to speak it well. This leads to the cases that the learners feel a sense of unease speaking English simply because they do not think they will perform well.

The data collected from the questionnaire mainly served to supplement the subsequent interview questions by eliciting further information or clarification from the subjects. However, sometimes the questionnaire answers provided by the focal subjects are inconsistent with what they later revealed during interviews.

For example, in FS1's written comments in the questionnaire, FS1 dissented from the question item 17, but in his subsequent interview with the researcher, he provided a contrary oral explanation.

FS1: Since the teacher selects respondents, not asks for volunteers, even if I know the answer, I do not respond.

I: Your answer is different from the written one in the questionnaire.

FS1: Yes. Sometimes I got confused, after a series of the repeated procedures of reading question items and choosing answers in the questionnaire.

The data also revealed that the drawing of lots influenced learners' responding behaviours deeply. FS4, FS6, and FS11 thought the preparation in advance does not make them willing to respond in class (question item 5) because teachers used to

select respondents through drawings of lots, so in spite of sufficient preparation, they still fail to get the floor.

FS6 and FS11: As I mentioned earlier, the teacher will call upon students to respond. Even though I prepare, I don't have chances to speak.

FS4: No matter whether I prepare in advance or not, I do not have chances to speak. Most of the time, the teacher selects respondents by lot. If the teacher asks for volunteers after posing a question every time instead, if I know the answer, I would go for that. However, this kind of situation seldom happens in our class.

FS4 emphasized that this is because of the teacher's lottery. The students in her class do not have chance to volunteer answers, which leads to the passive responding behaviours of the classmates. When I rephrased FS4's opinions to Teacher A in the post-observation interview with her, Teacher A provided the responses and comments below:

I: The focal subject told me that you always choose respondents by lot, even though they would like to respond voluntarily. How do you think about that?

TA: I thought they might have equal opportunities to get involved in classroom activities by drawing lots. Em, yes. I admitted that the students are right. It would advantage the students by responding voluntarily.

The other question items which are related to responding voluntarily or nomination by drawing lots are question items 15 and 18. Most of the focal students achieve agreement on the statement that, 'usually, I do not respond to questions during whole-class discussion unless I am called upon' (question item 18), while most of them expressed their disagreement with the question item 15, 'I prefer being called upon by the teacher rather than volunteering an answer'. These are two related question items. The focal students should have the same responses to these two questions. However, the results about these two questions are inconsistent. After comparing all the responses of focal students, most students provided congruous answers, except FS6 and FS8. I found FS6 and FS8 disagreed with Question Item 15 but agreed with Question Item 18. From interviews, I found that these two students indicated that the declaration that they prefer volunteering to nomination may be just

an expectation that they expect themselves to do well. In reality, during whole-class discussion, they still stay passive and reticent and wait for nominations. The findings (from question items 5, 15, and 18) discover that the students have incompatible attitudes towards the lottery employed by the teachers. Some of them think it hinders their freedom to participate in the conversation with teachers, but some prefer waiting for teachers' nomination through drawing lots since they are too passive to speak or to respond.

The responses of the focal students for the question item 6 (I am more willing to speak in class if I am not the only person answering a question) are not in agreement. Half the students agreed (e.g. FS1, FS2, and FS13) while the other half of the students disagreed about this question (e.g. FS8 and FS11). Here are opinions from both sides:

Focal subjects who disagreed:

FS11: Even if I am the only one to respond, I'm still willing to speak. This (responding alone) stands for the fact that I have better English competence since I can respond to the question while others cannot.

FS8: If I talk with a stranger, I am nervous. However, in class, I do not feel nervous to talk or to respond to Mary's (Teacher C) questions, because I know even though I may say something wrong and my classmates may laugh at me, it does not matter. I like to entertain everyone.

On the other hand, FS1, FS2, and FS13 agreed:

FS1: I do not like to speak or to answer alone in class. When lots of students speak at the same time, not only me, I feel less anxious.

FS13: I am less tense when I have company. I feel I am not alone.

FS2: For me, I am not willing to speak in class, when I am the only person answering a question. Every single activity in school is a group activity. I am concerned about the opinions of other students. Some students do not like someone speaking alone frequently. You should follow your classmates' rules, and do not speak too much. Remember you are a member of the group.

Keeping group harmony in language classrooms is a factor which affects learners' speaking and responding behaviours (Cheng, 2000; Jackson, 2002; Kennedy, 2002). As Bond (1992, cited in Kennedy, 2002) said, there is strong pressure for some learners to conform and act in the interests of the group. Compromise, moderation, and the maintenance of harmonious relationships are approved while individualism is disapproved.

There is agreement among most of the focal students about the question item 7: 'I feel more comfortable answering the teacher's questions when I do not have to do it in front of the whole class'. Although some of them (FS5, FS8 and FS9) claimed that speaking in front of the class makes themselves brave, most of the focal subjects stated that they cared about others' opinions and they were afraid of making mistakes in front of their classmates.

FS13: When responding to the teacher privately, in spite of making mistakes, others cannot hear it. If I respond and make errors in front of the class, I am humiliated, since everyone knows I make mistakes.

FS12: Every time when responding in public in class, I feel my classmates listen to what I say and correct my grammatical errors. I'm quite upset. On the other hand, when answering teacher's questions face to face in private, the teacher still corrects my mistakes, but I am fine. It is not so humiliating.

I: What is the difference between teacher's corrections and classmates' corrections?

FS12: I don't know. They are just different.

FS6: When responding in private, I do not need to care about others. When responding in front of other students, I feel everyone corrects me.

I: Do you feel uncomfortable?

FS6: Yes, their corrections make me lose face.

The phenomenon that learners' responding behaviours are subject to their classmates' opinions and judgments was already reported by many researchers such as, Liu and Littlewood (1997) and Babcock (1993). In Babcock's explanations, this is the Confucian heritage which influences Taiwanese learners of English. 'Face' for Taiwanese students is not unlike that found in other cultures. It means self-respect for one's feelings, dignity, and how people viewed themselves socially in front of others.

The focal students in the findings were concerned with how they are judged by others. They were very sensitive about making errors in public, which would be an obvious occasion of 'losing face' in the society in Taiwan. Clearly, the sensitivity of focal subjects to make mistakes, or fear of 'losing face' made them hesitate to speak in class (Shumin, 2002).

In Jackson's (2002) explanations for reticent students, she points out that the subject students expressed concern about how their peers would regard them if they spoke up frequently in class. They did not want to be labeled as a 'show-off'. This occurrence is developed in language classes when learners are criticized or even ostracized by classmates if they are viewed as taking a more active role than the rest. However, in the study, I obtained different answers from focal students. When being asked about the question item 19, 'If I often volunteer answers, my classmates may think I am showing off'. Few focal subjects agreed.

FS8: The students in Taiwan are very strange. To be honest, their competence is not good. However, when someone is trying to take a more active role, he/she is thought of as being showing off.

On the other hand, more focal students did not think they show off when volunteering answers.

FS11: My classmates are nice. They do not think I am a show-off when I respond frequently.

FS7: I do not think so. In my class, I am very talkative. I often respond to the teacher's questions. My classmates are proud of me. They do not think I am showing off.

According to Wong's (1984, cited in Wu, 1991:15) findings, there are some 'unspoken rules' the learners of English in classes should follow, which includes 'you should not demonstrate verbal success in English in front of your peers', 'you should not answer the teacher voluntarily or enthusiastically in English', 'you should not speak fluent English'. Nevertheless, when being asked the question item 20 (If I answer questions in English, my classmates may think I am showing off), most of the focal students stated their disagreement, such as FS8.

FS8: Responding to teacher's questions in English is normal. This is an

English class.

Even though she disagreed with the question item 20, FS2 still believes more able students in class should not speak too much. Otherwise, they are bragging about their English ability.

FS2: My English is at the middle level in our class. I do not think other classmates who have a better command of English will think I am showing off when I respond in English. However, if some more able students, like FS1, speak too much, I will think he is showing off.

The question items 4-8 and 15-20 are generally linked with learners' individual attitudes towards speaking and responding in class. The findings above show different learners have different attitudes and reactions when encountering the same question item. Also, the learners' comments of 'face losing', 'group harmony', or a 'show-off' cannot be simply explained through the principles of Confucius discussed in the previous literature review. However, I think this is because they think they are members in a community. The students care about others' opinions, try to behave properly, and follow the rules in that community. Their attitudes towards speaking and responding in class are socially structured and are in association with their relation with other members in class. I believe the specific Taiwanese socio-cultural factors happening in every single classroom also lead to different consequences of learners' verbal participation. In the following section, these factors related to classroom interaction in which both the teacher and students get involved will be described in order to obtain a clear understanding about how the dynamic classroom interaction influences learners' responding behaviours.

8.2 The factors associated with dynamic classroom interaction in which the teacher and students are involved

The question items 21-34 are related to learners' perceptions of peer support and teacher rapport in classroom interaction. As Nguyen (2007) suggests, a comfortable classroom climate is encouraged since the belief is that learners can learn better in such an environment. Also, in Krashen's (1985) Affective Filter Hypothesis, input can become intake only when the learner has a lowered affective filter, i.e. when they feel confident and comfortable. The teacher should maintain a friendly classroom atmosphere and establish a good relationship with students in order to create a

conductive learning environment (Tsui, 1996; Nguyen, 2007). In addition, peer support and relationship is also a function of the social structure and milieu of the classroom (Clement, 1994) and rapport from peers is as important as support from the teacher in creating a comfortable climate for learning (Tsui, 1996). Therefore, both peers and the teacher in dynamic classroom interaction might influence a learner's language learning and responding behaviours.

8.2.1 The factors in association with the interpersonal relationships with peers

Among question items 21-34, the question items 22, 25, 27, 29, 30, and 32 are in relation to focal students' perceptions of peer support. Most of the focal students disagreed with the question items 22 (my classmates in this class do not respect each other's views), 29 (my classmates discourage others from appearing too confident), 30 (my classmates do not pay attention when others are speaking), and 32 (many of my friendships with others have been made through this class), while most of them also agreed with the question items 25 (my classmates are supportive of their peers in this class), and 27 (when responding to the teacher's questions, my classmates depend on a few students to do it). Generally speaking, most of the focal subjects viewed their classes as comfortable and the peers as supportive, but there are still some different opinions.

There is only one exception answer for the question item 22, which came from FS9. While most subjects thought their classmates respect each other's views, FS9 expressed a different explanation:

FS9: Usually, my classmates pay attention to each other's views. However, when the teacher asks off-task questions, my classmates are willing to provide answers but everyone insists on their own opinions. They do not respect each other.

There are only three focal students (FS7, FS9, and FS12) who disagreed with the question item 25, 'my classmates are supportive of their peers in this class', while most of the focal subjects thought their classmates are supportive, helpful, and friendly. Here are their reasons:

FS7: The educational system in Taiwan makes us compete not collaborate. The system is exam-oriented. My classmates do not support each other.

FS12: Sometimes, they satirize my answers or opinions.

I: Are they kidding or serious?

FS12: They are kidding. They don't mean it, but I still feel uncomfortable.

FS9: I do not think my classmates are very supportive.

I: But I remember you told me when you do not know the answer, your classmates will help you.

FS9: Oh, yes, if that is what you mean by 'supportive'. Yes.

I: Well, for you, what does the word, 'supportive', mean?

FS9: I thought you mean my classmates say something to encourage me to study. Actually, my classmates do not like studying English, so that they do not say something to encourage me.

In addition to FS9, some focal students were also confused about the word 'supportive', before they answered this question item and the question item 24 (our English teacher is supportive), they either asked me for the exact definition of 'supportive' or stated that they did not know how to explain their chosen answers. In fact, these two questions were modified and inspired from Hsu's (2001) research. Even though I attempted to provide better translations as much as I could, a technical problem in English-Mandarin translation is still found, which probably occurred when I tried to adapt the English question items from Hsu's (2001) questionnaire into Chinese ones. Also, the word, 'supportive', itself is a very abstract word both in English and Chinese languages, which puzzled some focal students. The implication here is when employing similar question items in the questionnaire, the researcher needs to provide a clear definition or probably a clear example in order to eliminate confusion for the interviewees.

Most of the focal students agreed with the question item 27 (when responding to the teacher's questions, my classmates depend on a few students to do it) even though FS1, FS5, FS6, FS8, and FS13 believed that because of the drawing of lots employed by the teachers, everyone in class gets equal chances to speak, and the phenomenon that relying on some particular students to respond does not exist. However, this was not approved by most of the other subjects and they thought, in their classes, not only do their peers count on few more able students, but also their teachers select the particular students who are able to provide the expected answers.

FS2: We depend on a few more able students to respond. However, when they

respond frequently, we are mad and we think they get more chances to speak than us.

FS9: Except for the lottery, my teacher always choose some particular students, like FS8 to respond. These students are good at English.

I: Are you one of them?

FS9: Yes.

I: Do you think why your teacher would like to choose the students like you to answer her questions?

FS9: Because other students do not know the answers. Only we can offer the answers that the teacher needs.

Indeed, based on my observations in Class C, Teacher C very often relied on FS8 (Mark) to do all the verbal interaction with her and to answer her questions.

Excerpt 54:

1 TC: 我們來做二百二十三頁的題目。Number one. Mother is always talking
2 about the importance of water conservation. 那我們這個就叫 FS8 來
3 做好啦！他一定行的。

4 Ss: 好。(LF)

5 TC: ((LF)) FS8, come on.

6 FS8: 我做一題就好嗎？

7 TC: 好，FS8, number 2.

8 FS8: Due to the XXX

9 TC: Recent.

10 FS8: Due to the recent water rationing, people are always complaining about
11 the inconvenience.

12 TC: Very good.

1 TC: Let's look at the questions, page 223. Number one. Mother is always
2 talking about the importance of water conservation. Let's get FS8 to
3 answer all of the questions. He must know the answers.

4 Ss: Yes. ((LF))

5 TC: ((LF)) FS8, come on.

6 FS8: Can I just do question two please?

7 TC: Ok. FS8, number 2.

- 8 FS8: *Due to the XXX*
9 TC: *Recent.*
10 FS8: *Due to the recent water rationing, people are always complaining about*
11 *the inconvenience.*
12 TC: *Very good.*

During the video-tape review with Teacher C in her stimulated recall interview with me, she gave me the following rationales and accounts for her preferences for choosing some particular students, especially FS8, in her class to speak.

- I: Why did you prefer asking Mark (FS8) questions?
TC: I was restricted in my time at that moment. Mark speaks louder, and as I know he is good at English and he can provide all answers I want.
I: According to my observations, you usually call on more able students like Mark to answer your questions, right?
TC: Yes. I indeed prefer choosing more able students to respond. I asked him (FS8) questions a lot since on the basis of my experience he often responds voluntarily in whole-class discussion. I want to save time and keep the classroom activities going well, so I choose him. I know he is able and willing to provide correct answers. I do not have faith in other students. If I select others, they won't reply and then, there will be an awkward tension in the air in the classroom. Besides, it also takes me more time to elicit the answers from other students. The teaching schedule will be postponed.

As Tsui (1996) stated, some teachers' intolerance of silence in class and uneven allocation of turns might lead to learner reticence. From the interview data, TC revealed that she feels uneasy when she fails to get verbal contributions from the class and in order to avoid not getting responses from students, she tends to allocate turns to brighter students from whom she is sure of getting answers.

The majority of focal students did not think their classmates discourage others from appearing too confident (the question item 29) and FS4 even stated that they all get along very well. On the other hand, FS5, FS6, and FS9 disagreed with this statement.

- FS5: We do not like someone who is too confident and speaks too often in class. We boycott him or her if necessary.

FS9: Sometimes, if someone responds, my classmates discourage them by booing.

I: Do you know why?

FS9: When everyone is quiet and modest, you should not behave differently.

For the question item 30, ‘my classmates do not pay attention when others are speaking’, most of the focal students claimed that their classmates keep their mind on what others say. When I asked FS5 the exact reasons why he knew his classmates were paying attention, he gave me the following explanation:

FS5: Because everyone in class stared at the students who were speaking, so that I knew they were really listening.

On the contrary, some other students provided opposite views on this question item.

FS9: I always find my classmates chatting when someone is speaking.

FS6: I do not think my classmates concentrate when others are responding in class. It is very easy for them to be distracted.

There is not an acceptance among most of the focal students for the question item 32: ‘Many of my friendships with others have been made through this class’. As FS10 declared:

FS10: There are lots of subject lessons in school. I make friends through all of them, not only English lessons.

8.2.2 The factors in association with the interpersonal relationship with teachers

The question items 21, 23, 24, 26, 28, 31, and 33 are linked with the focal subjects’ perceptions of their teacher’s support in class. Half the students disagreed with the question item 23 (I feel pressure if I do not respond to the teacher’s questions in class). Most focal subjects agreed with the question items 24 (our English teacher is supportive), 26 (our English teacher has a good sense of humour), and 28 (our teacher does not interrupt students when they are speaking) and all of them assented to the question items 21 (our teacher often encourages us to speak in class), 31 (our teacher respects what we say), and 33 (our teacher praises students very often).

All of the focal students believed that their English teacher encourages them to practice speaking in class (the question item 21).

FS7: Yes. She tells us that we should speak more in class. More speaking practices, better English competence. She also encourages us to read aloud the texts, not only recite them.

Among 12 focal subjects, six of them disagreed with the question item 23 and they insisted that they do not feel pressure if they do not respond to the teacher's question in class.

FS9: No. I do not feel pressure.

I: What does your teacher do when you cannot provide the answer?

FS9: She asks other more able students.

I: Do you feel bad about that?

FS9: No, not at all.

The other half of the questionnaire respondents, on the other hand, expressed that they are humiliated and under heavy pressure, if they cannot provide the expected answers.

The large majority of focal students felt their teachers are very supportive (the question item 24). Only FS12 had different opinions.

FS12: I do not understand this question. What do you mean by 'supportive'?

I: It could be in any occasions in which you feel rapport from your teacher regarding your English learning and speaking.

FS12: Oh, yes. She supports my language learning all the time. She is very nice and patient. Oh, there is an exception. She does not give me enough time to consider after posing questions. I cannot figure out the answers in time. I am quite frustrated in these situations.

The situation mentioned by FS12 is demonstrated in the following excerpt:

Excerpt 55:

1 TD: If you have a chance to go to Chiufen, what do you expect to see, FS12?

2 FS12: ...

- 3 TD: Have you been there? It is a beautiful city, isn't it? What kind of
 4 interesting things have you ever seen? As I know, there are many
 5 interesting things and gift shops there. Have you ever been to any stores?
 6 FS12: ...
 7 TD: What kind of stores do you like most?
 8 FS12: ...
 9 TD: What kind of stores do you like most? Do you like all of them? Say
 10 something.
 11 FS12: ...

In these question-answer sequences, it can be found that Teacher D posed a series of questions at the same time in the lines 3-6 and 10-11, and she did not wait for enough time for the learner to utter the replies. Insufficient wait-time after questioning practices might be a reason why the students keep quiet in class. The similar findings were also identified in the learners' oral responses to the question item 28: 'our teacher does not interrupt students when they are speaking'. Both FS2 (from Teacher A's class) and FS4 (from Teacher B's class) described that their teachers indeed interrupted students by giving respondents little time to respond.

FS4: When I am speaking, my teacher disturbs me sometimes, since my teacher tries to give me clues to answer her questions, she says a lot immediately after her questions. I know she does not really mean to interrupt, but the interruption makes me distracted.

Regarding the question item 26: 'our English teacher has a good sense of humor', almost all subjects assented to this statement. Only FS6 did not think his teacher is humorous.

FS6: She is serious and strict to our studies. She seldom smiles. Everyone will be quiet when she is not in a good mood.

In addition, all of the focal subjects achieved agreement on the statements that 'our teacher respects what we say' (Question Item 31) and 'our teacher praises students very often' (Question Item 33).

From the above results of the questionnaire, I found students in general thought their teacher and peers support them a lot in class. However, according to my observations, most students in class tended to be quiet and passive and when being asked about

‘generally speaking, I think the class makes me feel comfortable to speak’ (the question item 34), the responses among the focal subjects are incompatible. If the classroom atmosphere is comfortable and conducive and their peers and teachers support them as they said, why are the students whom I observed still so reticent and reluctant to speak in class? In order to explore other contributing factors, I also examine the interview data from the subject teachers to find out the other reasons why the students are not active in teacher-student verbal exchanges from teachers’ perspectives.

8.2.3 Teachers’ perceptions and explanations of student reticence

Through pre/post-observation and stimulated recall interviews with four teacher subjects, there are some reasons the teacher believed influenced learners’ verbal contribution most in class.

System of homeroom teacher in school

The homeroom and homeroom teacher systems in Taiwan are different from those in other countries. I rephrase and summarize the definitions from the on-line Wiki encyclopedia (Wikipedia, 2008) and the descriptions in order to give a clear understanding of the specific Taiwanese homeroom system and homeroom teacher culture.

A homeroom in Taiwan is a classroom where students meet every day to be checked for attendance and receive school bulletins. Students do not often move between classes for different lessons and most of the time the students from the same homeroom stay together. Students are expected to work on tasks in their homeroom, including cleaning, studying, day duty, and competitive events between different homerooms. Homeroom classes are often reshuffled between years, changing their compositions (Wikipedia, 2008).

A homeroom teacher in secondary school can be any kind of subject teacher who teaches to a number of classes, especially including her/his own homeroom class. In her/his homeroom class, she/he also monitors the lives of homeroom students quite closely (Chiu, 2005). Usually, a homeroom teacher stays with her/his own class longer than other subject teachers and the interaction types between a homeroom teacher and

students in Taiwan encompass punishment, explanations, admonishment and so forth (Lee, 2006).

According Teacher A's reports, that is because her roles of a homeroom teacher and an English subject teacher cause learner reticence in her class.

TA: I am both the homeroom and English subject teacher in Class A. Compared with other subject teachers, the students cared about my concerns and feelings. They are nervous especially when I am in the classroom. They are afraid of me. When I teach in other teaching classes, for other students, I am just a English teacher, a teacher of a subject, and only students' own English proficiency will influence their responding behaviors. However, when I teach in Class A, my presence influences students' mood and feelings. I am not only their English teacher. I am their homeroom teacher who monitors their non-academic behaviours and their lives in and outside the classroom. These students would think carefully before they speak or respond. They are much more passive in class.

Not only Teacher A believed that the homeroom teacher system exerted an influence on learners' verbal participation but also Teacher B and C had similar perceptions and comments.

I: Does my presence cause any differences regarding learners' responding behaviours?

TB: No. The students are passive since I am the homeroom teacher for this class. They are influenced by me not you. They are anxious. They are afraid of me.

Teacher C even expressed that this is because Class C is not her homeroom class and she knows Class C is much more outgoing than her homeroom class so that she is much more willing to allow me to observe Class C.

I: As I know, you got two classes to teach this semester, one is your homeroom class and the other is your teaching class. Class C is your teaching class. Why did you choose Class C to be observed and studied?

TC: Class C is very outgoing. However, if they are lectured by their homeroom teacher, I bet they would be quiet. Every school year, I lecture two classes,

one homeroom class and one teaching class. The students in a homeroom class are frightened by their homeroom teacher. I do not mean these students dislike their homeroom teacher, but they stand in awe of their homeroom teacher.

I: Can you explain that for me?

TC: I mean in my homeroom class, I usually give my homeroom students admonitory talks. In addition to English lessons, I also spend more time dealing with my homeroom students' non-academic matters and lecturing them with admonitory talks. My homeroom students cannot be relaxed in front of me. This is a psychological factor or, you can also say, this is the specific phenomenon of our Taiwanese homeroom culture. No matter how hard I try to show my affinity to my homeroom students, it never works, but it is effective in my teaching class. The students in my teaching class (Class C) says whatever they want to say and they even make fun of me, but this will not happen in my homeroom class, unless I nominated them to speak.

In Lee's (2006) studies, based on classroom observations, he concludes that when a teacher both plays the roles of a homeroom teacher and a English subject teacher in Taiwan, he or she needs to spend lots of time dealing with class affairs in English lessons for her homeroom students, causing the procedures of teaching not to continue. The English courses are taught in a hurry and the didactic instruction is employed very often. Under this kind of situation, the character of the interaction between the home teacher and students is the teacher leads students initiatively and students' classroom participation is passive.

Interpersonal relationships among students

According to Liu (1989, cited in Tsui, 1996), the anxiety scores of students whose English had been rated as 'poor' were much higher than the scores of those whose English was assessed as 'good'. However, this does not mean that students with higher English competence have little anxiety (Tsui, 1996). As Allwright and Bailey (1991) point put, more able students are anxious since they feel themselves to stand out from their peers and this might influence their interpersonal relationships with others. To avoid this, they either hesitate and give short answers (Wu, 1991) or keep silent and withdraw from the classroom interaction with the teacher, because they are inhibited by the 'maxim of modesty' in the classroom (Tsui, 1996).

In Class A, there are three selected focal students, FS1, FS2, and FS13 (since the interview data of FS3 were deleted by accident, the extra FS13 interview data were used for analysis. See details in the Methodology section). Teacher A made comments on these students' English ability:

TA: For FS1, he is the best student in all classes in Year 2 in this school. The English ability of FS2 is of the inter-mediate level, but she is good in Class A. Compared with FS1 and FS2, FS13 is not good. However, based on my observation, she made progress gradually.

FS1 in class A is a more able student. When being asked about the question, 'how often do you usually speak and respond in class?', he provided me with the following answers:

FS1: Our teacher nominates respondents, so that I do not speak a lot. If I volunteer answers, my classmates will think I am very snobbish.

I: Snobbish?

FS1: Yes. They think I am bragging about my English ability.

His opinion is supported by the English teacher, Teacher A.

TA: FS1 seldom responds voluntarily or speaks frequently in class. His ability makes his classmates jealous. In fact, this is a very common situation in our class. The more able students are very quiet in class and they try to avoid standing out from their peers.

I: But, the other two focal students, FS2 and FS13 do not think so.

TA: You know, FS2 is one of the students who are very jealous of FS1.

I: You cannot be serious.

TA: FS2 is very, very jealous of FS1. I am serious.

I: How do you know? How do you know that?

TA: She (FS2) told me by herself in person. I think her jealousy is from the bottom of her heart. In year 1, I am just their English subject teacher. FS2's jealousy is not strong. However, in Year 2, I am both the English and homeroom teacher for Class A. The situation changed soon. FS1 is hard working and he used to come to ask me questions in the breaks and I also try my best to help him. FS2 saw everything and she thought I treated FS1 better than her. FS2 thinks FS1 gets more concern and support from me.

- I: But FS2 did not mention these in her interview.
- TA: Because she is not very familiar with you.
- I: Do you think the students like FS2 influence the more able students' responding behaviours deeply?
- TA: Yes. Definitely. That's a pity. More able students do not speak since they are afraid of being outstanding; while less able students keep silent due to their lower English proficiency.

Similar descriptions were also found in Teacher B's interview data.

- I: Do you know the reason why the students in your class are very quiet and seldom respond voluntarily?
- TB: It is probably related to our culture. If some students are too active and talkative, they will be hated by others. I feel interpersonal relationships influenced their speaking and responding ability very much. No one likes to speak too much or responds to teacher's questions frequently, since he does not want to be so outstanding in class. This is the universal phenomenon in school in Taiwan. That's what we call the 'golden mean'.

The concept of the 'golden mean' is from the Confucian legacies. Even an individual who can be described as an able person must be self-restrained. The interpersonal relationship among individuals in a group is superior. Group harmony is sought through the golden mean, the guidance for a person's behaviours, which suggests your performances should be not too good. A compromise in a community rather than a confrontation is sought (O'Keefe and O'Keefe, 1997).

Other factors which teachers believe affecting learners' verbal action

In the interviews with the four subject teachers, I asked them what factors they think might improve students' responding behaviours. The subject teachers expressed that the mood of the teacher, proper rewards, and non-direct questions, rather than direct questions, were effective.

- TA: The mood of the teacher is the most important factor to influence students' responding behaviours. If I speak to the class, 'Hey guys, we are going to do the following exercise', in a very cheerful voice and in a rising intonation, the class will be very happy and talkative to get involved.

I know that, but unfortunately I am not always in a good mood in every moment in class.

TB: Non-direct questions works more effectively than direct questions. When I pose a question, if I do not select a particular student to respond, everyone seems to have something to say. However, when I actually choose certain student to speak, he or she will keep silent. Based on my teaching experience, if I would like to encourage students' participation in class, asking non-direct questions towards the whole class without choosing specific respondents is better.

The providing rewards leads to active students' verbal participation was also approved by Teacher C.

TC: When I added marks for them, they will be very happy to respond voluntarily.

I: Well, they are very pragmatic.

TC: Yes. Students are willing to respond when a reward is offered.

As mentioned earlier in the literature review, the problem of getting students to respond is particularly acute with Asian students who are, in general, considered to be more reserved and reticent (Kumaravadivelu, 2003). Taiwanese students' attitudes towards responding in class (e.g. they keep quiet since they prefer maintaining harmony and saving face) indeed are influenced by the Confucian culture and heritage, but as Stephens (1997) puts it, in seeking cultural explanations for insufficient interaction between learners and their mentor, there is a danger of resorting to over-generalization about culture issues. If we go over these sections which present the factors regarding learner responding behaviours in English classrooms in Taiwan again. It is found that the shortage of enough wait-time, teachers' uneven allocation of talk turns in dynamic classroom interaction with students (Excerpt 54), and specific Taiwanese socio-cultural factors (the homeroom teacher system and the drawing of lots (Excerpt 55)) all exerted influences on learner verbal participation. As Tudor (1998:319) affirms, "the reality of language teaching [and learning] emerges from a dynamic interaction of [individual and socio-cultural] rationalities, a process which is unique to each classroom and which can rarely be predicted in advance". Learner responding is a much more complex process not only due to the individual different attitudes which are socially structured in class, but also complicated classroom interaction between teachers and students and the socio-cultural background of all

participant speakers.

8.3 Summary of findings

The question items in the questionnaire regarding learners' attitudes towards the English role in Taiwanese society are the questions 1-3. Most of the focal students agreed with these question items and claimed that English is a universal communication tool to get in touch with people from other countries and receive up-to-date information and knowledge. Learning English also brings economic effects for the learners in Taiwan for promotion and career development. Most of the focal subjects had positive attitudes towards the role of the English language in Taiwan. However, based on my observations, I found the observed students from four subject classes were quiet and usually waited to be called upon by teachers, and they were not enthusiastic to take part in classroom activities.

Question items 5, 8, and 17, are related to learners' self-confidence in their English ability. When I designed these question items, I assumed students should agree with all of them because they are not confident in their spoken English, but the results are unexpected. Most of the focal students thought no matter whether their answers are correct or not, they will answer the teacher's questions because their teacher will correct their mistakes and this correction benefits them. When the teacher asks a question in class, more than half of the students stated that they prefer to respond to it. However, the other five students prefer not to respond. Their reasons include: avoiding the impression of seeking the limelight and the anxiety from high performance expectations. Among learners' responses to the question item 5, it is found that the drawing of lots employed by the teachers influenced learners' speaking and responding behaviours deeply in the four subject classes.

Through comparison, I found two students' responses to the question items 15 and 18 are inconsistent. It could be possible that the claim that they prefer volunteering answers than being nominated by the teacher may be just an expectation they expect themselves to do well and when they are really asked by the teacher, they will stay quiet and passive. To sum up the findings of the question items 5, 15, and 18, I also discovered different comments on the teachers' lottery. Some focal subjects thought it inhibits learners' freedom to get involved in classroom discourse, while some were willing to be called upon by the teachers' drawing lots because of their reluctance to speak.

When being asked about the question, 'I am more willing to speak in class if I am not the only person answering a question', half the subjects agreed. They reported that answering alone makes them uncomfortable. One student even expressed that when your classmates do not like talkative persons, you shouldn't break the rules.

Maintaining group harmony in classrooms is a potential factor which affects learners' verbal contribution. The majority of focal students, in their responses to the question item 7, stated that they feel more comfortable answering the teachers' questions when they do not have to do that in front of the whole class, since they care about others' opinions and they are afraid of making mistakes or losing face in front of their classmates. Clearly, in order to save face or avoid making errors, learners often hesitate to speak and stay silent in class. Also, most students do not agree with the question item 20. That is, they did not think when they respond in English, their classmates will think they are showing off.

Different from questions 4-8 and 15-20 above, which are related to individual learners' attitudes towards speaking and responding in class, the questions 21-34 aim to discover the possible contributing factors in association with the classroom interaction between the teacher and students in class. Based on my research findings from the questionnaire, most of the subjects believed that generally their classmates are very supportive and helpful, though a few of them did not understand what the abstract word, 'supportive', actually means. From the responses to the question item 27, I found not only students rely on the few more able students in class to respond to the teacher's questions, but also the teacher (Teacher C) has a tendency to select brighter students to provide expected answers. The teachers' intolerance of silence in class and uneven allocation of speaking turns might be factors why students were reticent. The majority of the focal subjects did not think their peers discourage others from appearing too confident and most of the focal students also reported that their classmates keep their mind on what others say in class. In addition, most focal subjects also claimed that their teachers are very supportive and encourage them to practice speaking in class. However, insufficient wait-time after a question was a problem for Teacher A, B and D, and this interruption in the question-answer exchanges might negatively influence the verbal participation on the part of learners.

In teachers' reports, two major factors were indicated, the system of homeroom teacher in school and interpersonal relationships among students. Teachers A, B, and C all claimed that being a homeroom teacher or not in class is a very important factor which affects learner verbal contribution and behaviours in class. Homeroom teachers

in Taiwan monitor students' non-academic affairs and give students admonitory talks. Accordingly, students stand in awe of their homeroom teacher and they are not willing to speak in front of the homeroom teacher. The subject teachers also pointed out the brighter students keep passive since they are inhibited by 'the maxim of modesty' in the classroom while less able students also keep silent thanks to their lower English competence. Apart from these two factors, the teacher's mood, rewards, or question types all might exert an influence on learners' behaviours of responding. Taiwanese learners' responding is a complicated behaviour which is not only influenced by the cultural issues or individual differences, but also by the dynamic classroom interaction between teachers and students and the socio-cultural factors situated in Taiwanese classroom settings.

Chapter 9 Conclusion

In this concluding chapter, I review and discuss the findings of all previous chapters and attempt to provide a whole picture of the present research (Section 9.1). Section 9.2 presents some important issues which need to be explained. Section 9.3 points out the implications of the present research and suggestions for further research.

9.1 Summary and discussion of research findings

The present research examined teacher questioning behaviours in English as a foreign language (EFL) classroom settings in Taiwan with a major socio-cultural approach. Although progress has been made in our understanding of teachers' classroom questions from the extensive language research studies grounded in the process-product, quantitative paradigm, there is need for research that takes a more comprehensive and in-depth look at the role of questioning in EFL classes. This study, therefore, emphasized the interactional functions of teacher elicitations. Collaborative dialogue (Swain, 2000), in the form of verbal exchanges between a teacher and students, benefits learners' mental processing and language development. Also, this research not only discussed how questioning reflects a teacher's instructional goals but also it explored the learners' verbal contribution in response to teachers' questions, and the factors that might cause Taiwanese learners' passivity and reticence in classrooms, so as to uncover the connections between teacher questioning and instructional objectives and learners' learning.

The five research questions were generated after my extensive literature reviews. For the first research question: **What kind of learning opportunities does teacher questioning generate in the classroom?** I was triggered by Hsu's (2001) research which interprets classroom questioning in the discourse contexts and provides complete accounts of the purposes, effects, and functions of classroom questions and, most importantly, a socio-cultural perspective for data analysis and interpretation. Based on the qualitative analysis of classroom talk, Polio and Duff (1994) and Liu et al. (2004) list the generated functions of the native language in classrooms, after careful consideration of classroom discourse and participants' reports. Accordingly, the second research question appears — **When and why do the teachers employ code-switching strategies in their classroom questioning?** Polio and Duff (1990) and Rolin-lanziti and Brownlie (2002) suggest that it is necessary to undertake

calculations and to understand the distribution of use of the native language and the target language. In response to their suggestions, I present the use of these two languages in the present study. McCormick (1997) conducted a research study in ESL classrooms based on Vygotsky's socio-cultural theory and discovered a strong relationship between the teaching and learning goals and the use of questions on the part of the teacher. Inspired by McCormick's research, the third research question occurs—**What are the teachers' teaching and learning goals in English language teaching? How do both target- language and native-language questions assist the teachers with the achievement of these goals?** Teacher questioning elicits learners' responses which obligate them to make contributions to classroom interaction (Ellis, 1992). However, the research on learners' response is circumscribed in the quantitative paradigm where it is conducted by counting the number of words learners produce. The current research would aim to enrich our knowledge about learners' native language use. I followed and referred to three research studies (Brooks and Donato, 1994; Anton and DiCamilla, 1998; Swain and Lapkin, 2000) and believed that learners' use of L1 is an important semiotic tool for their language development and mental processing. This led to the fourth research question: **How do the learners respond to the teachers' questions? Do they respond in English or their native language? Does the use of the native language help their English language learning?** Triggered by Hsu's (2001) research project, I investigated whether learners' language proficiency or perception of classroom climate might influence learners' responding and questioning behaviours. The research reported here aimed to explore more contributing reasons in Taiwanese classroom settings, and, therefore, the fifth research question is – **Which other factors might influence the learners' responding behaviours in the classrooms?**

The present study is a classroom-centred / multiple-case research, and it mainly adopted a data-driven, qualitative research design together with supplementary quantitative numeric analyses (for research question two and research question three) to discover how teachers' questioning practices contributed to the opportunities for learners' verbal participation, cognitive processing, and language development in four EFL classrooms in Taiwan. The data were collected in the second semester of the academic year 2006. Multiple data were collected from three major research tools: classroom observation, interviewing, and the questionnaire. Prior to the research, the informed consent of all participants was sought. In order to seek parents' support, I employed passive consent in place of active consent after taking specific Taiwanese social and cultural factors into consideration. I collected 24 recordings of classroom observation, and twenty of them were used. In addition to audio- taping, I took field

notes during every observation and asked teachers to comment using the journal entry formats I designed for them so as to understand the classroom contexts and their teaching and learning goals for every class session. Three kinds of interviews were carried out with four teachers. Pre-/post-observation interview and stimulated recall interviews were all conducted once for each participant teacher. Twelve focal students were selected to complete a questionnaire and I also undertook subsequent interviews with them individually, to elicit further clarifications and explanations of their written responses on their questionnaires. The content-units and discourse/conversation analyses (Hsu, 2001) were adopted as major methods to analyze all of the transcribed excerpts of classroom verbal interaction between teacher and students.

The findings of the five research questions can be found in Chapters 4, 5, 6, 7, and 8 respectively. In Chapter 4, there are five generated functions of teacher questions which were identified after I studied the classroom transcribed data several times. They are: Comprehending teacher questions, helping students generate answers, assisting learners with producing comprehensible output, transmitting and testing learners' knowledge, and semiotically mediating and scaffolding learners' language development.

Although the research question two is 'when and why do the teachers employ code-switching strategies in their classroom questioning?', I also counted how much English and Mandarin language were used in class to provide the readers of the thesis with an understanding of the distribution of both languages in my observed classes. The subject teachers made use of English language in varying amounts, from as little as 5% (Teacher B) to as much as 77% (Teacher D). In the following contexts, Teachers A, B, C (and D in her post-quiz activities) were observed to switch from Mandarin to English in their solicitations: text reading and teaching, getting English responses from the students, and giving instructions related to the classroom tasks. On the other hand, in some cases, Teachers D and A (in her reading activities), switched from English to the native code for some specific purposes: giving grammar instruction, requesting meaning clarifications from the students, and providing Mandarin subtitle translation. In their interviews with me, Teacher A claimed her English questions contributed to the elicitation of learner English verbal responses in class A; Teacher B believed that her Mandarin questions triggered learners' interest in text learning; Teacher C used Mandarin questions for providing her life experience. Different from the other subject teachers, Teacher D emphasized the long-term teaching and learning goals and insisted on using the target language all the time, and made little use of Mandarin in class.

Through the data from the pre-/post-observation interviews, stimulated recall interviews and journal entry formats, I identified teachers' course goals and language skill/ sub-language skill goals. Assisting the students with passing the JUEE is a universal course goal for Teachers A, B, and C. Teachers A and B also claimed that they expected their Year 2 students to pass the GEPT before they upgrade to Year 3. Significantly different from other participant teachers, Teacher D preferred to facilitate both comprehension and comprehensibility on the part of students. That is, she emphasized the improvement of students' speaking and listening abilities. For the language skill and sub-language skill goals, Teacher A believed that reading, grammar, and writing are three major teaching and learning goals for her; Teacher B preferred to enrich the amount of the passive vocabulary and reading competence of the learners; Teacher C stated that reading ability is mainly focused on her language teaching; Teacher D tried to facilitate learners' listening and speaking abilities as much as she could. However, due to the discrepancy between what I observed and what the teachers stated, only some of the data were taken for further analyses. I only analyzed scaffolding functions of teacher questions during reading and grammar activities in Class A, a reading activity in Class B, and teacher-centred film discussion and student presentation activities in Class D. In Teacher A's reading activities, I found the teacher's English initiations, rephrasing, tag questions, and repetition of questions with R, RDF, MCFD, and DM functions (refer to Appendix U to see their definitions) helped her achieve her reading instructional goal and prevent learners from relying on their first language. On the other hand, the Mandarin initiations (the R function), decomposition (the RDF function), probing (the DM function), tag questions (the MCFD function), and comprehension checks (the FC function) also assisted Teacher A with achievement of the grammar goal which aims to acquaint the students with the needed grammar knowledge. In order to increase the learners' reading comprehension and minimize the possible sources of trouble caused by the limited target language proficiency of the learners, Teacher B tried to use Mandarin initiations (especially, display questions), rephrasing of questions, and probing with R, RDF, and DM functions in her reading activity. Also, it was found that the use of English referential questions (the R function) and rephrasing (the RDF function) and both Mandarin and English clarification requests (the DM function) is congruent with the speaking goal set by Teacher D. English/Mandarin tag questions (the MCFD function) and comprehension checks (the FC function), on the other hand, helped Teacher D achieve her teaching and learning goal regarding to learners' listening competence.

In Chapter seven, I present three frequently observed patterns of learners' utterances in response to teachers' questions. They are inaudible responses, one-word/ one-phrase

answers, and one-sentence utterances. In addition to these observed patterns, I also found that the learners preferred to speak only when they were spoken to and the subject teachers employed the drawing of lots to involve learners to take part in classroom conversation and to give everyone equal chances to speak up in class. In most cases, the students were observed reciprocating their teachers' language use, but I found a few exceptions. To some extent, the complexity of questions indeed influenced learners' language choices. The findings also revealed that the use of learners' mother tongue, Mandarin, was 'private speech', scaffolding learners' cognitive processing and English development. The three identified functions of L1 private speech are social, cognitive, and affective functions. L1 use on the part of learners can be one kind of affective tool and 'metatalk', and can help achieve 'intersubjectivity' between the teacher and students.

The contributing factors of learner reticence and passivity were identified. The findings from the question items 4-8 and 15-20 in the questionnaire are linked with learners' individual attitudes towards speaking and responding in class. For the learners in EFL classes in Taiwan, 'losing face', 'group harmony', and 'showing off' cannot be simply viewed as psychological factors or be attributed to Chinese Confucianism's principles, but because students care about others and try to behave properly in their community, the English class. These factors related to learners' attitudes towards speaking in class are socially-structured. When I designed my questionnaire items 21-32, I thought the classroom interaction in which the teacher and students are involved exerted some effects on learners' responding. However, based on my research outcomes, most students thought that their peers and teacher have positive influences on their verbal participation and the classroom climate is conducive for their learning. In order to find out more other factors, I referred to some of the data from interview with the subject teachers. I found the homeroom teacher system, interpersonal relationships among students, rewards, or the mood of the teacher might make learners either talkative or reticent.

Looking across the research questions

There are three important generated functions of teachers' questions in Chapter Four. They aim to help students comprehend the questions, figure out the answers to the question, and be able to produce an answer in the target language which is comprehensible to others. According to Hsu (2001), the extent to which the learners can comprehend the question might exert influences on learners' mental processing. When the mental processing is activated, it can affect the output that learners produce.

Furthermore, even if learners can comprehend the question, they may not be able to generate answers from their current linguistic resources. Then, for the learners who understand the teacher's question and can figure out the answer, their lack of proficiency in the target language might hinder them from producing target-like and comprehensible responses. These are three challenges which were pointed out by Hsu (2001). The subject teachers under study appeared to deploy many instructional strategies through their questioning behaviours and to help learners overcome these three challenges in answering teachers' questions. Learner utterances elicited while facing these challenges can be thought of as an 'informal diagnostic device' (Hsu, 2001) for teachers to gauge the effectiveness of their teaching and to make modifications accordingly. In other words, soliciting learner production via teacher questioning is not just an end in itself, that is, to enhance learners' English language learning. However, it is a means to an end through which teachers' pedagogical support can be provided to meet students' needs (Hsu, 2001).

Most of the observed functions of teachers' language choices in their questioning behaviours in the present research appeared to echo the findings of other language research studies. English language was used when the teachers were reading English texts, giving task instructions or getting English reciprocating responses from learners. In the contexts of the first two types, though it was simple and not authentic language use, I think the subject teachers tried to provide learners with invaluable target language input, since the teacher in Taiwan is most often the sole linguistic model for the students and therefore is their main source of English language. As an old saying goes, practice makes perfect. It is through the situations where the learners' reciprocating responses are elicited that they not only learned the linguistic knowledge of English but also obtain opportunities to practice using this language. Mandarin worked in teachers' utterances when they were giving grammar explanations, providing Mandarin caption-like translation, and requesting meaning clarifications from learners. The L1 use for explaining grammar saves time so that it is not surprising that most of the subject teachers were not enthusiastic about explaining grammar in the L2 (Macaro, 1997). For them, using the L1 for grammar gives efficiency of understanding by the students (Cook, 2001). The Mandarin caption-like translation strategy used by Teacher D is also called 'spot translation', in Critchley's (2008) term, which aims to provide a clear denotative meaning for a new phrase or vocabulary. Then, after that, Teacher D helped students develop this 'knowledge kernel' (Schmitt, 1995) through further communicative interaction in English (Critchley, 2008). When we discuss about the functions of teachers' L1 use, one important function is pointed out by many researchers—L1 use for compensating

communication breakdowns. That means that in order to make input comprehensible, teachers will make efforts to prevent communication problems, which were discussed in Chapter Four (Section 4.1). However, unlike other subject teachers, Teacher D not only clarified herself but also frequently requested learners to self-clarify in Mandarin. When she tried to comprehend what her students had said, two-way genuine information exchanges between her and her students, therefore, happened (Section 4.3). To sum up, the subject teachers had a tendency to give text teaching and to provide students with chances to do new language practices in English. They, also, preferred using Mandarin to explain grammar, to facilitate learners' understanding of a new expression (by Teacher D), and to encourage learners' ability of comprehensibility (by Teacher D).

Based on my observation, Teachers A, B, and C taught English with a focus on learning about language forms, not its use (Chern, 2002). The purpose of English instruction in Taiwan is to help students pass the examinations, the so-called 'teach-to-test' practice (Su, 2000, cited in Chern, 2002) or the 'washback' effect (Chen, 2002). In the present research, most teachers observed behaviours showed, and they reported that, the JUEE indeed influenced their teaching a lot and the focus of their instruction is placed on reading, grammar, and translation (Chern, 2002). Teacher D, on the other hand, used the target language extensively and her teaching and learning goals were focused on improving learners' listening and speaking abilities, but I cannot, therefore, conclude that her instructional practice is better than others since the present research did not conduct any work on assessing and comparing the learners' performance and achievement among these four classes. Teachers A, B, and C made a great deal of Mandarin language use in classes, partly because, as Polio and Duff (1994) stated, that for many non-native teachers whose own experience and exposure to the target foreign language are limited, it may be unreasonable to expect the exclusive use of the TL in their classroom (but supportive in-service teacher training is recommended- see Section 9.3), and partly because national language assessment may continue to focus on form instead of function and use, for which a exclusive L2 use method has limited application in the current educational contexts, as in Taiwan (Raschka et al., 2008). Besides, based on my research outcomes, there appeared no obvious evidence to support the declaration that restricting mother tongue use would improve learning efficiency, and most of the language switches employed by the subject teachers in these four classes were also purposefully related to pedagogical functions (Macaro, 2001).

Teachers A, B, and C and Teacher D had different teaching and learning objectives for

their students. However, the instructional goals of the subject teachers merely differed in the opportunities they created for learning. Teachers A, B, and C tried to transmit the linguistic knowledge of English and to match the current methods of assessment, while Teacher D effectively promoted reformulations and clarifications on the part of learners. For me, the most salient advantage of Teacher D's instructions is not her exclusive English use or her goals of the improvement of learners' comprehension and comprehensibility but her negotiation of meanings and linguistic forms with the students. Although Teachers A, B, and C employed many self-clarifying strategies in their questioning behaviours in class, these teachers only attempted to make sure their students understood what they had said, and they did not really make efforts to comprehend the responses or production made by their students. Most of the students' verbal contribution was inaudible or unclear in this research, but Teachers A, B, and C seemed to 'understand' what their students said (Musumeci, 1996) and provided them with subsequent feedback. Even though Teacher A explained that this might be because my standing position is in the back of the classroom, I strongly suspect that sometimes Teachers A, B, and C just guessed what their students produced without actually checking that they did in fact understand and let many students' mistakes pass without correction. Probably, this might be because they felt overwhelmed by their demanding curricula and examination schedules and had limited teaching hours, as they stated in their interviews. Given that such erroneous production in students' utterances caused no breakdown in communication with the teacher, the students might be not aware of the existence of errors since their attention is not drawn to the linguistic form of their output by teachers' negative feedback (Long et al., 1998). These language learners whose teachers in the present study had 'good ears' (Hsu, 2001) to comprehend their non-target-like or unrecognized answers obtained few opportunities to engage in the 'negotiation of meaning' and 'negotiation of form' (Lyster and Ranta, 1997; Liu and Zhao, 2004). On the contrary, most of the time, due to her requests for further clarification, Teacher D not only pushed the learners towards producing formally more correct and appropriate utterances (Van Den Branden, 1997), but also focused on resolving communication problems in an attempt to achieve mutual understanding with the learners.

Even if CLT has been implemented in Taiwan for several years, and English teachers should be concerned about providing students with an environment in which they can interact with others using the target language, most of the subject teachers still failed to do that. The possible reason to explain this failure is that the policy makers and entrance exam makers hold different teaching philosophies (Tsai and Lee, 2007). Taiwanese exam makers who are senior high school teachers lack information on the

new policy. When designing the exam, they might make subject judgments based on stereotypes about traditional teaching approaches instead of applying new concepts (Tsai and Lee, 2007). Also, in his earlier study, Olson (1981) reports that teachers often translate the new curriculum into their familiar practice and they often modify their instructions to reflect their own teaching objectives for students. Therefore, Teachers A, B, C adopted traditional teaching methods since, for them, the result of learners' tests is more important than providing rich English input to learners.

In the present research, it can be confirmed that there is a strong relationship between teachers' goals and their in-class questioning behaviours. Among all of the teacher-fronted reading, grammar, film discussion, and student presentation activities, questions were found scaffolding language learning and learner participation. R questions helped teachers involve learners into classroom interaction. DM, RDF, and FC questions were present to facilitate comprehensible classroom discourse, to simplify the tasks into sub-tasks, and to assess learners' on-line comprehension. MCFD questions drew the learners' attention to an important aspect of the task and demonstrated the ideal solution of the tasks or correct linguistic forms. No matter whether they were spoken in English or Mandarin (like Teacher A, who used exclusively Mandarin questions in her grammar activities and employed English questions in reading activities all the time), they were effective questions if the questions assisted the teachers with the achievement of their goals. The findings from Chapter Six suggest that to evaluate a question's effectiveness, considerations need to be given to the interaction of questions, the intended teaching objectives, and the responses. That is, when the teacher's questions prompted a response that achieved the intended teaching and learning goal, the question is considered effective (McCormick, 1997).

As the data show in Chapter 7, the learners talked aloud in their L1 private speech to themselves to self-direct the given tasks, to negotiate with their teachers, and to express their emotional condition. The data provided evidence of the emergence and strategic use of L1 private speech in collaborative interaction between the teacher and students in teacher-fronted situations (Ohta, 2001) while other similar research findings were reported from learner-to-learner interaction or peer learning tasks (Donato, 1994; Anton and DiCamilla, 1998; DiCamilla and Anton, 2004). Some people may think that in the four subject classes, the learners' competence is not at a good level thanks to the limited learners' language contribution (inaudible utterances or one-word responses). However, we cannot simply evaluate learners' verbal contribution by quantifying their language production. If we review the examples in

Chapter 7, we can find that it is through these simple and short verbal replies in response to the questions that the learners displayed their competence and the cognitive outcomes of learning in their social interaction with the teachers (Lee, 2006). As Doughty and Long (2003:4) stated “ [p]erformance data are inevitably the researchers’ mainstay, but understanding underlying competence, not the external verbal behavior that depends on that competence, is the ultimate goal”. Nevertheless, I agree that the limited target language use in their production might indeed prohibit them from developing ‘intercultural competence’ (Crawford, 2004) or ‘multilingual competence’ (Blyth, 1995). To cultivate interculturally competent language users, the curriculum design should emphasize using the language, not just learning about it (Crozt, 1996; Liu et al., 2004). Without a significant change in language use, the majority of learners will continue to complete their language studies with very limited experience and practice in the English language. The English ability of the citizens is important if Taiwan would wish to remain economically competitive (Savignon, 2003). At present, the improved proficiency outcomes deemed necessary for global citizenship might remain unachievable.

Socio-cultural theory had been criticized for its lack of emphasis on affective factors (Le, 2003). Although Vygotsky acknowledged the social contexts of external interactions, he paid little attention to the affective components of teaching and learning interactions (Goldstein, 1999, cited in Le, 2003). So far, there has not been research which investigates the affective factors of learners working in verbal exchanges with their teachers. The research outcomes from Chapter 8 have filled this gap in our understanding. The socially-constructed affective factors and the interrelationships between the individual learners and their mentor and peers all influence learners’ in-classroom participation. I provide some useful recommendations below and suggest that there are some methods all teachers can employ to encourage the verbal contribution of their class later in this section; except for the two factors, the drawing of lots and the homeroom teacher system, which might only happen in English classroom settings in Taiwan and may need further in-depth research to explore and to improve their use in class.

9.2 Final remarks

In their study of teacher questioning, Banbrook and Skehan (1990) point out one problem that faces many researchers when they undertake research on teacher-question studies - ‘What constitutes a question?’ which can be viewed as a

problem caused by the variety of forms and functions of a question. For instance, a question can take the form of an interrogative but function as a request (See the linguistic forms of questions in Section 2.2.1.2). In this research, no matter what its forms and functions, a question was identified as the teacher utterance which aims to elicit either verbal or non-verbal (e.g. nodding) feedback from learners. In addition, sometimes, I also encountered the problem of distinguishing the differences between display questions and referential questions. Within certain contexts, there is no clear boundary between display and referential types (Banbrook and Skehan, 1990).

Excerpt 56:

- 1 TB: 請大家看一下第五課。第 81 頁。請大家看一下這個阿伯。
- 2 Ss: 史蒂芬史匹柏。
- 3 TB: 我想請問同學，你想知道史蒂芬史匹柏的什麼？
- 4 Ss: @#\$\$%^&*
- 5 S1: 他的所有電影。
- 6 TB: Ok. Films.
- 7 S2: 基本資料。
- 8 TB: Ok. (Writes down 'personal information')
- 9 S3: 他怎麼成爲一個有名的導演。
- 10 TB: 好。

- 1 TB: Look at the lesson five。Page 81. Look at the man here.
- 2 Ss: Steven Spielberg.
- 3 TB: What do you want to know about Steven Spielberg?
- 4 Ss: @#\$\$%^&*
- 5 S1: His films
- 6 TB: Ok. Films.
- 7 S2: Personal information.
- 8 TB: Ok. (Writes down 'personal information')
- 9 S3: The way to success.
- 10 TB: Good.

When I was observing the class, I thought the teacher's speaking turn in the line 3 was a referential question. After the above verbal exchanges, the teacher and students started group work to discuss the content of the lesson five. Later, in Teacher B's stimulated recall interview with me for this class session, she explained these

exchanges above were the warm-ups for the following group activity and before this observed classroom session, Teacher B already had given an introduction to this famous film director to Class B in the previous class session which was not observed by me. I now identified the question in the line 3 as a display question, which was employed to remind the learners of the contents of the lesson. When I analyzed the question types, I tried my best to go over the contexts and teaching materials again and again and to refer to the data from different sources to triangulate my question categories and to eliminate possible misinterpretation of the types of teacher questions.

There is a close bond between the five research questions in the present study. For example, the first research question, ‘what kind of learning opportunities does teacher questioning generate in the classroom?’ can be interrelated with the research questions two and three to see if the language choices and the scaffolding functions of teachers’ solicitations affect learners’ cognitive and English development. Likewise, the last two research questions should be viewed as two dependent and inseparable issues. Furthermore, according to Carlsen (1991), during classroom interaction, the teacher and learners mutually influence each other in the social construction of a discourse context and it is impossible to exclude an analysis of teacher questions entirely from that of learner responding and vice versa (Hsu, 2001). That is, they should be placed and discussed together. However, I organized the outcomes of the five research questions in different chapters. The discussions of teachers’ questions were in the chapters Four, Five, and Six, while the descriptions of learners’ responding behaviours were illustrated in the chapters Seven and Eight. The purpose of dividing the research outcomes of teacher questions and learner responses is to present the data analyses in a much more meaningful and systematic manner as required by the degree of complexity manifested in my findings.

9.3 Implications

The implications from the present research are discussed from three perspectives, including theoretical, methodological, and pedagogical/educational implications. I tried to provide more useful information for future research, and some suggestions for language educators and teachers.

9.3.1 Theoretical implications

Based on my data analyses, socio-cultural theory is indeed a viable framework for investigating teacher classroom questioning practice. Teacher questions were observed as mediated linguistic tools through which scaffolded assistance can be provided to the learners especially in the two examples demonstrated in Section 4.5. Teachers' provided assistance was graduated, contingent, and dialogic (Aljaafreh and Lantolf, 1994). Unlike the previous input-output framework, by using socio-cultural theory, this research views language learners as participants involved in developmental processes, not only processors of input or producers of output (Ohta, 2000).

Instead of classifying questions into different types and counting them over lessons, I have shown that a valid understanding of a teacher's native-language and target-language questions can be achieved by employing the concept of scaffolding and by connecting them with teachers' instructional goals (see Chapter 6). This method is congruent with socio-cultural theory by which learning is a collaborative activity situated in the discursive interactions which take place in communities of practice (McCormick and Donato, 2000). That is, knowledge is a co-constructed process uniting individual and social processes mediated by language, the most notable semiotic tool. Teacher questions are one frequently invoked semiotic tool at a teacher's disposal for not only uniting these social and individual processes but also scaffolding learners' language learning and cognitive development (McCormick and Donato, 2000).

Recently many researchers started to claim that developing children and developing adults can expand their affective resources by appropriating the consequences of shared experience (John-Steiner, 2000, cited in Le, 2003) and that teachers can build upon students' prior experiences, then helping them to develop the confidence that generates competence. Teachers can instill the gift of confidence in their students by providing caring support (John-Steiner, 2000, cited in Le, 2003). This research extended our knowledge of the factors which made learners hold back from classroom participation. I believe that learners' attitudes towards speaking in class are socially-constructed and many complicated socio-cultural reasons all might lead to silence in teacher-student verbal exchanges. By employing the socio-cultural approach, these contributing factors were well described and explained in Chapter Eight.

Different from other research studies, this research did not quantify learners' target language production. Instead, through analysis of learners' L1 private speech, I found out that, as many socio-cultural theorists claim, L1 private speech which has cognitive, social, and affective functions (McCafferty, 1994), is an important mediational tool

fully available to learners. Under the framework of Vygotskian analysis, speaking on the part of learners in English classrooms in Taiwan creates a shared social reality and helps learners to carry out task-relevant actions (Donato, 1994).

Therefore, I will argue that socio-cultural theory in the present research successfully helped us to understand how teachers' questions assist their instructional goals and affect learners' language learning. On the one hand, teacher questions are one form of verbal assistance that arises in dialogue between the expert and novices in teacher-centered activities in the context of the language classroom. On the other hand, speaking is used by Taiwanese language learners as a strategic tool for constructing tasks, sharing situational definitions, and expressing emotional feelings.

According to Matsuoka and Evans (2004), in language-related literature, socio-cultural theory is predominant. However, there is another theoretical framework that can be employed to examine classroom language use as well—a “socio-cognitive approach” (Atkinson, 2002). Vygotsky explains that the thinking process is not found in the internal structure but in the interaction between thinking bodies—humans (Lantolf and Appel, 1994). The development of the human mind begins in the social environment and finishes at the individual level (Centeno-Cortes and Jimenez, 2004). Different from socio-cultural theory, for the socio-cognitive model, the cognitive and social are more closely related (Atkinson, 2002). As the findings shown in chapter 7, learners' L1 private speech is not only the talk learners address to themselves but also the talk which also influences the following social exchanges with their teacher. The social notion and cognitive notion should be more intertwined in language learning. As Atkinson (2002) states, our mind exists simultaneously both in the head and in the world. Further similar socio-cultural language research is encouraged by using the complementary socio-cognitive approach to examine a variety of types of classroom activities or collaborative learning. By utilizing both types of framework, foreign language research studies equipped with both social and cognitive factors will be realized.

9.3.2 Methodological implications for the future research and limitations of present study

The current research adopted a classroom-centred multiple-case research study. Three major research tools were employed—observation, interviewing, and the questionnaire, and also other sub-research tools, such as field notes, journal entry formats, were also

employed so as to make sure the research findings were triangulated. The methodological triangulation and the multiple use of qualitative and quantitative approaches, successfully shed some light on how teacher questioning assists and affects English language teaching and learning in classrooms in Taiwan. However, there is no perfect research in the world. I provide some issues and problems of the present research which, I think, can be improved. Future research can avoid similar mistakes or obtain useful suggestions and experience from this research.

In Section 6.1, because of the differences between my observed events and teachers' self-reports, some inconsistent data were not analyzed. Although the present study took a research period of 13 weeks, 24 recorded class samples did not precisely present the whole picture of what the participants are actually doing in their everyday classes. In addition, I usually visited each class once a week or sometimes twice a week based on teachers' preferences. That is, I did not collect data for analyzing the theoretical need to observe ongoing sequences of lessons, which has been demonstrated by a number of researchers. This research does not show an extensive background of accumulated meanings of language use by teachers and students over a sequence of lessons, and the researcher is in danger of collecting only some parts of events if the data are collected on single visits (Gibbons, 2003). I believe prolonged field work or observation is needed for further similar research studies since such intensive fieldwork or observation allows time for a researcher to become socialized into the community, to build trust with participants, to observe phenomena under investigation repeatedly and regularly in order to gain some idea as to its degree of typicality and its range of variation, to test analysis for accuracy (Dufon, 2002). However, the focus of this research was different—the detailed micro-tactics of interaction and I therefore had to place a realistic limit of the data collected and analyzed.

Additionally, in this research, I conducted three kinds of interviews with the teachers and the subsequent interview with 12 focal students respectively. After I completed all the transcription, I found some of the information given by the subjects was inconsistent. Taking the data from Teacher B's pre-/post-observation and stimulated recall interviews with me as examples, when being asked about the influences of her homeroom teacher role on learners' responding behaviors, her replies in these three interviews are different. The following exchanges were taken from the pre-observation interview.

I: Do you think your students are enthusiastic to participate in class?

TB: Yes. I am their homeroom teacher. It is much more easy for me to communicate with them.

However, later in her stimulated recall interview and post-observation interview with me, she provided different answers.

I: Did you experience that some students prefer not to provide the answer they know when they were called upon?

TB: Yes. They are much more nervous when responding to my questions since I am different from their subject teachers. I know them very well.

I: Does my presence cause any differences regarding learners' responding behaviours?

TB: No. The students are passive since I am the homeroom teacher. They are influenced by me not you. They are anxious. They are afraid of me.

Because Teacher B only expressed that her homeroom teacher role has positive effects on learners' responding behaviours once but revealed its negative influences in both stimulated recall and post-observation interviews, when I presented the findings in Section 8.2.3, I assumed Teacher B's role of a homeroom teacher might be the reason why the Class B were reticent and passive. The same inconsistency also happened with FS1's verbal responses on the question item 17 in the questionnaire mentioned in Chapter 8, which were opposite to his written ones. In my opinion, after data transcription, further research could improve the credibility of the research data through involving the subjects to look at the transcripts so as to prevent any possible incorrect interpretations of their opinions and views.

Another limitation of the present research is the 'cooperative-subject effect' (Kirk, 1982). "This source of bias is caused by the influence that a researcher's expectations and motives have on a subject's performance" (Hsu, 2001:38). Therefore, subjects often respond in the ways expected by the researcher. When conducting my research in the four subject classes, although I did not mention the exact topic and purposes of this research to the teachers, they tried to guess what I would like to know and to operate in coordination. For example, in Section 8.1, when being told that some focal students questioned about Teacher A's use of a lottery to select respondents, she provided the following accounts and comments:

TA: I though they might have equal opportunities to get involved in classroom

activities by drawing lots. Em, yes. I admitted that the students are right. It would advantage the students if they would respond voluntarily.

In the classroom session after the interview, she obviously made changes in her method of selection and asked for volunteers. The symbol, '((DR))', in the following excerpt stands for the non-verbal drawing behaviour (see other transcription conventions in Appendix S).

Excerpt 57:

1 TA: 'As soon as they realized the danger they were facing, the parents rushed
2 their five children into the cellar'. Rush into 是什麼意思? ((DR)) 6號, 等
3 一下, 有沒有人自願?
4 Ss: ...

1 TA: 'As soon as they realized the danger they were facing, the parents rushed
2 their five children into the cellar'. What does 'rush into' mean? ((DR))
3 Number 6. Wait. Any volunteers?
4 Ss: ...

In this excerpt, Teacher A already chose the student, Number 6, to respond in the line 5, but she immediately changed her mind and asked for volunteers. The phenomenon happened frequently in this observed classroom session.

The other salient example is in Chapter Five (Section 5.1), after my several prompts, Teacher C got the wrong impression that her language use would be examined and promised me she would use more English when I come to visit. Therefore, I assume that during the research period the teacher and student subjects might perform consciously and unconsciously, and bias the research outcomes to some extent (Hsu, 2001).

To enlarge our knowledge about learners' responding behaviours and the factors which make the students enthusiastic or reluctant in participating in classroom conversation, I employed the questionnaire and subsequent interviews with twelve focal students. However, when I analyzed the data, I still found the information I collected from the focal subjects was incomplete, so that not only the stimulated recall interviews with the teachers are required but also student subjects' own interpretations through the use

of stimulated recall are needed. An example can be found when FS12 reported that sometimes his teacher did not give him sufficient time to think before answering a question, and these events could be the reason why he holds back from responding a question. This phenomenon, in excerpt 55 (Section 8.2.2), in class was observed and identified by me, but if I had also designed the stimulated recall interviews with FS12 to allow him to view this identified excerpt and to comment on what was going on at that time, the present research could have yielded much deeper insights and clearer understanding of this occurrence. I recommend that further research should work on such an elucidation from students via stimulated recall which can provide valuable information that helps to triangulate and qualify the interpretations of data presented by the researcher.

Future research can examine the effects of teachers' questioning practices on learners' language learning from a long-term perspective. Most of the evidence in the excerpts and examples in the present study was 'on-line' learning (Hsu, 2001), as shown in observable immediate changes in learners' language development during classroom interaction. Further studies should examine whether such on-line language learning triggered by teachers' questioning can also have a lasting effect (Hsu, 2001).

In addition, there are some interesting research questions and issues which deserve future researchers to explore and to fill these gaps in our understanding of classroom educational knowledge. First of all, the focus of this research is limited to the language data produced during teacher-student whole-class interaction. More research needs to look at the conversation that generated during pair or group work in classrooms, since, in these contexts, students are able to use each other as resources to co-construct knowledge (Kobayashi and Kobayashi, 2004). That is, learners not only benefit from the assistance of experts—teachers but also benefit from the interaction with equal peers or even less capable peers (Van Lier, 1996). How learner-learner interaction influences their own language learning and cognitive development would be the next interesting research question. Second, if we believe that questions are essential to learning, we cannot neglect the importance of the role student questioning plays in the classrooms. According to Hsu (2001), via questions, learners state their current states of understanding to the teacher, which later helps the teacher make input modifications to meet the needs of individual learners. Also, students' questions are the evidence that they are highly engaged themselves in classroom participation (Morgan and Saxton, 1991). Questions posed by learners are worthy of more analysis and discussion. Future researchers can enrich our knowledge about learners' in-class solicitations by employing the combined Socio-cultural and Socio-cognitive approach suggested in the

present research. Third, I only focused on verbal exchanges between teacher-student conversations in the present research. However, communication does not only refer to verbal exchanges. Instead, it means the negotiation and exchanges of information between individuals through the use of both nonverbal and verbal symbols (Canale, 1983; Allen, 1999). In order to fully understand the relationship between negotiation and classroom language learning, similar research studies in the future can take both verbal and non-verbal modes of communication into consideration. In the chapter six, I listed the occasions where teachers used both first and target languages in their questioning behaviours. The fourth interesting research question that future researchers can further examine would be the effects of language switches in these occasions.

9.3.3 Pedagogical and educational implications

IRF exchange structure has been the target of some criticism in the communicative language teaching movement (Cullen, 2002). Lin (2000:75) states that the use of IRF pattern pushes learners “further away from any possibility of developing any interest in English as a language and culture that they can appropriate for their own communicative and socio-cultural purposes”. Nystrand’s study also points out that in IRF interaction the learners were less able to recall and understand the topic content than the students who were engaged in more participatory discussion. Nystrand (1997) argues that the IRF structure is a significant factor in creating inequalities in student opportunities to develop intellectually complicated language skills. However, in this research the teachers’ IRF mode of instruction was observed as a powerful pedagogical device for transmitting and constructing knowledge. The IRF pattern is extensively used in every classroom from kindergartens to universities. It is the mode most teachers adopt by default. What we are trying to do should be make it more effective. Many researchers point out that the third move of the circle, a F-move is much more crucial than a first initiative in the teacher-student conversation (Cullen, 2002; Burns and Myhill, 2004; Liou, 2009). The findings from Chapter Four demonstrate that teachers can create more opportunities for learners to promote their language performance and cognitive processing in problem-solving situations by engaging learners in the resolution of their own linguistic problems in classroom verbal exchanges. The method subject teachers used to involve the students into collaborative dialogue is teachers’ questioning in the follow-up moves of verbal exchanges. As excerpts show in Section 4.5, while guiding learners through problem-solving tasks, the subject teachers’ deployment of the questions in follow-up

moves (e.g. scaffolded inference questioning) can turn teacher-student exchanges into a collaborative effort and promote learner self-regulation and autonomy (Hsu, 2001). “[T]he teachers are observed to calibrate the appropriate level of scaffolded assistance that the student might need, and graduate the necessary help in their subsequent questions accordingly” (Hsu, 2001:190). If we neglect the importance of a teacher’s provided feedback after a student’s response, we cannot see the point of a teacher’s questions. Language educators and teachers should see a follow-up move as an obligatory and important feature of teacher-initiated classroom exchange. It is worth investigating further the pedagogical role it plays in supporting learning to see how teachers can use it to best effect (Cullen, 2002).

Based on the current teaching and learning conditions in Taiwan, including the prevalent instructional practice, the language assessment method, the teaching materials, and the teachers’ and students’ English abilities, except for a few classes like Class D, most English teachers in Taiwan still make use of a great deal of Mandarin in their instruction. Therefore, both pre-and in-service teacher training could usefully focus on strategies for optimal English and Mandarin use since, as shown in the present study, even experienced language teachers (e.g. Teacher D) sometimes switch codes for no reason, and as far as I know no such training is currently being offered. I also hope this research would inspire further discussion of the norms and standards that language teachers explicitly and implicitly present to our students to be emulated (Seidlitz, 2003). In addition, as the research findings show, some subject teachers (e.g. Teacher A and Teacher C) do not have good enough English proficiency to make use of English language more often. In-service teacher training to improve oral English proficiency would help. At the same time, assessment at both national and local levels could be revised to focus not only on language forms but also on practical use (Liu et al., 2004). Learner competence tests incorporating speaking and listening could be included in the exams.

Moreover, an important implication for teacher trainers is to call for language teachers’ attention to instructional goals. Questions are means for achieving the goal of action (Wells, 1996). This depends on teachers’ ability to be aware of, articulate, and enact their goals of action and then to use questions effectively (McCormick, 1997). Nevertheless, the awareness of one’s instructional goals and the ability to express them clearly is difficult since teachers are “not necessarily skilled at interpreting their teaching and considering their intentions” (Antonek, McCormick and Donato, 1997:17). When I conducted interviews with the subject teachers in the present study and asked them for their instructional goals, without the following prompts from me

(e.g. Can you explain your goals much more specifically? From the aspects of writing, reading, speaking, and listening language skills?), most subject teachers stated that their teaching and learning goals are the same as the goals of the JUEE or the GEPT, which are very abstract and ambiguous. A teacher is required to reflect upon her/his instructional goals. Thus, pre-/in-service training programmes which help teachers systematically reflect and state their teaching and learning goals would be valuable. Both novice and experienced teachers could benefit from conscious attention to their instructional objectives (McCormick, 1997) and the awareness of the connection between their goals and the questioning practices they employ to assist learners with language learning.

To encourage student classroom participation, here are some suggestions for language teachers. First of all, they could lengthen wait-time. This has been mentioned for a thousand times in language classroom research. It sounds like a cliché, but that is a real necessity. Take excerpt 55 in Section 8.2.2 as an example, after Teacher D posed a question to the student, if Teacher D could have slowed down the speed of her initiations and have explicitly told the students to take their time to think about their answers, this would increase the percentage of the learner's successful and correct responses. Moreover, so as to engender the learners' confidence in speaking English, teachers may get students to write down their English answers and check their answers with their peers before offering them to the whole class. By doing so, the learners can not only rehearse their thoughts to each other in a low-risk situation, but also they can feel they have the support of their peers. Then, when they put their answers forward, the interrelationship among them would no longer inhibit them from speaking up in class (Tsui, 1996). Additionally, for language teachers, establishing a good relationship with students is extremely important in order to creating a conducive learning environment. One way of achieving this is to engage learners in discussion about their feelings regarding anxiety and participation in class. Apart from talking to students in groups, teachers can talk to individual students at recess (Tsui, 1996). Talking sessions like this might be effective since they enable teachers and students to work together to deal with these affective factors directly. Finally, among all the factors which influenced learner verbal behaviours, the majority of focal students expressed that 'fear of making errors in front of the class' is a major reason that inhibited them from responding to teacher's questions. Language teachers could encourage their students to speak by helping them establish positive attitudes towards speaking errors (Hsu, 2001). Teachers can explain to students that making mistakes while speaking the language they are learning is acceptable not only because everyone makes mistakes, but also because that is an inevitable part of language learning.

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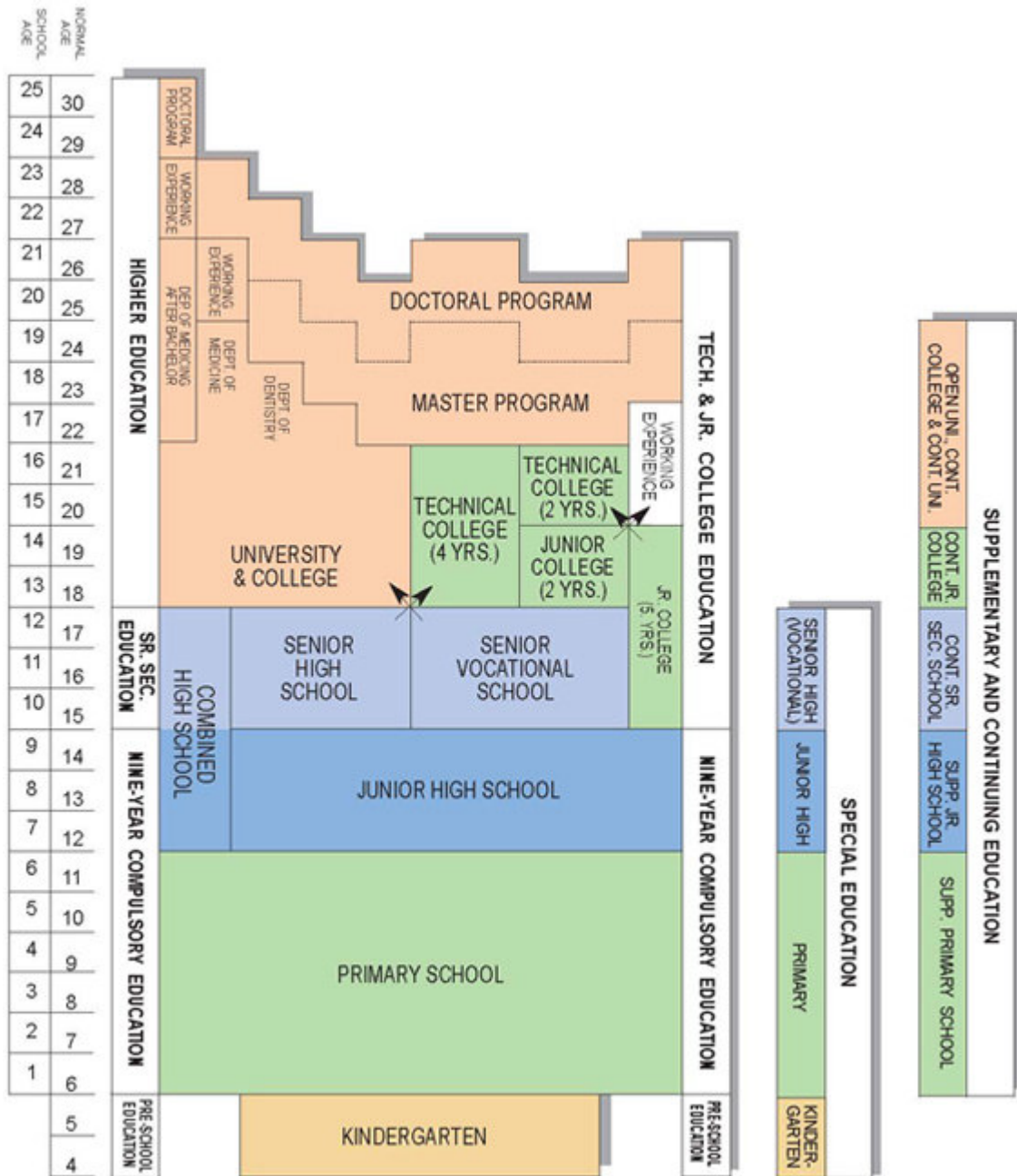
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Appendix A

The Current Educational System in Taiwan

The Current Educational System in Taiwan



Excerpt from Current School System, by the Ministry of Education. (2007c: 01).

Appendix B

Sample of English Examination in the JUEE

大學入學考試中心
九十八學年度學科能力測驗試題

英文考科

—作答注意事項—

考試時間：100 分鐘

題型題數：

第壹部分

- 選擇題共 56 題

第貳部分

- 非選擇題共 2 大題

作答方式：

- 選擇題用 2B 鉛筆在「答案卡」上作答，修正時應以橡皮擦拭，切勿使用修正液
- 非選擇題用黑色或藍色筆在「答案卷」上作答

選擇題答錯不倒扣

祝考試順利

第壹部分：選擇題（佔 72 分）

一、詞彙（佔 15 分）

說明：第1至15題，每題選出最適當的一個選項，標示在答案卡之「選擇題答案區」。
每題答對得1分，答錯不倒扣。

1. Steve's description of the place was so _____ that I could almost picture it in my mind.
(A) bitter (B) vivid (C) sensitive (D) courageous
2. When people feel uncomfortable or nervous, they may _____ their arms across their chests as if to protect themselves.
(A) toss (B) fold (C) veil (D) yield
3. The doors of these department stores slide open _____ when you approach them. You don't have to open them yourself.
(A) necessarily (B) diligently (C) automatically (D) intentionally
4. Nicole is a _____ language learner. Within a short period of time, she has developed a good command of Chinese and Japanese.
(A) convenient (B) popular (C) regular (D) brilliant
5. With rising oil prices, there is an increasing _____ for people to ride bicycles to work.
(A) permit (B) instrument (C) appearance (D) tendency
6. This information came from a very _____ source, so you don't have to worry about being cheated.
(A) reliable (B) flexible (C) clumsy (D) brutal
7. We hope that there will be no war in the world and that all people live in peace and _____ with each other.
(A) complaint (B) harmony (C) mission (D) texture
8. To have a full discussion of the issue, the committee spent a whole hour _____ their ideas at the meeting.
(A) depositing (B) exchanging (C) governing (D) interrupting
9. While adapting to western ways of living, many Asian immigrants in the US still try hard to _____ their own cultures and traditions.
(A) volunteer (B) scatter (C) preserve (D) motivate
10. With the worsening of global economic conditions, it seems wiser and more _____ to keep cash in the bank rather than to invest in the stock market.
(A) sensible (B) portable (C) explicit (D) anxious
11. Under the _____ of newly elected president Barack Obama, the US is expected to turn a new page in politics and economy.
(A) adoption (B) fragrance (C) identity (D) leadership
12. Rapid advancement in motor engineering makes it _____ possible to build a flying car in the near future.
(A) individually (B) narrowly (C) punctually (D) technically
13. When you take photos, you can move around to shoot the target object from different _____.
(A) moods (B) trends (C) angles (D) inputs
14. Students were asked to _____ or rewrite their compositions based on the teacher's comments.
(A) revise (B) resign (C) refresh (D) remind
15. Besides lung cancer, another _____ of smoking is wrinkles, a premature sign of aging.
(A) blessing (B) campaign (C) consequence (D) breakthrough

二、綜合測驗（佔15分）

說明：第16至30題，每題一個空格，請依文意選出最適當的一個選項，標示在答案卡之「選擇題答案區」。每題答對得1分，答錯不倒扣。

Art Fry was a researcher in the 3M Company. He was bothered by a small irritation every Sunday as he sang in the church choir. That is, after he 16 his pages in the hymn book with small bits of paper, the small pieces would invariably fall out all over the floor. One day, an idea 17 Art Fry. He remembered a kind of glue developed by a colleague that everyone thought 18 a failure because it did not stick very well. He then coated the glue on a paper sample and found that it was not only a good bookmark, but it was great for writing notes. It would stay in place 19 you wanted it to. Then you could remove it 20 damage. The resulting product was called the Post-it, one of 3M's most successful office products.

16. (A) marked (B) tore (C) served (D) took
17. (A) threw at (B) occurred to (C) looked down upon (D) came up with
18. (A) is (B) was (C) will be (D) has been
19. (A) despite that (B) rather than (C) as long as (D) no matter what
20. (A) into (B) out of (C) within (D) without

The pineapple, long a symbol of Hawaii, was not a native plant. 21, pineapples did not appear there until 1813. The pineapple was 22 found in Paraguay and in the southern part of Brazil. Natives planted the fruit across South and Central America and in the Caribbean region, 23 Christopher Columbus first found it. Columbus brought it, along with many other new things, back to Europe with him. From there, the tasty fruit 24 throughout other parts of civilization. It was carried on sailing ships around the world because it was found to help prevent scurvy, a disease that often 25 sailors on long voyages. It was at the end of one of these long voyages that the pineapple came to Hawaii to stay.

21. (A) For example (B) In fact (C) As a result (D) Little by little
22. (A) nearly (B) recently (C) originally (D) shortly
23. (A) that (B) what (C) which (D) where
24. (A) spread (B) to spread (C) should spread (D) will spread
25. (A) bothered (B) contacted (C) suffered (D) wounded

The Paralympics are Olympic-style games for athletes with a disability. They were organized for the first time in Rome in 1960. In Toronto in 1976, the idea of putting together different disability groups 26 sports competitions was born. Today, the Paralympics are sports events for athletes from six different disability groups. They emphasize the participants' athletic achievements 27 their physical disability. The games have grown in size gradually. The number of athletes 28 in the Summer Paralympic Games has increased from 400 athletes from 23 countries in 1960 to 3,806 athletes from 136 countries in 2004.

The Paralympic Games have always been held in the same year as the Olympic Games. Since the Seoul 1988 Paralympic Games and the Albertville 1992 Winter Paralympic Games, they have also 29 in the

same city as the Olympics. On June 19, 2001, an agreement was signed between the International Olympic Committee and the International Paralympics Committee to keep this 30 in the future. From the 2012 bid onwards, the city chosen to host the Olympic Games will also host the Paralympics.

26. (A) for (B) with (C) as (D) on
27. (A) in terms of (B) instead of (C) at the risk of (D) at the cost of
28. (A) participate (B) participated (C) participating (D) to participate
29. (A) taken turns (B) taken place (C) taken off (D) taken over
30. (A) piece (B) deadline (C) date (D) practice

三、文意選填（佔10分）

說明：第31至40題，每題一個空格，請依文意在文章後所提供的 (A) 到 (J) 選項中分別選出最適當者，並將其英文字母代號標示在答案卡之「選擇題答案區」。每題答對得1分，答錯不倒扣。

Familiar fables can be narrated differently or extended in interesting and humorous ways. The end of the famous fable of “The Tortoise and the Hare” is well known to all: the tortoise wins the race against the hare. The moral lesson is that slow and steady wins the race. We all have grown up with this popular version, but the 31 fable can be extended with different twists. At the request of the hare, a second race is 32 and this time, the hare runs without taking a rest and wins. The moral lesson is that 33 and consistent will always beat slow and steady. Then it is the tortoise that 34 the hare to a third race along a different route in which there is a river just before the final destination. This time, the tortoise wins the race because the hare cannot swim. The moral lesson is “First 35 your strengths, and then change the playing field to suit them.”

But the story continues. Both 36 know their own drawbacks and limitations very well; therefore, they jointly decide to have one last race—not to decide who the winner or loser is, but just for their own pleasure and satisfaction. The two 37 as a team. Firstly, the hare carries the tortoise on its back to the river. Then, the tortoise carries the hare and swims to the 38 bank of the river. Lastly, the hare carries the tortoise again on its back. Thus they reach the 39 line together. Overall, many moral lessons from the last match are highlighted. The most obvious one is the importance of 40. Another moral which also means a great deal is “competition against situations rather than against rivals.”

- (A) arranged (B) challenges (C) competitors (D) cooperate (E) fast
(F) finishing (G) identify (H) opposite (I) same (J) teamwork

四、閱讀測驗（佔32分）

說明：第41至56題，每題請分別根據各篇文章之文意選出最適當的一個選項，標示在答案卡之「選擇題答案區」。每題答對得2分，答錯不倒扣。

41-44 為題組

To Whom It May Concern:

Your address was forwarded to us by Why Bother Magazine. All of us here think The International Institute of Not Doing Much is the best organization in the world. You know how to avoid unnecessary activities!

We closely followed the advice in your article. First, we replaced all our telephones with carrier pigeons. Simply removing the jingle of telephones and replacing them with the pleasant sounds of birds has had a remarkable effect on everyone. Besides, birds are cheaper than telephone service. After all, we are a business. We have to think of the bottom line. As a side benefit, the birds also fertilize the lawn outside the new employee sauna.

Next, we sold the computers off to Stab, Grab, Grit, and Nasty, a firm of lawyers nearby. Our electricity bill went way down. Big savings! The boss is impressed. We have completely embraced paper technology. Now that we all use pencils, doodling is on the increase, and the quality of pencilwomanship is impressive, as you can tell from my handwriting in this letter. By the way, if you can, please send this letter back to us. We can erase and reuse it. Just tie it to Maggie's leg and she'll know where to take it.

Now it's very calm and quiet here. You can notice the difference. No more loud chatter on the telephones! All we hear is the scratching of pencil on paper, the sound of pigeons, and the delivery of inter-office correspondence by paper airplane.

Wonderful! I've always wanted to work for an insurance company ever since I was a little girl. Now it's perfect.

*Sincerely yours,
Eleanor Lightly
Spokeswoman and Company Hair Stylist
ABC Activity Insurance: Insure against overdoing it*

41. Which of the following best describes the life the author is leading?
- (A) A simple, slow-paced life. (B) A life of hard work and security.
(C) A religious, peasant-like life. (D) A life away from paper and pencils.
42. Where is Eleanor's letter sent to?
- (A) Why Bother Magazine. (B) ABC Activity Insurance Company.
(C) Stab, Grab, Grit, and Nasty Law Firm. (D) The International Institute of Not Doing Much.
43. Which of the following is practiced in the author's company?
- (A) Replacing the manual work system with modern technology.
(B) Turning off lights in the daytime to save electricity.
(C) Recycling paper resources whenever possible.
(D) Buying birds and pets as company for the staff.
44. What is true about Maggie?
- (A) She works as a manager in the author's company.
(B) She sometimes helps fertilize the lawn outside the sauna.
(C) She often helps with inter-office correspondence using e-mail.
(D) Her handwriting has improved a lot after entering the company.

45-48 為題組

The Galápagos Islands are the Pacific island paradise where Darwin's theory of evolution was born. They are places filled with giant tree lizards, sandy beaches, and tropical plants. Now they will be famous for one more thing: the world's first green airport.

This group of islands off the coast of Ecuador has recently contracted Argentine Corporación America to manage the redevelopment of the airport on the island of Baltra. It is estimated that US\$20 million is needed to complete **the project** by 2009. The new development has several important features: use of wind and solar energy, passive heating and cooling systems, as well as concrete runways in place of asphalt, which has a greater carbon footprint during its production cycle. This new development couldn't be coming at a better time for the Galápagos, which were added to an environmental "danger list" in 2007.

Pacific islands like the Galápagos, Easter Island, and Tahiti, have economies that are driven almost completely by tourism. However, some people think these are "unsustainable models of development." The number of visitors to the Galápagos rose more than 250% from 1990 to 2006, while the number of commercial flights to the area rose 193% from 2001 to 2006. These increases put great stress on the islands' resources and environment. Air travel is especially criticized for exhausting natural resources and causing environmental damage. Thus, efforts are being made to reduce the environmental impact of the tourism industry. The greening of airports is just one of these attempts.

45. What is this article mainly about?

- (A) The problems of Darwin's theory. (B) The background of building a green airport.
(C) The history of the Galápagos Islands. (D) The ease of transportation to the Pacific islands.

46. Where will the world's first green airport be built?

- (A) In Tahiti. (B) In Argentina. (C) In Baltra. (D) In the United States.

47. What is true about the Galápagos Islands?

- (A) They are located near Ecuador in the Pacific Ocean.
(B) They have had a great increase in population since 2001.
(C) They will invest US\$20 million to promote their tourism.
(D) They have become one of the most dangerous places in the world.

48. What does **the project** in the second paragraph refer to?

- (A) The plan to build a green airport. (B) The research on the production of solar energy.
(C) The task of calculating a carbon footprint. (D) The study on the exhaustion of natural resources.

49-52 為題組

According to popular folklore, many animals are smarter than they appear. Dogs bark before earthquakes; cattle predict rainfall by sitting on the ground. But cattle may have another hidden talent in telling which way is north.

Small animals such as mole rats living underground are known for the use of magnetism to navigate. Dr. Begall and her colleagues wanted to know whether larger mammals also have the ability to perceive magnetic fields. They investigated this possibility by studying images of thousands of cattle captured on Google Earth, a website that stitches together satellite photographs to produce an image of the Earth's surface.

Grazing animals are known to orient themselves in a way that minimizes wind chill from the north and

maximizes the warmth of the sun when they are cold. The researchers therefore had to study a lot of cows grazing in lots of different places at different times of day, in order to average out these factors and see whether cattle could act like compass needles.

The researchers concluded that cattle do generally orient themselves in a north-south direction. This north-south preference has also been noted in flies, termites and honeybees. But unfortunately, even the high resolution of Google Earth is not powerful enough to tell which end of the cow is its head, and which its tail. The researchers were therefore unable to answer their research questions of whether cattle prefer to look north or south, and whether that differs in the northern and southern hemispheres.

49. What is the article mainly about?
- (A) The usefulness of Google Earth. (B) Whether cattle are superior to other animals.
(C) Animals' sensitivity to natural disasters. (D) Whether cattle behave like compass needles.
50. Which of the following factors might affect Dr. Begall's research result?
- (A) Rainfall. (B) Earthquakes. (C) Location. (D) Cost.
51. What is the major finding of Dr. Begall's study?
- (A) Cattle point north-south. (B) Magnetism can't be studied scientifically.
(C) Animals prefer to look south. (D) Google Earth is a reliable research tool.
52. Why couldn't the researchers get the answer to their research questions?
- (A) Many cattle in their study were sitting on the ground.
(B) The cattle constantly change directions to avoid wind chill.
(C) There is magnetic difference between the two hemispheres.
(D) They couldn't tell a cow's head from its tail in the satellite pictures.

53-56 為題組

Children normally have a distrust of new foods. But it's the parents' job to serve a variety of foods and expose their children to healthy dieting habits.

Some simple strategies can help even the pickiest eater learn to like a more varied diet. First of all, you don't have to send children out of the kitchen. With hot stoves, boiling water and sharp knives at hand, it is understandable that parents don't want children in the kitchen when they're making dinner. But studies suggest that involving children in meal preparation is an important first step in getting them to try new foods. In one study, nearly 600 children from kindergarten to sixth grade took part in a nutrition curriculum intended to get them to eat more vegetables and whole grains. The researchers found that children who had cooked their own foods were more likely to eat those foods in the cafeteria than children who had not. Kids don't usually like radishes, but if kids cut them up and put them in the salad, they will love the dish.

Another strategy is not to diet in front of your children. Kids are tuned into their parents' eating preferences and are far more likely to try foods if they see their mother or father eating them. Given this powerful effect, parents who are trying to lose weight should be careful of how their dieting habits can influence a child's perceptions about food and healthful eating. In one study of 5-year-old girls about dieting, one child noted that dieting involved drinking chocolate milkshakes, because her mother was using Slim-Fast drinks. Another child said dieting meant "you fix food but you don't eat it." By exposing young children to

erratic dieting habits, parents may be putting them at risk for eating disorders.

53. What is the main purpose of this article?

- (A) To explain what causes children's eating disorder.
- (B) To teach children about the meal preparation process.
- (C) To advocate the importance of vegetables and whole grains.
- (D) To inform parents how they can help their children like varied foods.

54. Which of the following groups will eat more balanced meals?

- (A) The children who help cook food.
- (B) The children whose parents are on a diet.
- (C) The children who do not love radishes.
- (D) The children whose parents work in a cafeteria.

55. What does **erratic** in the last sentence imply?

- (A) Obvious.
- (B) Healthful.
- (C) Dishonest.
- (D) Inappropriate.

56. Which of the following is true about Slim-Fast?

- (A) It is children's favorite food.
- (B) It looks like a chocolate milkshake.
- (C) It contains a variety of vegetables.
- (D) It is intended for slim, fast people.

第貳部分：非選擇題（佔 28 分）

一、翻譯題（佔 8 分）

說明：1.請將以下兩題中文譯成正確而通順達意的英文，並將答案寫在「答案卷」上。
2.請依序作答，並標明題號，**每題僅能譯成一個英文句子**。每題4分，共8分。

1. 大部分學生不習慣自己解決問題，他們總是期待老師提供標準答案。
2. 除了用功讀書獲取知識外，學生也應該培養獨立思考的能力。

二、英文作文（佔 20 分）

說明：1.依提示在「答案卷」上寫一篇英文作文。
2.文長120個單詞(words)左右。

提示：

請根據右方圖片的場景，描述整個事件發生的前因後果。文章請分兩段，第一段說明之前發生了什麼事情，並根據圖片內容描述現在的狀況；第二段請合理說明接下來可能會發生什麼事，或者未來該做些什麼。



Appendix C

Framework of Field Notes

Appendix A
Field notes Part I (Teacher Behaviours)

Date of Observation:

Class of Observation:

Name of Teacher:

Questioning behaviours which influence learner verbal participation.	
Language choices on the questioning behaviours	

Field notes Part II (Student behaviours)

Responding to teacher questions	
Language choices on the responding behaviours	

Appendix D

Questions for the Pre-observation Semi-structured Interview

Questions for the Pre-observation Semi-structured Interview

1. Personal information:

1.1 Educational background

Name and age. Which Uni. and subject, for example, English language teaching or English literature, did you study? Where did you take the teacher training programme? What did you learn from this training programme? How does this experience influence your current English language teaching? How do you feel about your proficiency in spoken English? Do you feel as comfortable speaking English as you do using Mandarin, when you teach? Please tell me something about what you believe is the best way to learn and teach English?

1.2 Work experience

How long have you been teaching English in this school? Before being a teacher in this school, have you taught English in other schools? Where and for how long? Do you think such teaching experience influences your teaching? Do you have experience other than English teaching experience? What was the role of English in these jobs?

1.3 Teaching situation in the current school

What position do you have in your current school? How many classes are you teaching now? How many working hours per week? Apart from teaching, do you also do another job in this school, such as a student daily tutor or an administrator? What characterizes your current class?

2. Teaching procedures and English teaching goals

What do you perceive the National Curriculum for English language teaching in secondary schools? What is the English teaching policy in this school? Do these perceptions fit with your preparation for lessons (need more probing questions)? More specifically, what are your English teaching goals including reading, writing, listening, speaking, grammar, vocabulary, culture and other aspects. How do you achieve them? (Need more probing questions).

3. How to improve student listening and speaking competence

As I know, the government and parents now would like to enhance student listening and speaking abilities. Do you have any strategies to help students with that? How do you improve these two abilities through whole-class discussion?

4. Language choices

When do you use English in class and why? When do you think using English is most effective? When do you usually use Mandarin in class and why? Do you plan occasions to use Mandarin? When do you think using Mandarin is helpful to your students?

5. Perception of student participation and ability

Can you describe the general performance of students in your class in terms of their learning attitudes towards class activities and whole-classroom discussion? How do you think about the vocal participation of your students? Are you pleased with their responding behaviours? Do you perceive some students to be less vocal than others? How do you encourage less vocal students to talk?

Finally, is there anything else that you would like to add?

(Question items adapted from Thamraksa, 1997; McCormick, 1997; Hsu, 2001; Liu, Ahin, Baek, and Han, 2004)

Appendix E

Questions for the Post-observation Semi-structured Interview

Questions for the Post-observation Semi-structured Interview

(These questions will be revised based on the results of observations and pre-observation and stimulated recall interviews)

1. English Teaching goals

I would like to ask you some questions about the lessons that you taught during past ten weeks. For you, your teaching goals are..... Did you achieve them?

2. Improving listening and speaking abilities

As I know the government and parents would like to enhance student listening and speaking abilities, how did you help your students with that? Did you succeed?

2. Language choices

As I observed, I found you use a) Mandarin/English, b) mostly English, c) mostly Mandarin. Why did you do so? Did you think these Mandarin/English languages helped you to achieve your teaching goals?

3. Perception of student performances and attitudes

What was the attitude of the students in your current class towards whole-class discussion? In general, were you happy with the responding behaviours of your class? In particular, were you happy with the responding behaviours of the focal students? Did you think what factors might influence their responding behaviours?

I have observed your lessons for a long time, and I found you used a lot of questions in the class. Could you please tell me what types of questions you used and why did you use these questions in your class? Did you think these questions help you to achieve your teaching goals?

Finally, is there anything else that you would like to add?

(Question items adapted from McCormick, 1997; Hsu, 2001; Liu, Ahin, Baek, and Han, 2004)

Appendix F

Questions for the Stimulated Recall Interview

Questions for the Stimulated Recall Interview

General questions (The following questions based on naturally occurring class events):

- 1. What are your teaching goals for this lesson?**
- 2. I have observed you use English/ Mandarin a lot in this class. Did you think what role English played in this lesson? Did you think what role Mandarin played in this lesson?**
- 3. I saw you use Mandarin here. Could you please tell me why you asked this question in Mandarin? Do you think it help you to achieve your goals?**
- 4. I saw you use English here. Why did you use this English question? Did you use this to achieve your goals?**
- 5. In general, were you happy with the responding behaviours of your class?**
- 6. In particular, were you happy with the responding behaviours of the focal students?**
- 7. Do you think what factors might influence student responding behaviours?**

Other questions based on natural occurring events which the researcher thinks they are important.

Appendix G

Questionnaire

Questionnaire

Student ID code:	Teacher ID code:
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Personal information

Name of school:	Class:	Grade:
-----------------	--------	--------

Questionnaire statements

Please note that you are very welcome to leave your comments when you are answering the following questions.

1. I like to study English, because English is important.

Strongly agree Agree Disagree Strongly disagree

Comment: _____

2. I think English is an international language and it has an important place in the modern world.

Strongly agree Agree Disagree Strongly disagree

Comment: _____

3. Speaking English helps me get a good job in the future.

Strongly agree Agree Disagree Strongly disagree

Comment: _____

4. I think that enthusiastic participation will contribute to my own English language learning.

Strongly agree Agree Disagree Strongly disagree

Comment: _____

5. I am more willing to respond in class if I prepare in advance.

Strongly agree Agree Disagree Strongly disagree

Comment: _____

6. I am more willing to speak in class if I am not the only person answering a question.

Strongly agree Agree Disagree Strongly disagree

Comment: _____

7. I feel more comfortable answering the teacher's questions when I do not have

to do it in front of the whole class.

Strongly agree Agree Disagree Strongly disagree

Comment: _____

8. I would not want to answer a question because I may not be correct.

Strongly agree Agree Disagree Strongly disagree

Comment: _____

9. I think that responding to questions in English can help me learn English better.

Strongly agree Agree Disagree Strongly disagree

Comment: _____

10. I do not want to answer in English because I think my English is not good enough.

Strongly agree Agree Disagree Strongly disagree

Comment: _____

11. I feel more comfortable when answering teacher's questions in Mandarin.

Strongly agree Agree Disagree Strongly disagree

Comment:

12. When the teacher asks questions in English, I would prefer answering in English.

Strongly agree Agree Disagree Strongly disagree

Comment:

13. When the teacher asks questions in Mandarin, I would prefer answering in Mandarin.

Strongly agree Agree Disagree Strongly disagree

Comment:

14. When I feel that the teacher's question is difficult, I prefer answering in Mandarin rather than English.

Strongly agree Agree Disagree Strongly disagree

Comment:

15. I prefer being called upon by the teacher rather than volunteering an answer.

Strongly agree Agree Disagree Strongly disagree

Comment: _____

16. I feel less comfortable about answering teacher questions in front of my classmates whom I know very well.

Strongly agree Agree Disagree Strongly disagree

Comment: _____

17. When the teacher asks a question in class, I prefer not to respond to it even if I know the answer.

Strongly agree Agree Disagree Strongly disagree

Comment: _____

18. Usually, I do not respond to questions during whole-class discussion unless I am called upon.

Strongly agree Agree Disagree Strongly disagree

Comment: _____

19. If I often volunteer to answer questions, my classmates may think I am showing off.

Strongly agree Agree Disagree Strongly disagree

Comment:

20. If I answer questions in English, my classmates may think I am showing off.

Strongly agree Agree Disagree Strongly disagree

Comment:

21. Our teacher often encourages us to speak in class.

Strongly agree Agree Disagree Strongly disagree

Comment:

22. My classmates in this class do not respect each other's views.

Strongly agree Agree Disagree Strongly disagree

Comment:

23. I feel pressure if I do not respond to the teacher's questions in class.

Strongly agree Agree Disagree Strongly disagree

Comment: _____

24. Our English teacher is supportive.

Strongly agree Agree Disagree Strongly disagree

Comment: _____

25. My classmates are supportive of their peers in this class.

Strongly agree Agree Disagree Strongly disagree

Comment: _____

26. Our English teacher has a good sense of humour.

Strongly agree Agree Disagree Strongly disagree

Comment: _____

27. When responding to the teacher's questions, my classmates depend on a few students to do it.

Strongly agree **Agree** **Disagree** **Strongly disagree**

Comment: _____

28. Our teacher does not interrupt students when they are speaking.

Strongly agree **Agree** **Disagree** **Strongly disagree**

Comment: _____

—

29. My classmates discourage others from appearing too confident.

Strongly agree **Agree** **Disagree** **Strongly disagree**

Comment: _____

30. My classmates do not pay attention when others are speaking.

Strongly agree **Agree** **Disagree** **Strongly disagree**

Comment: _____

31. Our teacher respects what we say.

Strongly agree Agree Disagree Strongly disagree

Comment:

32. Many of my friendships with others have been made through this class.

Strongly agree Agree Disagree Strongly disagree

Comment:

33. Our teacher praises students very often.

Strongly agree Agree Disagree Strongly disagree

Comment:

34. Generally speaking, I think this class makes me feel comfortable to speak.

Strongly agree Agree Disagree Strongly disagree

Comment:

Questionnaire items adapted from Young, 1990; Fassinger, 1995; Hsu, 2001).

Appendix H

Questions for the Semi-structured Interview with the students

Questions for the Semi-structured Interview with the students

1. **Do you like to study English?**
2. **Do you think learning English is important? Why do you think so?**
3. **How often do you usually speak in class now?**
4. **How often do you answer questions in class?**
5. **How do you feel about speaking in class?**
6. **How do you feel about responding to questions in class?**
7. **How do you feel about your spoken English?**
8. **How do you feel about responding in English?**
9. **How do you feel about responding in Mandarin?**
10. **What do you think is a good way to improve your English, especially, speaking?**
11. **If your teacher asks for volunteers to answer questions in front of the class, are you willing to help?**

Other questions are based on focal students' answers in the questionnaire.

(Question items modified and selected from Hsu, 2001)

Appendix I

Parent Consent Form

Parent Consent Form

Dear Parent,

I am asking you to give your consent to your child's participation in the present study. The purpose of this research is to explore some specific issues in classroom conversation between the teacher and students. Video-taping will be used to record the lessons in your child's classroom during ten weeks (once every two weeks). The teacher and the children will be tape-recorded when they talk and interact in each lesson. It could happen that your child will be selected as a focal student for further interviews. Video-recording and audio-recording will be used for interviews and observations. Names of children will be removed from these.

From the aspect of an ethical approach to the present study, I assure you that:

- children will complete their school activities in the usual way and **this study will not interfere with your child's learning in school.**
- **You may withdraw your child from this study at any time.** If you decide to do so, the recordings and transcripts of your child will not be used, and this will not influence your child's grades and assessment.
- All tapes will be used for research or educational purposes only. This follows the ethical guidelines of the University of Warwick.

If you have further questions about this study, please do not hesitate to contact me by the means provided as bellows. Otherwise, you may speak to me when I am visiting your child's school. Additionally, if you are interested in the results of this study, you are welcome to contact me and obtain the research findings.

If you are willing to let your child participate in this study, please sign the statement below and return it to your child's teacher. Thank you very much for your support. I am very appreciative of your willingness and cooperation.

Researcher:

Miss Fang-yu Chang

0939-992-932 (Mobile)

(02) 2783-0972 (Home)

Email: fychang0127@yahoo.com.tw

Informed consent form

I have read and understood the information mentioned above and I am willing for my child to participate in the study which is conducted by the researcher, Fang-yu Chang. I understand that my child's identity will remain confidential and that I may withdraw my child from the study at any time.

Signed:

Printed name:

Relationship to child:

Date:

(This consent form adapted from Davidson (in preparation and modified in Lankshear and Knobel, 2004)).

Appendix J

Student Consent Form

Student Consent Form

You are invited to participate in the research study conducted by Fang-yu Chang. The purpose of this research is to explore some specific issues in classroom conversation between the teacher and students. In this research, you, the teacher, and other students will be video-recorded once in every two weeks during the ten-week research period. You may be or may be not selected as a focal student to complete the questionnaire and to be interviewed. If you are, the interview will be audio-taped by the researcher for further analysis.

If you have consented to participate in this study, please understand **your participation is voluntary and you have the right to withdraw your participation at any time without penalty.** Your privacy will be maintained in both published and written data in the study. This follows the ethical guidelines of the University of Warwick.

If you have further questions about this study, please do not hesitate to contact me using the information below. In addition, if you are interested in the results of this study, you are welcome to contact me for the research findings.

If you are willing to be involved in this study, please sign the statement below and return it to your teacher. Thank you very much indeed. I am very appreciative of your help and cooperation.

Researcher:
Miss Fang-yu Chang
1F, No., 59, Jhongnan St.,
Taipei, 115
0939-992-932 (Mobile)

Informed consent form

I have read and understood the information mentioned above and I am willing to participate in the study which is conducted by the researcher, Fang-yu Chang. I understand that my identity will be kept confidential and that I may withdraw my participation from the study at any time.

Signed:

Printed name:

Date:

(This student consent form adapted from Forero (2001 cited, in Lankshear and Knobel, 2004))

Appendix K

Teacher Consent Form

Teacher consent form

You are being invited to participate in the research study conducted by the researcher, Fang-yu Chang. The purpose of this study aims to explore certain issues in classroom conversation between the teacher and students. If you participate, your lessons will be observed and video-taped over ten weeks (one lesson every two weeks) After some lessons, the researcher will interview you to discuss certain issues or events which happened in the classroom. In addition, two interviews will be conducted before and at the end of ten weeks. All interviews will be audio-recorded for further analysis.

Participation in this study will not be linked to the assessment of your teaching performance and will not impact on your professional career. Please note that the participation in this study is voluntary. You are free to withdraw from participation at any time. If you decide to do so, your decision will not cause any loss of benefits. If you choose to participate, all information will be kept confidential. All data obtained from this study are for educational purposes only and only the researcher has the right to have access to them. This follows the ethical guidelines of the University of Warwick.

If you have any questions about the information above or queries about the present study, you may discuss them with the researcher through the information below. Besides, if you are interested in the results of this study, you are very welcome to contact the researcher and get the research findings.

If you are willing to take part in this study, please sign the statement below. Thank you very much indeed for your support.

Researcher:

Miss Fang-yu Chang

0939-992-932 (Mobile)

(02) 27830972 (Home)

Email: fychang0127@yahoo.com.tw

Informed consent form

I have read and understood the information mentioned above and I am willing to participate in the study which is conducted by the researcher, Fang-yu Chang. I understand that my identity will be kept confidential and that I may withdraw my participation from the study at any time.

Signature:

Printed name:

Date:

(This consent form adapted from Thamraksa, 1997)

Appendix L

Parent Consent Form—Chinese Version

家長通知書

親愛的家長您好：

此份通知書在於通知您，您的孩子正參與本人的研究計畫。此次研究的目的是在於探索一些老師與學生課堂互動有關的議題。您孩子就讀的學校與她(他)的英文任課老師已同意參與。老師與學生在英語課堂上的所有活動會視需求錄影存檔作為此研究的資料，此研究活動共進行五次，每兩個星期一次。如果您的孩子同意，他(她)有可能會被選擇為特定的研究對象並且被要求完成問卷調查以及接受本人的訪談。訪談的內容經學生同意後會錄音存檔，您孩子的身分與個人資料會絕對保密。

基於對參與學生有所保護，本人可以擔保下列幾項條件：

1. 此研究絕對不會影響您的孩子在學校的日常學習活動。
2. 所有的蒐集資料純粹只供教育與研究用途，得到的研究結果將對於台灣高中英語教學有所貢獻。

假若您有任何的疑問，您可以透過下面資訊與我連絡。非常謝謝您對台灣英語教學的貢獻並祝您闔家平安、事事順心。

研究員：張芳瑜

英國瑞汀大學 (The University of Reading) 碩士

英國華威大學 (The University of Warwick) 教育系博士研究生

研究領域：教室互動、第二外語教學、質性研究。

行動電話：0939-992-932

Appendix M

Student Consent Form—Chinese Version

學生同意書

親愛的同學你好：

此份同意書在邀請你參與研究人員--張芳瑜的博士研究。此研究的目的是在於探索一些老師與學生教室互動的議題。在研究中，你與同學們及老師上課情況會被錄影存檔作為研究紀錄。每兩星期一次，一共五次。你可能會被挑選作為研究之特定對象，同時被要求完成問卷並且接受研究人員的訪談，訪談內容會被錄音以作為日後研究分析使用。

假使你同意參與，請你注意，**你有權利隨時停止參與此研究**，停止繼續參與研究並不會給你任何的懲罰，也不會影響你的課業成績。如果你同意參與，**你的個人資料也會被嚴格保密**，一律以匿名的方式在本研究中出現。

如果你有任何的問題，你可以透過下面的聯絡方式與我聯繫。日後你若對此研究研究結果有興趣，本人樂意提供此研究之結果及相關資料供你參考。

如果你願意參與此研究，請你簽署第二頁的同意書。非常謝謝你的參與與配合，祝你學業進步，身體健康。

研究員：張芳瑜

英國華威大學 (The University of Warwick) 教育系博士候選人

電話：(02) 2783-0972

行動電話：0939-992-932

同意表

我已經詳讀並了解前頁所描述的資訊，我願意參與研究員-- 張芳瑜的教育研究，我了解我的身分會完全被保密，我了解我有權利隨時停止參與這個研究計畫。

座號	姓名	座號	姓名	座號	姓名
1		15		29	
2		16		30	
3		17		31	
4		18		32	
5		19		33	
6		20		34	
7		21		35	
8		22		36	
9		23		37	
10		24		38	
11		25		39	
12		26		40	
13		27		41	
14		28		42	

Appendix N

Chinese Version of Questionnaire

問卷調查

學生 ID 代號:	英文老師 ID 代號:
-----------	-------------

個人資料

學校:	班級:	年級:
-----	-----	-----

請注意，當勾選答案時，請你寫下你個人的理由與意見。

問題項目 (以英文課為例)

1. 我喜歡學習英文，因為我覺得英文很重要。

非常同意 同意 不同意 非常不同意

理由與意見：

2. 我認為英文是一個國際語言，而且在現今社會中有著重要的地位。

非常同意 同意 不同意 非常不同意

理由與意見：

3. 能夠說英文能幫助我在未來找到好工作。

非常同意 同意 不同意 非常不同意

理由與意見：

4. 我認為熱烈地參與課堂活動是幫助我學習英文的好辦法。

非常同意 同意 不同意 非常不同意

理由與意見：

5. 如果我有事先的準備，我比較願意在課堂上回答老師的問題。

非常同意 同意 不同意 非常不同意

理由與意見：

6. 如果我不是唯一一位回答老師問題的學生，我會比較願意在課堂上發言。

非常同意 同意 不同意 非常不同意

理由與意見：

7. 當我不需要當著教室裡所有的人發言時，我會比較自在地回答老師的問題。

非常同意 同意 不同意 非常不同意

理由與意見：

8. 我不想去回答老師的問題，因為我的答案有可能是錯的。

非常同意 同意 不同意 非常不同意

理由與意見：

9. 我認為用英文回答老師的問題，可以幫助我學好英文。

非常同意 同意 不同意 非常不同意

理由與意見：

10. 我不想用英文回答老師的問題，因為我覺得我的英文不夠好。

非常同意 同意 不同意 非常不同意

理由與意見：

11. 當我用中文回答老師的問題時，我覺得比較自在。

非常同意 同意 不同意 非常不同意

理由與意見：

12. 當老師用英文問我問題時，我傾向用英文回答。

非常同意 同意 不同意 非常不同意

理由與意見：

13. 當老師用中文問我問題時，我傾向用中文回答。

非常同意 同意 不同意 非常不同意

理由與意見：

14. 當我覺得老師的問題很難時，我傾向用中文回答而不是用英文。

非常同意 同意 不同意 非常不同意

理由與意見：

15. 我傾向由老師點名回答問題，我自己並不喜歡主動回答。

非常同意 同意 不同意 非常不同意

理由與意見：

16. 在我非常熟悉的同學們面前，我回答老師的問題會覺得比較不自在。

非常同意 同意 不同意 非常不同意

理由與意見：

17. 當老師在課堂上發問時，即使我知道答案，我也傾向不回答老師的問題。

非常同意 同意 不同意 非常不同意

理由與意見：

18. 通常我不在全班同學面前主動回答老師的問題，除非老師點名要求我回答。

非常同意 同意 不同意 非常不同意

理由與意見：

19. 如果我常常主動回答老師的問題，我的同學會認為那是一種炫耀。

非常同意 同意 不同意 非常不同意

理由與意見：

20. 如果我用英文回答老師的問題，我的同學會認為我在賣弄英文。

非常同意 同意 不同意 非常不同意

理由與意見：

21. 我們老師經常鼓勵我們在課堂上發言。

非常同意 同意 不同意 非常不同意

理由與意見：

22. 我們班上的同學們並不尊重彼此發言的意見。

非常同意 同意 不同意 非常不同意

理由與意見：

23. 如果在課堂上我不回答老師的問題，我會覺得很有壓力。

非常同意 同意 不同意 非常不同意

理由與意見：

24. 我覺得老師很支持我們。

非常同意 同意 不同意 非常不同意

理由與意見：

25. 在課堂上，我的同學們會互相支持對方。

非常同意 同意 不同意 非常不同意

理由與意見：

26. 我的老師很有幽默感。

非常同意 同意 不同意 非常不同意

理由與意見：

27. 我的同學們倚賴少數幾位同學回答老師的問題。

非常同意 同意 不同意 非常不同意

理由與意見：

28. 當同學們在說話時，老師不會打斷他們。

非常同意 同意 不同意 非常不同意

理由與意見：

29. 同學們會一起勸阻那種在課堂上太過於有自信的同学。

非常同意 同意 不同意 非常不同意

理由與意見：

30. 當其他同學在課堂說話時，我的同學並不是很仔細地在聽。

非常同意 同意 不同意 非常不同意

理由與意見：

31. 我們老師很尊重我們的發言。

非常同意 同意 不同意 非常不同意

理由與意見：

32. 很多我跟同學之間的友誼是在這門英文課上所建立起來的。

非常同意 同意 不同意 非常不同意

理由與意見：

33. 我們英文老師經常讚美學生。

非常同意 同意 不同意 非常不同意

理由與意見：

34. 一般來說，我非常地有自信在這門英文課上說話。

非常同意 同意 不同意 非常不同意

理由與意見：

Appendix O

Three Steps of Data Translation

Three steps of translations of research data

In the current research, I followed three steps to translate research data I collected from Mandarin to English:

- a) In the first step, I transcribed the narrative Mandarin data verbatim.**
- b) In the second step, I did word-for-word translations for the transcribed texts.**
- c) In the final step, I presented the texts in good English.**

The following example came from the interview with FS2, the researcher was trying to elicit information about the first question (Do you like studying English?) in the interview.

The first step:

- I: 我現在先問你喔！你喜歡學習英文嗎？
- FS2: 就現在來講是還蠻喜歡的。
- I: 爲什麼？你可以告訴我原因嗎？
- FS2: 因爲就是從小就跟中文一樣接觸一點，所以久而久之就會習慣，就會看。久而久之就會進一步喜歡。
- I: 你是怎麼就從小就接觸英文？
- FS2: 就是很標準的被爸爸媽媽送到兒童美語去學。
- I: 從什麼時候開始學？
- FS2: 從，好像，恩，大班吧。
- I: 所以你英文應該很棒喔。
- FS2: 就我們班來講，算還蠻爛的。
- I: 爲什麼？
- FS2: 因爲我們班有一個超好的。你已經訪問過他了。然後我覺得自己的英文還是有個限度。
- I: 這樣子啊！可是你很喜歡，是因爲你從小就學，所以才喜歡。
- FS2: 恩。

The second step:

- I: I now first ask you X! You Like study English X?
- FS2: X present X X X quite like X.

- I: Why? You can tell me reason X?
- FS2: Because that is since young with Chinese a little bit contact, therefore gradually can get used to, will lean. Gradually will advanced contact.
- I: You are how X since young X contact English?
- FS2: That is very standardized X Dad Mum send to child English to study.
- I: Since when start learn English?
- FS2: Since, probably, um, big class.
- I: Therefore your English should very excellent X
- FS2: For our class XX, X very quite poor.
- I: Why?
- FS2: Because our class has one very good. You already interview him. Then I feel my English still limited.
- I: I see. But you like, is because you since young X learn, so like.
- FS2: Um.

'I' represented the researcher.

'X' presented some words that I cannot find equivalent English meaning.

The Third step:

- I: Now I am going to ask you questions. Do you like studying English?
- FS2: At present, I like it very much.
- I: Why? Can you tell me the reason?
- FS2: Because I have learned English for a long time like the way I have learned Mandarin Chinese since I was very young, therefore gradually I get used to it and eventually I like it.
- I: How did you start to learn it since you were young?
- FS2: I was sent to after-school English institutes by my parents, like other parents did for their kids.
- I: Since when?
- FS2: Since, probably, um, the last year in the nursery school.
- I: So, you must have a good command of English.
- FS2: In our class, My English is quite poor.
- I: Why?
- FS2: Because there is a very excellent student in our class. You already interviewed him. Then, I feel that my English competence is limited.
- I: I see. Anyway, you like English and this is because you have learned it for a long time since you were young.

Appendix P

Original Schedule of Data Collection

The original Schedule of Data Collection

Observations: *

Stimulated recall interviews: △

The questionnaire: ◎

Semi-structured interviews with focal students: ☆

Pre-observational semi-structured interviews (19/03/2007-23/03/2007)

Week/Date	Teacher A	Teacher B	Teacher C	Teacher D	Comment
1 26/03-30/03	*	*			Selecting focal students from A and B classes
2 02/04-06/04			*	*	Selecting focal students from C and D classes
3 09/04-13/04	*◎☆	*			Focal students from class A complete the questionnaire and are interviewed.
4 16/04-20/04		◎☆	*	*	Focal students from class B complete the questionnaire and are interviewed.
5 23/04-27/04	*△	*△			Stimulated recall interviews with teachers A and B after 48 hours of taping
6 30/04-04/05			*△	*△	Stimulated recall interviews with teachers A and B
7 07/05-11/05	*	*	◎☆		Focal students from class C complete the questionnaire and are interviewed.
8 14/05-18/05			*	*◎☆	Focal students from class D complete the questionnaire and are interviewed.
9 21/05-25/05	*△	*△			Stimulated recall interviews with teachers A and B
10 28/05-01/06			*△	*△	Stimulated recall interviews with teachers C and D

Post-observational semi-structured interviews (04/06-08/06)

Appendix Q

Timetable of Data Collection

Timetable of data collection (19/03/2007~08/06/2007)

Teacher A (TA): 褚老師

班級：二年級導師班

Focal student 1 (FS1): 周敏超

Focal student 2 (FS2): 張雅涵

Focal student 3 (FS3): 吳柏毅

Teacher B (TB): 吳老師

班級：二年級導師班

Focal student 4 (FS4): 王麗婷

Focal student 5 (FS5): 許喬智

Focal student 6 (FS6): 林諭聰

Teacher C (TC): 胡老師

班級：204 (教學班)

Focal student 7 (FS7): 怡君

Focal student 8 (FS8): Mark

Focal student 9 (FS9):

Teacher D (TD): 張老師

班級：二年級音樂班

Focal student 10 (FS10): 吳羿翰

Focal student 11 (FS11): 何敏慈

Focal student 12 (FS12):

Monday	Tuesday	Wednesday	Thursday	Friday
19/03 Pre-observation interview TA (11:30-12:30) Pre-observation interview TB (13:10- 14:10)	20/03	21/03	22/03 Pre-observational interview TC (11:30-12:30)	23/03
26/03 Questionnaire FS1 (09:10) Observation TA (09:10-10:00)	27/03 Interview part 2 FS1 (12:30)	28/03	29/03 Questionnaire FS7 (09:10) Observation TC (09:10-10:00)	30/03

Interview part 1 FS1 (12:30) Observation TB (13:00-13:50) Interview TB (14:00-)			Interview FS7 (12:30)	
02/04 Observation TA (09:10-10:00)	03/04	04/04	05/04	06/04
09/04 Pre-observation Interview TD (09:10:00)	10/04	11/04	12/04	13/04
16/04 Questionnaire FS8 (10:10) Observation TC (10:10-11:00)	17/04 Questionnaire FS2 (09:10) Observation TA (09:10-10:00) Observation TB (11:10-12:00) Interview FS2 (12:30)	18/04 Questionnaire FS10 (09:10) Observation TD (9:00-10:00) Interview FS10 (13:10-13:45) It is not convenient for students to be interviewed	19/04 Stimulated recall interview Source: 16/04 observation TC (11:00- 12:00) Interview FS8 (12:30)	20/04

		in the lunch break.		
23/04	24/04 Questionnaire FS3. FS4 (09:10) Observation TB (11:10-12:00) Interview cannot be held because of activities in the language lab.	25/04 Interview FS13 (12:00) Stimulated recall interview Source: 24/04 observation TB (15:15-15:45) Interview cannot be held because of activities in the language lab.	26/04 Questionnaire FS9 (10:10) Observation TC (10:00-11:00) Interview FS 9 (12:30)	27/04 Observation TD (10:00-11:00) Interview FS11 (13:10)
30/04 Observation TA (09:10-10:00) Interview FS4 (12:30) Data missed, do that again.	01/05	02/05 Interview FS3 (12:30) Stimulated recall interview Source: 30/04 observation TA (14:00)	03/05	04/05 Observation TD (10:00-11:00)

07/05 Observation TC (10:10:11:00)	08/05 Questionnaire FS5 (09:10) Observation TA (09:10-10:00) Observation TB (11:10-12:00) Interview part FS5 (12:30)	09/05	10/05	11/05
14/05 Questionnaire FS12 (10:00) Observation TD (11:00:12:00)	15/05	16/05	17/05	18/05 Stimulated recall interview Source: 14/05 observation TD (11:00-12:00)) Interview FS 12(12:00)

21/05 Observation TC (10:10:11:00)	22/05	23/05	24/05 Post-observation interview TC (11:00-12:00)	25/05
28/05	29/05 Questionnaire FS6 (11:10) Observation TB (11:10-12:00)	30/05 Interview FS6 (12:30) Post-observation interview TB (13:00-14:00) Post-observation interview TA (14:00-14:50)	31/05	01/06
04/06	05/06	06/06 Observation TD (9:10-10:00)	07/06	08/06 Post-observation TD (11:00-12:00)

Appendix R

Journal Entry Format

Journal Entrance Format

School:	Class:
Date:	Teacher ID:

What are your main goals for this lesson?

How did you achieve these goals?

Comments:

Appendix S

Transcription Conventions

Transcription conventions

TA:	teacher A teaches Class A in School A
TB:	teacher B teaches Class B in School A
TC:	teacher C teaches Class C in School B
TD:	teacher D teaches Class D in School C
S?:	unidentified student in Class.
Ss:	several or all students in Class
S1-n:	the order of the respondent students in an episode
FS1-FS3:	focal students 1-3 in Class A
FS4-FS6:	focal students 4-6 in Class B
FS7-FS9:	focal students 7-9 in Class C
FS10-FS12:	focal students 10-12 in Class D
(+)	a pause shorter than three seconds in utterances
(++)	a pause longer than three seconds in utterances
↗	rising intonation
...	silence
XXX	unintelligible
/sorry/	uncertain
(...)	omission
Bold	Increased volume
% ok %	decreased volume
my::	a lengthy preceding sound
@#%\$%^&*	many students speak at the same time
((LF))	laughter
((ND))	nodding
((DR))	drawings of lots
((PO))	pointing at the next speaker
(non-verbal)	Other non-verbal behaviours
'reading from texts'	Participants are reading a phrase or a sentence from the text or the things the teachers write down on the blackboard
<Give up>	transcriber's comment

Appendix T

Results of Questionnaire

Results of Questionnaire

These tables list the questionnaire items along with the responses from the focal subjects agreeing or disagreeing with each item (strongly agree=1, agree=2, disagree=3, and strongly disagree=4). The symbols “***” and “*” that appear in the last column indicate the degree of agreement which has been reached by all focal students or most of them on a particular item. “#” represents disagreement among the majority of focal students. In addition, those items that do not have any symbols in the last column represent the inconsistency among the responses of focal students.

** = All agree (all the responses are ‘1 = strongly agree’ and ‘2 = agree’)

* = Largely agree (more than a half of all the responses are ‘1 = strongly agree’ and ‘2 = agree’)

= Largely disagree (more than a half of all the responses are ‘3 = disagree’ and ‘4 = strongly disagree’)

Table T1: Results of the questionnaire on attitudes towards focal students' language use in class.

Item	Focal subjects												All
	FS1	FS2	FS4	FS5	FS6	FS7	FS8	FS9	FS10	FS11	FS12	FS13	
9. I think that responding to questions in English can help me learn English better.	1	2	1	2	2	2	1	2	2	1	2	1	**
10. I do not want to answer in English because I think my English is not good enough.	3	4	1	4	3	2	3	3	2	4	3	3	#
11. I feel more comfortable when answering teacher's questions in Mandarin.	2	3	1	1	2	2	2	2	1	3	2	1	*
12. When the teacher asks questions in English, I would prefer answering in English.	2	2	3	3	2	2	1	3	2	1	3	2	*
13. When the teacher asks questions in Mandarin, I would prefer answering in Mandarin.	2	2	1	1	2	2	3	2	1	4	2	3	*
14. When I feel that the teacher's question is difficult, I prefer answering in Mandarin rather than English.	3	2	1	1	2	2	3	2	1	4	2	2	*

Notes. 1=strongly agree, 2=agree, 3=disagree, 4=strongly agree. **=all agree, *=largely agree, #=largely disagree.

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Table T2: Results of the questionnaire on the factors related to learners' attitudes towards the role of English language and speaking and responding in class

Item	Focal subjects												All
	FS1	FS2	FS4	FS5	FS6	FS7	FS8	FS9	FS10	FS11	FS12	FS13	
1. I like to study English, because English is important.	2	2	2	2	2	2	1	3	2	1	2	1	*
2. I think English is an international language and it has an important place in the modern world.	1	2	1	2	1	2	1	2	2	1	2	1	**
3. Speaking English helps me get a good job in the future.	3	2	2	2	2	1	1	2	2	1	2	1	*
4. I think that enthusiastic participation will contribute to my own English language learning.	1	2	3	2	2	2	2	2	2	1	2	1	*
5. I am more willing to respond in class if I prepare in advance.	2	1	3	2	3	2	2	2	1	3	1	1	*
6. I am more willing to speak in class if I am not the only person answering a question.	1	1	3	1	3	3	3	3	1	3	2	1	
7. I feel more comfortable answering the teacher's questions when I do not have to do it in front of the whole class.	1	1	1	3	2	2	3	3	2	3	2	1	*
8. I would not want to answer a question because I may not be correct.	3	4	2	4	2	2	3	3	3	3	2	4	#

(table continues)

Table T2: Results of the questionnaire on the factors related to learners' attitudes towards the role of English language and speaking and responding in class (continued)

Item	Focal subjects												All
	FS1	FS2	FS4	FS5	FS6	FS7	FS8	FS9	FS10	FS11	FS12	FS13	
15. I prefer being called upon by the teacher rather than volunteering an answer.	2	3	1	3	3	2	3	3	1	3	2	3	#
16. I feel less comfortable about answering teacher questions in front of my classmates whom I know very well.	3	3	3	4	2	2	3	3	3	3	3	2	#
17. When the teacher asks a question in class, I prefer not to respond to it even if I know the answer.	3	3	2	3	2	2	3	3	2	3	2	4	#
18. Usually, I do not respond to questions during whole-class discussion unless I am called upon.	2	3	2	3	2	2	2	3	2	3	2	3	*
19. If I often volunteer to answer questions, my classmates may think I am showing off.	2	4	3	3	3	2	2	3	2	3	3	4	#
20. If I answer questions in English, my classmates may think I am showing off.	2	3	3	2	2	3	3	3	3	3	2	4	#

Notes. 1=strongly agree, 2=agree, 3=disagree, 4=strongly agree. **=all agree, *=largely agree, #=largely disagree.

Table T3: Results of the questionnaire on the factors which are associated with dynamic classroom interaction in which the teacher and all students are engaged

Item	Focal subjects												All
	FS1	FS2	FS4	FS5	FS6	FS7	FS8	FS9	FS10	FS11	FS12	FS13	
21. Our teacher often encourages us to speak in class.	1	1	2	1	2	2	2	2	2	1	2	1	**
22. My classmates in this class do not respect each other's views.	3	3	3	4	3	3	4	2	4	3	3	3	#
23. I feel pressure if I do not respond to the teacher's questions in class.	2	1	2	4	1	3	3	3	2	2	3	4	
24. Our English teacher is supportive.	1	2	1	1	1	2	2	2	1	1	3	1	*
25. My classmates are supportive of their peers in this class.	2	2	2	2	2	3	2	3	2	2	3	1	*
26. Our English teacher has a good sense of humour.	2	1	2	2	3	2	1	2	1	2	2	1	*
27. When responding to the teacher's questions, my classmates depend on a few students to do it.	3	1	2	3	3	2	3	2	1	1	1	3	*
28. Our teacher does not interrupt students when they are speaking.	2	3	3	1	1	2	2	2	2	1	2	1	*
29. My classmates discourage others from appearing too confident.	3	3	3	2	2	3	3	2	3	3	3	3	#

(table continues)

Table T3: Results of the questionnaire on the factors which are associated with dynamic classroom interaction in which the teacher and all students are engaged (continued)

Item	Focal subjects												All
	FS1	FS2	FS4	FS5	FS6	FS7	FS8	FS9	FS10	FS11	FS12	FS13	
30. My classmates do not pay attention when others are speaking.	3	3	2	3	2	3	3	2	2	2	2	3	#
31. Our teacher respects what we say.	1	2	1	1	1	2	2	2	1	1	2	1	**
32. Many of my friendships with others have been made through this class.	4	3	3	2	3	3	3	4	3	2	3	2	#
33. Our teacher praises students very often.	1	2	1	1	2	2	2	2	2	2	2	2	**
34. Generally speaking, I think this class makes me feel comfortable to speak.	3	3	3	2	3	3	2	2	2	1	3	2	

Notes. 1=strongly agree, 2=agree, 3=disagree, 4=strongly agree. **=all agree, *=largely agree, #=largely disagree.

Appendix U

New Scaffolding Functions and Classifications

Scaffolding functions and classifications

Wood, Bruner, and Ross (1976) provide six functions of scaffolding, representing how an adult or expert assists a child or novice from an educational psychology perspective. It also appears that successful scaffolding depends on how the teacher manages the interaction between the task and students' demands (DeGuerrero and Villamil, 2000). The six functions include:

- 1) Recruitment: Drawing the novice's attention to the task and its requirements.
- 2) Reduction in degrees of freedom: This involves simplifying the task by reducing the number of constituent acts required to reach solution.
- 3) Direction maintenance: keeping the novice motivated and keeping him/her in pursuit of a particular objective.
- 4) Marking critical features: providing information about the discrepancy between what the novice has produced and what an expert recognizes as correct production.
- 5) Frustration control: Decreasing the stress on the novice.
- 6) Demonstration: Demonstrating or modeling solutions to a task.

After careful modifications, I provided the possible types of teacher questions to fit with these six functions, made them much more language-oriented, and applied them in the current research.

1) Recruitment:

A new initiative question, before any following students' responses, recruits students' attention to the given task.

2) Reduction in degrees of freedom:

The teacher questioning strategies, such as rephrasing, simplification, and decomposition, in Wu (1993)'s term, can provide this scaffolding function (Refer to Section 3.2.1.5 to review the definitions). When an initial question fails to elicit the expected verbal replies from students, the follow-up questioning strategies can help language learners to respond by simplifying, rephrasing, or decomposing the original question.

3) Direction maintenance:

Repetitions, confirmation checks, clarification requests, and probing may include this scaffolding function. There are two kinds of repetitions, repeating teachers'

own questions and repeating students' responses. Self-repetition questions may keep the learners motivated and following the teacher's predetermined goal. On the other hand, Wu (1993) and Cullen (2002) state that repetition of individual students' contributions with rising intonation often is viewed as a question (especially in the English language) and acts as a way of contrasting the dispreferred with preferred answers, thus maintaining the students' attention and seeking further modified repairs from students.

Confirmation checks in the current research refer to any teacher' questions, appearing immediately after a response by the students and aiming at eliciting confirmation that the response has been correctly heard or understood by the teacher. They are answered very often by a simple confirmation, such as 'Yes' or 'Mmhm'. Clarification requests, however, are all of the teachers' questions which aim at eliciting clarification of students' previous responses, requiring students either furnish new information or encode information previously given. These two types of questions clarify possible misunderstandings and help teachers pursue their teaching and learning goals (see detailed definitions and examples in 3.2.1.4).

Probing is one kind of teacher solicitation, followed by one or more subsequent questions in order to elicit more responses from a student. This kind of question can keep students' motivation on the given tasks and provide the scaffolding function of direction maintenance.

4) Marking critical features and demonstration:

According to Nabei and Swain (2002), a recast is defined as a reformulation of a previous erroneous utterance into a more target-like form. In the current research, after a student's nontarget response, the following teacher questioning with a form of a recast can provide students with more opportunities to repair and at the same time, this act is also audible to the rest of the class and demonstrate for the class a model of correct usage (Cullen, 2002). The teacher's question in the form of a recast (in the database, the identified questions are tag questions. See discussion in Section 6.2) can provide the fourth and the sixth functions of scaffolding. These two functions are combined and integrated jointly in the present research.

5) Frustration control:

Comprehension checks, such as 'Do you understand?', display an effort made by language teachers to prevent a breakdown in communication and avoid possible

frustration on the part of learners.

Therefore, the following table demonstrates the new emerging classifications:

Table U1: Scaffolding functions and classifications

This research's new classifications	
1) recruitment (R)	An initiative question move
2) reduction in degrees of freedom (RDF)	Rephrasing, Simplification, Decomposition.
3) direction maintenance (DM)	Repetitions, Confirmation Checks, Clarification Requests, Probing.
4) marking critical features and demonstration (MCFD)	Recasting.
5) frustration control (FC)	Comprehension Checks.
English (E), Mandarin (M)	

Appendix V

Numeric Analysis of Language Use in Classes

The numeric analyses of language use in class.

Table V1: Percentage of language used in subject teachers' classes

Class	Type	Teacher A	Teacher B	Teacher C	Teacher D
1	E1	80%	9%	35%	89%
	E2	1%	-	9%	1%
	Mix	-	-	6%	-
	M1	18%	63%	39%	4%
	M2	-	20%	9%	-
	XXX	1%	8%	2%	6%
2	E1	10%	2%	35%	76%
	E2	2%	-	4%	2%
	Mix	5%	-	5%	2%
	M1	58%	82%	39%	15%
	M2	24%	5%	16%	3%
	XXX	1%	11%	1%	2%
3	E1	21%	8%	54%	88%
	E2	1%	-	2%	-
	Mix	1%	1%	7%	-
	M1	59%	66%	29%	7%
	M2	17%	22%	8%	-
	XXX	1%	3%	-	5%
4	E1	10%	2%	3%	86%
	E2	1%	-	13%	3%
	Mix	6%	3%	2%	-
	M1	57%	72%	11%	5%
	M2	26%	18%	45%	-
	XXX	-	5%	26%	6%
5	E1	-	-	11%	72%
	E2	-	-	4%	8%
	Mix	-	-	15%	1%
	M1	-	-	43%	17%
	M2	-	-	27%	1%
	XXX	-	-	-	1%
6	E1	-	-	27%	33%

E2	-	-	-	1%
Mix	-	-	2%	11%
M1	-	-	20%	37%
M2	-	-	51%	18%
XXX	-	-	-	-

Table V2: Average percentage of language used in subject teachers' classes

Language use	Teacher A	Teacher B	Teacher C	Teacher D	Average
English (E1+E2)	31%	5%	33%	77%	37%
Mix	3%	1%	6%	2%	3%
Mandarin (M1+M2)	65%	87%	56%	20%	57%
XXX	1%	7%	5%	1%	3%

Table V3: Percentage of language used in Teacher A's classes

Class	Type	E1	E2	Mix	M1	M2	XXX
	1		80%	1%	-	18%	-
2		10%	2%	5%	58%	24%	1%
3		21%	1%	1%	59%	17%	1%
4		10%	1%	6%	57%	26%	-

Table V4: Percentage of language used in Teacher B's classes

Class	Type	E1	E2	Mix	M1	M2	XXX
	1		9%	-	-	63%	20%
2		2%	-	-	82%	5%	11%
3		8%	-	1%	66%	22%	3%
4		2%	-	3%	72%	18%	5%

Table V5: Percentage of language used in Teacher C's classes

Class \ Type	E1	E2	Mix	M1	M2	XXX
1	35%	9%	6%	39%	9%	2%
2	35%	4%	5%	39%	16%	1%
3	54%	2%	7%	29%	8%	-
4	3%	13%	2%	11%	45%	26%
5	11%	4%	15%	43%	27%	-
6	27%	-	2%	20%	51%	-

Table V6: Percentage of language used in Teacher D's classes

Class \ Type	E1	E2	Mix	M1	M2	XXX
1	89%	1%	-	4%	-	6%
2	76%	2%	2%	15%	3%	2%
3	88%	-	-	7%	-	5%
4	86%	3%	-	5%	-	6%
5	72%	8%	1%	17%	1%	1%
6	33%	1%	11%	37%	18%	-