

Title

Teacher cognition of thinking skills in Chinese primary EFL classrooms

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Abstract

Extensive attention is given to the significance of promoting thinking skills in education. However, very little research has attempted to explore EFL (English as a Foreign Language) teacher cognition of thinking skills, even it directly influences children's thinking and learning. In recent years, promoting thinking skills has become an educational goal in the Chinese English Curriculum (MOE, 2010). In order to bridge the gap between the desired outcome and current practice, this study aims to investigate Chinese EFL teachers' conceptions and teaching beliefs about thinking skills, and to explore the opportunities for, and obstacles to, developing students' thinking skills in primary EFL classrooms.

Four EFL primary school teachers, with more than three years of teaching experience each, participated in this case study. Semi-structured interviews and video recordings were used to collect the qualitative data. The interview data were analysed using thematic content analysis. Teaching practices were video recorded and examined through a think-led methodological framework developed in this study. The analysis revealed a new concept - "English thinking", as subject-specific thinking. The findings also showed that teachers' conceptions of thinking skills were fragmented and that they felt unprepared to teach thinking skills, although they all had a positive attitude towards integrating thinking skills into their teaching. The conflicting beliefs around promoting thinking skills were influenced by teachers' previous language learning experiences and by the challenges they come across. Opportunities for promoting thinking skills are identified from teacher-students interaction, including the use of teacher questioning and feedback, collaborative learning, increase of wait time, authentic topics, and teaching creatively. Teachers' insufficient knowledge of thinking skills and other contextual factors such as the exam-oriented education system constrained the successful implementation of thinking skills in class.

Pedagogical suggestions are put forward for policy makers, teacher educators, and teachers. Implications for future research indicate a need to explore EFL teachers' perceptions of thinking skills, and to develop a framework for the development of thinking skills in foreign language curricula.

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List of Abbreviations

ALT	Audio Lingual Teaching
CEE	College-Entrance Exams
CET	College English Test
CLT	Communicative Language Teaching
CoP	Community of Practice
ECS	English Curriculum Standards
ECSC	English Curriculum Standards Committee
EFL	English as a Foreign Language
ELT	English Language Teaching
GTM	Grammar Translation Methods
HE	Higher Education
HOT	Higher Order Thinking
ICC	Intercultural Communicative Competence
MOE	Ministry of Education
P21	Partnership for 21st Century
PPS	Powerful Pedagogical Strategies
RQ	Research Questions
TEM	Test for English Majors
TESOL	Teaching English to Speakers of Other Languages
TPD	Teacher Professional Development

Chapter 1 Introduction

1.1 Background of the study

A wealth of research studies has been undertaken in the area of thinking skills development in the educational contexts worldwide (e.g. Halvorsen, 2005; Swartz & McGuinness, 2014). In recent years, the Partnership for 21st Century (P21) Skills Framework for Learning (2009) has attracted increasing attention around the world. Creativity and innovation, critical thinking and problem-solving, and communication and collaboration, are aspects of the framework aimed at preparing students to succeed in the changing world. In Asia, the variety of these skills and accomplishments are vital to promote global competence (Soland, Hamilton & Stecher, 2013). At policy level, reports from different regions stress the significance of thinking skills for a learner's future development. For example, developing students' thinking skills- including information processing, reasoning, enquiry, creative thinking and evaluation skills has been introduced in primary schools in the English National Curriculum (Qualifications and Curriculum Authority, 1999). In Northern Ireland, the Thinking Skills and Personal Capabilities framework (TSPC, 2000) helps students to think skilfully and engage in a better quality of thinking, including being creative, problem-solving, decision-making, managing information and so on. In China, the Reform of the National Curriculum stresses the importance of developing students' creativity (Zhou & Zhu, 2007). In the Basic Education Curriculum Reform Outline (MOE, 2001), formulating problem-solving learning styles to improve students' overall ability with regard to information processing, knowledge acquisition, problem-solving, and cooperative learning has become one of the objectives (Cui & Zhu, 2014).

At the practical level, different approaches to thinking skill development including designed programmes for teaching thinking, subject-specific and infusion of thinking in the curriculum, have been proposed and implemented in schools (McGuinness, 1999). Empirical studies derived from different perspectives have shown a growing interest in talk among individuals and in exploring the way people talk and think together (e.g. Cook, 2000; Mercer, 1995). In the process of successful communication, the interactional competence involving thinking skills

facilitates information exchange. Therefore, classroom interaction is an effective and dynamic source of learning. This is particularly the case at the primary stage, where the teacher acts as a facilitator and instructor so that their talk therefore dominates most of the teaching time (Myhill, Jones & Hopper, 2006; Tan, 2007) and becomes an influential factor in children's learning and thinking development. The crucial role of teacher-student interaction also applies to language education.

A number of studies have revealed the significant link between foreign language learning and thinking skills (e.g. Li, 2011; Xerri & Vassallo, 2016). It is recognised that higher-order thinking skills (HOT) could be developed during EFL learning, and EFL learning could also improve HOT skills' development. In EFL classrooms where students need to improve their language proficiency and performance, the use of conversation allows them to practice their language skills and knowledge. In the process of communication and information exchange, different types of thinking skills take place, such as creative thinking and evaluation (Mercer, 1995). In the Chinese educational context, being able to communicate in English is perceived as one of the teaching objectives (Cortazzi & Jin, 2006), and thus, students' thinking skills are one of the key aspects of communication. In the Chinese educational context, teachers have been stereotyped as the authority of the class (Kennedy, 2005; Thøgersen, 2015). This teaching style is in line with research studies showing that teachers dominate most of the talking time in class. Thus, it would be of great interest to explore how teachers use their talk to facilitate students' language and thinking development during teacher-student interactions.

Informed by the significance of promoting thinking skills in education in various ways, as presented above, an exploration of how teachers promote students' thinking skills through classroom interaction in China would be of great interest. For one thing, there is a claim that Chinese learners are lacking HOT skills due to the Confucius-heritage learning culture (e.g. passive learners; see section 2.3). Therefore, investigating the ways teachers promote the development of students' thinking skills could serve to re-examine the claim, and also reveal the authentic teaching and learning environment in Chinese classrooms. For another, the call

for developing children's global competence (Soland, Hamilton & Stecher, 2013) suggests the necessity of fostering students' communicative competence, and English is therefore used as a lingua franca by Chinese citizens to communicate with the world. Hence, it is vital to promote students' thinking skills in EFL classrooms.

Although the literature shows that teachers dominate during teacher-students interactions, what matters is the quality rather than the quantity of their talk. Therefore, teacher cognition with regards to thinking skills is a fundamental aspect in promoting students' thinking in EFL classrooms, since their content knowledge and pedagogical knowledge of thinking skills are implicitly embedded in teachers' talk when they interact with the learners. Hence, this investigation attempts to map out teachers' beliefs and practices with regard to teaching thinking skills to ascertain which could be utilised by the policymakers and improve the educational community.

1.2 Rationale for the study

My interest in conducting this study was inspired by Li's (2011) research, which reveals the opportunities for and challenges in promoting thinking skills during classroom interactions in Chinese classrooms. I developed my interest in discovering teachers' personal understandings of thinking skills, since teachers' beliefs shape their teaching practices. Most particularly, there is a gap in the literature on teacher cognition of thinking skills compared to the research studies on the implementation of thinking skill programmes. Besides this, teacher cognition is a crucial aspect in language education and it could be shaped during the social interaction process (Li, 2017). Thus, exploring how teachers define thinking skills and perceive the teaching of thinking skills, with the emphasis on the development of students' thinking development so that they can use English to communicate with the world is vital.

Additionally, my overseas learning experience formed part of the rationale for this study. I realised that there are a number of research studies (e.g. Clark & Gieve, 2006; Huang & Wang, 2011) that compare the Chinese learning culture with the

West, and tend to polarise the East and the West which leads to the myth that Chinese learners are passive and the teachers hold the power for knowledge transmission. As a result, Chinese learners have been characterised as lacking creative and critical thinking skills, which is considered as one of the learning difficulties for students studying abroad. However, reflecting on my background, these claims are generalised, and there could be individual learning differences. First, the language barrier could be one of the reasons why they appeared to be passive. Second, it could be the culture norms that lead students to respect teachers and remain silent in class (see Chapter Two). Thus, it is not suitable to claim Chinese learners are lacking HOT skills by comparing to the Western learning style. Therefore, it raised my personal interests to explore how teachers assist students to develop thinking in Chinese EFL classroom, since English has been perceived as an international language that learners need to use to communicate across the world.

Furthermore, developing thinking skills is one of the learning objectives in the English Curriculum Standards in China. However, there are no clear guideline in the policy to support teaching in this area. This suggests that the way to promote thinking skills in EFL classrooms might be to rely on the teachers' knowledge about thinking skills, and previous language learning and teaching experiences. Nevertheless, teachers' understanding of thinking skills has not yet been fully assessed, thus, this aspect in EFL classrooms is a new area of interest to explore, especially in the Chinese context. Teachers' teaching practices will inform policy makers of the up-to-date information about teaching thinking skills since every classroom is a thinking environment. In this way, rich and authentic data could emerge and be added to the body of knowledge for a more in-depth understanding of teacher cognition of thinking skills.

1.3 Research aims

In light of the aforementioned literature on the significance of thinking skills in EFL classrooms, I intend to explore and illuminate the insider's views associated with teachers' knowledge, beliefs and their teaching practices regarding thinking skills in EFL classrooms. Hence, this study sets out to address the following aims:

- (1) To investigate teachers cognition of thinking skills in the EFL class.
- (2) To explore the opportunities and challenges for teachers in developing students' thinking skills.

In order to set out a clear research process and reflect more precisely on the research aims, these two research aims are narrowed down into four research questions, as follows:

- (1) What are teachers' conceptions of thinking skills?
- (2) What are teachers' opinions with regard to the implementation of thinking skills in EFL classrooms?
- (3) How do teachers promote thinking skills in their teaching practices?
- (4) What are the challenges for teachers to promote thinking skills?

In terms of achieving the first research aim, all four research questions could provide useful insights. To be specific, research question (RQ) 1 investigates how teachers define thinking skills, which is related to their knowledge of promoting thinking skills. RQ 2 reveals teacher's beliefs about promoting thinking skills that could affect their teaching practices (RQ 3 & 4). These four research questions are strongly linked and could discover teacher cognition of promoting thinking skills. The exploration of RQ 3 and RQ 4 could reveal the moments during classroom interaction which promote or hinder students' thinking development which would also achieve the second research aim.

1.4 Significance of this research study

The significance of this thesis is expected to be addressed in six areas. First, as indicated previously, research studies focusing on teacher cognition of thinking skills in language classrooms is limited, meaning that there is good scope for the present study to explore this field. This is especially true in the Chinese context where this is a new area of research as it has been set as a learning objective in the English Curriculum Standards. This study serves to investigate teacher cognitions in this field which could arrive at new insights. This might uncover the

potential guidelines for teaching thinking skills for teachers, researchers and policy makers by revealing teacher knowledge (RQ1) and beliefs (RQ2) of thinking skills through different approaches to language teaching.

Second, one of the expectations of this study is to bridge the gap between policy and teaching practices as there is a lack of clear guidelines for the teachers to integrate thinking skills in practice (see section 1.2). The findings of this research would inform the policy makers of the extent to which teachers implement thinking skills in classroom teaching and the way in which they do this. This could be a bottom-up approach for curriculum development. The result of the real teaching practices of thinking skills will inform recommendations to the policy makers to improve the English Curriculum Standards.

Third, this study seeks to present a picture of classroom interaction in terms of thinking skill development. Therefore, the findings could inform the public as clearly as possible about current teaching practices with regard to thinking skills. This shows how teacher-student interactions facilitate or hinder the development of students thinking skills in EFL classrooms (RQ3). By identifying the opportunities for and obstacles to teaching thinking skills, suggestions for better teaching could be identified. Teachers could identify the features of promoting thinking skills in terms of pedagogical considerations, and adjust their teaching for better student learning outcomes.

Fourth, the challenges of promoting thinking skills which teachers deal with will be revealed (RQ4). In this way, teacher professional development will be informed about the needs of the pre-service and in-service teachers in this area, and thus be equipped to provide appropriate teacher training programmes.

Fifth, this study is expected to present evidence that shrinks the gap between the East and the West. According to the literature, Chinese learners lack HOT skills due to the Confucian heritage culture. The research field of this study is in a local public school in China, and provides a close examination of classroom interaction and a resulting to uncover the authentic picture of teaching and learning in China.

Sixth, influenced by the sociocultural and political aspects, the conception of thinking skills has never been agreed upon. Therefore, the investigation of teacher knowledge in this field might bring in a new understanding of this concept. Thus, the findings from this investigation could be further developed into a new thinking-based curriculum framework for EFL curricula (Li, 2016). In addition, the contextualised understanding of this field might also contribute to the current body of knowledge of thinking skills.

1.5 Outline of the thesis

This thesis comprises seven chapters. Following this chapter, Chapter 2 will introduce the contextual background of this research, including an overview of Chinese culture background, the learning culture in China, an overview of the Chinese education system, the status of English in mainland China, an explanation of EFL education in China and the status quo of teaching and learning in EFL classrooms.

Chapter 3 provides the literature review which guides my research. This is organised into reviewing different approaches to defining thinking skills and the perspectives on teaching thinking skills in class. Empirical research studies will be discussed at the end of this chapter.

Chapter 4 presents detailed information about the research design, including philosophical assumptions, methodology, research methods, data analysis, participants, ethical considerations and the trustworthiness and reflexivity of this study.

Chapter 5 reports the findings of this research study in the order of the research questions. The findings will be presented along with a descriptive analysis of the data including the interview transcripts and extracts from the classrooms.

Chapter 6 discusses the key findings in relation to the research questions.

Chapter 7 is the conclusion chapter and ends with the implications of the research findings for policy makers, professional development programmes and teachers. The contribution of this thesis to the knowledge in the field of education will be

served. Limitations of this study will be discussed and, finally, suggestions for future research studies will be proposed.

Chapter 2 Context

2.1 Introduction

This chapter sets out to provide an overview of the context in which this study occurs. The sociocultural and political contexts influence the research design and its findings. The knowledge, evidence and the concepts generated from this research are filtered through these aspects. Thus, the results of this study could be applied to the provinces or regions with similar contextual backgrounds. Hu (2003) also points out that language teaching and learning are dynamic in various ways as they are influenced by the contextual factors. To this end, it is essential to present a clear and detailed description of the thesis research context.

In this thesis, I will use 'Chinese' to refer to the context of mainland China, even though the concept of Chinese communities involves Chinese learners and their learning culture which are widely applied in other places such as Southeast Asia (e.g. Singapore) and territories including Hong Kong, Macao and Taiwan (Feng, 2011). Because of their different socio-political settings, the coverage of English language use and education systems in these places are distinctively different. The different status of English in these Chinese communities has influenced the educational policy for English education, which has further impacts on the teaching and learning styles in language classrooms. With the rise of China as an economic force within the world today (Pan & Block, 2011) and English becoming a global language (Crystal, 1997), it is essential to review the status of English in mainland China in this thesis as part of the background. Therefore, in order to provide a clear overview of the Chinese context (that is that of mainland China), I will first discuss the background to Chinese culture.

2.2 The background to Chinese culture

According to Hofstede (1984), Chinese culture has been identified with collectivism and characterised as low in individualism, meaning that Chinese culture emphasises belongingness, preferring for working in groups from the same culture, places considerable emphasis on hierarchical relationships, advocates harmony in society and the avoidance of uncertainty (Kennedy,

2002). A number of research studies indicate that this oriental culture is rooted in Confucianism (Kolarik, 2004; Stephen, 1997). In East Asia, Confucianism emphasises ethics and statecraft (Starr, 2012), and influences people's activity and their thinking (Kennedy, 2002; Shi, 2010). In China, Confucian education informs the features of harmony and unity for steady development (Starr, 2012) and aims to cultivate humanity (e.g. MOE, 2011). Li (2015) indicates that the purpose of education is to cultivate oneself to achieve humanity, balancing things in a moderate way. It is suggested that extreme emotions and social conflicts are discouraged as these would be considered as a disruption to social harmony (Bond, 2010). Instead, moral education in China advocates one should maintain harmony through establishing a good relationship with others by inspecting their interests before bringing in one's own different voice.

2.3 Chinese learning culture

Confucian values have been criticised as lacking teaching thinking in education. In order to enrich humanity, individuals tend to avoid extremes, sacrifice their own wills make compromises (Starr, 2012). Thus, Chinese learners have been stereotyped as being reluctant to employ criticality. Learners seldom challenge their teachers as a way of showing respect within a hierarchical and large-power-distant relationship (Hofstede, 1986). Therefore, obedience and respect are the codes of Chinese learning culture, meaning that students should never doubt the teachers or cause them to lose 'face' in public (Bond, 2010). As a result, Chinese learners have been characterised as seldom having individual thought which leads to a lack of creativity and criticality in them. Consequently, the notions of critical thinking and other higher-order thinking are incompatible with Confucian cultural beliefs (Shi, 2006). To support the above claims, there are numerous existing studies (Huang & Wang, 2011; Li, 2012; Lian, 2012; Nisbett, 2003), and cross-cultural studies (Thøgersen, 2015; Miyamoto, Nisbett & Masuda, 2006; Wingo, 2014) that reveal the 'lacks' and 'problematic consequences' (Clark & Gieve, 2006, p.55) of the Chinese approach to learning, pointing to the dichotomy between the East (China) and the West, illustrated, for example by, the collectivist versus independent ways of thinking (Stephens, 2010). However, this is a deficit model of Chinese learners attributed to Confucian cultural heritage (Clark &

Gieve, 2006). Confucianism in many articles is misinterpreted and misleading (e.g. Flowerdew, 1998; Kolarik, 2004). One common misinterpretation of Chinese learners is that they are lacking of HOT due to the Confucian approach of learning. This claim suggests the significance of Confucianism might not have yet been fully grasped (Biggs, 1998). The argument here is that although Chinese learners seem to be passively receiving others' opinions, this does not mean they are not engaged in in-depth learning and thinking. Rather, the Confucian Analects reflect the concerns of promoting deep learning and thinking which is different from the dominant Western styles of thinking (Li & Wegerif, 2014). This argument will be further elaborated in Chapter 3 (see section 3.3).

Second, all the above discourses are based on same assumption: that culture is a single, homogeneous and taken-for-granted concept (Clark & Gieve, 2006). The significant characteristics of Chinese culture, which are fixed in people's minds and framed as the 'large culture' of the nation, appear to be that it is concrete, static and reification which are fixed in people's minds framed as the 'large culture' of a nation. This entails the danger of labelling, yet individuals can be remarkably diverse. Nevertheless, the explanation of Eastern (e.g. Singaporean and Japanese) cultural roots in Confucianism is that these Asian countries share some characteristics of the Confucius culture of learning. However, what makes these countries different are the political, social and other aspects that intertwine within the status quo to shape their own uniqueness.

Third, it is also problematic to adopt a 'Western framework' to measure Chinese students' ways of thinking. This is not to argue that cultures exist distinctively in isolation in the world: there are some connections between the East and the West which will be further elaborated in Chapter 3 (see section 3.4). Nevertheless, the key message emerge here is an alternative explanation of a learning culture rooted in Confucianism, with consideration of social and contextual factors (Clark & Gieve, 2006). To illustrate this, the construction of people's values, beliefs, knowledge and behaviours is achieved through socialisation, such as in the educational practices. The above discussion sheds light on the significance of teacher cognition, as teachers' knowledge, beliefs and practices are influenced by their cultural, social and political factors in their local Chinese context. The

construction of their cognition influences their teaching which results in how students' thinking skills are developed.

2.4 An overview of the Chinese education system

China has the largest education system in the world with over 146 million students (from primary to higher education) enrolled in 2015, according to the statistics provided by the Ministry of Education (MOE) in China (MOE, 2016a). The education market in China is diverse and immense, and most of the schools are state-run with a rapid growth of private schools (e.g. international schools) to address the demands for diversification and choice (Zhao & Qiu, 2012). China utilises a three-level administrative model, entailing inter-linked management levels among the central government (MOE), provincial or local government, and school and teachers. The concept of decentralisation was introduced along with the establishment of the 1985 Decision to Reform the Education System, distributing the responsibilities to three levels of administrative divisions - provincial level, county level and township level, to manage the vast population in terms of education (OCED, 2016; Zhao & Qiu, 2012). The responsibilities of the MOE are to govern the education system, initiate educational reforms, issue policy guidance, set up macro-goals, strategies, research and surveys of relevant issues, allocate budgets and administrative means (OECD, 2016). Therefore, the policies established by the MOE are usually comprehensive and general. The provincial bureaus of education develop implementation plans and investigate the best way to reinterpret the curriculum objectives and contextualised them to suit local needs (Halpin, 2010; OECD, 2016). At the school level, local schools have been given decision-making power and autonomy over school affairs (Sargent, 2015; Zhao & Qiu, 2012), including exploring and selecting appropriate resources for teaching (e.g. textbooks), developing their own teaching courses, and carrying out curriculum experimentation or other educational research according to the provincial plan (Halpin, 2010; OECD, 2016).

2.4.1 Chinese education system organisation

In China, the school system can be divided into four stages: pre-school education, primary education, secondary education and higher education (see Table 2.1).

Table 2. 1 Chinese education system organisation (Adapted from OECE, 2016)

Age	Schooling	Stage of learning and Exams
25-27	Year 20-22	PhD programme
		<i>Exams and interviews</i>
22-24	Year 17-19	Master's programme
		<i>Exams and interviews</i>
18-21	Year 13-16	University (bachelor's degree and vocational college)
		<i>College Entrance Exams (CEE)</i>
17	Year 12	Senior secondary school
16	Year 11	
15	Year 10	
		<i>Senior Secondary School Entrance Exam</i>
14	Year 9	Junior secondary school
13	Year 8	
12	Year 7	
		<i>Graduation Exams</i>
11	Year 6	Primary school
10	Year 5	
9	Year 4	
8	Year 3	
7	Year 2	
6	Year 1	
2-5		Pre-school and Kindergarten

Although pre-school education is not compulsory for Chinese children, children are enrolled in preschools at the age of two and leave at the age of six. Primary schooling (year 1- year 6) and Junior Secondary schooling (year 7-year 9) are

called compulsory education; it is a legal requirement that all children should attend state schools from year 1 to year 9. After finishing junior secondary school, students can choose to continue with senior secondary education (years 10-12). In terms of higher education (HE), undergraduate degrees require four years to complete, while associate degrees need three years. With regard to postgraduate study, students will normally take two or three years to complete a master's degree, and another three years to complete a doctoral degree.

2.4.2 Chinese education reforms and curriculums

The Chinese education system is centralised at the MOE. In the past 30 years or so, China has engaged in a series of educational reforms (Zhao & Qiu, 2012). The National Education Curriculum Reform (1999) demonstrates that Chinese government consigns a high value to education, aiming at the promotion of Quality-Oriented Education (Cui & Zhu, 2014), to promote all-round development of the students (OECD, 2016), including their moral virtue, intellectual and physical development, discipline, culture and ideals (MOE, 2001). The Basic Education Curriculum Reform Outlines (MOE, 2001) specify that the following changes be made: from knowledge transmission instruction to learner-centred teaching perspective; from a subject-specific curriculum to an integrated and selective curriculum structure to meet the diverse needs of students; from abstruse curriculum content to essential knowledge and skills regarding students' lifelong learning; from passive and rote learning to an active and problem-solving learning approach to improve students' overall abilities including thinking skills and collaborative learning; from a highly-selective evaluation system to a comprehensive evaluation system; from a centralised education system to one that involves central government, local authorities (e.g. provincial educational administration) and schools (Cui & Zhu, 2014; OECD, 2016). Since these outlines were issued, the macro-goals of the National Curriculum have shifted to a focus on learner-centred development of "creativity, innovation, collaboration, self-expression, engagement, enjoyment of learning, inquiry skills, problem-solving abilities and be[ing] able to apply knowledge in practice" (Sargent, 2015, p.104). Teachers are encouraged and given a greater degree of control in the development of creative teaching (Halpin, 2010). They are required to create a

positive, open, and comfortable learning environment in order to encourage students to engage in their thinking processes, to develop their thinking skills, to express their diverse ideas and to enhance their curiosity, desire for learning and imagination (MOE, 2001).

According to The Basic Education Curriculum Reform Outline (MOE, 2001), primary schools should offer courses such as, Chinese, English, Mathematics, Moral Education, Natural Science, Physical Education, Art, and Music (OECD, 2016). More economically developed regions also offer computer and technology courses. For junior secondary education, courses mainly include Chinese, English, Mathematics, Physics, Chemistry, Biology, Moral Education, Geography, History, Arts, Music, and Physical Education. Throughout the nine-years of compulsory education, Chinese, English and Mathematics are the core subjects. When it comes to senior secondary schools, in addition to the core subjects, students are offered optional courses including the subjects mentioned above. The requirements for the optional subjects are different from the core subjects. Normally, their areas of interest in HE are relevant to the optional or core subjects that the learners have studied. Additionally, English must be taught throughout the Chinese education system, even for students who have not majored in English-related subjects in HE.

The MOE renewed the new curriculum framework in 2011 to allow more flexibility and to focus more on creativity (OECD, 2016). In 2010, the Outline of China's National Plan for Medium and Long-term Education Reform and Development for 2010-2020 (MOE, 2010) points out that students' creativity should be fostered in higher education. In 2011, the curriculum standards for teacher education indicate the need for teacher education to train pre-service teachers to apply a creative teaching approach in their future classrooms (Li & Johnston, 2015). According to Pang and Plucker (2013, p. 248), "China's creativity education is tightly associated with national development strategies. Under China's top-down approach to policymaking, national strategies can dramatically affect national and local educational policies, which in turn determine the practices of teaching creativity". As a result, students' thinking skills development is influenced by teachers' teaching practices. Hence, it is important to review and examine how

the policy guides teachers' teaching of thinking skills. In other words, decisions made by the policy makers reflect on the development of students' thinking skills'. A number of research papers have examined the Chinese policies and the transformation to an approach that promotes creativity in Chinese education (Hui & Lau, 2010; Li & Johnston, 2015; Pang & Plucker, 2013). With the rapid growth of economic and manpower needs, creative education places a strong emphasis on science and technology development (Pang & Plucker, 2013). The necessity for developing students' creativity in order to promote the country's economic, scientific and technological development has also been stated in the English Curriculum Standards (MOE, 2011) (See section 2.7).

However, although New Curriculum Reforms (2001, 2011) have led to great change in terms of effective learning, it is suggested that the traditional learning culture might create barriers to the diffusion of pedagogical innovation (see section 2.3), and that the exam-oriented educational system also places pressure on the teaching time and makes it impossible to introduce changes in real teaching (Sargent, 2015), especially with regard to promoting learners' HOT skills, which requires sufficient time and space (See section 3.9.3). Regardless of the call to promote the all-round development of students and the advocacy for change, the exam-oriented system has a washback effect on teaching and learning processes.

2.4.3 The exam-oriented education system

At the end of each stage of learning, students need to pass exams in order to progress to the next level of education (see Fig. 2.1). The graduation exam for junior secondary students is the Senior Secondary School Entrance Exam. The result of the exam assigns students to different brands of senior secondary schools since senior secondary schooling is no longer compulsory. Students are required to take the College Entrance Exams (CEE) in order to study at universities or colleges and can choose their own major according to their exam results. For postgraduate study, the entry requirements include exams, including English language tests. Similar entry requirements apply to the doctoral stage. English is one of the three compulsory subjects (Chinese, Mathematics and English) that have to be examined in the public examinations including graduation

exams and CEE. In HE, students need to pass the College English Test Bands 4 and 6 (CET 4, CET 6) in order to graduate, even if they are not majoring in English-related subjects. Students who major in English-related subjects, need to pass the TEM 8 (Test for English Majors band 8) in order to graduate. For further study, students also need to take English examinations as one of the entry requirements.

As shown above, examination plays a vital role in Chinese education. The Chinese education system and pedagogy have been described as exam-centric (Kirkpatrick & Zang, 2011). The most important exam is the CEE, which can be dated back to the Sui Dynasty as the Imperial Civil Exam, used to select the best civil servant to protect the country (Niu, 2007). With a long history of this learning culture, examination has “profoundly shaped Chinese education in respect to its content, function, mission and value of education. It also has a marked effect on all participants within the system: teachers, administrators, parents and students” (Zhao & Qiu, 2012, p.314). The results of the CEE influences students’ futures, affecting whether they get into prestigious universities and determining their future careers. This leads to a washback effect on the teaching and learning process in language education. The authorities control what students know and do not need to know, which downplays the critical thinking (Kirkpatrick & Zang, 2011). In this way, the high-stakes testing system demands for rote learning and memorising information (such as vocabulary and grammar rules). The learning environment in compulsory education is one in which the teachers are the authority who are expected to transmit knowledge, which enables students to move smoothly into the later stages of education. In other words, the compulsory education stage equips students with the skills and knowledge to pass the Senior Secondary Entrance Exam.

In order to achieve better results in the public examinations, there are various types of tests during schooling, including mock exams held by the city or provincial government, mid-term or end-of-term exams, and tests after each unit of learning. Therefore, linguistic knowledge is the core of language education. The grammar translation teaching method (see section 2.6 for details) is popular

as the exam-oriented system favours knowledge reproduction. This often comes at the cost of Chinese students accused of lacking imagination and creativity.

Crucially, learning English is vital in Chinese education not just for developing the subject knowledge, but also because it emphasises the endorsement of “humanistic principles of educating the whole person and developing life-long learners” (Liu, 2016, p.77). Therefore, in the next section, a historical review of status of English (section 2.5) will be presented in order to further explain English language education in mainland China (section 2.6).

2.5 A historical review the status of English in mainland China.

The historical background for the use of English can be traced back to 1627 when the first contact between English speakers and Chinese people took place in Canton (Guangzhou) (Bolton, 2002). With the rise of business dealings with the British in 1644, Pidgin English was used for communication purposes (Gil & Adamson, 2011). After the Opium Wars, the desire to learn the English language began to grow and was met through the activities of those such as missionaries and customs officials working for the imperial government. At that time, mastering English meant good economic prospects for the Chinese. An alternative reaction to the foreign intrusion was to build up and strengthen the nation’s power through technological transfer, meanwhile preserving the Chinese cultural heritage (Cheng & Wang, 2012; Gil & Adamon, 2011). This was a synthesis of the Chinese and the West advocated by the scholars – Chinese learning for essential principles, and Western learning for practical application. During this period, English was the first foreign language to be taught in Tongwen Guan (a college) (1861) in Beijing. After the Sino-Japanese War (1895), there had been a boost to English language learning, and comprehensive reforms included embedding learning foreign languages in the school curriculum, “enhancing interaction in the spheres of science and technology, economics and, in the major cities, popular culture” (Gil & Adamon, 2011, p.27). With the emphasis on developing the nation’s economy, science and technology, English language education became necessary for students to access knowledge and strengthen the nation’s power. This has also influenced recent policy development, including the reforms and

English Curriculum Standards (see section 2.7) that reflect the significance of these aspects for China.

During the Republic of China period (1911-1949), emphasis was placed on embracing the new ideas from the West and rejecting conservative Confucianism. At that time, the use of English was not only for servants or commercial services, but for educated (Cheng & Wang, 2012). It was also perceived as a tool for struggle and personal transformation by politicians (Gil & Adamon, 2011). However, when the Chinese Communist Party took power in 1949, Russian displaced English since English was regarded as the enemy's language (Sun, Hu & Ng, 2017). English resurfaced in the early 1960s when China broke off with the Soviet Union. The Communist Party advocated the "walking on two legs" policy – economic modernisation paralleled by political transformation through class struggle" (Gil & Adamon, 2011, p. 29), and the English language at this period was regarded as a tool for boosting industrialisation. Learning English was considered to be a factor in pursuit of cultural, educational and economic development as more relations were established with the third world countries (Sun, Hu & Ng, 2017). However, it was considered undesirable for the other leg - political transformation. During the Cultural Revolution (1966-1976), learning English was severely interrupted; it was officially removed from education and social life (Gil & Adamon, 2011; Sun, Hu & Ng, 2017). English was regarded that as being associated with imperialism and the capitalism (Gil & Adamon, 2011).

It was not until the late 1970s that the open-door policy was introduced, the significance of English re-emerged and it was recognised as a tool for achieving the goal of modernisation (Fang, 2016; Gil & Adamon, 2011). This was a period of reform which drove economic liberalisation and opened up China to the world. Since then, English has been actively promoted as a bridge to connect with the outside world, as the modernisation programme has brought about commercial, technological and cultural exchanges and economic trade with other parts of the world (Bolton & Graddol, 2012; Gil & Adamon, 2011; Hu, 2003; Sun, Hu & Ng, 2017). With the achievement of satisfactory economic acceleration, the popularity

of demand for English learning increased in the 1990s (Bolton & Graddol, 2012; Gil & Adamon, 2011).

Promoting English was used to gain international stature in the 2000s as China joined the World Trade Organisation in 2001 and held the Olympic Games in 2008 (Bolton & Graddol, 2012). The learn-English movement has been further boosted by the overseas study trend. By 2015, over four million Chinese students had studied overseas since 1978 (MOE, 2016b). According to analyses of the trend of studying abroad, the Anglophone universities in the USA, UK, Australia and Canada have been the popular choices for Chinese students. Therefore, a huge demand is created for English skills' training in order to pass foreign language tests such as IELTS exam, and in preparation for overseas study. As well as the phenomenon of studying abroad, education reform in China led to English becoming a main subject, and a compulsory subject to be in the University Entrance Exam (Sun, Hu & Ng, 2017). Nevertheless, in 2014, the MOE announced that English is no longer a mandatory subject to be tested in the University Entrance Exam. Instead, learners could take the exams twice and use the higher score as consideration for admission (Gu & Magaziner, 2016). More recently, the popularity of English learning seems to have decreased. Sun, Hu and Ng's (2017) study uncovered an opposing position with regard to English language learning: this comes from the issue of disappointment that after years of effort on learning English, there is no benefit for Chinese learners and on the "summoning sentiments of patriotic loyalty" (p.199) which regard learning English as a national threat to the Chinese identity.

Overall, the status of English in China suggests a roller-coaster-like phenomenon of English learning, and the "policy makers have tied English education to China's modernisation efforts, economic prosperity and opportunity for advancement in science and technology" (Zhang, 2012, p.67). The purpose of English learning is mainly for communication with the world in order to increase the nation's global competence, and for the fulfilment of personal pursuits such as career advancement (Wang & Gao, 2008; Zhang, 2012). At the same time, learning English has been perceived as a way to promote and protect the Chinese culture heritage, yet the political tensions remain (Gil & Adamon, 2011). The above

purposes of English language learning have influenced the establishment of the National English Curriculum and pedagogy.

2.6 An overview of English language education

The policies on English language education in China have been shaped closely by the changing context of national development (Hu, 2005). The first English syllabus was issued in 1956, solely for use in senior secondary schools (Hu, 2002a). In line with the political situation at that time, English had been officially removed from the junior secondary curriculum as a result of worsening relations with the West (Hu, 2005). People who studied English in that period were considered as unpatriotic. Only a few secondary schools and institutions of higher still taught English education remained teaching English (Hu, 2002a), and academics were encouraged to read in English in order to develop scientific and technological knowledge (Gil & Adamson, 2011). The purpose of learning English resonates with the development of the function of English as a tool to receive new knowledge from the outside world (see section 2.5). Therefore the Grammar Translation Method (GTM) was used to teach English. The GTM emphasises the detailed analysis of the grammar rules, and the application of this knowledge in translating sentences into target languages, with a preference for literacy (Hu, 2004; Richards & Rodgers, 2015). It stresses on accuracy, rote learning of vocabulary and extensive use of translation in teaching (Hu, 2004). During this period, this approach assisted students to translate and understand every detail of the text, which helped students to understand and gain the technological and scientific knowledge that was written in English. GTM has persisted as a method throughout language education in China to the present day. It favours teacher-centred and textbook-oriented approaches in EFL classrooms (Hu, 2002a). It is a useful and effective way to support students passing exams (see section 2.4). However, this teaching method fails to recognise the communicative nature of a language.

In 1962, after the breakdown of Sino-Soviet relations, the MOE published a document to pilot a new school system and teach the English language in year 4 and year 5 in primary school (Zhang, 2012). Nevertheless, there was no official English curriculum mandated for primary schools at the national level (Zhang,

2012). In 1963, a new draft of the syllabus was established which emphasised linguistic knowledge and skills for applying English (Hu, 2002a). The idea of learning 'real English' emerged, and the Audio Lingual Teaching (ALT) method was promoted, since it was a foreign approach to language teaching (Hu, 2002a). The ALT method focuses on habit formation through repetition and reinforcement, and is an intensive oral approach to foreign language learning. This method is "taught through extensive drilling and repetition exercises and through making use of activities that minimized the chances of producing mistakes" (Richards & Rodgers, 2014, p.26). In the EFL classroom, students repeat the dialogues or pattern drills as a way to form good verbal habits. It is a structural syllabus that stresses speaking skills, including pronunciation. Students imitate the model of the target language (e.g. teachers) and memorise the dialogues for communication. As GTM retains a prominent status in language education, ALT practice has often been infused into the GTM practices (Hu, 2002a). Nevertheless, these two traditional teaching approaches often fail to address the needs for real communication. In other words, the practices of the drilling, repetition and memorisation practices (e.g. dialogues and sentence patterns) are meaningless when it comes to the language use in real life. The English language education was once again interrupted during the ten-year Cultural Revolution (1968-1978); it did not disappear from the school curriculum but it was restricted to secondary schools and colleges (Sun, Hu, & Ng, 2017; Zhang, 2012).

With the 1978 open-door economic reform, the first national English syllabus was established for primary and secondary schools at the compulsory stage of Chinese education (Hu, 2005). English became a tool to access modern scientific and technological knowledge (Cheng, 2011), and mastering this language conferred social prestige in its own right (Cheng, 2008; Cortazzi & Jin, 2006). The English language education was introduced in year 3 of primary schooling, and for the regions which lacked necessary resources, the first introduction of English would be at year 7 (first year of junior secondary school) (see Fig. 2.1). In this period, English grammar, vocabulary, and pronunciation were the three aspects taught to the students (Sun, Hu & Ng, 2017). There was a new call for the adoption of the Communicative Language Teaching (CLT) approach due to

discontent with the traditional teaching methods – GTM and ALT – since students had little confidence and limited competence with regard to speaking and understanding English (Yu, 2001). CLT addresses the conception of communicative competence that consists of grammatical competence (linguistic knowledge of the target language), sociolinguistic competence (the ability to understand the various social norms), discourse competence (the ability to interpret another's expressions throughout the conversation), and strategic competence (the ability to employ a variety of skills to maintain the communication) (Hu, 2002a). CLT does not only emphasise linguistic knowledge and language skills, it is also meaning-focused. Therefore, pedagogical practices and principles mainly focus on communicative functions; learners should be provided with opportunities to practise the target language in contextualised activities with authentic materials and situations. Communication is focuses on fluency rather than merely on accuracy. Teaching should be learner-centred as students need to be offered maximised interaction to practise using the target language according to the topic of the conversation (Richards & Rodgers, 2014). However, CLT failed to receive attention and make an impact on English education in the 1970s (Hu, 2002b; Yu, 2001). It was not until the launch of the State Education Development Commission (1992) that communication became a teaching aim, and CLT was officially recognised and implemented in teaching practice in China (Yu, 2001).

The enthusiastic teaching and learning of English continued to flourish during the 1980s and 1990s, and standardised English exams were introduced (Cheng & Wang, 2012). For a long time, English language education emphasised linguistic details and was a teacher-centred and textbook-centred approach. Under the traditional patterns of teaching and learning, English language education produced good test-takers rather than competent English users (Cheng, 2011).

The communicative approach was introduced in the 1990s to change this situation, and the goal of learning English has gradually broadened to include the development of communicative skills for students. Yet still under debate is how teachers can localise this approach in the Chinese context (see discussion above). Nevertheless, the effectiveness of this teaching approach in terms of

promoting language learning has been widely. There is still limited understanding of how CLT can be contextualised and affect students' English learning (Butler, 2011). The challenges have been identified as: the Chinese culture of learning (Hu, 2002b); teachers' teaching beliefs (Yu, 2001); learning strategies (Hu, 2002b); the exam-oriented system (Butler, 2016); qualified teachers (Yu, 2001); teacher's conceptions (Butler, 2011; Hu, 2002a); and limited teaching resources (Yu, 2001).

Therefore, a complex picture of current English language teaching in China has been formed. In response to the national needs to develop international status and individual pursuit, the 2001 English Curriculum Standards (ECS) were introduced and English became compulsory courses in the national curriculum starting from year 3 (aged 8-9) (MOE, 2001). Some areas in China (e.g. Guangdong province in which this study takes place) have introduced English as a subject for learning from year one (aged 6-7) and even at the pre-school stage, according to their local government's decision (Cheng, 2011). Since then, learning English has gradually shifted from focusing on skills and linguistic knowledge to other aspects of learning, including cultural awareness, learning strategies, and emotions and attitudes (see section 2.7 for details). The ECS were reformed in 2011 and minor revisions made. The emergence of New English Curriculum Standards unified English education at primary and junior secondary level (years 1-9) and removed the standards from years 9-12 (senior high school) (Zhang, 2012). The goal of EFL teaching is to cultivate students' integrated competencies of language application and includes five aspects of language learning. The reformed curriculum is based on diverse criteria for students' learning outcomes, such as providing students with two opportunities to take the English test for the CEE (see section 2.4). Thus, it changes the status quo of the exam-oriented education and supports students in discovering their potential and develop creativity (OECD, 2016) (see section 2.7 for details).

Although there is a call for a change to exam-oriented education, the highly-selective examination system still exists and it is difficult to ensure congruity between the curriculum objectives and exams. Therefore, there is still a heavy emphasis placed on the traditional teaching methods such as GMT and ALT

approaches in EFL classrooms in China (Sargent, 2015). The teacher-centred environment for knowledge transmission and rote learning is common and effective as preparation for passing exams. Thus, English language teaching and learning is still dictated by tests which are about linguistic knowledge and language skills (e.g. reading comprehension tests) (Sargent, 2015). Therefore, it has been suggested that the school curriculum and a pedagogy which focuses mainly on exams, result in a lack of creativity (Cheng, 2008). It has been considered as more related to a “reproductive process of accumulating information rather than an analytical or speculative process” (Li & Johnson, 2016, p. 377). Regarding the learning culture aspect (see section 2.3), HOT skills have been characterised as undesirable in countries with the Confucian heritage of learning as such skills stem from Western culture (Craft, 2005); an alternative argument is that the testing system in China is responsible for both the stereotyped Chinese learning culture and the claim of lack of creative thinking among Chinese students (Niu & Sternberg, 2006).

In the next section, I will present detailed information about the 2011 ECS. The ECS are seen as guidelines for EFL teachers in various areas in China. In this research, the local education department uses ECS as guidelines for the local EFL teachers.

2.7 The English Curriculum Standards.

The 2011 ECS were developed in response to the New Curriculum Reform (2001) to meet the needs of promoting economic and technological development and communication with the international community (Zhang, 2012). The ECS (MOE, 2011) reflect the belief that teaching and learning English at the compulsory stage lays the foundation for improving the nation’s global competence and the whole nation’s quality through cultivating talents and developing professionals who possess creativity and intercultural communicative competence. This corresponds to the position English has in China that it has the capacity to strengthen nation’s power (see section 2.5). Different from the previous curricula, the ECS also place importance on individual development in terms of humanity. They states that learning English emphasises on cultural and humanistic aspects, assisting students to broaden their visions and developing tolerant

characteristics, improving the awareness of intercultural communicative competence, and facilitating their cognitive development and forming correct values (Cheng, 2011; MOE, 2011). Thus, mastering English not only allows students to participate in knowledge and technology innovation in the future, but also supports their personal development including the development of thinking skills that provide them with a foundation to better adapt to the dynamic and globalised world. It is suggested that the new curriculum perceives English education to be about making a person a better thinker, and learning a second language helps students to improve their learning of other subjects by promoting their analytical and interpretive capacities (Cheng, 2011).

Regardless of the constraints of exam-oriented education (see section 2.6), the 2011 ECS revealed an awareness of the necessity to reform the exam-oriented system. They stress the shift from traditional teaching methods to a communicative teaching approach (Gong, 1999), from teacher-centred to learner-centred classrooms, from an exam-oriented educational system to an “essential-qualities-oriented education ... focused on developing students’ creative spirits and practical abilities” (Li & Johnston, 2015, p.385), and from purely emphasising linguistic knowledge to integrated skills. They require that learning English no longer entails mimicking, repeating and reciting of the linguistic knowledge, meaning negotiation and fostering creativity are also important aspects of mastering a foreign language. Guided by teachers, students should be able to construct knowledge, develop skills, broaden horizons, foster independent thinking and demonstrate their personality in EFL classes (MOE, 2011).

In terms of the nature of the new English curriculum, instrumentality and humanity are the dual characteristics for teaching English. Regarding instrumentality, the task of teaching English is to develop students’ English literacy and their thinking; and to foster creativity is a part of humanity. The ECS (2011) recognises the value of thinking skills as they shares the same beliefs as in Vygotskian theory, that language is a tool for communication as well as a tool for thinking (Vygotsky, 1978), and learning a foreign language improves individuals’ cognitive development so as to foster the awareness of creativity. They also suggest that

thinking skills developed in the English class need to be applicable to other areas of learning, including creativity in science and knowledge. The emphasis on technology and science in the English curriculum may indicate the necessity for interdisciplinary development among different subjects. Nevertheless, one could assert that there is an overemphasis on science and technology in the English curriculum and, that learning English seems to serve as a way to foster scientific competence, and that higher-order thinking is more related to science and technology learning.

The goal of the 2011 ECS derives from a holistic approach integrating students' competencies with regard to language application, in order to facilitate cognitive development and promote a humanistic quality through English learning. There are five aspects of English learning which jointly construct the main goal of the English curriculum (see Fig. 2.2). These five aspects share the same importance in terms of English learning and also reflect the status of English in China (see section 2.5). They reveal that foreign language learning involves much complexity, and integrates various linguistic, psychological and social variables (e.g. personality, communicative competence, motivation, cognitive capacity) that influence the desire to learn a foreign language and to develop mastery of it (Peng & Woodrow, 2010).

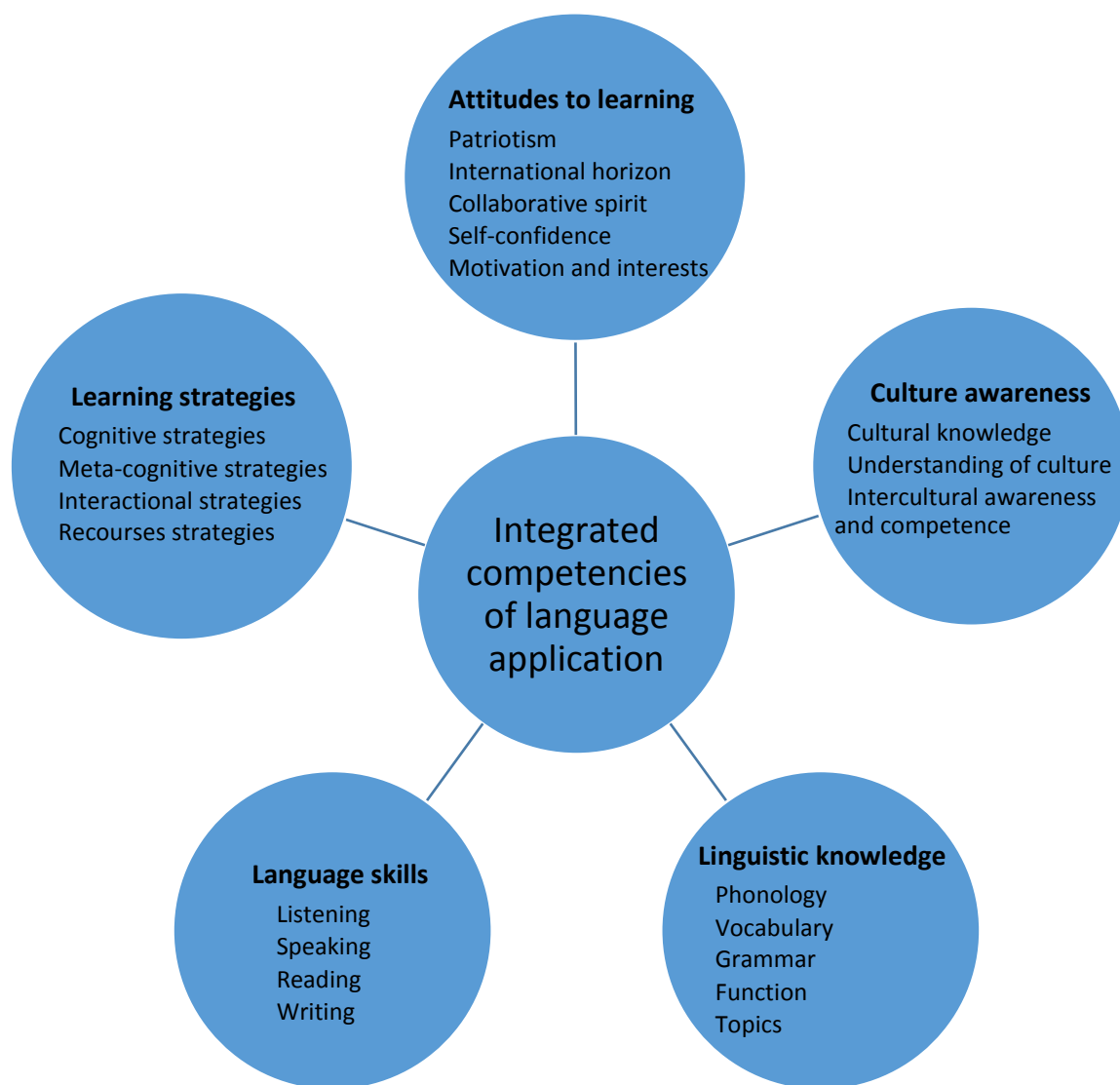


Fig.2 1 The structure of the goals for English Curriculum Standards (adapted from MOE, 2011)

The learning objectives within these five aspects clearly show that learning English has transformed from learning skills and knowledge to include another three aspects of EFL learning - learning strategies, cultural awareness and attitudes to learning, which will be further illustrated in a later section. In order to achieve the goal of the ECS, the specific learning objectives for these five aspects are divided into nine levels based on the different year groups in compulsory education (see Fig. 2.3).

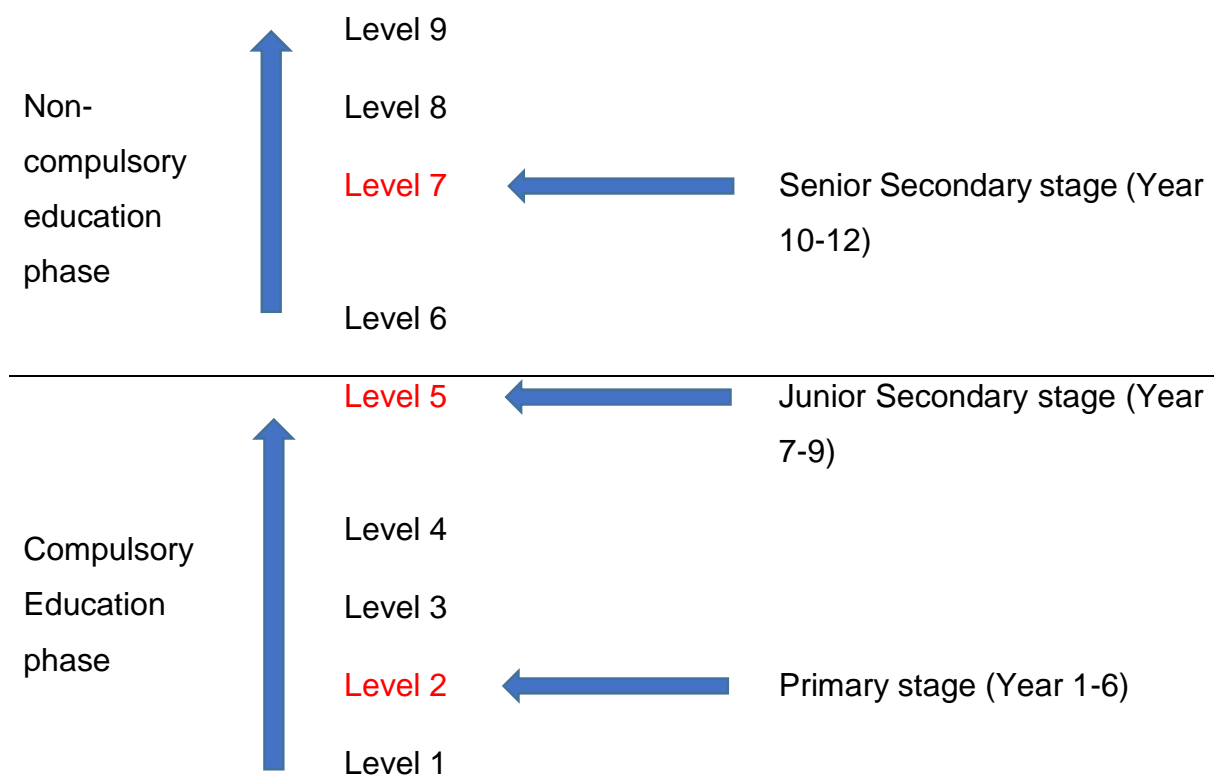


Fig.2 2 Levels of learning in the English curriculum (MOE, 2011)

In the compulsory education phase, students need to achieve the minimum level 2 when they finish primary school, and some can achieve higher. At the junior secondary level, they should achieve level 5. To complete secondary school, learners need to reach level 7. In order to provide more rooms for the local schools to adjust their teaching practices according to the local context, the 2011 ECS provides 5 levels (level 1 - level 5) of learning objectives for the language skills aspect, while for the other four aspects, only level 2 and level 5 are given. Therefore, since primary education is the focus of this research, I will present the specific descriptors focusing on level 1 and level 2 for language skills, and level 2 for language knowledge, learning strategies, attitudes to learning and cultural awareness.

First, the ECS (2011) regards language skills (see Table 2.1) as an essential part of the use of language; they are fundamental to students' language learning and real-life communication. The objectives for language skills are clearly specified in the ECS for EFL education, providing more explicit guidelines for teachers regarding the competences that learners should achieve at different learning

stages (Zhang, 2012). Consistent with the development of the status of English in China (see section 2.5), knowing English language skills assists students in accessing knowledge and communicating with the world.

Table 2. 2 Level descriptors for language skills (MOE, 2011)

Level	Skills	Learning objectives
Level 1	Listening	<ol style="list-style-type: none"> 1. Students can recognise and understand the vocabularies and sentences with the aid of pictures or real-life objects. 2. Understand simple instructions and respond appropriately, such as by colouring, drawing and acting. 3. Understand simple stories and respond with the aid of pictures and actions.
	Speaking	<ol style="list-style-type: none"> 1. Imitate the recordings. 2. Take part in a conversation involving greetings and exchange personal information such as names and age with others. 3. Be able to express feelings and attitudes, such as likes and dislikes. 4. Be able to guess the meaning behind performances, and speak the words or phrases according to the images or texts. 5. Learn to sing around 15 English children’s songs. 6. Be able to interact and play games with instructions from the teachers. 7. Take part in simple role plays.
	Reading	<ol style="list-style-type: none"> 1. Be able to recognise words with pictures. 2. Be able to read aloud the learned words with their referents. 3. Be able to read and understand simple stories with the aid of images.
	Writing	<ol style="list-style-type: none"> 1. Be able to write letters and words correctly. 2. Be able to write words and sentences with references to exemplars.

	Visual and listening	Can understand simple English in English cartoons or English teaching programmes. Visual and listening time should not be less than 10 hours per academic year (20-25 minutes per week).
Level 2	Listening	<ol style="list-style-type: none"> 1. Understand simple speech with the aid of images, pictures and gestures. 2. Understand simple stories with the aid of images. 3. Understand simple inquiries in classroom interaction. 4. Understand common instructions and respond appropriately.
	Speaking	<ol style="list-style-type: none"> 1. Speak clearly with correct pronunciation and convey meaning through intonation. 2. Be able to engage in a dialogue about personal and family situation. 3. Be able to use common expressions (e.g. greetings, farewells, apologies). 4. Be able to describe daily topics. 5. Tell stories with the aid of pictures and support from teachers.
	Reading	<ol style="list-style-type: none"> 1. Be able to recognise and read aloud the learned words. 2. Be able to read simple words according to their spelling. 3. Be able to understand the simple instructions given in textbooks. 4. Understand the information expressed on greeting cards. 5. Be able to understand the meaning of short stories with the aid of pictures and to form the habit of reading in phrases. 6. Be able to read aloud all the stories or texts that have been learned.
	Writing	<ol style="list-style-type: none"> 1. Use upper and lower-case letters and punctuation correctly. 2. Write simple greetings. 3. Write simple sentences based on the pictures, words and example sentences.

Playing and acting, audio and visual	<ol style="list-style-type: none"> 1. Be able to use simple language to play games. 2. Perform a drama or story with the teacher's help. 3. Be able to sing simple English songs (about 30 songs). 4. Be able to understand English cartoons and English teaching programmes. The audio and visual lessons require no less than 10 hours per academic year (20-25 minutes weekly).
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Based on the above descriptors, it can be seen that apart from the four basic skills in language learning (listening, speaking, reading and writing), acting is one of the learning objectives for students to achieve at the end of their primary school education. This objective draws the four skills together into a comprehensive English language application; students need to use the language to communicate and play games. This indicates that language learning is no longer solely tied to linguistic knowledge development and accuracy, but as an intellectual activity which requires students to use thinking skills such as, information processing, reasoning, creative thinking, and critical thinking in order to participate, collaborate, communicate, interact and act out their thoughts in real-life dialogues (Li, 2011). This is reflected in both language reception (e.g. listening and reading) and production (e.g. speaking, writing and acting). For example, understanding vocabularies, sentences and simple speech (see the listening skills at level 1 and 2) requires students to process the information by making connections between the images and symbols students have in their mind; this could be done through contrasting, comparing, differentiating, relating and examining learned and new knowledge.

Expressing personal feelings and engaging in daily dialogue using common expressions (see speaking skills) requires students to be able to apply the language, interpret others meaning and respond with appropriate responses. Interestingly, playing is considered to be a part of language learning development which indicates that language learning includes the element of playfulness, which is a feature of creativity (see section 3.6.2). It also suggests that language learning should be an emotional activity which can be fun. The reading skills objectives requires learners to elaborate the words, phrases and sentences by

making inferences with the spelling, pictures and to use information which is beyond what is explicitly written. Children need to make connections, analyse and construct their understanding of the text or stories in a foreign language. Therefore, promoting reading skills involves mental activities which includes various thinking skills (Lewis & Smith, 1993). Above all, although no specific requirements for development of thinking skills in the language skills aspect, such skills are necessary and embedded in the intellectual activities required for the development of language skills.

Similar to the language skill aspect, thinking skills are embedded in the process of developing linguistic knowledge (see Table 2.2).

Table 2. 3 Linguistic knowledge (MOE, 2011)

Level	Knowledge	Descriptions
Level 2	Pronunciation	<ol style="list-style-type: none"> 1. Read the 26 letters of the alphabet correctly 2. Understand spelling patterns 3. Understand stress in words and sentences 4. Understand that English pronunciation, includes linking, rhythm, pauses, intonation etc.
	Lexis	<ol style="list-style-type: none"> 1. Understand that words are formed in letters. 2. Know that learning vocabulary means knowing to its pronunciation, meaning and spelling. 3. Learn 600-700 words and approximately 50 common expressions related to the topics designed for this level. Be able to use approximately 400 words to describe the relevant topics.
	Grammar	<p>Be able to understand the meaning and the application of the following grammar rules in particular contexts:</p> <ul style="list-style-type: none"> - The singular and plural forms of nouns and possessive nouns. - Pronouns and possessive adjectives. - Present tense, present continuous tense, past tense and future tense.

		<ul style="list-style-type: none"> - Prepositions used in time, place and positions. - The basic forms of simple sentences.
	Function	Understand and apply the following functions: greetings, introduction, farewell, inquiries, invitations, appreciation, apologies, attitudes, suggestions and wishes.
	Topics	Understand and use language connected to the following topics: personal information, family and friends, body and health, school and daily life, recreational and sports activities, holidays, food, costumes, seasons and weather, colours, animals, etc.

For example, understanding and memorising grammar rules, identifying and understanding spelling patterns, which requires students to “translate” the letters into phonetics and recognise the interrelation between the sounds for different letters in order to produce the correct pronunciation as well as memorising the vocabulary all entail the use of thinking skills. The topics listed in the descriptor allow teachers to develop students’ linguistic knowledge of real-life topics such as sports, school and food), which strongly emphasises the importance of comprehensive English language application. In the process of using the language, students might need to use their analytical skills as they need to distinguish, examine or relate the situation to their knowledge in order to use the appropriate language for a particular context. Therefore, developing linguistic knowledge is not only useful for tests, and rote learning is not the only way to gain learning linguistic knowledge. The reason for developing linguistic knowledge is to be able to use it in real-life situations.

Learning attitudes refers to learning interests, motivations, self-confidence, perseverance and collaborative spirits (MOE, 2011) (see Table 2.3). These factors influence students’ language learning process and its outcomes (Dörnyei & Ushioda, 2009). Teachers are encouraged to promote students’ learning interests and encourage positive learning attitudes towards the learning situation.

Table 2. 4 Learning motivations and attitudes (MOE, 2011)

Level 2	Descriptions
	<ol style="list-style-type: none">1. Experience interest in learning English.2. Express oneself in English without being afraid of making mistakes.3. Be willing to actively use English.4. Actively participate in classroom activities.5. Be able to actively work collaboratively with other members in the group.6. Ask for help when they come across difficulties.7. Be open and happy to know about foreign culture, and strengthen awareness of the motherland.

For instance, one of the learning outcomes is the willingness to actively participate in class. This is in alignment with the sociocultural perspective of learning, that learning is a form of interaction and, that language can be a tool to mediate knowledge co-construction among learners (Lantolf, 2000). EFL learners could use English as a tool to create new meanings. Therefore, the focus of language learning in addition to language skills and linguistic knowledge is to form a channel for information sharing, communication, and negotiation (Li, 2011). Thus, encouraging students' active participation highlights the importance of developing students' autonomy and thinking skills are an important feature of autonomous and active learners (Li, 2011).

Expressing oneself in English without being afraid of making mistakes indicates that students are willing to take risks to try out their ideas in English, which helps to foster possibility thinking (see section 3.6.2). Strengthening the awareness of the motherland and being open and happy to develop knowledge about foreign culture resonates with the English status in China (see section 2.5). This could simply suggest that students need to memorise certain facts, such as places of interest in foreign countries, or expressions to describe Chinese traditions. It could also lead to critical thinking development that as one needs to have the ability to distinguish cultural differences, have a sense of curiosity and to see the world from different perspectives. The above ability could be defined as critical

cultural awareness (Byram, 1997) which could enhance foreign language development.

As can be clearly seen from the learning strategies aspect (see Table 2.4), the traditional teacher-centred Chinese EFL classroom has transformed into a learner-centred environment, and more emphasis is placed on personal development, through active participation, learners' autonomy and collaboration. This aspect helps learners to develop their ability to use English in real-life contexts, cultivates learners' autonomy, fosters different and effective learning strategies including interactive classroom participation and develops communicative competence (MOE, 2001).

Table 2. 5 Learning strategies (MOE, 2011)

Level 2	Descriptions
	<p><i>Basic Strategies</i></p> <ol style="list-style-type: none"> <li>1. Actively cooperate with peers and jointly finish the tasks. <li>2. Take the initiatives to consult teachers and peers. <li>3. Develop simple English study plans. <li>4. Actively review and summarise what has been learned. <li>5. Make association between words and their referents. <li>6. Learn with concentration. <li>7. Pay attention, listen, and think actively during classroom interaction. <li>8. Try to read English stories or other extra-curricular English materials. <li>9. Actively express and communicate what has been learned. <li>10. Observe the application of the simple English used in the media and daily life. <li>11. Be able to use simple reference books to learn English.

Individual development is reflected in the basic strategies descriptors. The learning objectives indicate the requirement to promote students' thinking skills, these including, for example, making enquiries and taking the initiatives to consult teachers and peers, thinking actively, expressing their own ideas and

communicating with others, and actively reviewing and summarising what has been learned. Learning attitudes, motivations and learning strategies aspects all reveal the language classroom as a communicative community where students and teachers interact and create spaces for meaning co-construction, information sharing and thinking. Active participation in the learning tasks, in which thinking skills such as analysing, being open to others, creative thinking and critical thinking are required, leads to foreign language development.(Li, 2011).

Nevertheless, it is not clear what types of thinking skills should be promoted, or how. Active thinking could be interpreted in many different ways, such as memorising vocabularies efficiently, or reasoning about and analysing a problem actively in the mind. However, the basic strategies serve to achieve the main goal – developing integrated competencies in English language application. Therefore, the learning objectives of this aspect supports the development of other aspects, for example, the improvement of students' reading skills by encouraging students to read English stories and the promotion of speaking skills through collaborative learning; linguistic knowledge is embedded in these skills.

With the call for globalisation, collaboration with people from different cultural and national background is essential, and therefore, developing students' cultural awareness (see Table 2.5) helps them to develop their 21st century competencies. In line with the status of English in China, the love and hate relationship inform the importance of developing an international horizon while maintaining the Chinese tradition.

Table 2. 6 Cultural awareness (MOE, 2011)

Level	Description
2	<ol style="list-style-type: none">1. Know the simple form of addressing people, and greetings and farewells.2. Respond properly to compliments, requests, and apologies.3. Know the major entertainments and sports events in the world4. Know the names of the food and drinks of English-speaking countries.5. Know the capitals and flags of English-speaking countries.6. Know important symbols of English-speaking countries such as Big Ben for the UK.7. Know the main festivals of English-speaking countries.8. Be aware of the differences between the Chinese and foreign culture when studying and interacting with others.

At level 2 of cultural awareness, remembering is one of the thinking skills students need as they are required to remember the traditions, festivals, places of interest, and capital cities of English-speaking countries. Knowledge of English-speaking countries facilitates helps them to be aware of cultural difference and enables them to interact with foreigners using appropriate language expressions. Nevertheless, no specific requirement exists for students to consider cultural diversity among other non-English speaking countries. This limits the potential to develop students' intercultural competence which an objective in the new curriculum. Therefore, in order to prepare learners to interact properly and effectively with people from diverse backgrounds and ethnicities, who have diverse viewpoints, beliefs and linguistic systems, critical thinking is necessary to help students to develop a deeper level of cultural awareness and understanding of other cultures instead of just memorising the facts of a particular country (Byram, 1997; Nugent & Catalano, 2015). Thus, EFL teachers need to design tasks which incorporate an intercultural stance in order that students can reflect on their beliefs, and practice analysing, interpreting and communicating in relation to the perspectives of another culture (Nugent & Catalano, 2015). Given the opportunities to practise these thinking skills in language classrooms, students could attain proficiency in the English language, feel more connected to real-life-based activities and develop an awareness of real-world issues, and

have “raised the level of intellectual stimulation in the foreign language classroom” (Nugent & Catalano, 2015, p.16).

Regarding teaching suggestions, the new ECS (2011) advocate that teachers provide more spaces for students to develop their thinking, learn collaboratively, and to learn and apply English through observation, imitation, experience, exploration and demonstration. Especially, it stresses that teachers should raise students’ awareness of using language creatively. Therefore, activities are required to be designed according to the communicative approach. This aims to foster students’ ability ‘to use English to do things’, meaning being able to use English in different situations. These activities should be designed to encourage learner participation, so that they develop their language and thinking skills through individual learning as well as collaborative learning. It has also been suggested to organise extra-curricular activities are organised in order to develop students’ thinking skills, imagination and creativity (MOE, 2011). Furthermore, teachers also need to develop students’ metacognitive skills and reflective thinking so that they can improve their own language learning. Based on these requirements, thinking skills such as imagination need to be promoted along with language learning.

However, similar to the learning objectives shown above, there is no clarification on the definition of thinking skills. It seems that thinking skills, imagination and creativity are regarded as three separate concepts yet they are overlapping (see Chapter Three). Besides this, there is no guidance with regard to designing relevant activities. Apparently, what to teach has been stated but without explanation or guidance on how to teach. Therefore, this curriculum only reflects the need for developing thinking skills in EFL classrooms, but with little emphasis on the practices. Situated in an exam-oriented system, the aim to develop thinking skills becomes difficult to achieve, and this curriculum might not be in congruous with the exam system or with the teaching practices and pedagogy.

The ECS (MOE, 2011) encourage teachers to use teaching materials such as the blackboard or whiteboard, flash cards, graphs, pictures as well as technology and the internet creatively. It is stated that teachers should teach creatively through using a variety of activities. It seems there is an assumption that the EFL teachers

have a certain degree knowledge of creative teaching and teaching for creativity. In terms of assessment, students should be encouraged to reflect on their learning process in order to improve their learning outcomes. Regarding students' reading and writing, one of the criteria is to assess whether the students have the ability to express their own thoughts.

Above all, the new curriculum highlights the importance of teaching thinking. However, there is no detailed descriptions of the conception of thinking skills, or instructions for advocating and promoting them. Therefore, this could lead to a gap between policy and teaching practices. Additionally, there are few supportive documents and guidelines to be found that contribute to the training of teachers and the implementation of thinking skills at the primary stage. Therefore, as language classrooms are being seen as interactive learning communities, an exploration of how teachers promote thinking skills through classroom interaction, and a comparison of this with the policy, would be of great interest, and would reveal how the social, cultural and political factors affect teachers' cognition of thinking skills.

Last but not least, it is worth pointing out that at the HE level, critical thinking has become a vital component. In 2015, the textbook of intensive reading for English students was replaced with *Critical Reading: Language and Culture* (Sun, Lan, Xia, Gao, Zheng & Wang, 2015). It is clearly demonstrated in the textbook that students are required to use critical thinking skills in language learning activities. However, there is limited explicit requirement for critical thinking development prior to HE. Regarding secondary education, reflective thinking is mentioned but has not been further elaborated. At level 8, which is a more advanced level than the minimum requirement for senior secondary education, problem-solving and inferring have been listed as thinking skills to be developed in terms of critical thinking (MOE, 2011). This seems to suggest that critical thinking can be promoted only when students have reached level 8. There is no explicit description of critical thinking at the compulsory education level. However, developing thinking skills is a process which could be started at the early stage of language learning instead of advocating it at a particular stage without any preparation and fundamental knowledge. Since little detail is provided of the

concepts behind, and the features of, thinking skills, this could lead to ineffective teaching resulting in an inconsistency for thinking skills' development at different stages of language learning.

2.8 The EFL environment

Classroom dynamics are closely related to the teachers, learners and the tasks, which also, in turn shape the instant context co-constructed by the perceptions of all actors involved (Dörnyei, 1994; Peng & Woodrow, 2010). Therefore, it is essential to provide an overview of the current EFL classrooms.

In 2014, the average number of students in a Chinese primary school classroom, in both the public and private institutions, is 38 (OECD, 2014). It is stipulated that EFL classes should take place weekly, about 3-4 times per week, and for no less than 80-90 minutes per week (MOE, 2011). In China, each lesson lasts for 40 minutes, with a 10-minutes break between lessons. Most students are exposed to English language learning for 1-3 hours each week in class (Yang, 2015). The classrooms are usually set up in rows. Teachers stand at the front of the class. It has been argued that this is a symbol a teacher-centred learning environment (Cortazzi & Jin, 2006). Along with the education reforms (see section 2.6), the Chinese government has simplified the curriculum and lessened homework loads (Jin & Cortazzi, 2002). Nevertheless, due to the exam-oriented system, increasingly, Chinese primary school students are sent to paid tuition schools after regular school hours in order to boost their exam results, even as the Chinese government is calling for reducing the work load on students. However, outside the class, there is little opportunity for students to learn authentic English from TV channels and radio broadcasting. Therefore, the ECS (2001) require teachers to organise extra-curricular activities such as, organising English speaking contests or English drama (e.g. Cinderella) competitions to promote language learning and collaborative group work in order to help students to practically use the language, for instance,.

Regarding EFL teaching, the ECS gives teachers more power from the central government over their teaching practices and local context. As presented previously, the methodological picture of the Chinese EFL classroom is complex

(Hu, 2002) (See section 2.6). In order to help students to pass exams, traditional teaching methods are still dominant in the EFL class (Wang & Gao, 2008; Sargent, 2015). This is also attributed to the large class size and limited teaching hours; there is insufficient time and space to promote students' communicative competencies and other skills, while the traditional teaching methods save time and are more efficient at developing subject knowledge. In practice, whole class instruction, discipline, sentence manipulation, fill-in-the-blank practices, cloze passages and translation exercises characterise the Chinese EFL class (Hu, 2003; Yang, 2015). Sargent's study (2015) also confirms that the traditional practices of lecturing and making use of memorisation are frequently used by EFL teachers. Yang (2015) points out that knowledge-level thinking is the focal point. However, there are still other pedagogical practices that teachers would like to use in EFL classrooms which are in alignment with the ECS. For instance, using open-ended questions, encouraging class interaction including group work and pair work, playing games, singing songs and giving opportunities for students to express their own opinions (Sargent, 2015). Besides, as the ECS (2011) emphasise integrated competencies of language use, teachers are expected to relate their teaching practices to daily life topics. Hence, most of the activities they design are related to the students' living environment; these topics are provided in the selected textbooks or designed by the teachers themselves. However, it is still challenging to implement the pedagogical innovation advocated by the education reform due to the pressure of examinations (Sargent, 2015).

In the English classes, students are expected to remain in silence while the teacher is delivering knowledge, both to show respect and as a matter of discipline. They will be taken through a text or a dialogue word by word, sentence by sentence several times in order to memorise the sentence patterns and practise their pronunciation. Yu and Wang's (2009) study showed that Chinese EFL learners generally use direct strategies such as memorisation more frequently than a metacognitive learning strategy, which is a major consequence of the learning context, classroom practices and the examinations. Therefore, the current language teaching and learning environment is not supportive of the development of students' communicative competence, learner autonomy and thinking skills which are prescribed as part of the goal in the ECS (2011) (see

section 2.7). Therefore, situated in an exam-oriented system, how primary EFL teachers promote and implement thinking skills into their teaching is worth investigating.

Chapter 3 Literature Review

3.1 Introduction

This chapter reviews the literature and research studies of thinking skills in education. It starts with an introduction to the different thinking styles in the West and East. In general, there are different perspectives in understanding thinking, mainly psychologically (as a mental process) and philosophically (Fisher, 2011). The different philosophical understanding of thinking results from the origins in thinking, as East Asia was considered to be related to the Confucius tradition whereas the West has been described as originating in the Ancient Greek tradition. Although the different Eastern and Western perspectives have impacts on an individual's thinking style, this literature review identifies the connection between the two, arguing that these two different ways of thinking are not polarised as described.

The definitions of West and East provided in this study are general. For one thing, one of the focuses of this research is on the EFL teaching and learning context, and English is the native language of some Western countries, such as the UK and the USA. Thus, the term West is used to refer to the Anglo-Saxon system (Starr, 2012), and East refers to Confucian-heritage systems such as that in China. West and East are generalised terms which blur the differentiating individual countries, yet are widely used in literature and cross-cultural comparative research studies looking at the Eastern Asian regions (mainland China, Hong Kong, Taiwan, Japan, South Korea and Singapore) (Tran, 2013) and North American and European countries (e.g. Dahlin & Watkins, 2000; Li, 2015; Li & Wegerif, 2014; Nisbett, 2003; Starr, 2012). It is also acknowledged in the Chinese society to describe the contrasting practices with the ways things are done in China (Thøgersen, 2015). For another, there are various approaches to how thinking is conceived of and taught in these two systems, although it is superficial to make generalisations and stereotypes about the characteristics. However, it would be useful to make a statement in order to be able to understand, analyse and distinguish thinking and the teaching of thinking in both Western and Eastern traditions (Li & Wegerif, 2014), especially considering that

most work and research on thinking has been conducted from the Western perspective while little is known of the Eastern conceptions and approaches to teaching thinking (Li, 2015). Therefore, reviewing these two systems of thinking is necessary in this thesis.

Definitions of critical thinking and creative thinking will be presented and discussed in the next chapter. For one thing, the Chinese MOE established policy and reforms focusing on promoting students' creativity and thinking skills (see sections 2.4.2, 2.6 and 2.7). Developing students' foreign language proficiency is inseparable from developing their thinking skills. The meaningful use of language is embedded within creative and critical thinking since one needs more than one perspective to communicate and exchange opinions with others. For another, the aim of this research is to investigate teacher cognition of thinking skills, and these are the good thinking skills worth promoting in EFL classrooms. Additionally, HOT has been described as umbrella term which encompasses various forms of thinking such as critical and creative thinking, which are prominent in facilitating students' abilities to transmit knowledge and skills into responsible and meaningful actions (Miri, David & Uri, 2007). Therefore, a large body of literature focuses on investigating the development of critical and creative thinking in the field of education, (e.g. Dwyer, Hogan & Stewart, 2014; Krathwohl, 2002; Lewis & Smith, 1993; Wegerif, 2015), as they consisted of the various relevant HOT skills (Krathwohl, 2002, see section 3.2.1). A conceptual understanding of HOT skills offers creative solutions to real-life problems, engagement in critical analysis of materials, resilience and collaboration, which are major aspects of 21st century skills (see section 3.4) (Wegerif, Li & Kaufman, 2015).

Following this section on the definition of creative and critical thinking is a review of the key approaches to promoting thinking skills and a discussion of the factors which provide teachers with opportunities to promote students' thinking skills in the EFL context. The teaching of thinking skills draws on both psychological and philosophical perspectives (Moseley et al., 2005a). Different thinking skills frameworks and programmes are developed based on their understanding of thinking and values given to promoting thinking and the type of thinking that is important for lifelong learning (Moseley et al., 2005a). Although there is no

thinking skills intervention in this study, the reviewing of different frameworks of teaching thinking provides insights into the techniques and strategies for developing students' thinking skills, especially for EFL learning.

As the aim of this research is about EFL teacher cognition of thinking skills, a review of literature on teacher cognition will be presented. Last but not least, recent research studies on thinking skills will be reviewed and discussed as these empirical research studies informed the research design and rationale.

3.2 Western ways of thinking

The cultivation of thinking is ancient. Most notably, the Greeks were very concerned about how to structure thought effectively. According to McGregor (2007, p.7), "the Greeks are generally regarded as the earliest teachers of thinking". Philosophers such as Socrates, Plato and Aristotle held a belief in the importance of seeking reasonable and logical explanations, and regarded thinking as based on 'logic'. It is widely believed that much of the Western thought is associated with the cultural tradition influenced by Ancient Greek philosophy (Schaeffer, 2005). This belief has also widely influenced the field of education. Educators perceive thinking as the development of the intellect (Jarvis, 2005; McGregor, 2007). For example, the Socratic dialogue is a method which aims to stimulate an individual's critical thinking and to illuminate ideas via discussion between individuals through asking and answering questions. Problem-solving tasks enable students to use critical thinking skills to speculate among themselves and support their learning through the use of dialogue between them and the expert; new ideas will be generated and evaluated (Kutnick & Rodgers, 1994; Topping & Trickey, 2007). The pedagogy of Philosophy for Children (P4C) (Lipman, 2003), has some similar features to Socratic dialogue, although it is rooted in the work of the philosopher John Dewey (Goodman, 2004). It focuses on teaching reasoning and argumentative skills to children through the use of a community of enquiry method (Goodman, 2004; Lipman, 2003).

3.2.1 Different understanding of thinking

Jarvis (2005) emphasises that there have been many attempts to classify the processes of thinking. Throughout the learning and teaching process, reflective thinking has been regarded as essential in education (Rodgers, 2002). Dewey (1933) states that reflective thinking is an educational aim, and identifies different meanings of thoughts:

- Thinking is a 'stream of consciousness' which is 'uncontrolled coursing of ideas' (p.4).
- Thinking involves reflection. It is a 'stream of thoughts' which become as a chain that are linked together to 'utilise in the next term of thoughts' (p.5).
- Thinking is a way of imagination which is usually 'restricted to things not directly perceived' (p.5).
- Thinking can be considered as a set of beliefs, such as 'I think it is going to be colder tomorrow' (p.6).

He argues that thinking enables students to make possible actions with conscious aims, makes possible systematic preparations and invention (p.18), and enriches things with meanings (p.19). Dewey's idea of good thinking includes reflective thoughts, as "thinking is reflective which has a purpose to reach at a conclusion as the basis of both rationality and action" (Moseley et al., 2005a, p.11). Dewey (1933, p.9) identifies that a reflective thought should involve the quality of evidence to deal with a suggestion:

Active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends constitutes reflective thought.

He highlights that a given suggestion should be tested and that people should engage in critical evaluation, and thinking about the original suggestion. He perceives that reflective thinking, which involves criticality, is the aim of education. Thinking is a meaning-making process in which a learner relates and connects his or her experiences to a deeper understanding of the other idea; a rigorous, systematic and disciplined way of thinking which requires interaction with others

and is undertaken with an attitude of valuing the personal and intellectual growth of individuals (Rodgers, 2002). This is good thinking that provides students with a way they can engage in deep learning and thinking to resolve doubts.

Moseley et al. (2005a) state that there is another sense of thinking which is in relation with care and attention - thoughtfulness. It has been argued that there are a variety of senses in which thinking can be described (Moseley et al., 2005a, p. 11), for example,

- semi-conscious thoughts: what we perceive in routine but little direct attention or efforts are needed;
- conscious or deliberate act of reflecting on aspects of experiences; and
- a goal-directed process using imagination, reasoning, problem-solving, etc.

The above definitions of thinking reveal that the characteristics of criticality and problem-solving could be considered as the features of good thinking (Wegerif, 2015). Fisher (2003) also provides a list of features of being a good thinker: open mindedness, perseverance, respecting others, seeking truth, being honest, and self-examination.

Bloom's (1956) taxonomy has been widely used as it considers the nature and the development of the taxonomy as an aid in "developing a precise definition and classification of such vaguely defined terms as 'thinking and problem solving'" (p.10) (see Table 3.1). The taxonomy divides the cognitive domain from simplest behaviour to the most complex behaviours which can be divided into six major classes: knowledge, comprehension, application, analysis, synthesis, and evaluation. These cognitive abilities are hierarchically classified with evaluation as the most demanding, and whereas knowledge as the least.

Table 3. 1 Bloom's taxonomy of cognitive domains (Adapted from Bloom, 1956; McGregor, 2007)

Knowledge	Remembering, recognition or recall of ideas, materials or phenomena (Bloom, 1956, p.62). <ul style="list-style-type: none"> - Define, recognise, identify, label, understand, examine, show and collect (McGregor, 2007, p.17).
Comprehension	Three types of comprehension behaviour are considered: translation, interpretation and extrapolation. Emphasising on individuals' ability to grasp the meaning and present it in communication. <ul style="list-style-type: none"> - Translate, interpret, explain, describe, and summarise.
Application	Applies comprehension in a situation new to the student, requires transferring of knowledge and comprehension to a real situation. <ul style="list-style-type: none"> - Apply, solve, experiment, show and predict (McGregor, 2007, p.17).
Analysis	Emphasis on the breakdown of the material into its constituent parts and detection of the relationships of the parts and of the way they are organised. <ul style="list-style-type: none"> - Distinguish facts from hypothesis, identify conclusions, classify, organise, connect, relate, detect, compare and infer.
Synthesis	Putting together of elements and parts so as to form a whole. This is a process to generate patterns or structure not clearly there before. This domain clearly provides for creative behaviour.
Evaluation	Making judgement about the values, for some purpose, of ideas, works, solutions, methods, materials. It is a late stage in a complex process which involves some combination of all the other behaviours of previous stages. <ul style="list-style-type: none"> - Appraise, judge, criticise, and decide.

Bloom's taxonomy has been modified and categorised to suit educational objectives (Anderson et al, 2001) (see fig. 3.1). It classifies a number of skills which can be used to understand thinking and as a framework to teach thinking.

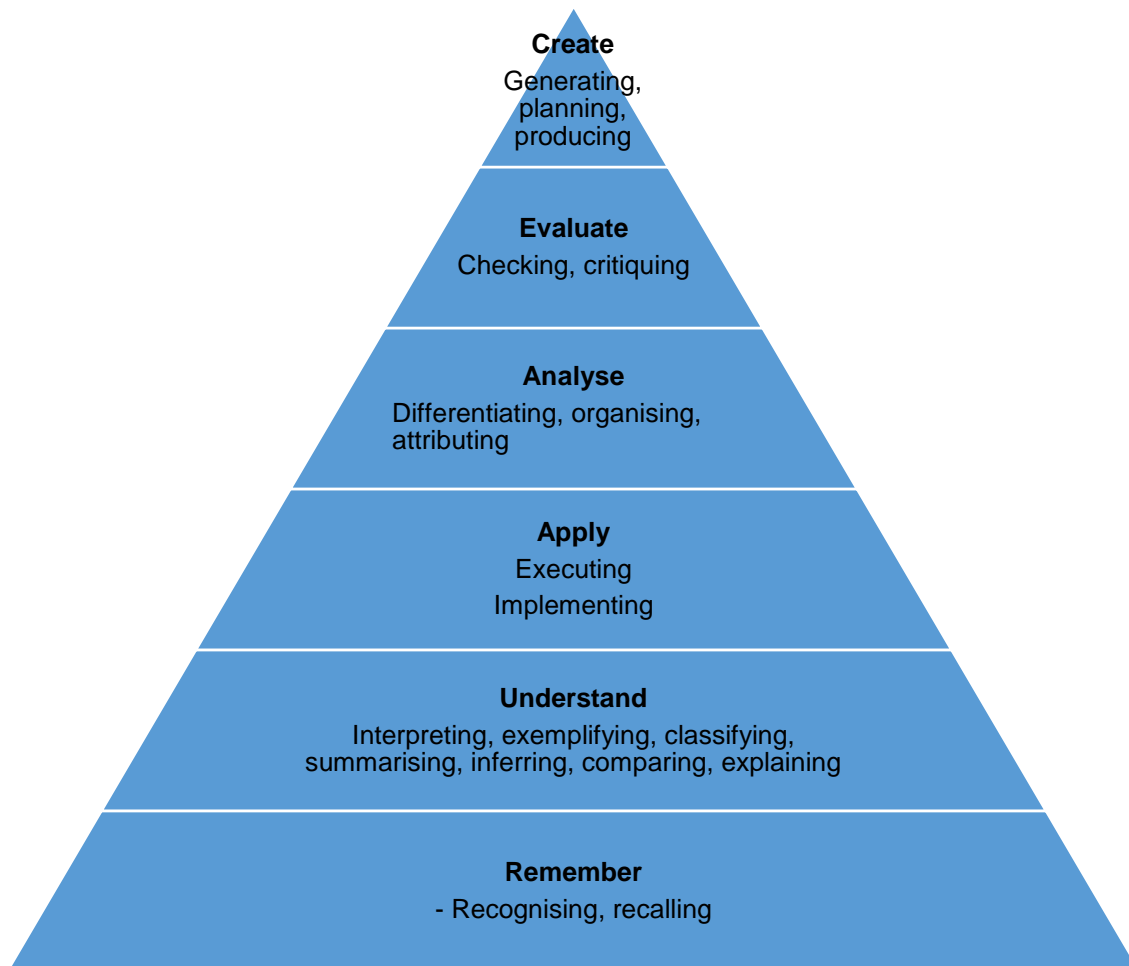


Fig.3 1 Modified taxonomy (Adapted from Krathwohl, 2002)

The modified taxonomy provides a hierarchical framework for teaching thinking. Generally speaking, creative thinking and critical thinking, which are considered to be HOT processes, dominate the top of the pyramid, whereas lower-order thinking (LOT) skills, such as remember, understand and apply are at the bottom (Krathwohl, 2002). Although this taxonomy provides classification of thinking skills, it has raised a concern that thinking is developed in a hierarchical way, and that one needs to acquire the lower-order thinking skills before the higher-order thinking can be developed (Dwyer, Hogan & Stewart, 2014; Krathwohl, 2002). For example, the development of critical thinking skills is dependent on LOT skills, such as memory; one needs to know and remember the information in order to engage in the HOT process (Dwyer, Hogan & Stewart, 2014). However, these HOT and LOT skills can be developed in an integrated way, and may be

interwoven in the teaching and learning process (Moseley, Elliott, Gregson & Higgins, 2005; Resnick, 1987). For instance, problem-solving skills require the interpretation of information, definition of the problem, a search for diverse perspectives to solve the problems, the creative formulation of ideas, and experimentation with the solution (Lewis & Smith, 1993). Therefore, HOT is an umbrella term which covers both creative and critical thinking skills, and developing creative thinking skills is not necessarily more demanding than that of the critical thinking skills. There are overlaps between creative and critical thinking which will be discussed later in this section (see section 3.4).

In Moseley et al.'s (2005b) study, 55 frameworks for understanding thinking are systematically reviewed and evaluated and it is concluded that a generic category for different types of thinking is covered in 35 frameworks, which include: self-engagement (the motivational aspects of thinking), reflective thinking, productive thinking, basic thinking skills (understanding, elaborating and application), knowledge recall and perception. Drawing on this systematic review, Moseley et al. (2005b) also propose an integrated two-way model for understanding thinking and learning, including strategic and reflective thinking and cognitive skills (see fig.3.2). This model was developed not only to present an aspect of understanding thinking, but also to achieve a practitioner-friendly model to be used in education (Moseley et al., 2005b).

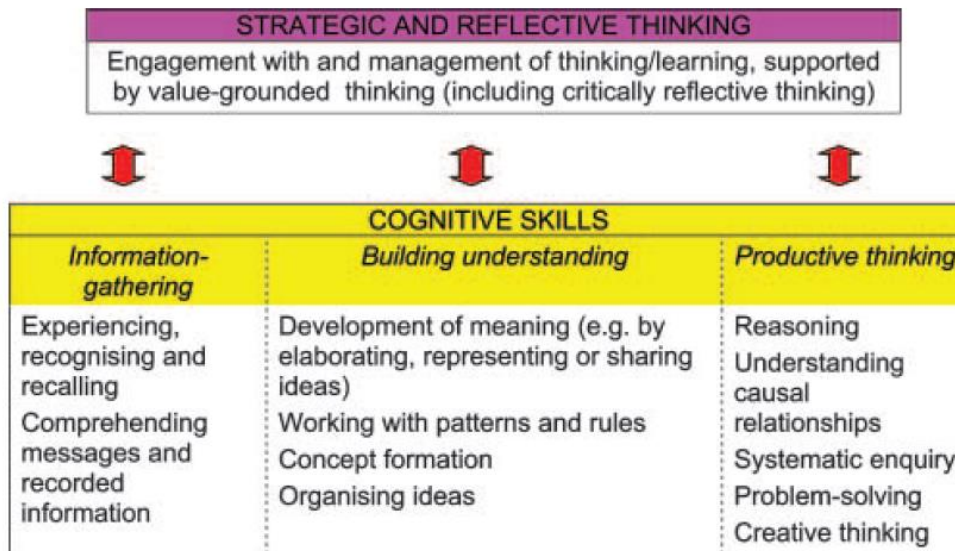


Fig.3 2 An integrated model for understanding thinking and learning (Moseley et al, 2005b)

In this model there are three phases in cognitive skills: information-gathering, building understanding and productive thinking. Moseley et al. (2005b) adopted the term information-gathering to include perception, recognition and information-recall. The use of building understanding is to avoid the negative indications embedded in the basic thinking skills (e.g. LOT), while productive thinking shares a similar meaning to HOT. Unlike Bloom's taxonomy, these phases are not necessarily featured in linear fashion. The model opens up spaces for understanding that different phases can overlap, and learners might go back and shift across these components to acquire the thinking skills they need to use. This model also adopts a more holistic approach to strategic and reflective thinking to involve the ambiguous and overlapping definitions of metacognitive and self-regulatory processes. The model relates to the cognitive process, motivation to learn (e.g. engagement) and introduced the term 'value-grounded thinking' to indicate that different ways of thinking are valuable depending on the context and purpose (Moseley, et al., 2005b). Strategic and reflective thinking may also be applied at any phase of learning. Moseley et al. (2005b) point out that the two-way structured model suggests that thinking is complex and that thinking strategically and consciously can lead to meaningful learning. However, cognitive skills can be unreflective and non-strategic.

3.3 Chinese styles of thinking

As discussed in Chapter Two, Confucianism has had a great impact on learning and thinking in current education, the ways in which this philosophical framework shapes the Chinese style of thinking will be reviewed in this section.

3.3.1 Harmony and holistic worldview

Chinese thinking mainly emphasises a holistic worldview and harmony. According to Confucius, everything should be done in a moderate way and other's point of view taken into consideration to prevent causing disruption to the harmonious environment. Holistic thinker sees the world as a whole picture and it is the dynamics among the elements rather than the elements themselves that matters (Bond, 2010). The pictogram created by Liu (2014) (see fig. 3.3) explains this concept by contrasting different actions the West and East take in terms of proposing opinions and making contact. Although the poster art might be accused of being generalised and stereotyping the East and the West, it has caused a global response in terms of cultural differences as Liu's work is award-winning and has featured in exhibitions in 20 countries (Hohenadel, 2015). It provides a vivid comparison between the East and the West which allows readers to understand the concept more directly and easily.

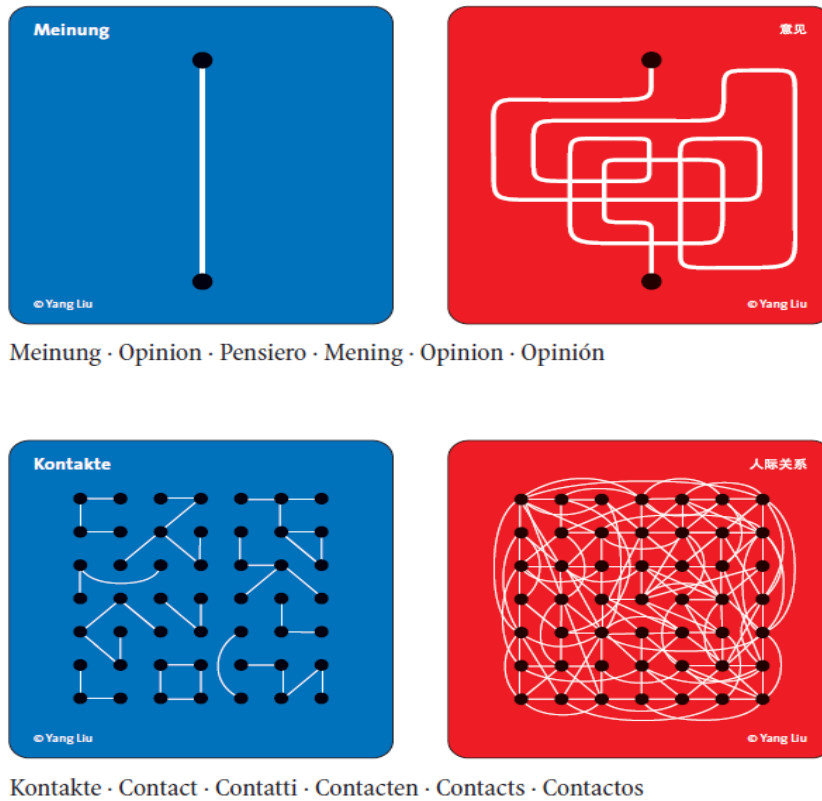


Fig.3 3 East vs West – Opinions and making contacts (Liu, 2012, p.15)

This figure indicates that Chinese thinking (in red) is contextual and situational. In the opinion pictogram, the East circumscribes before proposing an opinion whereas the Western thinking style (in blue) focuses on the point-at-hand (Wingo, 2014) to reach a solution. The holistic approach of the Chinese thinking suggests that one should take account of the other related elements and then arrive at a solution. In other words, one seeks for an agreed solution (*unity*) in relation to others in harmony; the circumscribed process illustrates this type of thinking. The making-contact pictogram shows that the Westerners tend to have a direct, simpler and linear relationship with a few group members. It also illustrates the harmonious and holistic worldview in China and reveals the collectivist nature of Chinese society, in which individuals develop contacts with one another, establish a circular relationship which is complex and across many people in order to develop *guanxi* - association in the hierarchical manner to maintain harmony and social order to achieve success in China (Guan, 2011; Kriz,

Gummeson & Quazi, 2014; Nisbett, 2003). This further explains the importance of harmony and unity when solving problems. It reveals that the Chinese think in a holistic way and their thinking advocate relationships and that everything is connected. There are a large number of empirical research studies providing evidence to support these contrasting cultures of thinking. For example, in Masuda and Nisbett's (2001) research, Japanese and American students were asked to watch animated vignettes of undersea scenes and report the contents. Their study shows that Japanese participants proposed more contextual information and relationships than the American participants. Wingo's (2014) study also uses a 'fish tank experiment' to study the difference between Chinese thinking and American thinking (see fig. 3.4). The study reveals that the Chinese viewed everything in one system from a holistic point of view while the Americans focused on the main point. Other research studies also reveal the learning difficulties of Chinese students in Western countries which underline the very different thinking styles and learning styles (Cortazzi & Jin, 2006; Shi, 2006).

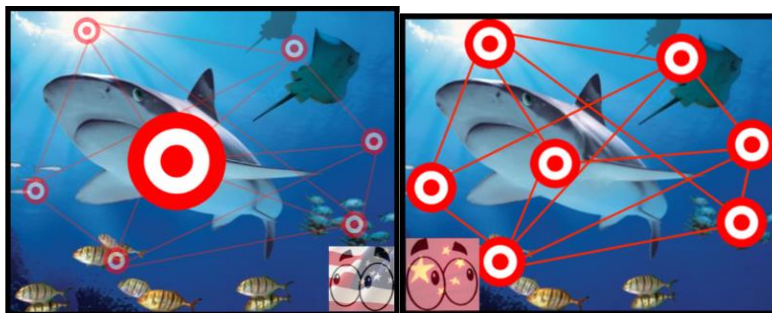


Fig.3 4 Fish for thought (Adapted from Wingo, 2014)

Therefore, a conclusion can be drawn from the above statements and research studies that Western and Eastern conceptions of thinking are different and seemed to be polarised. However, as discussed in Chapter Two, thinking is shaped by its cultural and socio-political context. Therefore, it is argued here that although there are many differences existing between the Eastern and the Western ways of thinking, this does not mean that they are situated in a polarised culture; the socio-political aspect might also shape their thinking.

3.3.2 Reflective thinking

In Confucian education, thinking means reflective thinking (Li & Wegerif, 2014) and the Chinese reflective thinking is different to Dewey's understanding of thinking. Dewey's definition of reflective thinking underpinned his concern for interaction, experience, and impact on educational thinking and practice (see section 3.2.1). The emphasis of Dewey's definition is on the importance of the individual's experience in a community. In other words, it focuses on personal achievement (Li & Wegerif, 2014). However, Chinese reflective thinking is different from Dewey's definition. On one hand, the origin of Chinese reflective thinking lies in Confucianism which is deeply embedded in Chinese values and norms, and emphasises on thinking in relation to contextual factors such as being responsible to the other members of the community (e.g. seek for an agreement) (see section 3.3.1). On the other hand, from the holistic worldview, one should learn with reflective thinking to become a knowledgeable person with moral integrity, and learning without thinking is in vain. As the Master (Confucius) said, "If you study but don't reflect you'll be lost. If you reflect but don't study you'll get into trouble" (Analects, 2.15).

According to Li and Wegerif (2014), Chinese reflective thinking is conducted at two levels – reflection on knowledge and reflection on oneself. First, the level of being reflective on knowledge require students to be independent and active in learning (Li & Wegerif, 2014). For Confucius, the traditional knowledge transmission model is not welcome, which is contrary to the exam-oriented modern Chinese education system (see section 2.5). Instead, he requires students to provide thoughtful responses or questions regarding his teaching through involving themselves in analytical and reflective thinking, "[i]f I raise one corner and do not receive the other three in response, I teach no further" (Analects, 7.8).

This indicates that Chinese reflective thinking encourages individuals to generate ideas from different perspectives. In other words, learners are encouraged to challenge, identify and discover new meaning from their existing knowledge or the teachers'; reflective learning (Li, 2015). This leads to the encouragement of critical thinking and not to blindly obeying the teacher (see section 3.5.1). Another

aspect of reflective thinking is learning from others. Confucius states that one can always learn from the good qualities of others and follow them, and avoid the bad qualities (Li, 2015; Tan, 2016).

Regarding the second level, Zixia, one of Confucius' disciples, stresses the role of reflection in thinking and learning with virtuousness, "[t]here are learning extensively, and having a firm and sincere aim; inquiring with earnestness, and reflecting with self-application - virtue is in such a course" (Analects, 19.6).

This explains that virtue lies within reflective thinking and learning since one needs to think in relation to other members of the same community. More importantly, reflective thinking involves of self-examination and self-questioning in order to discover errors and make improvement. Thus, Chinese reflective thinking enables self-cultivation in individuals as a way to develop humanity and a quality individual (Li, 2015).

3.3.3 Silent engagement and inner reflection

As discussed above, reflective thinking is advocated in the Confucian tradition, it is identified as correlational and social. Students are encouraged engage in deep thinking before they speak, "Ji Wen thought thrice, and then acted" (Analects, 5.20).

This is similar to the previous point that students are required to be responsible for others in the same community. This is also seen as being responsible for one's learning. Therefore, it is easy to observe that students are not asking questions and remain silent in class because they might be engaging in inner reflections, as well as relating to others and their own considerations in the collective interests of attaining unity and harmony (Li, 2015) (see section 2.2). To emphasise this, silent engagement could be an indication that students are involved in deep thinking, that they are looking at a question from a holistic point of view and balancing themselves with others. This process requires time. Li (2015) identifies this as an inner-dialogic approach, one in which students involve themselves in multiple voices to achieve a solution or an agreement through balancing each aspect of the knowledge. Learners are allowed to challenge others in a responsible manner, after reflection (Li, 2015). This is different from the Western

verbal dialogic approach in which students think, discuss, interact, communicate and co-construct knowledge in meaningful talk (Alexander, 2017).

3.3.4 The role of memorisation and repetition

Memorisation has been categorised at the lowest position in Bloom's taxonomy (see section 3.2.1). It is widely believed that students should focus on understanding and on developing HOTS rather than on reciting information. However, this belief is not shared with Chinese educators, who often see that understanding and memorisation work together to produce high quality work. It is believed that one needs to respect previously-learned knowledge and review it several times in order to deepen one's understanding. According to Dahlin and Watkins (2000), the Westerner sees understanding and memorising as two separate processes, and understanding is in a higher position than memorising (Bloom, 1956), which is seen as a surface approach to learning. However, in order to accumulate knowledge, Chinese learners need to memorise it by heart. Thus, repetition is a teaching practice which can help students to deepen their understanding and learn information by heart. Learners can read and engage in different aspects of the teaching content to gain a deeper understanding, and at the same time, memorise it. This is different from simply recalling facts. For example, in Chinese literature classes, students are required to memorise parts of the Analects, and teachers are appreciative if they use this knowledge in essays or other areas of learning. Similarly in EFL classrooms, memorisation is essential as one might need to use working memory resources in order to produce higher-order responses. Higher proficiency in English would require fewer memory resources and so adequate memory resources would remain for satisfactory critical thoughts (Manalo & Sheppard, 2016). With sufficient accumulated knowledge it means that they have learned and internalised knowledge, which they are able to apply in real-life contexts (Cortazzi & Jin, 2006). The role of memorisation has also been viewed as a way of accumulating knowledge for future use (Dahlin & Watkins, 2000).

Through repetition, students might also discover new meanings. It is possible to review accumulated (memorised and understood) knowledge and produce new understandings. Linking old knowledge to solve new problems is embedded in

rote-learning. As shown above, students internalise the meaning of knowledge and use it when they come across a new problem.

It is advocated that stored knowledge can be applied to generate new understanding. "The Master said, if a man keeps cherishing his old knowledge, so as continually to be acquiring new, he may be a teacher of others" (Analects, 5.11). The Confucian approach to thinking places a great importance on reviewing and repeating knowledge so as to deepen one's understanding and memorise it. This is different from the Westerner's understanding of memorisation, which places it in the lower-order thinking category.

The above sections redress the under-representation of the Confucian philosophy of thinking and learning. It is argued here that Chinese thinking is different from Western and it is inappropriate to adopt the Western philosophy of thinking to understand Chinese learning and thinking (Li, 2015). Although there are views that the Chinese style of thinking and learning cannot produce HOT and in-depth learning, in Zhang's (2002) research study, it is revealed that creativity and complex thinking styles were significantly positively correlated with the holistic thinking style, whereas the analytic mode of thinking was significantly negatively correlated.

3.4 Connections between Western and Chinese Thinking

There are similarities and connections between the East and the West in the understanding and teaching of thinking. Ryan and Louie (2007) argued that the claim of the dichotomies between East and West is misleading. They indicated that one should examine the complexities and diversities of the educational systems before comparing them (see Chapter Two). Reflective thinking is encouraged in the Confucian tradition of learning, and this is similar to Dewey's idea that critical thinking is a way of being reflective. It is difficult to have a precise definition of thinking as it is constructed by diverse culture traditions and disciplines (e.g. philosophy, cognitive psychology), and other social dimensions. However, one can obtain a better understanding of the values of other cultures, and make connections to each to improve better learning and thinking. It is also likely that there will be some similarities between these two different cultural

communities, and it is argued that people from different cultures might share some strategies in common. Hence, thinking styles across different cultures do not necessarily contradict on another (Chan & Yan, 2007). People from different cultures might use similar thinking skills when dealing with problems in a particular field. People from different cultures would develop various strategies to cope with problems that are crucial to their survival in their daily life (Chan & Yan, 2007), for example. In Hu and Smith's (2011) research, a blending of cultural perspectives for effective teaching is recommended. It was reported that Chinese and US lecturers aware of the power in each culture applied the strengths of each to pursue teaching excellence.

Furthermore, with the rapid development of globalisation, Western and Eastern cultures should no longer be perceived as polarised. In China, the Open Door policy (1978) introduced a flow of Western thought into China, which impacted on the creative education. Some Western thinking would be bound to influence the construction of knowledge for Chinese learners, as a way of 取長補短 (overcoming one's weakness by acquiring another's strong points). In relation to language teaching and learning, Zhang (2011) point out that the learning strategies in the ECS are proposed with reference to O'Malley and Chamot's (1990) classification and Oxford's (2011) language learning strategy systems.

In recent years, the Framework for 21st century learning (P21) has increasingly attracted attention around the world. Creativity and innovation, critical thinking and problem-solving and communication and collaboration are aspects of the framework designed to prepare students to succeed in the changing world. In Asia, this variety of skills and accomplishments are vital to promote global competence (Soland, Hamilton & Stecher, 2013). It is recognised that critical thinking, creativity, problem-solving, and metacognition are the key competencies for the 21st century. Additionally, Zhang (2011) established the P21 framework with the 2011 ECS. He reported that the content of learning and innovation skills, information, media and technology skills and life and career skills are essential for children's healthy growth and the development of global citizenship.

In addition, students do not necessarily learn most effectively not in a hierarchical manner as in Bloom's taxonomy (Thrilling & Fadel, 2009). It is not necessarily the case that students must have acquired LOT skills before being presented with and learning HOT skills. Different thinking skills can be learned in a more integrated manner but in a random order (Westbrook, 2014). Loose (2016) revised the hierarchical structure of Bloom's taxonomy and pictures it as a wheel. It is suggested that not every lesson necessarily leads to critical thinking and creative thinking, and that these skills can be integrated and learned in any order. Similarly, in the philosophical tradition of Confucianism there is no hierarchical order of learning and thinking as a holistic and 'all-at-once' approach of thinking development (Tan, 2016) is emphasised. Tan (2016) states that Confucianism "encompasses a range of thought processes such as understanding, reflection, analysis, synthesis, evaluation, making connections, drawing analogies, making inferences, forming judgements and so on'- it is a taxonomy of thinking" (p.430-431).

This reveals that the Confucian philosophy of thinking stresses in-depth learning and thinking and the process is compatible with the HOT skills in Bloom's taxonomy. Therefore, it can be concluded that thinking is not necessarily constructed in a rigidly hierarchical way. This is shared by some Western scholars of the East.

As demonstrated above, Western and Eastern philosophies of thinking are not contradictory; they are different but share similarities and connections. Due to different cultures having different definitions of thinking skills, it would be of great interest to find out how Chinese EFL teachers define thinking skills and what thinking skill students might cultivate in from the EFL classrooms. It is clear from the above discussion that different cultures both share and are distinguished by their understanding of thinking. Thus, it would be challenging to provide a universal definition of thinking. It is acknowledged here that 'good thinking' involves a set of complex skills, and the definition of it is developmental according to time and diverse approaches.

3.5 Defining Critical thinking

Understandings of critical thinking are diverse and developing. As mentioned in the previous section, critical thinking is a good thinking practice which, Dewey (1933) sees as being related to reflective thinking (see section 3.2.1). In his definition, reflective thinking involves critical thinking skills which aim at identifying, examining, analysing and evaluating assumptions. Critical thinking is an active thinking process which unpacks the given information, instead of receiving it passively, and takes other perspectives into account. It requires careful considerations so one needs to stop and think instead of continuing unreflectively (Fisher, 2011). Reasoning is another aspect as one needs to find evidence to support the 'supposed form of knowledge'. In order to allow for further implications of the beliefs, these reasons need to be evaluated. There are scholars who have based their definitions of critical thinking on Dewey's perspective; many of the expounded notions involve evaluating information and ideas or judging whether they are plausible or useful (Ennis, 2011; Facione, 1990, 2011; Fisher, 2014; Lipman, 2003; Swartz & McGuinness, 2014).

Ennis (2011) provides a more straightforward definition of critical thinking, "critical thinking is reasonable and reflective thinking focused on deciding what to believe or do" (p.1). This definition emphasises reasoning and being reflective, as in Dewey's definitions. Decision-making is another aspect which is incorporated in the nature of critical thinking. Alternatively, Paul and Elder (2006) define critical thinking as similar to metacognition in that one needs to challenge one's own assumptions from various perspectives, and improve one's thinking through systematic intellectual self-assessment. This involves the feature of metacognition; one needs to have awareness and an ability to monitor and regulate one's own cognitive process (Joke, 2016). Nevertheless, it has been pointed out that this definition is different from other researchers' definitions in the field of metacognition (Fisher, 2011).

In Facione's (1990) report, 46 experts share their definitions of thinking, and Facione's resulting definition is thus considered the most authoritative definition of critical thinking (Wegerif, 2002). "Critical thinking is purposeful, self-regulatory judgement which results in interpretation, analysis, evaluation and inference as

well as explanation of evidential, conceptual, methodological, criteriological or contextual considerations upon which that judgement is based” (Facione, 1990, p.2). Analysing, evaluating, and purposeful reflective judgement are the skills that the critical thinking process involves (Facione, 1990, 2011). The design of the HE textbook in China was also based on this report (Sun et al, 2015) (see section 2.7), and perceives critical thinking as a tool of inquiry (Rodgers, 2002; Sun et al, 2015),

Lai (2011) points out that the disciplines of psychology and philosophy are the two primary roots of critical thinking. The philosophical approach could be traced back to the Ancient Greeks where one focuses on seeking truth, and on the formal application of logic. McGregor (2007) describes critical thinking as arising out of Socratic thinking at that time. McPeck (1990) defines critical thinking as a subject-specific skills, involving use of reflective scepticism within a subject discipline. However, it is argued that some critical thinking skills may well be useful for individuals to apply across real-life settings (Paul & Binker, 1990). Such skills can be practised and might be useful in order to develop expertise (Higgins, 2014). Additionally, the philosophical approach focuses on the qualities and characteristics of the critical thinker (e.g. Ennis, 2011; Lipman, 2003). Some philosophers argue for a normative definition in which critical thinking is related to values (Higgins, 2014); for example, the Confucian approach sees critical thinking as a means of self-cultivation, of becoming a quality person (Li, 2015), whereas, the cognitive psychological approach tends to focus on how people think, and the steps, actions or behaviours a critical thinker would take (Lai, 2011). This approach defines critical thinking in a descriptive way, as a mental process of cognitive skills and strategies that individuals can apply to problem-solving tasks, to open up new possibilities and create evidence for reasoning about and evaluating one’s ideas, as well as to learn new concepts (Lai, 2011; Sternberg, 1986; Willingham, 2007;). Higgins (2014) proposes a synthesis approach derived from the strengths of these two positions. In using the normative domain, one might be able to see if the students used critical thinking and the quality of it, whereas the descriptive perspective would be useful for deciding the valuable aspects of critical thinking to be covered in a specific subject domain in an appropriate context. In relation to the field of education,

Bloom's taxonomy of cognitive domains and the classification of HOT (Resnick, 1987) indicate that critical thinking involves skills such as analysis, evaluation and synthesis, the three highest levels of Bloom's taxonomy.

3.5.1 The Confucian approach to critical thinking

The Confucian approach to thinking resonates with the P21 programme which calls for educators to incorporate high-level thinking into all aspects in the field of education.

Criticality is encouraged by Confucius. He expected his students to have contradictory views to him and regarded this as deep learning. This philosophy recommends that learners be critical and open-minded. This is similar to the definitions presented above, in which the critical thinking process involves skills such as evaluating and analysing. Confucius rejected passive learning and accepting everything without critical thinking (see section 3.3.2). The Confucius tradition of self-reflection requires individuals to discover wisdom by themselves, and requires teachers to speak less and stimulate people to reflection on their teaching and their own learning.

Criticality is embedded in reflective thinking, and it is frequently understood with reference to relationships and responsibilities to others. It is not a property of an individual, as in the cognitive psychology approach (Li, 2015). Self-criticism is another aspect of critical thinking (see section 3.3.2). It aims for self-cultivation and self-examination: it is important to engage in in-depth consideration of one's own life in order to develop humanity and become a person of good quality (Li, 2015).

From another perspective, being critical is implicit in the learner's inner dialogue rather than being explicit within the community. It is not the same as the way Confucian education as a reproductive system is described in the literature (see section 2.2); rather it emphasises a complex silent inner dialogue with multiple voices (see section 3.3.4). Being self-critical means cultivating deep moral values, which in turn leads to responsibility for the collectivist interests (Li & Wegerif, 2014). This is different from Bloom's taxonomy. Critical thinking is

embedded in reflection, which is not developed in a linear fashion from LOT to HOT. Rather, memorising, analysing, evaluating, summarising and synthesising are all important aspects of critical thinking.

3.5.2 Features of critical thinking skills

As the definition of critical thinking develops, more and more features, such as reasoning, challenging, evaluating, analysing, decision-making and being reflective, have been identified and classified by researchers as aspects of critical thinking,.

Below is a table summary of the skills which are recognised by the above scholars and other researchers.

Table 3. 2 Features of critical thinking

Features	Authors
Reasoning	Black (2012); Deane & Borg (2011); Dewey (1933); Ennis (2011); Fahim & Hashstroodi (2012); Fisher (2011); Glaser (1941); Moore (2013); Rezaei, Derakhshan & Bagherkazemi (2011); Siegel (2010); Yang & Chung (2009)
Analysing	Black (2007); Dewey (1933); Fahim & Hashstroodi (2012); Salmon (2002); Paul & Elder (2007)
Reflective	Deane & Borg (2011); Dewey (1933); Facion (1990); Luk & Lin (2015); Yang & Gamble (2013)
Logical enquiry	Glaser (1941); Luk & Lin (2015); Rezaei, Derakhshan & Bagherkazemi (2011)
Evaluating	Black (2012); Dewey (1933); Facion (1990); Fisher (2011); Moore (2013); Rezaei, Derakhshan & Bagherkazemi (2011);
Making decisions	Black (2012); Black (2007); Ennis (2011); Fisher (2011); Salmon (2002)
Making judgements	Black (2007); Moore (2013); Yang & Gamble (2013)
Problem-solving	Fisher (2011); Glaser (1941); Moore (2013)
Drawing inferences; self-regulation; Metacognition	Facion (1990); Paul & Elder (2007)

The list includes some of the skills which I have summarised from the literature; and this table could be endless as the concept is still developing and there is a wide range of research studies that produce similar definitions by using alternative terms. However, these features are valuable as they will form part of the framework for the data analysis of this research (see section 4.8).

According to Facione's report (1990), good critical thinking includes both skills and dispositional dimensions. Glaser (1941) defines critical thinking in relation to disposition. It is a matter of attitude, of being disposed to use thinking skills in a thoughtful way, which is supportive of students' active participation in the learning process (see section 2.7). Paul and Elder (2007) also define critical thinking as involving the improvement of one's quality of thinking through questioning one's assumptions from different perspectives. It is a self-directed, self-disciplined, self-

monitored and self-corrected process. This definition is similar to that of Chinese reflective thinking (see section 3.3.2). Similar to the Delphi report (Facione, 1990), Siegel (1988) proposes that there are two components of critical thinking which are prominent in the educational settings of critical thinking: one is an ability to reason, and the second is a critical spirit and attitude.

Glaser (1941) stresses that critical thinking is the willingness, desire and disposition to drive one's actions and beliefs towards reasoning and thoughtful consideration. Perkins (2011) states that disposition stands in contrast with abilities, and the notion has emerged over the years that the dispositional side of thinking is tremendously important. The importance of cultivating habits of mind is not just having the ability to think about the other side of the case or to look for evidence, but being inclined to do so.

Relevant dispositions include:

- Being honest to face bias (Bailin, 2002; Ennis, 2011; Facione, 1999; Yang & Chung, 2009);
- Being flexible in considering alternatives (Bailin, 2002; Black, 2012; Brookfield, 2012; Facione, 1990);
- Open mindedness (Bailin, 2002; Black, 2012; Facione, 1990);
- Being willing to revise views (Black, 2012);
- Being disposed to seek clarity, truth and accuracy (Fisher, 2011; Yang & Chung, 2009);
- Being reflectively sceptical, to critiquing, doubting and questioning various assumptions (Lipman, 2003; Moore, 2013);
- Being open to exploring possible alternatives (Yang & Gamble, 2013), and
- Being able to debate different perspectives (Yang & Gamble, 2013).

The above dispositions are the commonly cited critical thinking dispositions from research studies and theories. The ability to think critically is distinct from the disposition to do so. Facione (2002) defines critical thinking dispositions as an internal motivation to act and respond to different circumstances. It is variously cast as attitudes and habits of minds, as dispositions are steered by one's

attitudes, values and beliefs (Almerico, Johnson, Henriott & Shapiro, 2011). It is essential for EFL teachers to stimulate learners' intrinsic motivation and provide opportunities for students to develop their critical thinking so as to improve their EFL learning. From a social constructivist perspective, motivation is a state of cognitive and emotional arousal that leads to a conscious decision to act and gives rise to a period of sustained intellectual efforts (Williams & Burden, 2000, p.120). Hence, demonstrating critical thinking habits and maintaining an opened-minded learning environment would foster and encourage students to use English and practise their critical thinking skills.

3.6 Defining creative thinking

Similar to the definition of critical thinking, there is no agreed statement on what creative thinking means in general terms. By this, meaning that there is more than one way to understand this concept.

The definition of creative thinking is constantly being developed as there is no consensus in general. Stemming from the Ancient Greek tradition, creativity was regarded as divine inspiration which originated from the Muses (Sternberg & Lubart, 1999). This mystical approach emphasises that creative inspiration comes from the unconscious mind and it is a spiritual process. People have recognised that human beings have the ability to produce creative works in the mid-19th century. It was this time that the new discipline of psychology conducted studies on "subjectivity of feeling, and in-depth insights, often made manifest in creative products, for example in art" (Craft, 2011, p19). This is the product-oriented creativity which requires the creative product to achieve features of both originality and usefulness (Sternberg & Lubart, 1999). However, creativity can also be process-oriented. It is also fundamental in science, politics, technology, business and in all areas of life (NACCCE, 1999). In this aspect, one of the features of creative thinking is the generative process.

In the mid-20th century, the psychological tradition had expanded and looked at creativity through different lenses, including,

- The psychoanalytic perspective:

Creativity “arises from the tension between conscious reality and the unconscious drives” (Sternberg & Lubart, 1999, p.6);

- The cognitive approach:

Intelligence exploration, believed creativity as “an integral part of intelligence” (Albert & Runco, 1999, p.27) and creative thinking is a staged process (Sawyer, 2003);

- The behaviourist approach:

The conditions of rewarded original responses and products (Craft, Gardner & Claxton, 2008);

- The humanistic approach:

Creativity is a spontaneous process as self-actualization and can also be a special talent (Craft, Dugal, Dyer, Jeffery, & Lyon, 1997).

In addition, creativity was no longer seen as being exclusive to art; science was being considered as a domain in which creativity could be involved. Craft (2001) states that this was a rich and influential period of research into creativity with the focus being on the psychological determination of individual genius and giftedness.

Two major notions derived from the investigation of creativity – high creativity and everyday creativity. High creativity refers to a contribution which is remarkably new, and significant in transformations in the world. Kaufman and Beghetto (2009) frame this concept Big-C creativity. It is related to the genius and giftedness of an individual (Craft, 2005). The other notion is Little-C creativity (Craft, 2002). This focuses on ordinary creativity which enables most people to apply creative thinking skills to solve daily problems. It refers to “personal effectiveness and life-wide resourcefulness” (Craft, 2015, p.348). It tends to recognise that everyone has the potential to be creative to cope with challenges in everyday settings (Craft, Jeffery & Leibling, 2001). Beghetto and Kaufman (2007), however, argue that there is a need to broaden the conception of creativity to address the limitations of the dichotomy between Big-C and Little-C creativity. They propose the Four-C Models of creativity, to include mini-c creativity and pro-c creativity (Kaufman & Beghetto, 2009). It is argued that the traditional view of creativity may fail to recognise the personal insights of the

students (Beghetto & Kaufman, 2010). Mini-c creativity is defined as “the novel and personally meaningful interpretation of experiences, actions and events” (Beghetto & Kaufman, 2007, p.73). It is the “dynamic and interpretive process of structuring personal knowledge and understanding within a particular sociocultural context” (Kaufman & Beghetto, 2009 p.3). The concept of pro-c creativity, on the other hand, is consistent with professional expertise. This approach suggests that creators require a long period of practice to reach a level of expertise in a certain aspect (Kaufman & Beghetto, 2009).

The concept of mini-c will be helpful in discovering how individual students generate thinking which is meaningful to themselves. However, little-c creativity also provides more general and thoughtful insights into how students construct and make sense of ideas interpersonally:

All people are capable of creative achievement in some area of activity, provided the conditions are right and they have acquired the relevant knowledge and skills... Creative possibilities are pervasive in the concerns of everyday life, its purposes and problems; creative activity is also pervasive, many people who are being creative do not recognise that this is what they are doing; creativity can be expressed in collaborative and collective as well as individual activities, in teamwork and in organisations, in communities and in governments.

(NACCCE, 1999, pp.29-30)

It is probably the notion of little-c creativity that is most relevant to education (Craft, 2001) as it is “a seamless part of everyday curriculum” (Beghetto & Kaufman, 2010, p198). This category stimulates creative expression for most students and learning new knowledge might lead to creative practice. In relation to the Chinese context, the ECS (2011) emphasises the need to cultivate individual development in creativity through English language learning (see section 2.7), and this research study is related to everyday teaching and learning practices during classroom interaction. Students’ creative thinking can be demonstrated in their interactions with the teacher. Little-c creativity provides a criterion for personal and everyday creative thinking within the educational setting

which is suitable for this research study. It is suggested that this notion requires three variables (Amabile, 1996, cited in Kaufman & Beghetto, 2009): domain-relevant skills (knowledge, technical skills and specialised talent); creativity-relevant skills (personal factors such as risk-taking and tolerance); and task motivation. To go further, creativity could be defined within a social context during interactions, not just limited to personal insights. For example, Wegerif (2010, p.62) sees creativity as rooted in dialogic space, as he posits that the dialogic gap is,

An opening onto the continuous act of the creation of the world... Instead of identifying with the fixed identities that we construct on either side of the gap, we learn to return to the gap and identify with the space of the gap... In a real dialogue we can enter into the space between us and learn to see ourselves anew from there.

It is believed that creativity is not just an individual's property but can be something which is fostered with others together in an open space. Above all, the little-c conception is useful to underscore the role of everyday creativity, which is not constrained within a certain amount of people. It provides a broader meaning than mini-c creativity since it includes knowledge, technical skills, personal insights, attitudes and motivation.

3.6.1 Creative thinking is a generative process

Creative thinking is a generative process rather than a solid object in one's own mind. The approaches shown above all see creativity as involving the generation of possibilities and novel ideas. The generative process is multi-faceted (McGregor, 2007), not limited to the generation of novel ideas. It could also be constructive behaviour, in which current knowledge or stored information is reflected on in order to generate new meanings. It is a process in which one makes connection with ideas and produces new understandings. In this sense, this way of constructing new meaning from existing knowledge can be creative. It is a generative process as it might generate new tools and new outcomes – a 'new embodiment of knowledge' (Knight, 2002, p.1). During this process, new relationships, new communities of practice, new perceptions of issues and new

concepts might be generated. Vygotsky's (1978) approach emphasises that the creative process of knowledge is a generative process as in his notion of inner speech; the dialogical dimension provides space for the generation of interpreting the dynamic relationships between consciousness and the world. In this research, students' creativity is considered as a process rather than a product. This research is focused on how teachers promote the development of students' creative thinking. Some features of sociocultural approach to discourse analysis are used to analyse the process of classroom interaction in order to find the segments which promote students' creative thinking (see section 4.8.2).

3.6.2 Chinese approach to creative thinking

Many studies have found that people from societies based on Confucian thought tend to be less creative than people from more individualistic societies (Bond, 2010; Kim, 2009). The ability to produce a new but appropriate response to a problem is a much prized characteristic in the West. The creative act requires time, resources for experimentation, a valuing of individual expression, and a freeing of people from prescribed modes of thinking (Cheng, 2010; Craft, 2005; Kim, 2009). Kim (2009) states that the Confucian-heritage learning culture prohibits the development of creativity. The extreme competition for acceptance into prestigious universities has fostered a standardised examination system which focuses on memorisation and rote-learning which limits creativity, and also limits the space and time for learners to develop creative thinking and practice (see section 2.4.3). Kim's (2009) study shows that Confucianism was negatively related to an adaptive type of creativity but not the innovative creative type. Innovators produce quick and novel responses, whereas adaptors are detailed and deep thinkers. Kim's study revealed that Confucianism is negative for deep thinkers which is contrary to the definition of Chinese reflective thinking (see section 3.3).

However, as was discussed in the previous section, rote-learning can also be a way of in-depth learning. According to the Confucian approach, if one keeps reviewing old knowledge, he or she may acquire new information (Li, 2015). It is suggested that the Confucius approach encourages learners to generate new ideas, which echoes the meaning of Chinese reflective thinking (see section

3.3.2). It is worth pointing out here that reviewing old knowledge is not necessarily reproducing or repeating the knowledge. Rather, what Confucius advocated is to review old knowledge, reflect on it and connect it with the current situation or information to generate one's own interpretation or new ideas. This is in-depth thinking and is consistent with original thought based on diverse perspectives. Being able to connect knowledge with other aspects may also require learners to use creative thinking skills.

Definitions of creativity given by various research studies show that the process of creative thinking involves generating multiple ideas and then making a selection of more useful, effective, or appropriate ideas in order to have a workable solution to a problem (Sternberg & Lubart, 1999; Yaqoob, 2012). Chinese learners engaging in inner dialogues with multiple voices also seems to be a way of generating creative thoughts. Lian (2012) claims that an emphasis on the holistic encourages people to take various views into consideration and to look at the whole picture without restrictions, as a result, allowing more flexibility and imagination to the individual in the generation of creative thoughts. An empirical study conducted by Zhang (2002) identifies a finding that contradicted Kim's study. Zhang's study indicates that the generation of creativity, which has been regarded as a complex thinking style and higher-order thinking, was significantly positively correlated with the holistic mode of thinking, but negatively correlated with the analytic mode of thinking. Simplistic information processing is also positively related to the analytic mode of thinking and significantly negatively correlated with the holistic mode of thinking. Thus, there is still a gap in the research with regard to understanding how Chinese learners understand and develop creative thinking; this research study might add useful insights into this area.

With regard to the political perspective, the Chinese government has called for creativity for a long period of time. Early in the 20th century in China, the liberty of individuals and the promotion of scientific thought, encouraging creativity, was promoted, (Li & Johnston, 2015). The Open Door policy (1978) called attention to creative education in China. In the 21st century, the Education Reform emphasised the development of students' creative spirit (encouraging

questioning and exploring, for example) (Li & Johnston, 2015). In the 2011 ECS, developing English language competence and thinking skills are the basic tasks, and the importance of developing students' thinking skills and creative ability are continuously mentioned (see section 2.7). Based on what such policies indicate, and taking into account the Chinese holistic thinking style, it can be seen that the cultivation of creativity is encouraged in China.

3.6.3 Features of creativity

Originality

Consistent with the above definition of creativity, originality can be seen as the key feature in creative thinking. Being original can be divided into a number of different levels. For one thing, it could take the form of a contribution which is unexpected and highly original that might change the world (Sternberg, 1999), such as a scientific invention. For another, it could be original terms of developing new practices that provide possible solutions to everyday problems. It is the ability to see things in a new way. It is the ability to see things in a new way. In this sense, creative thinking leads to new insights, new understandings and conceptions of things and novel approaches to various perspectives (McGregor, 2007). Apart from the newness aspect of creativity, effectiveness and appropriateness are also characteristics of creative thinking. As McGregor (2007) argues, creativity is the ability to perceive things in a new way, to recognise unforeseen problems, to generate unique, original and effective solutions according to different contexts.

Imagination is one of the key characteristics in creative thinking. The NACCCE (1999) proposes a definition of creativity as involving an imaginative activity which enables learners to produce original and valuable outcomes.

Critical thinking

Creative thinking is not a randomised process of thinking, it contains logic and the making sense of real-life scenarios. This is similar to critical thinking in that one needs to have the ability to evaluate the validity of one's thoughts. The creative process or a creative product needs to be critically evaluated in order to try out different possibilities of what works and what does not work. Making

judgements according to creative thinking ensures that the creative process works in relation to the task at hand and makes it valuable (NACCCE, 1999).

Possibility thinking

Possibility thinking, a term which was coined by Craft at the end of the 20th century, is at the heart of little-c creativity. This concept refers to 'what if' and 'as if' thinking - such as the thinking generated by positioning oneself in another person's shoes in different situations (Craft, 2015) - and is driven by questioning and imagination. This concept helps us to understand how children inhabit the world with their imagination (Wegerif, Li & Kaufman, 2015). Regarding the feature of Chinese reflective thinking, taking account of the contextual situation might also encourage individuals to pose 'as if' questions since one needs to question oneself to consider different possibilities before presenting the creative thoughts (see section 3.3.2 and 3.3.3). Questions, play, immersion, making connections, imagination, innovation, risk-taking and self-determination are the features of possibility thinking. These are particularly important in language learning, especially as the ECS (2011) require teachers to provide space in which students can use the language creatively. Enabling possibility thinking allows children the space to immerse themselves in a benign environment where they can play with the language within the 'as if' space, questioning the language as they try to make connections with things they imagine, make decisions about their actions in a task and take risks by trying out their creative ideas.

Problem-solving

The value of problem-solving in creative thinking is that it leads to the discovery of possible problems which one has not yet recognised and imagined, and this leads to other possible solutions. To this end, instead of solving a problem from one perspective, more opportunities are given to generate various ideas, solutions and possibilities from different angles (NACCCE, 1999). Problem-solving skills require both critical and creative thinking processes; one needs to imagine, connect, and take risks to generate possibilities from diverse perspectives in order to find a solution. These possible solutions need to be

evaluated and validated. Therefore, there are overlaps between creative and critical thinking (see section 3.7).

Playfulness

Playfulness is an important feature in creative thinking, especially in EFL learning. For one thing, play is a behaviour which helps people to make connections and form associations among different concepts (Tsai, 2015). For example, in foreign language learning, children need to use their playful imagination to connect or draw associations or inferences about different terms or phrases in order to try to generate meaningful sentences in English (see section 2.7). Play is also a mood which stimulates students' creative thinking. Tsai (2015) concludes from studying a range of playful activities that the main purpose of those activities is to 'play' and investigate various pathways to solve problems. It is the playfulness that has positive effects on learning, creating fruitful learning experiences and a positive attitude that facilitates students' creative development (Kangas, 2010). Nevertheless, this feature might be frustrating for teachers to foster in class; especially in a large class, discipline would be difficult to maintain.

3.7 The overlapping thinking skills

Paul, Fisher and Nosich (1993) define critical thinking by drawing connections with metacognition. They suggest that the critical thinker is able to skilfully take charge of their thinking, and that the realistic way to develop critical thinking is through thinking about one's thinking. Flavell (1979) defines metacognition as knowledge about cognition and control of cognition. He argues that a wise and thoughtful decision is made by sensible problem-solving and critical analysis of emerging information and situations. This confirms critical thinking as forming part of metacognition. There are other scholars who believe metacognition and critical thinking are two distinct concepts, for the reason that metacognition is not necessarily critical and being able to deploy this particular ability may involve other thinking skills or simply general intelligence instead of only being an aspect of critical thinking.

Creative thinking is also a HOT skill and contains overlapping components with critical thinking. For example, problem-solving is a component shared by both

critical thinking and creative thinking. Creative problem-solving skills include the ability to discover possible problems and solutions; critical thinking comes into play when problems are considered from diverse perspectives based on an examination of the information. Additionally, Brookfield (1987) proposes that critical thinkers appreciate creativity and imagination as components of critical thinking, as one needs to imagine and seek alternatives so as to be reflective of scepticism. He also indicates that critical thinkers believe life is full of possibilities. Fisher (2011) agrees, and recognises the connection between creative and critical thinking, providing a more practical definition which perceives that thinking involves critical and creative aspects of the mind, what he describes as 'critic-creative thinking'. In his explanation, critical thinking tends to be seen as negative and to be truly evaluative. He proposes that alternative suggestions will be produced from good thinking, which is imaginative and creative, and based on improving whatever is being critiqued. To this end, thinking involves the mental capacities which individuals use to investigate the world, and therefore thinking skills are the practical abilities people possess that enable them to identify ideas and issues, to make judgements, and to solve problems in different contexts. It is through thinking that children make sense of the world.

Alternatively, Chinese reflective thinking consists of various HOTS skills based on a more holistic approach, although no explicit and direct definitions are given for either creative thinking or critical thinking. The features of both HOTS are embedded in the holistic approach of Chinese reflective thinking and include the generation of new ideas through personal interpretation and looking at a problem from diverse perspectives whilst taking into account the current situation. It emphasises reflection on knowledge and the personal level.

3.8 Defining thinking skills in this study

There has not been a consensus with regard to a definition of thinking skills due to different disciplinary, contextual and philosophical views. Some regard thinking skills as teachable, some do not. According to Smith (2002), thinking skills are the mental processes which are teachable and can be practised and developed; and this definition is one used in this study. On one hand, the ECS (2011) (see section 2.7) clearly state that teachers need to promote students thinking skills in

the EFL class, which suggests that thinking skills are considered to be developable and teachable. On the other hand, one's ways of thinking and learning are filtered through social, cultural and political contexts. The contextual environment (e.g. the cultural background and curriculum content) is very important in shaping the nature and the development of thinking; as Atkinson (1997) argues, critical thinking can be learned and practised in unconscious ways which makes it difficult for users to describe and provide a definition. Zhang and Sternberg (2000) explain the ways people govern and manage their everyday thinking and activities flexibly according to the different situations they are in. Therefore, individuals' thinking skills can be developed and fostered according to the needs of a particular situation. In other words, critical thinking skills or creative thinking skills can be developed from social interaction (Dewey, 1933; Mercer & Littleton, 2007; Vygotsky, 1978; Wegerif, 2010).

This study might be accused of confusing the terms thinking and thinking skills. However, it is not the objective of this research to sort through the fuzzy connections between these widely defined terms and argue for precise and accurate definitions. Instead, this study follows Moseley et al. (2005b), who broadly define thinking skills and equate them with thinking. Firstly, there is unlikely to be a single framework that fits all contexts in terms of understanding thinking skills and teaching them. The definition behind each framework is based on the particular value judgement, contextual situation and component that the policymakers consider to be significant for lifelong learning. For example, Bloom's taxonomy provides useful insights into distinguishing thinking skills and cognitive domains, which have been widely applied in teaching. Moseley et al.'s framework (2005b), on the other hand, is claimed to be compatible with British National Curriculum categories. Unfortunately, there is no clear definition of thinking skills in the ECS (2011), and, therefore, defining thinking skills in a broad way enables the skills that constitute an effective thinking process for language learning to be captured.

Secondly, in order to cultivate good thinking processes, one needs to learn skilful strategies (e.g. analysis, evaluation, comparison) and a disposition for positive thinking (Wegerif, Li & Kaufman, 2015). Therefore, in order to promote 'good

thinking', one needs to promote the development of a set of complex skills. Hence, by identifying a learner's use of HOT skills there is a potential opportunity for them to engage in HOT process. This also leads to the definition of HOT skills which will be illustrated next.

Thirdly, the frameworks for understanding thinking typically involve a broad range of HOT skills such as creative thinking skills, reasoning skills, making judgements, problem-solving skills etc., and LOT skills (see section 3.2.1). Whittington (1995) argues that the skills of remembering knowledge, processing information, analysis, application and comprehension are LOT skills; whereas, synthesis, creating and evaluation are HOT skills. Lewis and Smith (1993) conclude that LOT demands a reproductive thinking process for routine and mechanical application of the memorised information, while HOT is an active, creative and productive cognitive process that challenges individuals' current knowledge and demands reasoning, critical analysis, decision-making and problem-solving. Resnick (1987), on the other hand, points out that it is difficult to give an exact definition of higher-order thinking yet it is easy to recognise. It is not routine, it tends to be complex, it yields multiple solutions rather than a single one, and it involves interpretation, judgements, uncertainty, the imposition of meaning and criticality. "It is said to be complex thinking that requires effort and produces values outcomes" (Wegerif, 2002, p.2).

In alignment with Resnick's (1987) perspective, HOT, such as creative and critical thinking, is hard to define but easy to recognise. Besides, critical thinking and creative thinking are good thinking skills which are worth promoting in class for both foreign language development and the development of creativity. The thinking skills which are used in the EFL class should be useful to support students' English language development and helpful for the teacher's pedagogical objectives, to improve the quality of students' thinking (Higgins, 2015; Wegerif, Li & Kaufman, 2015). Because of the complexity of thinking skills, policymakers should decide which approach they take to how HOT is perceived, in order to promote students' thinking skills. This approach needs to be suitable to the context. It is inappropriate to solely use Western definitions to frame and examine teachers' beliefs and practices with regard to thinking skills (Li &

Wegerif, 2014). However, the definitions of thinking skills reviewed above provide a broad overview of how current literature views thinking skills, views which are supportive in terms of analysing (see section 4.8) and understanding teachers' conceptions of thinking skills. Additionally, the teaching of thinking in the EFL classroom, which will be discussed in the next section, informs us of the notions of good thinking in the EFL context.

3.9 Teaching thinking

There has been an explosion of interest in teaching thinking skills. A number of psychological and educational theories and research studies purport to show ways to enhance students' learning strategies, thinking skills, and intelligence, and this is evident in the increasing number of techniques, curricula and thinking-programmes there are (Maxy, 1991). There are various approaches to the teaching of thinking based on how thinking is perceived. These approaches are decided on by policymakers as means to achieve their aims of developing learners' thinking. Each approach influences and inspires the establishment of programmes or packages for teaching thinking. The approach taken by educationalists also raises on the question of what the best way to teach thinking is: a generic approach - an 'enrichment' approach to be taught as an extra curriculum item (Higgins, 2015); a subject-specific approach - thinking about a specific subject by using particular techniques and resources; or an infusion approach - infusing a methodology for developing thinking skills across all lessons in everyday teaching (McGuinness, 2000). Some believe that if thinking skills are taught explicitly, students will develop their knowledge of those particular thinking skills; however, knowledge of thinking skills would not necessarily mean that children would know when and how to apply HOT skills in a specific context. Others argue that if HOT skills are embedded into curricula, it would be challenging for children to know how they develop them and it might still be difficult for them to adapt these thinking skills to suit another subject or context (Higgins, 2015).

In the Chinese context (see section 2.7), the aim of promoting students' thinking skills is to foster future creative professionals to enhance the country's economic and technological development through collaboration with the rest of the world

(see section 2.6). As the ECS (2011) shifts its focus to a student-centred and collaborative learning approach, the sociocultural learning theory has been identified as supportive to the English curriculum as well as to the development of students' thinking skills. However, there are no specific thinking skills listed in the ECS that should be promoted, and no instructional statement provided in the education policy that states that thinking skills should be promoted in a subject-specific approach. There is, however, a general requirement in the ECS (2011) to promote students' creativity. Therefore, in this study, it is difficult to conclude which approach Chinese EFL education is taking to the development of thinking skills. Besides this, although different approaches to developing thinking skills can be utilised, the most important aspect is the teachers' decisions to develop thinking skills, their strategies for this development and the ways in which they integrate thinking skills into the English curriculum.

Therefore, in the next section, a review of the literature on the approaches to teaching thinking will be presented - with implications for language learning theories, since thinking and language are inseparable - followed by a discussion of the sociocultural perspective on language learning and thinking skills development. Last but not least, the significance of classroom interaction in the development of students' thinking skills will be presented.

3.9.1 Approaches to thinking development

One of the major trends in teaching thinking stems from questioning of the traditional view of thinking, which purports that intelligence is genetically programmed (inherited). Psychologists such as Galton and Eysenck tended to look for general laws concerning mental faculties (Fisher, 2014). The IQ test is used a tool to enable people to identify children with learning difficulties so that they can be offered appropriate teaching. However, this approach suggests that thinking is a single property in one's brain, and Fisher (2014) argues that IQ tests cannot measure or judge real-life thinking such as creative thinking or imagination. The concept of 'Multiple Intelligences' introduced by Gardner (1999), separates intelligences into different domains. The theory of multiple intelligence encourages teaching in multiple ways in accordance with learners' needs and abilities.

Another approach to teaching thinking is brain-based education. Learners' modes of learning are always associated with different parts of the brain and this decided which specific modes of learning they are more capable (Woolfolk, Hughes & Walkup, 2008). Instructional strategies, such as the right-brain and left-brain learning and the Mozart effect to improve spatial reasoning, are likely to improve cognitive development in young children, (Woolfolk, Hughes & Walkup, 2008). However, the brain-based approach to teaching requires a certain understanding of neurosciences. It is also challenging for teachers to bridge the gap between research and practice. The approach might be useful in promoting cognitive development; however, it might not be educationally desirable (Higgins, 2015).

In relation to language acquisition theories, the nativist approach perceives humans as biologically programmed to acquire language. Chomsky argues that children draw upon innate knowledge naturally because humans are born with a language acquisition device (LAD) (Mitchell & Myles, 2004). The Universal Grammar (UG) is part of the LAD which permits children to acquire the language of their environment (Lightbrown & Spanda, 2006). The implication for second language acquisition is that language learners possess the knowledge in an unconscious sense, so the knowledge is not in books but in their minds. The UG must be available to target language learners as well as to first language learners (Lightbrown & Spanda, 2006). However, the implications of the UG in foreign language learning are questionable for different reasons. For example, it is in the development of their first language that children decode and acquire language naturally (Woolfolk, Hughes & Walkup, 2008). However, in an EFL context, learning is essentially an action rather than a passive acquiring of language naturally; the environment in which it is being learned (in this instance, China) is not an English-speaking one. Learning is different from acquiring as it requires external practice and reinforcement (e.g. learning grammar explicitly, practising pronunciation).

Another trend in teaching thinking is rooted in the cognitive-behavioural model. The information-processing cognitive model explains the automation for short-term and long-term memory in processing information (Lightbrown & Spanda, 2006; Maxy, 1991). Through practice and experience, the new information

becomes easier to process and learners become able to access it quickly and eventually become automatic (Lightbrown & Spanda, 2006). In terms of practice, the behaviourist theory emphasises habit-formation through imitation, practice and reinforcement. With sufficient input and repetition of the knowledge, students can process the information easily and the knowledge is internalised as long-term memory (Lightbrown & Spanda, 2006). In the EFL context, this model offers insights into how learners store and retrieve language (Lightbrown & Spanda, 2006). Drilling and repetition are two of the teaching practices. For example, through repetition and drilling, students' pronunciation of English can be adjusted and made similar to that of a native speaker; eventually, students can produce the "right" pronunciation automatically. However, language learning is more than thinking and learning like a machine. HOTS skills such as creative problem-solving skills and skills used to analyse the talk between speakers, support meaningful interaction, which is the core of the use of language. Thus, language learning and thinking are more than habit-formation behaviours.

Alternatively, the cognitive approach recognises that the development of thinking is complex, and is not constructed in one single way; rather, thinking is developed and influenced according to different aspects. Piaget's theory of cognitive development focuses on how human thought makes sense of the world and demonstrates that thinking is an active process (Woolfolk, Hughes & Walkup, 2008); this theory, based on stages of learning, enables teachers to understand and develop children's thinking according to their cognitive development. Nevertheless, knowing a learner's age is not a guarantee of knowing what the individual is thinking about, and the development of children's thinking could be accelerated beyond their stage of learning with support from their social context. Vygotsky's sociocultural perspective suggests the importance of the social environment and points out that children's thinking is influenced and developed through the use of language (Lantolf, 2000). However, he did not elaborate in detail about the cognitive process in developmental changes (Woolfolk et al, 2008). Nevertheless, there are many specific tools and programmes based on the cognitive approach (e.g. Cognitive Acceleration through Science Education). These programmes contain a series of tasks and activities based on the theoretical framework of the cognitive approach (Higgins, 2015). The

programmes focus on how to improve students' thinking from the concrete to a formal operational level (Higgins, 2015). The sociocultural approach also influences thinking skills programmes such as the Think Together programme. The framework for data analysis (see section 4.8.2) is inspired by this programme as it emphasises talk, interaction and dialogue.

Although these approaches are varied, they are interconnected and influence each other and they all contribute to the development of thinking (see fig. 3.5).

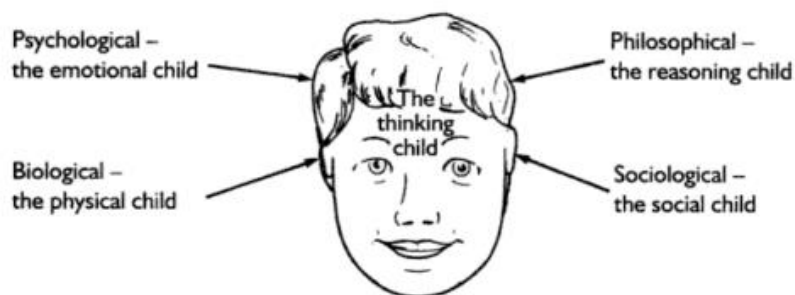


Fig.3 5 Aspects of the thinking child (Adapted from Fisher, 2014, p.4)

To illustrate this, according to brain-based education which is derived from biological psychology, several different parts of the brain correspond to different functions (Kalat, 2013). This complex organic system in the brain is useful in order to develop understanding of cognitive development as there are likely to be interconnections. For language learning and higher mental processes such as complex problem-solving, the cerebral cortex is significant in enabling these accomplishments, and is more likely to be susceptible to environmental influences (Kalat, 2013; Meece, 2002; Woolfolk et al., 2008). Additionally, with regard to the philosophical, Blowers (2010) broadly defines Chinese psychology and describes an 'indigenous psychology' involving its own distinct philosophical assumptions. The philosophical understanding of thinking has a great impact on culture, thinking and education (see section 3.2 & section 3.3) which influences how one learns new knowledge. For instance, a large number of research studies and literature (Chan, 1999; Cortazzi & Jin, 2006; Fang, Clarke & Wei, 2016; Ryan, 2010; Ryan & Louie, 2007; Walter, 2014; Wang, 2010) reveal that the underpinning reasons for the challenges that overseas students come across in

the new learning environment are the philosophical understandings and values are different from those in the home country culture. Furthermore, the social environment plays an important role in constructing individuals' thinking; as Fisher (2014, p.3) points out, "the thinking child is a social child". Thinking is personal, as thoughts are formed in an individual's mind. In education, teacher cognition is a social factor that will impact on students' thinking development in class. In this study, teachers' knowledge, beliefs and teaching practices are filtered through their philosophical assumptions, as well as through other sociocultural aspects including their own past experiences and beliefs about the best way to learn English and their attitudes towards teaching thinking. Therefore, classroom interaction between teacher and students is constructed around social, cultural and political factors that influence the development of students' HOT skills.

As discussed in previous sections (Chapter Two & section 3.4), sociocultural factors influence the construction of thinking. Thus, the sociocultural approach to thinking development is helps to form the theoretical framework of this study.

3.9.2 The sociocultural approach to thinking and language learning

Based on the above discussion, the sociocultural perspective forms the theoretical framework of this study. For one thing, sociocultural theory believes that the human mind is culturally and socially shaped, and that thinking is the development of higher mental processes such as logical thoughts and problem-solving (Lantolf, 2000; Turuk, 2008). It is believed that the sociocultural perspective provides a holistic view of language learning and thinking development within classroom interaction. This approach believes that learning is a social process, and that language is the psychological tool of thoughts (Lantolf, 2000). Students need to use English as a tool to express their thoughts, and this, in turn, develops their language proficiency. The language they produce is not just to demonstrate their linguistic knowledge (for instance, their grammar) or to practice language skills (e.g. speaking). Rather, language acts as a tool for conveying information, for negotiating concepts, and for exchanging ideas (Li, 2012). Therefore, the use of language is for "collectively making sense of experience and solving problems" (Mercer, 2000, p.1).

For another, the sociocultural perspective recognises the significance of social interactions as a way to improve language learning and thinking. Vygotsky (1978) believes that cognitive development results from conversations and interactions between children and more advanced members of their society. These members can be teachers, parents, or more capable peers, who provide information to assist the children in growing intellectually. They rely on the use of symbolic tools to mediate and regulate relationships and participate in the cultural life of the community (Lantolf, 2000; Mercer & Littleton, 2007; Vygotsky, 1978). These symbolic tools have been perceived as the mediation for higher-order mental processes. Lantolf (2000, p.1) considers that these symbolic tools are artefacts “created by human cultures over time”, and that language is one of these symbolic tools. Most communication is through language, and children are encouraged to use language to organise their thinking, as dialogue and discussions are believed to be important avenues for learning (Mercer, 1995). Therefore, learning a language means learning a social mode of thinking. It is organised through culturally constructed languages, and language itself plays a central role in organising uniquely human forms of thinking (Jackson, 2008). Hence, it is critical for cognitive development, as Vygotsky (1978, p.32) states:

The specifically human capacity for language enables children to provide for auxiliary tools in the solution of difficult tasks, to overcome impulsive action, to plan a solution to a problem prior to its execution and to master their own behaviour.

This social interaction is influential in children’s learning and stimulates thinking, as learners are involved in socio-cognitive conflict (Mugny & Doise, 1978) in which they are confronted with thoughts different from their own and so need to generate a higher-order solution to resolve the conflict. Mercer and Littleton (2007) explain this as people working together not only to share information but also to solve problems. During the process of problem-solving, individuals interact and inter-think to achieve an agreed solution. This process is considered to be interactive in terms of speech and thinking in the communicative events. Individuals develop their thinking during interactions and internalise the information from their own perspective. This is a continuous process, as

children's understanding of the world will gradually change as they continue to engage in social activities and will reconstruct, as well as create their own, understanding of the world (Woolfolk et al, 2008).

In relation to foreign language learning, Lantolf (2000) suggests that learning a second language can lead to the re-formation of an individual's mental system. From a sociocultural viewpoint, children's early language learning derives from the processes of meaning-making collaborative activities with other members in the society. The process of teaching and learning English can be viewed as in social terms (Mitchell & Myles, 2004). Foreign language learners could have their own opportunities to use English as a tool to create new meanings provided by interactions with others. In this way, learners' higher mental capacities start functioning, and different thinking skills are stimulated whilst interacting with other members in the same activity. Lantolf (2000, p.6) argues that to be an advanced speaker of another language means,

...to be able to control one's psychological and social activity through the language. As children develop, they gain increasing control over the mediational means made available by their culture, including language, for interpersonal (interaction) and intrapersonal (thinking) purposes.

As Vygotsky states (1978, p.120), "we may regard meaning as a phenomenon of thinking". Therefore, communicating in English verbally can be perceived as a channel for exchanging information, sharing ideas, and co-constructing understanding and thinking. In this research study, thinking is believed to be activated by social experiences in a communicative environment through language as a cultural tool. Thinking is not a fixed intelligence, it is developmental. Pupils need the support of others to fulfil their potential in thinking and learning. Teachers can use prompts, demonstrations and instructions to help children solve problems. Enabling a collaborative learning environment creates negotiation, socio-conflict and support which brings learners closer to the state of competence that assists them in completing the task independently.

As presented previously, there are various pedagogical rationales for teaching thinking. The implementation of thinking skills programmes has been proved to

be effective in improving performances on tests of cognitive measures (Higgins, Hall, Baumfield & Moseley, 2005). This indicates that with the development of students' thinking skills, a more in-depth and meaningful learning can take place. It is believed that the successful implementation of thinking programmes not only stresses what to teach, but also emphasises how to teach. These programmes have been evidenced to support changing patterns of interaction in classrooms (Higgins et al., 2005). However, there is little information given by the ECS and Chinese government on what to teach and how to teach HOT skills in class. Nevertheless, this study looks into classroom interaction, which is one of the areas evidenced to be useful in developing students' thinking skills (Higgins, 2015), to find out how teachers develop students thinking skills in class.

3.9.3 The importance of classroom interaction in promoting thinking skills.

Research has shown that interaction with adults and peers, including collaboration, creates opportunities for students to engage in learning and leads to cognitive development (Mercer & Littleton, 2007). Classroom-based talk creates a space for the process of meaning construction among learners and teachers (Gillies, 2016; Mercer & Littleton, 2007), with the language in use being a social tool for thinking (Mercer & Littleton, 2007). Language allows every member in the classroom to think together, and it can be used to co-construct knowledge together or trigger socio-cognitive conflicts. It has been found that through the effective use of language, students can positively develop individual thinking skills such as reasoning, creative thinking skills and their learning (Gillies, 2016). Therefore, the quality of classroom interaction is essential in order to generate opportunities for students to develop their thinking skills and learning.

Additionally, classroom interaction is essential for EFL learning. Similar to other subject, improving levels of interaction could encourage students to become more engaged in their learning (Wall, Higgins, Glasner & Gormally, 2009). If provided with sufficient time and space, EFL learners might be able to practise their language and develop their communicative skills. During communication, individuals seek agreement to solve tasks or develop alternatives in order to achieve the learning goal (Hung & Higgins, 2015). This requires students to use

thinking skills. It also enables teachers to gain insights into how their students learn. Effective talk during learning leads to effective teaching to improve student achievements in language learning. It also supports meaningful professional development for teachers (Wall, Higgins, Glasner & Gormally, 2009).

Classroom interaction can be perceived as a social and communicative process in which the teacher can be the mediator of students' thinking (Higgins, 2015). Probably the most important component of the framework for understanding communication in EFL classrooms is the teachers' control of the patterns of classroom communication (Johnson, 1999). Teachers control what goes on in classrooms primarily through the ways in which they use language (Johnson, 1999). For one thing, as the Chinese learning culture has been characterised as teacher-centred (see Chapter Two), the way they perceive and use language will have a direct impact on their students. For another, since there has been a shift towards learner-centred classrooms, teacher talk remains essential. Typically, they make pedagogical decisions through giving instructions, building up interaction patterns and promoting different forms of talk in class (Myhill, Jones & Hopper, 2006). Therefore, the pedagogical strategies or techniques they use provide useful insights into how they perceive and promote or obstruct the development of students' thinking skills.

The discourse pattern IRF (initiate, respond, feedback), has been recognised as one of the most popular interaction patterns in learning and teaching (Higgins, 2015). According to Sinclair and Coulthard (1975), teachers usually initiate a question to the whole class or a single student, learners respond, and then the teachers provide feedback. In the traditional way of teaching, initiation of language interchanges by the teacher is the main instrument in class as this enables teachers to guide and control the class by their talk. The imbalance in the number and length of turns taken by students and teachers in IRF exchanges is the most critiqued of classroom practices. It can result in children guessing the right answer and does not encourage speculative talk, which will not facilitate children in developing higher-order thinking skills (Myhill, Jones & Hopper, 2006). For example, the use of direct questions could turn the learning environment into a situation where the learners just provide an answer using a word or two (Myhill,

Jones & Hopper, 2006). The responses and their participation in class can be far from enough, and would not promote higher-order thinking skills or language development. Fisher and Larkin (2008) point out that traditional interactions based on the IRF strategy leave little opportunity for L2 learners to explore and develop their own interpretations and thoughts. It may also lead directly to the knowledge-transmission model in which learners are encouraged mainly to recall information or other LOT skills rather than engaging in HOT processes (Higgins, 2015). This limits the space for children to develop their thinking skills and express them in class. However, there are various functions of initiation. It can be used to give instructions, to launch a range of teaching activities, and to ask questions that provoke students to think and learn. Among these different types of initiation (Cazen, 2001; Lee, 2007; Waring, 2009), teacher questioning has been the most discussed.

Questions can be used to probe students' understanding (Smith & Higgins, 2006). Teachers can apply cued elicitation questioning skills to provoke students' participation both in speaking and thinking. As many scholars have pointed out (Chin, 2006; Corden, 2000), cued elicitations are one type of IRF: by means of the teacher asking questions, pupils receive rich clues regarding the information required. Mercer and Littleton (2007) note that the questions which teachers ask could trigger a range of communication functions that facilitate students' learning, such as checking students' understanding of the knowledge they have been learning; encouraging them to verbalise their thoughts, reasons and thinking; modelling different linguistic patterns of language use; offering opportunities for children to participate in interaction; and developing their understanding and removing misconceptions.

In the EFL classroom, using effective questioning has been shown to have numerous benefits, from allowing students to produce longer contributions in English to increasing students' active participation in discussion, which improves their English performance (Li, 2011). More importantly, it fosters an open and interactive learning environment for children. Besides this, students can be involved in a thought-provoking process where they need to use their thinking skills to construct their ideas and produce them in English almost at the same

time. Marzano (1993) states that in order to make sure the questioning method promotes students' HOT skills, many teachers should rely on classification systems that help them to use various types of questions to elicit different types of responses. For instance, questions could be classified according to Bloom's taxonomy. If one asks questions at the higher levels of the taxonomy, a more sophisticated response would be elicited. The teacher can also ask open questions in the first initiation to provoke thinking (Li, 2011). As students learn most by interacting with more competent individuals (such as teachers) through scaffolding (Vygotsky, 1978), learners can easily construct their knowledge and develop thinking in responding to the teacher's questions. "Through practice and internalisation, the new skills and knowledge become part of the students' individual repertoire" (Webb, 2010, p.3). Therefore, the forms of questions used in classroom discourse become increasingly important, and the way teachers use them to promote students' thinking skills has attracted considerable attention and been worth investigating.

A large amount of literature classifies question types into various categories (Corden, 2000; Gillies, 2016; Myhill, Jones & Hopper, 2006). Display and referential questions function differently in students' thinking behaviours – in their LOT and HOT skills (Klimova, 2009). Tsui (1995) and Lee (2006) both evidenced that display questions usually produce didactic discourse and receive predetermined answers which restrict students to LOT. In contrast, deep questions drive learners' thinking beneath the surface of things and force them to deal with complexity; they encourage learners to use HOT skills to solve problems. Referential questions aim to obtain information (Lynch, 1999), and research studies, including those done in the Chinese context (e.g. Tuan, 2010; Tsui, 1995; Xu, 2010), indicate a strong positive relationship between referential questions and the higher-order thinking, length and syntactic complexity of the learners' responses. Thus, it is believed that referential questions are more likely to stimulate HOT skills which, in turn, will generate a higher proficiency of language output. Hence, questions which are more open and divergent might encourage students to elaborate meaningfully and are preferable in the development of thinking skills (Ellis, 1999; Gillies, 2016). Open questions have been defined as questions that invite more than one response, and encourage

students more to consider different possible answers in order to construct knowledge (Smith & Higgins, 2006). In contrast, closed questions are those which limit students' utterances and are less interactive. It has been suggested that the use of open questions facilitates an interactive learning environment which develops students' thinking skills and learning. Although there is different terminology for question types, the common criteria to define a question is its impact on students: whether or not the questions used open up spaces for students to learn, and whether or not the questions applied support the teachers to complete their teaching objectives. Therefore, descriptions of the types of questions rely on the teacher's intent (Smith & Higgins, 2006).

However, there are critics of the conceptions of question types, as well as of their designated functions. More importantly, the effectiveness of the questions is not solely dependent on the types and functions of the questions, but also the feedback students receive in response to their answers (Smith & Higgins, 2006). For instance, Banbrook and Skehan (1989) found that display questions can stimulate greater responses than referential questions. It is argued that display questions are not actually low-cognitive questions, but, rather, elicit a substantial number of socially engaged and structurally elaborate utterances, as they trigger learners' thinking and motivate them to express their thoughts in English. Smith and Higgins (2006) argue that without effective feedback, however, there is no guarantee of an interactive learning environment. In other words, although open questions stimulate speculative responses, students' learning opportunities will be limited if teachers do not expand on or develop students' responses. Thus, the effectiveness of teacher-talk on students' thinking skills is not solely question-type-bound; rather, it is all the features embedded in the interaction which form a mutual exchange between teacher and students.

Based on the above discussion, teachers' feedback plays an essential role in transforming and further developing students' thinking and language development. Drawing on the IRF pattern, the functions of F are diverse: for example, it can be used to give encouragement for students' contributions; to extend students' responses by asking further questions; to evaluate students' response as a function of formative assessment (Clarke, 2003); to give advice

and make comments on students' work which could be improved (Clarke, 2003); and to make connections with other parts of the students' experience (Smith & Higgins, 2006). Teacher feedback is also linked with learning motivation (Clarke, 2003). Higgins, Elliot and Coe (2017) point out that using praise lavishly to low-attaining students convey a low-expectation message. This suggests that using praise as feedback is not necessarily an external motivation for students' learning. Rather, children, as a result of the sympathetic praise, might attribute their failure to their lack of ability. Clarke (2003) also indicates that "token comments" (such as "good" or "brilliant") are less helpful for children as they do not carry suggestions for improvement or information for the next step in their learning. Gillies (2016) proposes that constructive and specific feedback could challenge and prompt students to provide reasons and justification for positions articulated. Giving enriched feedback is regarded as a thinking device (Viiri & Sarri, 2006); it triggers students to elaborate their understandings, to give explanations, and provide justifications and reasons for their views during interaction. It enhances students' motivation by emphasising the progress they make, which creates opportunities for self-direction in learning. Smith and Higgins (2006) also argue that reciprocal engagement in learners' responses is another effective type of feedback. Teachers might use backchannel moves during students' responses as a way of constructing a more authentic, conversational and less institutional interaction. This type of feedback transforms classroom interaction into a more natural communication which helps the students to practise their use of language as well as to develop their thinking and communicative skills.

Above all, the quality of teacher and student interaction can be ensured not only by the teacher's questioning, but also by their reactions to students' responses. Smith and Higgins (2006) argue that the questions teachers generate are likely to be imbued with their intent, and that this forms their subsequent feedback. Therefore, in order to facilitate pupils' subsequent use of talk for thinking and learning, feedback is also powerful for follow-up learning such as the level of discussion on a certain topic after the teacher's initiation. Hence, classrooms that creates an ethos for speaking freely about learning are beneficial for developing

students' HOT skills and their learning; this is especially true for children, who need a nurturing climate to enable them to talk about their work (Clarke, 2003).

Given the complexity of classroom-based talk, verbal expression among individuals is essential. Alternatively, other pedagogical techniques are also worth considering in terms of thinking skills development, given the diverse factors involved in the IRF pattern, such as the wait time. Wait time is particularly useful for Chinese learners - in improving both their EFL learning as well as in developing their HOT skills - as silence is a way of learning internally (see section 3.3.3).

With extended wait time, there will be an increased number of responses from students, and the wait time will frequently result in more complex answers (Walsh, 2002), which leads to the development of HOT. The pause may also prompt another student's attempt at upgrading or improving on the previous answers (Hellermann, 2003). Silence has been seen to indicate a communication breakdown, or seen as a characteristic of the stereotypical passive Chinese learner (see section 3.3.3). However, research (Elliott & Ingram, 2016) perceives silence in classroom discourse as one of the most important elements that enable classroom interaction and develop students' learning and thinking. This type of silence could take the form of wait time (Rowe, 1972 as cited in Ingram & Elliot, 2016), thinking time (Morgan & Saxton, 2006), or pauses, gaps and lapses (Sacks, Schegloff & Jefferson, 1974). More recently, Ingram & Elliot (2016) divided wait time into four categories:

- Wait time I (i): pauses that follow a teacher finishing speaking and a student starting to speak.
- Wait time I (ii): pauses that follow a teacher finishing speaking and then taking the next turn.
- Wait time II (i): pauses that follow a student finishing speaking and the teacher taking the next turn.
- Wait time II (ii): pauses that follow a student finishing speaking and then continuing their turn.

It can be seen from these categories that the influence of the structure of turn-taking on wait time has been considered, and this suggests that the wait time could be structurally built in as pauses that teachers could use to manipulate the interaction. For instance, by extending the wait time, teachers could provide students with the time and space to think in silence, to reflect, and to relate new information with accumulated knowledge.

A range of effects of extending wait time have been shown on teachers' and students' behaviour (Ingram & Elliot, 2016). In the EFL teaching and learning context, silence is essential for students since they need some moments to process the information cognitively, and therefore the function of the wait time provided by teachers would be significant in enabling students to develop their language and thinking. For instance, by delaying the nomination of the next student, or pausing before the student has finished their turn, one could see if other students want to contribute so as to broaden the space for students to engage in the interaction. There are also some existing research studies that reveal the positive outcomes associated with extended wait time during classroom interaction. Rowe (1972, as cited in Ingram & Elliot, 2016) reveals that if the wait time in category I is longer than 3 seconds, there are fewer failures to respond. Clarke (2003) suggests that if teachers waited for more than 5 seconds, the feedback they give to children would be more effective. If provided with a longer wait time in category II, students are more likely to respond with logical reasoning and complex explanation. This would be particularly useful for the EFL context, since students could have enough time to organise their words in a meaningful and linguistically correct way. Increasing wait time beyond 3 seconds also increases higher-cognitive level achievement (Tobin, 1987).

In relation to Chinese learners who have been stereotyped as silent learners in some of the literature, the silence they respond with has been regarded as a symbol of passivity and as reflective of a lack of knowledge to contribute (Bond, 2010; see section 2.3). Arguably, the analysis in relation to EFL learning is that an increase in wait time is used to provide the space and time for students to think and construct their thoughts in a foreign language, the absence of which could be a reason behind students remaining silent in class. It has also been

posited that, in the Chinese culture, remaining silent in class is a way of being polite, of taking account of their surroundings, and that this can lead to self-reflection and to the development of reflective thinking.

3.10 Teacher cognition of thinking skills

Research on teacher cognition provides insights into teachers' knowledge, beliefs, and teaching practices in order to promote teachers' effectiveness and professional development (Borg, 2006; Li, 2017). Research shows that teachers' knowledge, beliefs and their teaching practices are intertwined and that their relations are dialectical (Borg, 2006; Dilekli & Tezci, 2016; Freeman, 2002; Mak, 2011; Zheng & Borg, 2013). Teachers play have the central role in the classroom; they make judgements and decisions in the dynamic teaching and learning environment which have a great impact on students' learning outcomes (Borg, 2003). Therefore, the factors that for the basis of their instructional practices are vital as these influence on the development of students' thinking skills. One of the widely discussed factors which influences teacher cognition is their previous learning experiences as learners, which continue to exert an influence on their teaching practices in class (Borg, 2003). However, teacher cognition is a developmental dimension which is also affected by current sociocultural factors (e.g. education policy). For instance, teachers' beliefs can be formed or changed through their teacher education programme (Li, 2012; Warford & Reeves, 2003).

The concept of teacher knowledge is an umbrella term which has been expanded to cover teachers' theoretical and practical knowledge (Li, 2017). From a sociocultural perspective, knowledge can be socially constructed. The knowledge which teachers hold regarding thinking skills could be shaped by their cultural heritage (Mak, 2011; Sun, 2012). It could be also affected by other contextual factors such as the policy, classroom interaction (Li, 2017), teacher education input and learning experiences as learners. As mentioned in Chapter Two, there is no clear definition of thinking skills provided to teachers , and therefore, one assumption that can be made is that their knowledge of the thinking skills which are to be used in EFL teaching could be derived from their teaching and learning experiences, which were formed in the sociocultural context. Besides, as a consensus regarding a definition of thinking skills in the wider literature has not

yet been reached, people probably make their own definitions. Therefore, teachers' knowledge of thinking skills exists at a very personal level, derived from their experiences. Thus, it is recognised here that teachers' experience forms the basis of their professional knowledge, their beliefs and their patterns of action (Ellis, 2006). Although teacher knowledge can be classified into different categories - content knowledge and pedagogical knowledge, referring to teachers' understanding of effective pedagogy (Shulman, 1987, as cited in Li, 2017); practical knowledge which is shaped by their teaching experiences (Elbaz, 1983 as cited in Li, 2017); and professional knowledge, procedural knowledge and personal knowledge for teacher education (Kumaravadivelu, 2012) - in order to tailor their professional development, this study perceives teacher knowledge in a general way to provide a more open space to discover how teachers define and understand thinking skills since there is no conception framework provided in the Chinese context. Thus, content knowledge and pedagogical knowledge are the terms used. Content knowledge refers to the teacher's knowledge of thinking skills, and how they define, understand, and interpret this content (Ellis, 2006). Pedagogical knowledge implies teachers' understanding of thinking skills and their knowledge of how to teach them in response to the diverse interests and abilities of learners (Borg, 2006; Li, 2017). This could be done by interpreting their reported practice. However, as their pedagogical knowledge is reflected in their teaching practice, their practices could also provide implicit information about their unconscious pedagogical knowledge, which could be built on as a framework for teaching thinking skills. In this case, teacher knowledge is understood as the knowledge people have and believe to be true even it is not verified in some objective and external way (Borg, 2006).

The interrelation between beliefs and knowledge is inseparable as beliefs are the indicator of one's actions and can influence one's decisions (Pajares, 1992). The definitions of beliefs are diverse, with different interpretations (Borg, 2006; Li, 2017; Pajares, 1992). Pajares (1992) defines beliefs as "an individual's judgement of the truth or falsity of a proposition, a judgement that can only be inferred from a collective understanding of what human beings say, intend and do" (p.316). His definition argues that individuals' beliefs affect their behaviour.

This sheds light on the relation between beliefs and practices, which resonates with the inseparable relationship between knowledge and beliefs. To this end, “[knowledge], beliefs and practices are inextricably intertwined, but the potent affective, evaluative and episodic nature of beliefs makes them a filter through which new phenomena are interpreted” (Pajares, 1992, p.325). However, situated in a dynamic teaching and learning environment, teacher’s beliefs can be inflexible and inconsistent (Mak, 2011). The beliefs that they hold will tend to be more or less strong according to the influence of sociocultural factors such as the learners, the teaching content, their own knowledge, the culture of learning, and the education policy. Therefore, contextual factors sometimes influence teachers’ beliefs about teaching. Teachers might need to act on the belief which they think is central to current teaching practices, rather than on peripheral beliefs, as the former is less susceptible to change (Borg, 2006). Therefore, consistencies and inconsistencies in beliefs and practices can occur (Mak, 2011; Mansour, 2013; Raymond, 1997). Mansour’s study found that science teachers’ traditional beliefs were consistent with their teaching practices, whereas those teaching practices which conflicted with their beliefs were attributed to the contextual factor. Mak’s research (2011) demonstrates the conflicting beliefs of an EFL teacher in their teaching practice, indicating that some culturally bound beliefs might override a teacher’s teaching decisions. However, there is little research into Chinese EFL teachers’ beliefs regarding teaching thinking skills (Li, 2017). This research will shed light on this gap by exploring teachers’ beliefs about promoting thinking skills. Such an investigation of teachers’ beliefs might also be helpful in making more effective political decisions about education and in designing effective teacher training courses. Besides this, revealing teachers’ beliefs might also lead to the uncovering of hidden issues in classroom teaching, such as the tensions between beliefs and practices. For example, Cheng’s (2010) study elicited teachers’ reflections and discovered the tensions and dilemmas teachers experienced in the reform of education concerning creativity in the Chinese context, and this, in turn, showed the need for further research into possible solutions to these tensions and dilemmas. There has been a steady increase in research examining various aspects of L2 teacher’s cognition. However, there has not been much work carried out in the primary school context,

where non-native speakers of English work with larger classes of learners (Dilekli & Tezci, 2016; Li, 2016). Empirical studies focusing on teachers' perceptions of the teaching of thinking skills in Chinese EFL primary classrooms are still rare. And this research study aims to fill this gap.

3.11 Empirical research studies

There have been a large number of research studies worldwide exploring the development of students' thinking (e.g. Cheng, 2010; Chien & Hui, 2010; Jia et al., 2017; Li, 2011; Robson & Rowe, 2012; Salmon & Lucas, 2011; Yang, 2016). However, little research has been done to investigate teacher cognition of thinking skills. Nevertheless, the following empirical research studies provide some insights into teacher cognition of thinking skills in EFL classrooms.

There are few studies concerning Chinese EFL teachers' knowledge and perceptions of thinking skills. However, some relevant research studies, which provided some useful insights in developing this study, will be reviewed. The empirical research studies show that teachers' knowledge of and beliefs about thinking skills are diverse. One recent study conducted by Li (2016) examined teachers' cognition of thinking skills, and the result showed that teachers had a fragmented and insufficient understanding of thinking skills. Surprisingly, creative thinking has been found to be the least important to develop in language classrooms, while memorisation and critical thinking scored relatively high percentages. Mullet, Willerson, Lamb, and Kettler's (2016) systematic review of the literature (1999-2015) provided an explanation for this, revealing that teachers' personal and cultural beliefs affect their perceptions of creativity and the characteristics of creative students. It has been reported that "the Chinese culture's negative view of non-conformist or expressive behaviour" (p.25) is the reason that Chinese teachers do not value creative behaviours. Nevertheless, Li and Wegerif (2014) argue that the belief that the Confucian-heritage culture of learning hinders the development of higher-order thinking skills is incorrect. Their empirical data supported this claim and reveals that students use independent reasoning skills, such as reflection, which is also a form of HOT, and that these are understood differently from the way the West understands them (see section 3.3). Therefore, it is argued that one should take cultural complexities into

consideration before implementing any Western practices and theories into classroom teaching.

Forrester and Hui (2007) found that the development of students' creativity is positively related to their teachers' creative personality and teaching techniques. Furthermore, Thani's (2010) study reported that teachers differed significantly with regard to teaching creative thinking skills according to their qualifications and in-service training. The study argued that teaching thinking cannot be separated from its context and that its transfer is likely to happen if thinking is embedded in all teaching and learning. Mok (2009) explored the development of students' critical thinking in Hong Kong secondary school classrooms. The study found that none of the teachers perceived teaching thinking to be an objective, and the participants explained that this was due to institutional constraints and to external pressure, which stopped them from teaching thinking.

There has been a large number of research studies worldwide focusing on teaching thinking skills. It has been suggested that some intervention in the teaching of thinking skills is useful for developing students' thinking skills. In the US, Salmon and Lucas (2011) investigated the impact of teachers' implementation of the Visible Thinking approach through drawing-telling techniques. The result showed that the children (aged 3-5) advanced their thinking skills (for example, by looking at something from different perspectives) with the teacher's scaffolding to provoke dialogic thinking. Molnár (2011) conducted an experimental research by introducing an inductive reasoning programme to 6-8-year old students and found that children who had been trained in the inductive reasoning programme scored higher in thinking skills, suggesting that inductive reasoning can be developed effectively at an early age. An intervention of Socratic seminar in Year 4 Romanian schoolchildren was applied in a critical thinking stimulation process in which asking questions was the tool for promoting students' critical thinking skills (Cojocariu & Butnaru, 2014).

In China, Yang (2016) contextualised and applied the Thinking Together programme in Chinese classrooms (for children aged 7-8); the results showed that the children's group reasoning skills had improved. Jia et al. (2017) also gained useful insights from their experiments in developing HOT skills in Year 6

Chinese students. Their findings show that both inquiry-based teaching and lecture-based teaching are complementary in terms of promoting students' creative problem-solving skills. They suggest that although criticisms have been levelled at lectured-based learning, since it focuses on knowledge transmission, it is supportive in the context of teaching declarative science knowledge. When the problem is related to real-life situations, an inquiry-based approach is suitable for students as they can engage in discussion and develop their HOTS skills in this way. Therefore, different teaching purposes require different teaching methods. These studies provide evidence that children are able to develop their HOTS skills when a teaching programme is implemented. It also supports the argument that Chinese learners are not reluctant to engage in and learn HOTS skills (see section 2.3 and section 3.4).

However, developing HOTS skills is not necessarily supportive of students' learning, according to some research studies. DeWaele (2015) reported that, in South Korea, higher-level questioning and critical thinking activities are not suitable for students who are below intermediate level in English. This suggests that the promotion of HOTS skills is constrained by students' English competence. Cotter and Tally (2009) stated that critical exercises did not have a positive effect on students' critical thinking skills. Manalo and Sheppard (2016) examined the language structures which might affect students' critical thinking performances in Japan. Their study explained that linguistic differences might constrain critical thinking performances since some Asian languages (such as Chinese and Japanese, for example) are more indirect in expressing criticism. Another way of understanding this is that students might lack the English language competence to express their critical thoughts. "Language processing entails the use of cognitive resources in working memory, and lower proficiency in a language would require the use of more resources" (Manalo & Sheppard, 2016, p.42). This suggests that as language processing takes up the brain's resources, there are fewer resources left for the satisfactory execution of critical thinking. Their results suggest that students need instruction in the specific language forms and structures that enable better critical thinking performances.

Nevertheless, one of the common limitations of an intervention programme on promoting thinking skills is that it is difficult to know whether it will have a long-

term effect on students' thinking and learning and whether this will be transferable across subjects. It could be that such interventions have just a one-time influence and teachers and students return to their traditional learning routine once the research is done. Although the successful implementation of these programmes indicates the effectiveness of a particular programme, it is difficult to see whether the teachers had developed knowledge which could improve their teaching practice. Therefore, it is crucial to explore teachers' beliefs about promoting thinking skills as they are central in developing students' language and thinking, quite apart from the teacher's role as knowledge-transmitter or facilitator.

There are research studies with an in-depth focus on investigating how children develop their thinking in a natural social environment. In the UK, Robson and Rowe's study (2012) showed that three-to-four-year-old children's creativity was enhanced through outdoor activities such as socio-dramatic play and gardening, and that their teachers stimulated speculative thinking. They also pointed out that child-initiated activities involved HOTS such as analysing ideas, flexibility, imagining and hypothesising. In Finland, Kangas's (2010) study offered children aged 7 to 8 a playful environment for them to co-create a curriculum-based game content for learning and play. Both these studies revealed the importance of playfulness and the environment in promoting students', and especially children's, creative thinking. These studies show that observation of natural settings can provide useful insights into how students' thinking skills can be developed through an in-depth lens.

Additionally, it is believed that the classroom, and the interactions in it, forms one type of natural setting in the educational environment. Walsh (2002) shows that teacher talk – including, for instance, error correction, giving constructive feedback, extending waiting, and scaffolding - has a great impact on students' involvement in learning. Therefore, the way teachers talk can provide opportunities for, or obstruct, the development of students' thinking (Inceçay, 2010). One of the most commonly used methods to improve thinking skills is questioning. Shim and Walczak (2012) found that asking challenging questions increased students' critical thinking abilities. Bialoğlu, Arnas and Yaşar's study (2016) supports this finding and showed that low-level questions to students fail

to enhance students' learning and do not improve their problem-solving and creative thinking skills.

In relation to language education, Malmir and Shoorcheh (2012) found that training to think critically students had a crucial impact on developing the speaking ability of Iranian EFL learners. Students who had received instruction in critical thinking strategies performed better in oral interviews than in the pre-test. They also indicated that a critical thinker is a better language learner. Hashemi and Zabihi (2012) agree and claim that critical thinking is a crucial factor in explaining EFL learners' high proficiency levels, as their findings showed that the highly critical thinking group enjoyed higher proficiency scores than the mid/low critical counterparts. In McDonough, Crawford & Mackey's research study (2015), there is a positive relationship between the EFL students' creativity and their production of questions and coordination. Language features are relevant to the completion of problem-solving tasks. However, there was only one problem-solving task that they had focused on, which restricted other possible language functions, which could contribute to the development of creativity. In terms of creative language use, recent English L1 studies on spoken interaction have revealed that creative language use contains playful language (Carter, 2004; Tagg, 2013). Yaqoob (2012) provides a similar finding. His research shows that the experimental treatment given through cognitive teaching models helped to nurture students' creative thinking and other HOTS skills. The findings also illustrate that creative thinking is a combination of critical and generative thinking and is a creative problem-solving skill. Li's (2011) study, carried out in China, provides some interesting insights into opportunities for promoting thinking skills during classroom interaction in EFL classrooms, finding that asking questions was the most frequently used classroom teaching method to trigger students' thinking. Other factors in this study, such as turn-taking, pausing and using the spiral IRF pattern, also demonstrated their function in eliciting and developing students' higher-order thinking.

Extended wait time also contributes to learning opportunities and learner involvement (Ingram & Elliott, 2016; Walsh & Li, 2013; Yataganbaba & Yildirim, 2016). Yataganbaba and Yildirim's study revealed that teachers' limited wait time obstructed learners' participation in both form-and-accuracy and meaning-and-

fluency contexts. Insufficient time hindered the young EFL learners' language development. An increase in wait time gives students more time to think and reflect on their learning in-depth which leads to greater learning outcomes (Mercer & Dawes, 2008). The awareness of the role of wait time and the nuanced understanding of it as an essential element of interaction is the key to establishing good dialogue in the classroom (Ingram & Elliott, 2016). There are other features which can affect teacher-student interaction. These research studies indicate the need to raise teachers' awareness of the effectiveness and pitfalls of their talk in class (Gharbavi & Iravani, 2014), which could serve to develop their pedagogical knowledge. Detailed analysis of classroom interaction can produce rich data which can help researchers, policy makers, teacher educators, teachers, and students to realise the successful and less successful features that support or obstruct the development of students' language and thinking.

Additionally, Igbaria (2013) conducted research aiming at examining the extent to which Wh- questions in textbooks emphasise high-level thinking and whether the textbooks aided students in developing their cognitive skills. The study revealed that comprehension questions dominated and that the textbook emphasised the lower-thinking processes of knowledge, comprehension and application. However, this research did not provide any information on the teachers' application of the textbook, making it difficult to see what obstacles hinder the development of students' HOTS skills. Nevertheless, the appropriateness of using different types of questions depends on the teacher's pedagogical knowledge in line with the pedagogical purpose, as they need to make decisions according to students' levels of English.

A number of research studies have also explored the challenges in promoting thinking skills in class. Li's (2011) study identified interruptions as one of the obstacles to promoting thinking skills during classroom interaction. Limited wait time is another obstruction in helping students to develop their thinking skills (Yataganbaba & Yidirim, 2016). Cai (2003) observed secondary level EFL classes in China and revealed that most of the teaching activities were mechanical; Cai suggested that this might be due to a lack of awareness of methods for teaching thinking. Additionally, Cheng (2010) confirmed the tensions and dilemmas experienced by teachers in creativity reform: lack of teaching time,

undesirable student performance in creative tasks, students' original thinking and learning habits, a tight and overloaded curriculum, and so on. This evidence suggests that causal loops are formed that create multiplying negative impacts on teachers' teachings. Besides this, a relatively low awareness of the barriers to and improvement of creative education and the difficulties in identifying factors that influence creative performance were also challenges identified in promoting creative teaching in China (Chien & Hui, 2010). It is believed that the school system and the emphasis on group conformity in the Chinese education system and school culture may have inhibiting effects on the development of thinking skills in schools. Students' higher-order thinking was weak and it was believed that this was due to cultural differences in the society as well as to the educational system (Cheng, 2010).

The analysis of the above research studies reveals the features which support or obstruct the development of students' thinking skills; however, the fundamental factors which influence the implementation of these teaching techniques are the teachers' beliefs and their knowledge. Teachers' beliefs influence their behaviours, including their planning, instructional decisions and their classroom practices, which in turn influence student behaviour in class and their achievement scores (Massa, 2014). However, the research into teaching thinking skills is very limited in Asia when compared to Europe and America (Dilekli & Tezci, 2016). There has been little research carried out into teacher cognition of thinking skills in EFL Chinese classrooms. As mentioned previously, thinking is situated and culturally constructed: the way that Chinese EFL teachers perceive thinking skills and their development will shed light on the gap in the literature.

In terms of research methods, a large number of the studies were conducted through surveys (e.g. Cotter & Tally, 2009; Celuch, Kozlenkova & Black, 2010; Incikabi, Tuna & Biber, 2013; Nalcaci, 2012; Tümkaya, Aybek & Aldag, 2009) and quantitative research studies (e.g. Forrester & Hui, 2007; Malmir & Shoorcheh, 2012; Yaqoob, 2012). These studies have provided significant statistical evidence on various issues in teaching thinking. For example, in Forrester and Hui's study (2007), participants attended a 9-month training course in creative teaching techniques. The results showed that students' figural creativity was related to the teachers' use of a technique to promote self-

evaluation in students. Stapleton's (2011) survey indicated that the teachers studied had some conception of critical thinking but that this tended to be narrow. Their study also revealed that the teachers expressed strong support for the inclusion of critical thinking in the curriculum, while conveying a desire for training in how to teach it. Most of the experimental studies showed an improvement in students' thinking skills after the interventions, and the survey studies provided statistical support for the impact of teachers' knowledge, personality, and beliefs on the teaching of thinking skills. However, participants are selected to be in the control and intervention groups according to particular criteria, and Robson (2011) argues that this makes it difficult to reproduce the findings in another setting. Survey studies contribute a larger picture of teaching thinking in class yet fail to make in-depth investigations of teachers' real thoughts. The influence of the teachers' teaching on students' thinking skills is not clear in these research studies, and Alnofaie (2013) states that only a small number of studies (for example, Li, 2011) have examined the effects of teaching thinking skills on EFL classroom interaction. However, some case studies do demonstrate the impact on students' thinking skills (for example, Cheong & Cheung, 2008; Li, 2011; Li & Wegerif, 2014). These studies have shown in-depth and convincing evidence for the development of thinking skills through teacher talk, the implementation of particular teaching techniques and materials. Informed by these empirical studies and theoretical frameworks, the case study design is therefore selected as the research methodology of this study.

Overall, the empirical studies discussed above all emphasise the critical role of teaching thinking in class, showing positive findings when appropriate strategies were applied. In relation to English language classrooms in China, the number and scope of investigations conducted in primary level classes are very limited. Besides this, most research studies have been conducted using observation or experimental methods, but not in-depth exploration. There are many variables that influence the promotion of thinking skills in class (Lynch, 1991), such as the classroom context, teacher cognition, classroom practices, and interactions. Hence, there is a need to look more closely at how these variables impact on thinking skills development in Chinese primary EFL classrooms. Therefore, the

findings of this research study might provide useful data which is able to fill the gap in this field as well as providing implications for further future study.

Chapter 4 Methodology

4.1 Introduction

This chapter presents the research design of this study. Justification for the use of the methodology and methods will be presented, in acknowledgement of the fact that the decisions to apply these are practical and carry very deep implications (Clough & Nutbrown, 2007) as they are based on values and assumptions which influence the study. This chapter begins with an overview of the research aims and questions, followed by a consideration of the philosophical assumptions behind the study. The application of research methods in this research will then be discussed and, finally, the ethical concerns and trustworthiness of this research will be examined.

The table below is a summary of the data collection methods and data analysis corresponding to each research question.

Table 4. 1 A summary of correspondent data collection methods and analysis for research questions

Research questions	Data collection methods	Data analysis
1. What are teachers' conceptions of thinking skills?	Interviews / Video recordings	Thematic analysis
2. What are teachers' opinions with regards to the implementation of thinking skills in EFL classrooms?	Interviews	Thematic analysis
3. How do teachers' promote thinking skills in their teaching practices?	Interviews / Classroom video recordings	Thematic analysis / Think-led methodological framework
4. What are the challenges for teachers to promote thinking skills?	Interviews / Classroom video recordings	Thematic analysis / Think-led methodological framework

In order to answer the research questions and fulfil the aims of the study, I mainly used semi-structured interviews and video recordings. This will be illustrated in detail later.

4.2 Research Questions

In order to fulfil the research aims (see section 1.3), four research questions were designed:

- (1) What are teachers' conceptions of thinking skills?
- (2) What are teachers' opinions with regard to the implementation of thinking skills in EFL classrooms?
- (3) How do teachers promote thinking skills in their teaching practices?
- (4) What are the challenges for teachers to promote thinking skills?

RQ1 aims to discover teachers' own interpretations of thinking skills. Teacher knowledge about thinking skills will be explored and compared with definitions from the literature reviewed in Chapter Three. Their understandings of thinking skills will provide opportunities for others to understand whether there are similarities or differences in definitions of thinking skills in terms of culture and the subject being learned. It is also important for the teacher-educator to know how well in-service teachers understand these terms in order to provide more effective continuing professional development.

Regarding RQ2, teachers' beliefs with regard to the development of thinking skills will be explored. As Pajares (1992) indicates, teachers' beliefs affect their teaching behaviours which in turn influence students' learning. Teachers' teaching beliefs might be constructed and filtered through sociocultural factors including their knowledge, the teaching content and policy. Since teachers' beliefs are complex and influential in their practice, it is important to uncover their beliefs and discover any unknown factors which influence their teaching practices. It is believed here that the beliefs of teachers derived from this study will explain their decision-making in practice and provide a more in-depth, richer

and wider picture of teacher cognition regarding the development of thinking skills; this will answer the main research question.

RQ3 was designed as a basis for examining teacher and student interaction in EFL classes in order to explore how teachers' instructional practices influence students' thinking and language development. The real-life teaching environment enables a visual understanding of the authentic teaching and learning situation, and interesting findings might also occur in the natural circumstances. Findings from this research question will not only bring to the light the available opportunities for promoting thinking skills but will also reflect how teachers perceive thinking skills (RQ2) and their knowledge of them (RQ1). Teachers' practices will be examined alongside their teacher knowledge and beliefs.

Challenges to the development of thinking skills will be revealed in response to RQ4. The answers to this question are expected to shed light on the teachers' needs in terms of content and pedagogical knowledge of thinking skills. The findings from this question are fundamental as they will inform policymakers of the challenges that teachers come across in their actual teaching practice, which will inform improvements in policy. The findings for this research question could be derived from both teachers' beliefs (RQ2) and their teaching practices (RQ3). Tensions and dilemmas reported by the teachers reveal the challenges which they regard as obstacles that prevent them from implementing thinking skills in class. Less obvious obstacles might be discovered through analysing their teaching practices.

4.3 Philosophical Framework

The paradigm one works within shapes the research problems and questions to study and the ways of seeking information to answer these questions (Creswell, 2013). Therefore, clarification of one's own philosophical assumptions provides justification for the choice of methodology and methods (Crotty, 1998).

4.3.1 Ontology

Ontology is concerned with the nature of reality. One ontological assumption relating to realism is that reality exists independently of our minds (Cohen,

Manion & Morrison, 2011), and is waiting to be discovered (Pring, 2000). Based on this understanding, having knowledge means having knowledge which accurately represents reality. However, confronted with the debates on the nature of “truth”, relativists view reality as subjective; Guba and Lincoln (1988) argue that reality can be socially constructed and that there are more than one everyday realities.

The ontological assumption in this thesis is that there is no one “true”, universal definition of what the reality of teacher cognition is. It is believed that the reality of teacher cognition in this research is subjective, and participants’ beliefs are real. However, von Glasersfeld (1999) argues that it is problematic to perceive the knowledge emerging from our experience as an accurate representation of an external world and that there is no way to compare experience to the real thing. Therefore, reality in this research refers to the participants’ experience of reality and, hence, does not apply to every teacher. Their reality is “experiential reality”, which “works” within the contexts that the teachers live in (von Glasersfeld, 1995). Therefore, multiple beliefs are generated in this research to represent teacher cognition of thinking skills in EFL primary classrooms. Pring (2000) suggests that these beliefs are “multiple realities” that often focus upon people’s perceptions of reality. This research aims to investigate teacher cognition of thinking skills in the EFL context. The reality of teacher cognition of thinking skills is believed to be socially constructed, that is, based on their individual daily experience (see Chapter 2 and 3); their knowledge and teaching beliefs arise from within a cultural heritage and are constructed every day based on direct awareness of the social world (Mingers, 2007), awareness of such factors as their individual experience of teaching, their past learning experiences and the influence on them of the MOE’s policies (Borg, 2003). Therefore, there is a diversity in what EFL teachers understand about thinking skills, and not one sole existing reality to discover. Rather, the “reality” of teacher cognition in this study does not exist independently of our knowledge of it (Grix, 2004); their cognition, which is filtered by the social world, can only be understood from the perspectives of the individual teachers who participated (Cohen, Manion & Morrison, 2011). Therefore, there are multiple beliefs generated in this study in response to the research questions; different conceptions of thinking skills, a

range of opinions regarding the development of thinking skills, various opportunities for and obstacles to promoting thinking skills are generated as the realities of teacher cognition about thinking skills in Chinese primary EFL classrooms.

4.3.2 Epistemology

Maynard (1994, p.10) explains that “epistemology is concerned with providing a philosophical grounding for deciding what kinds of knowledge are possible and how we can ensure that they are both adequate and legitimate”. Informed by the ontological position discussed in the previous section - that the reality in this study was “a product of process by which social actors together negotiate the meaning for actions and situations” (Blaikie in Crotty, 1998) - this study adopted a social constructivist approach, that is, one that sees knowledge as being socially constructed (Crotty, 1998). Therefore, the approach to investigating the teachers’ knowledge, beliefs and teaching practices with regard to thinking skills was based on looking at their subjective experiences of the social world; for example, their pedagogical knowledge regarding thinking skills development could have been socially constructed through their interactions with students. Thus, practical knowledge (Habermas, 2005), experiential knowledge, performative knowledge and epistemological knowledge are all generated in this study (Mingers, 2007). The practical knowledge generated arises from teachers’ understandings of and perspectives on the practice of teaching through interactions with students. The knowledge gained was also experiential as the study revealed teachers’ feelings and attitudes regarding the development of thinking skills, all of which are constructed around their social experience. The performative knowledge is demonstrated in how teachers promoted or discouraged the development of thinking skills, as well as revealing how teachers’ knowledge, beliefs and teaching practices influence one another. The knowledge derived from the study also concerns the epistemological knowledge that came out of examining why teachers take certain decisions in their teaching and the reasons behind both their conceptions of thinking skills and their beliefs regarding developing them.

In addition, according to Hollis (1994), epistemology is also concerned with the relationship between the knower and the known; “it is a way of understanding and

explaining what we know we know” (Crotty, 1998, p.3). The participants in this study were the “knowers”; they held knowledge about their cognition of thinking skills. I, as the researcher, as well as the “known”, socially interacted with the “knowers” using interviews and sitting in the classrooms for video recordings (see section 4.6). Thus, this research is value laden and the knowledge obtained is therefore relative to the context and not to universal standards. As this research is aimed at developing an in-depth understanding of the individual’s perspective in the context of Chinese primary EFL classrooms, the knowledge produced is relative to this context or to a similar context.

Ontology and epistemology are hard to separate as to investigate the construction of meaning is also to investigate the construction of a meaningful reality (Crotty, 1998). The philosophical assumptions above provide implications for research practice as the reality concerned and knowledge are both socially constructed, and rely on evidence from the participants. The philosophical stance of the study is grounded in a set of assumptions that informed the research design and influenced the choice of methodology (see section 4.4).

4.3.3 Interpretivism

The interpretivist tradition helps to frame the theoretical approach of this study. The interpretivist aims to understand the subjective world of human experience. “To retain the integrity of the phenomena being investigated, efforts are made to get inside the person and to understand from within” (Cohen, Manion & Morrison, 2011, p.17). Phenomenology, ethnomethodology and symbolic interactionism are three traditions embedded in interpretivism. According to Creswell (2013), phenomenology highlights how people generate meaning from their lived experiences, focusing on the individual’s subjective intended meaning, and regarding meanings common to individuals as social phenomenon to be explored and interpreted (Hitzler & Eberie, 2004). Ethnomethodology is interested in the routines of everyday life and people’s production (Flick, 2006). The key focus of this perspective is the context where interactions takes place (Flick, 2006). The tradition of symbolic interactionism emphasises subjective meaning (Flick, 2006). The basic assumptions of this tradition are the underlying linguistic foundations of life and social interaction with each other (Denzin, 2004). Meanings arise out

of the interpretive processes of individuals in social interaction (Crotty, 1998). Drawing the common characteristics from these traditions, the perspectives fit well with schools and classrooms as they concentrate on the action which derives from social interaction (Cohen, Manion & Morrison, 2011). Reality is something which is multi-faceted and individuals actively construct their social understanding of the world. The meanings they ascribe to phenomena and the actions based on these are fluid and changing rather than being static or based on a set of rules that can be discovered (Crotty, 1998). The actions and interpretations of individuals' deliberately constructed reality are only made meaningful in particular contexts.

The philosophical assumptions pointed to above demonstrate that there is no value-free truth waiting to be discovered, and that the generation of a reality which fits all is not the aim of this investigation. This research study aims to explore the teachers' beliefs regarding teaching thinking and their teaching practices in this respect; the results could vary among the individual participants, and this requires in-depth analysis rather than a general rule. Teachers' perceptions are hard to generalise and predicted, as their understanding of thinking skills will differ and classroom situations are hard to predict and foresee. In relation to this research study, it is believed that there is more than one reality and they are all valued-laden.

Overall, with regard to ontology, the interpretivist views reality as multi-faceted, seen through many views (Creswell, 2013). This study uncovers the different viewpoints regarding teaching thinking and explores the influence of classroom interaction on children's thinking. Thus, the ontological assumption embodied in this research is one based on social constructivism, which purports that the reality of beliefs are composed of different constructions that are negotiated, as whatever is assumed to exist only exists for certain individuals (Hollis, 2007); there is not one reality which is acknowledged by all people. Epistemologically speaking, knowledge is derived from participants' interactions as well as from teachers' perceptions. This is practical knowledge which emerges in the forms of meanings and perspectives (Habermas, 2005). This study is framed in an interpretivist approach based on the features of the three traditions mentioned

above. For one thing, it involves everyday teaching practice and it also uncovers teachers' personal feelings and interpretations of thinking and thinking skills. For another, the interpretivist paradigm seeks an explanation of social phenomena, and participants are able to tell stories about their lived experiences either orally or through actions, such as classroom interactions, which eventually reveal the meanings of the social phenomena (Alexander, Thomas, Cronin, Fielding & Ellis, 2008; Merriam, 1998).

4.4 Methodology

Based on these philosophical assumptions, the methodological approach of this study is an exploratory case study. Yin (2014, p.16) defines a case study as “an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-world context”. The assumption of this methodology is to understand real-life cases and the contextual conditions pertinent to each one. It also relies on an all-encompassing method to cover the logic of the design. In other words, the exploratory case study methodology accommodates the relativist perspective of that this study is consisted of multiple beliefs. The reality being researched has to be the reality which is defined by the participants. As mentioned in sections 2.5.1 and 3.9, there is no clear framework provided to the teachers to teach thinking skills and little research has been undertaken to explore teacher cognition of thinking skills, but this study allows teachers to reflect on their different definitions and beliefs of promoting thinking skills, and these multiple perspectives which are socially constructed in their real-life situations. That is, such beliefs are multiple and contextualised (Pring, 2000). An exploratory case study approach allows the data to ‘speak for themselves’ (Pring, 2000) through different methods of data collection. It is the aim of this study to explore how teachers understand thinking skills and their teaching practices of them.

To emphasise the above points, the nature of this case study is exploratory (Yin, 2014). The exploratory case study of teacher cognition of thinking skills provides the space for multiple beliefs and perspectives, and room for in-depth findings. A case study research recognises the unique dynamics of the context and hence places significance on reporting the real-life, complex interactions of the events, human relationships and other unique instances. As this study focuses on the

complexity of teacher and student interaction in an EFL context, an exploratory case study research is appropriate to catch in-progress situations in class and gather accurate information (Creswell, 2013). In this way, thick description (Creswell, 2013) of participants' lived experiences, thoughts and feelings is enabled.

Nevertheless, it has often been questioned whether the results of interpretivist research might not be generalisable. Yin (2014) argues that case studies opt for analytic rather than "statistical" generalisation. It is also necessary to point out that generalisability is not the aim of this interpretivist research; instead, detailed, in-depth understanding of a particular instance is the main objective. Ontologically and epistemologically speaking, multiple beliefs exist and the knowledge which is embedded in these needs exploration, description and analysis (Mingers, 2008). In this study, multiple perspectives of the teaching practices and of teachers' beliefs were generated and detailed information was gathered from classroom interactions. The findings, which will be presented in the next chapter, are believed to add dynamism to this field. Although it has often been posited that it is difficult to make generalisations from a single case study, such a study may serve as an alert to similar situations. Additionally, this study reveals a range of perceptions and teaching practices on the part of the teachers, all of which constitute multiple realities, reflecting the different definitions of reality held by people involved in the research (Pring, 2000). Therefore, this case study enables the understanding of how ideas and principles can fit together (Yin, 2014).

4.5 Participants and the research site

In this section, the sampling strategies used in this research study and information about the research site and participants will be presented. Informed by the philosophical assumptions of this study, non-probability sampling was selected. With regard to the research site, convenience sampling - in terms of the accessibility of the participants - was used. Purposive sampling was applied to select teachers with teaching experience.

4.5.1 Sampling Strategies

Probability and non-probability samples are two main methods of sampling (Cohen, Manion & Morrison, 2011), and the non-probability sample was selected as the sample strategy of this research. First, the paradigm informing this research is based on seeking multiple beliefs constructed in the social world. Because of the various sociocultural factors involved, it is not possible for there to be a generalised understanding or a rule for teaching practice that could be applied to the entire population of students to develop their thinking skills. Second, in order to reveal complex educational phenomena and intertwined interactions within a specific context, the emergence of in-depth data is needed. Informed by these philosophical assumptions, a particular targeted group is needed from which to obtain knowledge which represents the context they are living in. Although the selected non-probability sample does not represent the wider population, the sample was chosen to provide instances in a similar population (Cohen, Manion & Morrison, 2011).

There were two stages of sampling in this study. The first stage entailed selecting the research site, for which convenience sampling was used. For the second stage, purposive sampling was applied. In the following sections, I will discuss the research site and the participants with regard to the selected sampling strategies.

4.5.2 The research site

The research site of this study was a state primary school in the Guangdong Province. Guangdong is located in the south of mainland China and is bordered by Hong Kong and Macau. This province topped the total GDP rankings among all provincial-level divisions and has the largest population (OECD, 2016). It is a coastal province in which English was first introduced during trading in Guangzhou, the provincial capital of Guangdong Province (see section 2.5). Foreign trade brings openness to this province, and the Canton Fair, held in Guangdong, is the largest import and export fair in China. Every year, there are a large number of college students working as English translators for various organisations, companies or institutes as part of their internships during their

study. The local language used in Guangdong is Cantonese, which is also spoken in Hong Kong and Macau; however, it is not mutually intelligible with Mandarin, the official language of China. Sharing the same spoken language (that is, English) creates opportunities for cooperation and communication in education between these regions. For instance, the Shenzhen campus of the Chinese University of Hong Kong is an example of an education institute that benefits students across the regions (OECD, 2016). This creates opportunities for students to communicate with other students from different regions and countries. It also implies the essential status of English.

The primary school chosen for this study is a key city school which has earned a great number of prizes in relation to educational achievement in China, and has been nominated as one of the key experimental schools. As the school encourages a research culture, the children, teachers, parents and administrators are normally very supportive of research and welcome it in the school as a way to improve their teaching and learning. This means good accessibility to participants.

There were two underpinning reasons to select this research site. Regarding accessibility, the primary school was selected through contact with the headmistress, who has been in touch with me for seven years, and who granted me permission for school visits from 2009 till 2014. Therefore, access to this local school was easily gained as a result of rapport having been built up gradually over time. Another important consideration was that this school is situated in the city in which I lived during the process of the data collection and therefore enabled easy access in terms of traffic and living expenses. Access to the research field was therefore gained in the early stage of this research study.

Informed by the non-probability strategy mentioned above, a particular group needed to be selected. The chosen primary school was selected for this case study on the basis of convenience and ease of access, as mentioned above. Therefore, convenience sampling, based on the location of the school and the accessibility of the nearest available respondents, was used (Cohen, Manion & Morrison, 2011). The particular group in this study was from a Chinese primary

public school which implements the national ECS as their teaching guidelines and is run by the MOE.

4.5.3 Participants

The criteria for selecting the participants will be explained below. Information regarding the participants is summarised below.

Table 4. 2 Participants' information

Participants	Year group	Number of students	Student's age	Teaching experience
Mei	Year 2	48	7-8	10 years
Lei	Year 3	40	8-9	4 years
Han	Year 4	40	9-10	6 years
Wei	Year 6	42	11-12	16 years

In this research study, four EFL teachers from this primary school were selected. They were responsible for different year groups and classes. The number of students varied (see table 4.2) and the classes were large. The total number of students was 170. Students were also the participants in this study as their interactions with the teacher constituted one of the sources of evidence.

Mei graduated from a 3-year college degree and received the pre-service teacher training. She had ten years of EFL teaching experiences, ranging from Year 1 to Year 6 at primary level. Mei was responsible for teaching Year 2 (48 students) and Year 5 English. She was also the head teacher of a Year 2 class. A head teacher is responsible for students' overall academic achievement, moral education, discipline and management of the class, for contacting parents and for other administrative work connected to the class. Her teaching identity as an EFL teacher was inspired by her parents; she developed an interest in learning and teaching English from her father. She was always excited and enthusiastic about teaching primary students, and engaged very actively in academic meetings with her colleagues. She is also a mother who needs to take care of her child after work.

Lei graduated from a Normal University four years ago in China and received teacher training in primary education. She claimed to be a new teacher of this era but with a traditional spirit for teaching. She was also the head teacher for the Year 3 class (40 students). Apart from this teaching and administrative identity, she was also a mother who was expecting a baby. Therefore, she had asked her programme director and the school for a reduced workload.

Han was a teacher with six years of EFL teaching experience. She received a bachelor's degree in Education for Primary Teaching from a Normal University in China. Han was teaching two Year 4 EFL classes, and one of the classes (40 students) participated in this research study. She described herself as a teacher who uses games to enhance students' motivation to learn English. Like Mei, she was always enthusiastic about teaching and looked for materials to assist her EFL teaching. She is also a mother of a child studying at pre-school.

Wei is a teacher with 16 years' EFL teaching experience at the time of this research. Similar to Mei, she had taught students from Year 1 to Year 6. At the time this study took place, she was responsible for teaching English to one Year 1 and one Year 6 class (42 students). In this study, the students from Year 6 participated. Wei was also a head teacher of a class, and a programme director in the English department. Apart from the workload assigned to her as a head teacher, she was also responsible for allocating teaching tasks to each EFL teacher in this primary school, monitoring the progress of students' EFL language development, organising department meetings, publishing teaching-related articles, reporting to the head of the school about their weekly teaching, applying continuous professional development training for the EFL teachers in this school, and acting as a representative at research seminars and other in-service training sessions. Wei was also a mother of a 10-year-old child.

The selection of these four participants was achieved through the purposive sampling strategy. First, one of the reasons for selecting them was that they were experienced teachers; this does not indicate that they were experts in teaching language as this could not be assumed before the research had actually taken place, and they could have been experts in one area (for example, teaching speaking) but novices in other areas (such as managing the class) (Li, 2017).

Therefore, the purpose of selecting experienced teachers was to make sure that the participants had accumulated some of their own knowledge or beliefs with regard to teaching languages. There was limited reason to undertake random sampling among the teachers as this might have resulted in having participants with little teaching experience who were unable to comment on matters connected to the research focus (Cohen, Manion & Morrison, 2011), which in this case study, is their understanding and teaching of thinking skills. All the selected teachers expressed an interest in the implementation of thinking skills in EFL classes. Secondly, as mentioned earlier (see section 2.1), Chinese primary education runs from year 1 to year 6, and thus, a typical case sampling was followed so that participants involved with the different year groups were selected in order to generate a broad picture of teaching thinking skills at primary level education. However, teachers and students from Year 1 were not considered for this study since children in Year 1 might still have been getting accustomed to the new learning environment as this study took place in term one. This was pointed out by the EFL teachers and agreed with the administrative staff and with teachers from Year 1 in the school after discussion.

Thirdly, the school categorised the students into three different learning stages: lower-year groups (Years 1-2), medium-year groups (Years 3-4) and higher-year groups (Years 5-6). Therefore, based on the purpose of selecting teachers with more than two years experiences, the Year 2 teacher – Mei, who has ten years' teaching experience - was selected as representative for the lower-year group. Year 1 teachers did not participate as they expressed their concern regarding the children who were still adapting to the primary education system; they considered that videotaping Year 2 classes would be more helpful. Regarding the medium-year groups, one Year 3 EFL teacher, Lei, and one Year 4 EFL teacher, Han, participated. There were two EFL teachers in Year 5; one of them was an administrator for the school and was too busy to participate. The other one was Mei, who was responsible for Year 2 teaching and stated that she would rather her Year 2 teaching practices be videotaped than her Year 5 practice. As a result, no Year 5 teachers participated in this research. Therefore, only one EFL teacher, Wei from Year 6, with 16 years teaching experience, was the representative of the high-year groups. There was also one other EFL teacher in Year 6, but she

was unwilling to participate in the study as she considered that Wei would be the best EFL teacher to represent the higher-year groups.

Convenience sampling and purposive sampling were integrated in this research study. Although both of the sampling strategies would not provide generalisable findings and represent the whole, these were not primary concerns in this research; rather, the acquisition of in-depth information was necessary and it was likely that the results would be applicable to similar situations.

4.6 Data collection methods

According to the philosophical assumptions underpinning this study, semi-structured interviews, video recordings, and field notes were considered suitable methods of data collection for acquiring multiple sources of evidence (Yin, 2014). As case study research recognises the variables operating in real-life situations, more than one tool for collecting the various sources of evidence is required (Cohen, Manion & Morrison, 2011). Additionally, Mason (2006) considers that social experience and lived reality are multi-dimensional and that understandings of the world may become impoverished if these phenomena are viewed from only one angle. Therefore, applying multiple methods can encourage researchers to think “outside the box” and allow them to capture a wide range of social experiences. As the nature of this study originated from an interpretivist perspective, the methods that were used originated from the same worldview (Alexander et al, 2008). An insider role is taken, the implications for research practices rely on the “quotes as evidence from the participants; collaborates, [and the researcher] spends time in the field with participants” (Creswell, 2013, p.21). The purpose of these methods will be discussed below. By applying multiple methods, it was possible to reveal more details about teaching thinking in Chinese EFL classrooms.

4.6.1 Semi-structured Interviews

Guided by the philosophical assumptions and theoretical framework of this research study, one of the research methods used involved interview. It is believed in this study that knowledge is generated through individuals' communication. As Cohen, Manion and Morrison (2011) remark, an interview is

an interchange of views from two or more individuals, and it sees human interaction as a means of production of human knowledge. Knowledge is constructed between individuals and is multi-dimensional. In this research study, the interview is a flexible tool which enabled multi-sensory channels, including verbal, non-verbal, spoken and heard channels, to be used (Cohen, Manion & Morrison, 2011) to derive multiple views from the interviewees. As a result, the interviewees had opportunities to reflect on complex issues in depth. This was a suitable method in this project as it enabled participants' authentic feelings, understanding and thoughts (Denscombe, 2007) about implementing thinking skills in class to be elicited.

Semi-structured interviews are flexible, and enable the interviewees to develop their thoughts and ideas and to speak more widely on the issues raised by the interviewer. Thus, using semi-structured interviews allows interviewees to "speak[ing] their own minds", and also permits the researcher to discover issues about complex events (Flick, 2006). Regarding previous research on teachers' perceptions of classroom interaction, the researchers adopted interviews as their instrument of data collection, and elicited the participants' thoughts to develop more detailed data (see, for example, Chan & Yuen, 2014; Li & Wegerif, 2013; Malmir, & Tabatba'i, 2012; Myhill & Wilson, 2013; Stapleton, 2010; Tan, 2007). Chen and Yuen (2014) adopted semi-structured interviews in their exploratory study, for example, and identified important factors such as teachers' personality, and available time for teaching, both of which affected the teachers' ability to foster creativity in their students. Findings from their interviews indicated that teachers experienced tensions between fostering students' creativity and meeting the demands of the school.

The interview is a constructed and specifically planned event rather than a naturally occurring situation (Cohen, Manion & Morrison, 2011). A range of structured questions were therefore designed to address the research aims and questions prior to the interviews. The interview questions are open-ended (see Appendix 1), which served the purpose of enabling interviewees to develop their thoughts and ideas spontaneously (Gilbert, 2008).

The design of the questions was based on the theoretical framework, the principles guiding semi-structured interviews, findings from empirical research studies, and the research questions of the study. The interview questions were revised three times according to comments and advice from the two supervisors of this study.

The interviews took place in a lecture hall at the research site at times to suit the participants' availability. Each interview took approximately an hour, and the interviewees were informed that audio recordings would be taken place during the interview. Field notes were also taken to capture those moments when interesting points were raised; this allowed for follow-up questions to be designed. Some informal conversations also took place during the field work and field notes were useful to record information derived from these.

4.6.2 Classroom video recordings.

Classes were video recorded in order to capture the interactions between teachers and students. Video recordings are particularly useful in documenting complex classroom interaction and were especially important in this study for identifying the opportunities for and obstacles to developing thinking skills (RQ 3 & 4). From a theoretical perspective, this method is related to the interpretivist approach in that it enables analysis of a form of interaction (see section 4.3.3) and aids understanding of how multiple perspectives are socially constructed (see 4.3.1), and how knowledge is generated through interaction (see section 4.3.2). A video recorder can be used to capture classroom interaction in an unfiltered way for further analysis (Simpson & Tuson, 2003). While the interviews captured verbal data which revealed the teachers' thoughts about developing thinking skills, the video recordings captured their thoughts in visual form, complementing the verbal data and building up a comprehensive and multi-focused research (Flick, 2006). In this way, it was possible to generate a fuller picture of teacher cognition on thinking skills.

On the one hand, the EFL classroom is a complex setting in which unexpected factors that stimulate students' thinking can happen. On the other hand, as the aim of the research is to examine the influence of teacher and student interaction

on the development of children's thinking skills, relying on interviews and field notes was not sufficient. One advantage of the video recordings was that they could be watched an unlimited number of times and this provided the time and space for careful examination of the talk that happened in class. This was essential for this research. As mentioned in section 3.9.3, there are segments such as silence, questioning and feedback that are particularly supportive in developing thinking skills; with repeated examinations of the interactions in the video recordings, critical elements for developing thinking skills that were embedded within the interactions could be identified. The video recordings used back-head shots, and, therefore, no children can be identified in the recordings.

4.7 The research procedure

The research was carried out during the first school semester, from November to mid-January. Although an agreement was made with the head of the school before carrying out this research, three weeks were allowed as a "buffering time". This period of time was used for different functions, including sending out consent forms and information sheets, presenting the research aims to the teachers, selecting teacher participants, introducing myself to the children, running pilot interviews and video recordings and revising interview questions.

The preparation stage was essential for this study. Firstly, ethics were taken into consideration prior to the data collection (see section 4.9). Secondly, according to the criteria discussed previously (section 4.5.3), four EFL teachers were selected and asked to sign the consent forms. Meanwhile, children from the four different classes were informed about this research study and about my role before the pilot study took place (see section 4.9). Thirdly, a pilot interview was conducted with one of the EFL teachers from Year 3. She shared the same interests in this research with the other EFL teachers who participated but was not available to take part in the study; however, she was informed about the purpose of the pilot interview as a way to examine whether the interview design was realistic and workable, and to enable necessary revisions prior to the implementation of the study (Turner, 2010). Pilot video recordings were made. A video camera was located at the back of the classrooms during English classes. The use of this equipment brings an unnatural element into class which might

affect participants' behaviour. For example, participants might decide to behave in ways in which they think the researcher wants them and this might result in the researcher not being able to see the authentic human experience and assess its meaning. For this reason, the video recordings were piloted for two weeks before the actual data was collected, which allowed participants to become accustomed to the process and to act naturally in class (Flick, 2006). During the pilot recording, it was also possible to adjust the microphone and camera to ensure ideal conditions for good quality recordings.

In terms of the data collection procedure, the videotaping took place from the third week of November, after the pilot videotaping. As mentioned in section 2.6, English is a compulsory subject for Year 3 students, yet this school started to introduce English to the children from Year 1. However, they restricted the teaching hour to once every other week as a way to reduce stress in the learners whilst at the same time keeping them on track with learning English (see Table 4.3).

Table 4. 3 Video recordings of teaching practices

Teacher	Year group	Minutes of recording
Mei	Year 2	120 minutes
Lei	Year 3	320 minutes
Han	Year 4	320 minutes
Wei	Year 6	360 minutes
Total		1,120 minutes

The recording was set at the back of the class and the teacher was the only focus. The data were stored securely after each session ended, on my personal laptop. The process of video recording lasted for six weeks and provided me with 1,120 minutes of teaching practices.

The semi-structured interviews were scheduled to take place in December according to the teachers' availability. Each of the interviews lasted approximately an hour and was audio-recorded and saved securely on my laptop. Informal conversational interviews emerged spontaneously, therefore, no

recorders were used, and field notes were written after each conversation as the source of this type of data.

4.8 Data analysis

This section reports how the interview data and visual data were analysed. The methods adopted in analysing the research were based on what Cohen, Manion and Morrison (2011, p.537) call “the issue of fitness for purpose”. Therefore, in this research study, different data analysis methods were selected in order to serve the research aims and respond to the research questions. In terms of dealing with the qualitative data, two approaches were taken: the grounded theory approach for the interview data and the informal conversation interview data in the field notes; and the think-led framework which consisted of three phases for discursive analysis of the video recordings. Overall, the process of data analysis was iterative (Cohen, Manion & Morrison, 2011; Lichtman, 2010).

4.8.1 Interview Data

The interview data was gathered and analysed within the grounded theory approach to these processes; thematic content analysis was used. Themes - including teachers’ conceptions of thinking skills (for example, creative thinking skills), their beliefs about teaching thinking (for example, using questioning to promote thinking skills) and the obstacles they experienced in promoting thinking skills in class (for example, a lack of teaching time) - were generated from the interview data (see Chapter Five). These themes are also used to form part of the framework for the analysis of the classroom data.

Because of the exploratory nature of this study, grounded theory, “... a set of inductive and iterative techniques”, was seen as an appropriate way to approach the qualitative data (Guest, MacQueen & Namey, 2014, p.11). The thematic analysis inherent to grounded theory requires a great deal of interpretation and a focus on identifying themes derived from both implicit and explicit ideas within the data. In qualitative research, coding is a technique that helps to identify themes, and to generate ideas and concepts from raw data (Creswell, 2013). Therefore, a great deal of work and attention was put into the thematic analysis. There were four stages to the data interpretation process: coding the data; categorising these

codes; identifying themes and relationships; and developing concepts and arriving at some generalised statements (Creswell, 2013) (see section 4.5.2 and Appendix 2).

A verbatim transcription, rather than a selective transcription, in Chinese of the interview data was undertaken. This offered the advantages that all possible analytic uses are available without any filter. It was helpful in guiding the data analysis and revealing unexpected themes (Gilbert, 2008). It was particularly useful in this research as the themes from the interview were used to form part of the framework for the analysis of the video recordings. Additionally, due to the iterative nature of qualitative data analysis, several revisits to the transcription were needed.

Instead of translating the transcripts into English at this stage, an initial coding process on the Chinese transcripts took place as a way to retain the originality and authenticity of the teachers' expressions. The first step entailed looking for meaningful codes and highlighting them. In step two, these codes were revisited, linked and categorised as specific data segments (Guest, MacQueen & Namey, 2014). The segments from the transcripts were grouped and generated as a theme which was then translated into English.

Thirdly, based on the categorised segments, the themes were identified. New themes that emerged from the subsequent interviews necessitated further analysis of previously coded interviews. The previously coded interviews, on the other hand, also provided insights for the subsequent interviews. Because of the iterative process of qualitative data analysis, the codes could be further differentiated or integrated so that they could be reworked into a smaller number of categories, relationships, and patterns so as to tell a story or communicate conclusions drawn from the data.

The field notes were also included as a data source in this study. As key information was noted down, the interpretation of the informal conversation interview was added to the themes which had been generated from the semi-structured interview data as supplementary evidence to support the findings. Resulting from this thematic analysis, the main themes that were generated included: teachers' conceptions of thinking skills (for example, HOT skills);

teachers' beliefs regarding the development of thinking skills (for example, attitudes, influential factors); the practices used to develop thinking skills (for example, the strategies teachers used); teachers' concerns with regard to the development of thinking skills (for example, the obstacles and challenges they faced). These will be presented in Chapter 5.

4.8.2 Video recording data

The selection of extracts was an essential part of the video data analysis. This involved a data-reduction process that organised, sharpened and finalised relevant information (Namey, Guest Thairu & Johnson, 2008), making the rich and complex interactional phenomena captured by video understandable to the audience of interest (Derry et al. 2010). A total of 530.53 minutes of video recordings (which amounted to a total of 1,120 minutes) were transcribed initially as these were the sections that addressed the four research questions. A further 21 extracts were selected from within these episodes and are presented in this thesis as the "thinking moments"; these represent the "mini-events" of teacher cognition of thinking skills - including the conceptions, beliefs and teaching practices – that emerged in the classroom interaction. To identify these thinking moments, I used the "social practices for viewing" strategy to help with the video data analysis (Derry et al, 2010, p.17; see Fig 4.1), and moved from the stage of reviewing the whole lesson to one in which shorter segments were reviewed for the purpose of analysis (Jewitt, 2012). This process included, first, a presentation of the data in a research centre, when the initial approach to the analysis of video data was clarified as the interview-based phased (see Fig. 4.1); second, multiple views of the data along with supervisors about the episodes selected, provided a range of interpretations of the classroom interactions, which served to narrow down the data to specific extracts for discursive analysis.

The discursive analysis of the video data was undertaken through: an examination of the themes that emerged from the interviews with the teachers and from their teaching practices (see chapter 5); theoretical criteria taken from the literature (see chapter 3), and a combination of Mercer's sociocultural discourse analysis and Alexander's dialogic teaching framework (see Fig. 4.1).

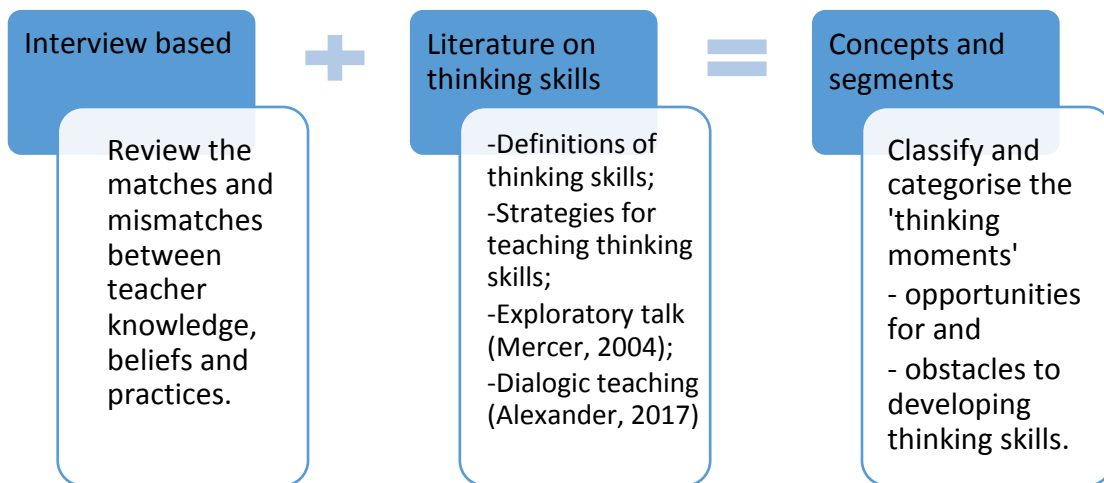


Fig.4. 1 A think-led methodological framework

One phase of the framework entailed reviewing the matches and mismatches between the video extracts of the teaching practices and the themes generated in the interviews regarding teachers’ knowledge of thinking skills and their beliefs about their development. The first step entailed watching a series of video recordings of individual teachers, and attempting to see if there was a match between the data from these and the themes which had been generated from the interviews (see table 4.4).

Table 4. 4 Examples of coding matches and mismatches

Themes from interviews	Video-recording	Match or mismatch
<p>Conception of creative thinking Codes from Lei’s interview: same phonetics, different words.</p>	<p>Extract 17 (Lei, year 3): “who can be creative?”</p>	Match
<p>Insufficient knowledge of thinking skills <i>Codes from Lei’s interview</i> Limited knowledge and concepts of thinking.</p>	<p>Comments: defined substitution drills as creative practice.</p>	
<p><i>Codes from Han’s interview</i> Knows little about teaching thinking skills and the theory behind them.</p>	<p>Extract 18: “have some creativity.” Comments: creative teaching did not lead to the development of creative thinking.</p>	Match

For example, regarding the theme of conceptions of creative thinking, Lei defined her understanding of it as reproduction of knowledge in an interview (see section 5.2.5). This matched her teaching practices, in which she used a substitution drill to practice sentence structure and specifically encouraged students to be creative, according to her understanding of that term, by reproducing the knowledge (extract 17). This teaching practice also reflected her belief that she had insufficient content knowledge of thinking skills to work to develop them (see section 5.6.2). In the second step, the moments which had been identified were assigned a time code for future reviews of the video in the software Transana 3.0. These moments were repeatedly viewed and were discussed several times with the supervisors to maintain authenticity. Thirdly, these were reorganised and categorised along with the moments taken from the data gained from the other participants, in order to generate key themes. For example, the interview with Han and her teaching practices (see section 5.6.2) were also categorised under the theme of 'insufficient knowledge of thinking skills' (see table 4.4). These themes were also conceptualised as obstacles to the development of thinking skills. These steps were similar to those executed in the thematic analysis, which was iterative; however, the process was not solely inductive as there were pre-categorised themes that had been generated from the interview data to guide the data selection from the recordings. This was also useful to identify how teachers' knowledge, beliefs and their practices influenced one another. The process of first-phase analysis increased the depth at which the context-rich coded data describing the case of teacher cognition of thinking skills (Namey, Guest Thairu & Johnson, 2008; Jewitt, 2012) was investigated. As the final step, these identified instances were transcribed in the software Transana 3.0 (see Appendix 3).

The second phase entailed identifying the "thinking moments" using theoretical definitions of thinking skills (see section 3.6 to 3.8 3.6), and current theoretical criteria to select the segments which appeared to be beneficial in the development of thinking skills (see section 3.9.3). This was both a deductive and an inductive process approach to data analysis that supported the reduction of the video data being recorded. On one hand, knowledge derived from the literature (for example, the definition of creative thinking skills), and the empirical

evidence derived from research studies (for example, the increase in wait time), acted as criteria for selection of relevant extracts. The literature provided a broader basis for data analysis; for instance, an increase in wait time was identified as a useful pedagogical technique for developing thinking skills, but none of the teachers mentioned it in the interviews. In this respect, the features generated from the literature were useful for filtering the episodes and ensuring a more in-depth exploration of the segments in the classroom interactions which supported the development of thinking skills.

The “thinking moments” were also defined and analysed on the basis of Mercer’s sociocultural discourse analysis methodology and Alexander’s dialogic teaching principles. Inspired by the nature of Mercer’s (2004) sociocultural approach to discourse analysis, which focuses on the “process of joint cognitive engagement with [children’s] developmental and learning outcome” (Mercer, 2004, p.143), this study has used some of the features of Exploratory Talk to support the identification of the “thinking moments”. For one thing, Mercer’s framework recognises the function of interaction which enables ‘inter-thinking’, and is concerned with “the ways that shared knowledge is both invoked and created in dialogue” (Mercer, 2004, p.140); this makes the approach useful to the analysis of classroom talk in the light of the research questions of this study. Furthermore, the nature of Exploratory Talk is linked with the exploratory nature of the methodology of this study, as it supports the process of data analysis in exploring how to use language as a tool for developing thinking skills, and vice-versa, during classroom interaction, and to see if there are any potential possibilities for or any challenges to improving the quality of classroom dialogue for learning and thinking development. However, Mercer’s (2004) approach is considered to be a methodology rather than a method of classroom data analysis. Mercer states (2004) that this approach to discourse analysis integrates both qualitative and quantitative methods yet in this research study, only the qualitative aspect and the features of Exploratory Talk have been applied because thinking was the focus in classroom interactions, rather than a systematic identification in the transcripts of relations or patterns, such as, for example, collocations of a term. These features of Exploratory Talk include:

- Meaning co-construction and criticality

- Joint consideration of suggestions, statements and decision-making
- Justified challenges and alternative hypotheses
- Active participants
- Visible reasoning and accountable knowledge is made public

The features of Exploratory Talk revealed the nature of classroom interaction in relation to children's productive engagement in ways in which their HOT skills would have been developed or obstructed. For instance, students' critical engagement with each other's ideas in a whole class discussion would be visible in their talk. However, the features were indicators that this moment might trigger the development of HOT; how teachers enabled the interaction to flow was critical in terms of ensuring the quality of the classroom dialogue. Hence, the approach of using features of Exploratory Talk in this process of data analysis was deductive - oriented towards locating potential "thinking moments". With regard to the feature of "active participants", this enabled the moments where children actively engaged in classroom dialogue - such as when they raised their hands, initiated a turn or challenged others' assumptions during classroom interaction - to be located initially. As discussed in section 3.3.3, silence could be interpreted as active engagement; therefore, taking into consideration the Confucian approach to thinking, the meaning of this feature was modified to suit the research context.

Hence, these potential moments were required for an in-depth analysis and close examination of the episodes, and identified the emerging segments, such as, for example, the use of silence in active participation, which supported the development of HOT and learning. This process is inductive in nature.

To carry out an inductive analysis of the potential thinking moments, Alexander's dialogic teaching framework was followed; this emphasises scaffolding practices in the potential thinking moments as a way to explore how teachers create or discourage a dialogic space for students in order to develop their thinking and learning (Alexander, 2017; Muhonen et al, 2016;). This is in alignment with the focus of this study and with the exploratory nature of this research into teacher cognition of thinking skills.

As productive educational dialogues stimulate learners' thinking and learning (Muhonen et al, 2016), this study draws on the key principles of dialogic teaching to identify the thinking moments in which teachers harness the power of talk to support students' meaning making and independent thinking. These principles (Alexander, 2017, p.38) are:

- Collective - teachers and children address learning tasks together, whether as a group or as a class
- Reciprocal - teacher and children listen to each other, share ideas and consider alternative viewpoints
- Supportive - children articulate their ideas freely, without fear of embarrassment over 'wrong' answers; they help each other to reach a common understanding;
- Cumulative - teachers and children build on their own and each other's ideas and chain them into coherent lines of thinking and enquiry
- Purposeful - teachers plan and steer classroom talk with specific educational goals in view

For example, thought-provoking questions, which are one indicator of dialogic teaching, were identified when teachers asked open-ended questions to encourage children to share knowledge, build on other's ideas and think in-depth; this reflects the collective, reciprocal and cumulative principles. The supportive principle was identified in the teaching practice in which the indicator of effective feedback was observed (see extract 1); a child was helped by others without the embarrassment of giving the "wrong answer", and the teacher steered the classroom talk with effective feedback by allowing time for "silent active engagement" to enable the children to respond to the question (Gillies, 2016). The teacher provided information and directed the child towards further thinking and language development rather than judging the child (Alexander, 2017). Hence, dialogic teaching resonates with Mercer's work on "inter-thinking" in that both address the function of talk not just for communication but as a "reciprocal process in which ideas are bounced back and forth and on that basis take children's thinking forward" (Alexander, 2017, p.24).

Through the close examination of teacher-student interactions in both phases, as discussed above, the “juicy moments” were categorised and decoded into identifiable themes as opportunities for and obstacles to developing thinking skills. This provided answers to RQ 3 and RQ 4. A commentary, including an analysis of these moments, is presented in the next chapter. I have used Jefferson’s system of transcription notation to capture what was said in the conversation, and how to exploit the details of complex interaction in EFL classrooms (Jefferson, 2004; see Appendix 4).

Overall, the framework used to analyse the video recordings is a thinking-led one, drawing on the complex notions of teacher knowledge, beliefs and practices in the foreign language classroom with regard to thinking skills on the basis of scaffolding pedagogy in dialogic space.

4.9 Ethical Concerns

Throughout the process of planning and designing this qualitative research, ethical considerations were taken into account; possible issues that might surface during the study were predicted and how these issues needed to be addressed was considered and planned for. Much of the qualitative research involves interactions with individual cases, unique instances, and may involve personal and sensitive matters. There are ethical guidelines, such as BERA, which provide advice on how to deal with problems connected to these matters and that govern the process of the study. However, it is argued here that there are no clear standards for governing activities in qualitative research study. More often, researchers need to rely on their own moral compass (Litchman, 2010). For one thing, ethical guidelines are too general to provide useful and detailed directions on how to solve conflicts that occur in individual instances. For example, they fail to provide guidelines on how to solve cross-cultural issues. Therefore, it was my own responsibility to ensure the wellbeing of participants. An ethical form was approved before entering into the research field (see Appendix 5).

4.9.1 Informed Consent, Anonymity and Confidentiality

The headmistress, teachers, and children were informed about the purpose of this study through a face-to-face meeting and a detailed information pack. The

information pack included information about the project, confidentiality, their right to withdraw and a consent form. The information pack was written in user-friendly language to explain the research in the research participants' first language (Chinese in this case) to avoid any ambiguity and difficulty in understanding. As this research study involved children, permission to participate in the research was sought from both parents and children. Consent forms (see Appendices 6-8) were sent to the children, their parents and the teachers separately. Participants and all people concerned (including the headmistress and parents) were informed about how the research findings would be used. For example, it was made clear that children's performances in class as well as teachers' opinions and their teaching practices would not be judged or evaluated and that the data collected would only be used for research purposes. Essentially, participants were notified that informed consent was an ongoing process throughout the research and they always had the right to withdraw from the research at any time. Since the classroom recording used the back-head shots, no children could be identified from the recording. Furthermore, both children and parents were informed that the focus of the recordings was on the teacher. It was hoped that by providing sufficient information about the research, the methods for recording and what the recordings would be used for, all parents and children would give their consent for the classroom recordings to proceed.

All the participants and parents were reassured that the researcher would respect their privacy and confidentiality, and their every decision, including their participation or withdrawal from the research. With regard to the teacher-participants, I sought volunteers who met the criteria of purposive sampling (see section 4.5.3), and explained the nature of the research to them, giving them ample time to consider their consent, and providing them with opportunities to ask questions about this research.

In terms of gaining informed consent from the parents, although it is always preferable to approach each parent individually and show them respect and goodwill, this did not actually prove possible. Information sheets and consent forms were given to the parents. However, after a discussion with the teachers and the headmistress, the original plan to meet the parents was withdrawn. For

one thing, not all parents of the 160 children would be able to attend the meeting related to this research project. For another, it would be time-consuming to contact every parent in person. However, parents are the “gatekeepers” for their children and therefore, an information sheet containing all the information about the research project, together with the consent form, were sent to the parents, with my contact information attached. Any parents who had questions were welcome to contact me. It was emphasised that parents needed to return the consent forms to the researcher only if they did not want to permit their child’s participation in the project.

Children were also participants in this research. Age-appropriate consent forms were designed and sent to the students before the process of data collection started. Having children as participants requires sensitivity to their age and development. I took every step necessary to avoid causing harm to the children. I was introduced to the class by the teacher as a senior “student” from an overseas university; it was true that I shared the same social identity – that of a student - as the children. To help the children understand the meaning of the research, I explained that it was a part of my study. Furthermore, it was hoped that the teacher’s introduction might somehow create a harmonious atmosphere in class. The introduction to the research procedure took place before the pilot videotaping began. Firstly, in order to reduce the impact of the researcher’s adult authority, children were allowed to ask any questions about me in the introductory session, and I gave the children time to “get used” to me. Secondly, I clarified that the children would be filmed but that their faces would not be shown in the film. In terms of informing them about the aims of this research, I used children’s language to try to make it more understandable. For instance, I explained that the purpose of filming was for me to keep it as a visual memory of them which would remind me of their ideas. To understand what and how they were communicating with the teacher was my homework in the UK. If they would not like to be filmed, they could let me know in person and they had their say on this project. As both parents and teachers had been informed about this research, and had it explained to them, the children could have gone to them if they came up with questions and concerns after the session.

The participants' names and school were anonymous in the research paper. In writing up the thesis, the school and participants were assigned pseudonyms. It was clarified that their information would not be disclosed to a third party under any circumstance. As the data was recorded and transcribed, the electronic information was stored only on, my personal laptop which is password protected. Any handwritten work would also be either transformed into electronic format and stored securely or destroyed when it was no longer required. As the participants and the school were given pseudonyms, there should not be any possibility that individual participants could be identified through reading the transcriptions of the data.

It is impossible to predict all the exceptional factors which could create ethical issues; however, I reminded the participants of their right to withdraw from the research at any given time. Teachers and parents were fully informed and were offered clear channels of communication regarding the research during the study.

4.9.2 Cross-cultural Ethical Issues

This case study was carried out in the Chinese context. Nevertheless, the theoretical frameworks and philosophical assumptions were all rooted in the non-Chinese society that framed the ethical guidelines. Therefore, a framework based on Western values had the potential to offend participants because of cultural issues. According to Hamid (2010), misunderstanding a culture deepens the social distance between the researcher and the participants. Lack of cultural consideration might trigger uncomfortable feelings and cause harm to the participants (Marshall & Batten, 2003), which would influence the authenticity and the process of data collection. Thus, it is arguable whether general ethical guidelines are effective enough to ensure both researcher and participants interact in an appropriate manner, protecting both participants and the researcher from harm in the Eastern context. To address this dilemma, the methods used for data collection were adjusted to make them culturally friendly, as will be discussed below.

4.9.3 Ethical Issues in Interviews

As this was an in-depth data collection method which might cause some unreasonable stress for the teachers when discussing their teaching practices, the interviewees were informed that they had the right to refuse to answer any question, or they could choose to stop participating in the project at any time.

A hierarchical system is a social norm in countries with a Confucian tradition, and Chinese culture places great emphasis on the matter of relationships. As mentioned in Chapter Two, teachers are regarded as masters of knowledge and are seldom challenged and questioned. Therefore, a cross-ethical issue might occur regarding the position occupied by the researcher, who has the power to ask interview questions. It was unclear whether the participants might misinterpret the researcher's questions or thoughts, as the researcher in this study is a student. In terms of cross-cultural issues, the researcher should show respect to the teachers' professionalism in classroom teaching. Thus, questions such as 'How would you like to implement teaching thinking skills in class?' might cause embarrassment to them, as they could perceive this type of question as an indication of there being better teaching practices than the ones they use. Consequently, teachers might perceive this situation as challenging their power of formal classroom teaching. Therefore, before entering into the interview, I showed respect to the participants. The forms of the questions were reconstructed in a humble way. For instance, 'How would you like to implement teaching thinking skills in class was turned into 'I don't have that much experience as you do, would you mind sharing your experiences of teaching thinking skills with me, so that I can reflect on the research as well as on my own teaching'. In relation to the power issue, I made every effort to keep the interview as natural as possible, as the more natural the environment is, the more authentic the responses a researcher can elicit are. Therefore, respecting the cultural setting was a way of creating a natural atmosphere. Although the above way of asking interview questions was time-consuming, developing rapport supported them in disclosing information and facilitated further investigation.

4.9.4 Video recordings

One of the ethical issues that needed to be addressed is that a video camera often disturbs the natural setting (Cohen, Manion & Morrison, 2011). On one hand, the teacher might feel an obligation to encourage students' thinking in class, in a way that was not part of the original lesson plan. On the other hand, the teacher might have a feeling of being judged and assessed as many of the observations carried out in Chinese classroom are for promotion purposes. Furthermore, as children were also participants who would be recorded, curiosity about the equipment, as well as other unexpected behaviour might occur due to the appearance of cameras in the classroom. As a result, teachers might need to spend more time on managing the class, which also raised a concern regarding teachers' willingness to participate in this research. One of the solutions was to carry out pilot videotaping in class. Very importantly, I developed rapport with the children during the pilot study. In this way, both teachers and students gradually got used to the camera and behaved more naturally.

4.10 Trustworthiness and reflexivity

Establishing criteria for examining a research study is essential. Trustworthiness consists of credibility, dependability, confirmability, and transferability. These four primary criteria have been widely accepted as criteria for assessing qualitative research (Marshall & Rossman, 2015; Shenton, 2003). This section presents how this study addresses these criteria for trustworthiness.

4.10.1. Credibility

One of the most important constructs in establishing trustworthiness is credibility (Lincoln & Guba, 1985, as cited in Shenton, 2004). First, a prolonged engagement in the field can help reduce reactivity (Robson, 2011). Spending more time with participants can serve to develop rapport with them and create more understanding, which in turn can lead to more accurate findings being generated (Gibbs, 2007). In this case, rapport had been developed before the first data collection dialogues took place. For one thing, I developed an early familiarity with the school culture through several school visits before the research study took place. A relationship of trust had been established for years with the

headmistress (see section 4.5.2) as well as with some of the EFL teachers. A desk was provided by the staff, situated in the English department office, which allowed me a platform from which to communicate with the teachers during the pilot study and the data collection process. Familiarity was developed gradually as teachers would approach me and chat about their views on teaching and thinking development, information which later became part of the data. For another, as students were also key participants, a friendly relationship was established during the period of the pilot study, for instance, by spending time with the children during their break time. The role that I took on during this time was that of a meddler. This idea was derived from McWilliam (2009) who posited that the role of the teacher when teaching creativity should be more than that of a facilitator; it should involve the researcher participating in the children's learning. Although the aim of my role was to develop rapport with the children, the purpose of being a meddler could ease the tension between adults and children and serve to establish a "friendship" between us.

A strategy to increase credibility was ensuring the honesty of the informants (Shenton, 2004). This relates to the first point mentioned above. This research study related closely to the participants' living experience and their opinions and as these could not be tested and examined to ensure accuracy, ensuring honesty on the part of the participants was a possible way to increase the authenticity and the credibility of the research. Therefore, with the development of good rapport, participants were more willing to elaborate on their personal thoughts and experiences. In this way, teachers were able to talk about their experience and ideas without the fear of losing credibility in the eyes of the investigator (Shenton, 2004). Echoing the cross-cultural ethical issues (see 4.9.2), I established rapport and thus implicitly indicated that their experiences and thoughts mattered the most with respects, and that there were no right or wrong answers to the questions I asked. Overall, the tactic used to ensure honesty was establishing an environment in which teachers could talk frankly.

Triangulation was another technique used to establish credibility. Although the study was purely qualitative and not aimed at generalisation, triangulation was used to grasp the multiple beliefs acquired from the multiple data collection

methods and the data analysis. It was believed that teachers had their own understanding of thinking skills which they would be able to elaborate in the semi-structured interviews. However, this formal means of data collection might not have provided enough space for the teachers to reflect on their beliefs. Therefore, informal conversation interviews were carried out and field notes were taken to record the data from these. In this way, teachers' beliefs could be more naturally elicited. Furthermore, teachers' practices had been video recorded and analysed using discursive analysis (see section 4.8.2) based on the framework developed from the themes from their interviews, the literature, principle of Alexander's dialogic teaching and the features of Exploratory Talk (Mercer, 2004). This provided another data collection and analysis method for examining teacher cognition regarding thinking skills in a real-life setting.

Audio-recording and videotaping, as ways to retain the accuracy and completeness of the data, were also strategies used to increase the credibility of the research and the findings (Robson, 2011). Added to this, peer scrutiny of the study and frequent debriefing sessions took place with the purpose of maintaining the credibility of the study (Shenton, 2004). Before my initial analysis of the data, I was given an opportunity to present my study in a Research Centre that works with a network of practitioners and researchers who are working on improving teaching thinking. Through discussion with people with more experience, my vision of data analysis widened and this helped me to adopt a suitable data analysis approach for the analysis of the interview data and video-recordings. During the data analysis process, I had frequent debriefing sessions with both supervisors in which I sought feedback and comments. We considered the data and worked on the coding process. These meetings provided a platform on which I was able to examine my interpretations and gain new ideas for alternative approaches to analysing the data.

4.10.2 Transferability

The second criterion for trustworthiness is transferability, which parallels external validity, meaning "the degree to which the results can be generalised to the wider population, cases, settings, time or situation" (Cohen, Manion & Morrison, 2011, p.186). However, generalisation is not an aim of this interpretivist study, which is

concerned with seeking multiple beliefs. Therefore, the findings of this study are specific and because a small number of individuals participated, it is not possible to apply the results to other situations and populations. Each case is unique on its own, yet it could be an example within a broader group and transferability could be accepted in this way (Shenton, 2004). Therefore, it was essential for a thick description of the phenomena to be provided in order that other investigators are able to relate the finding to their own positions in situations similar to that of this study (Cohen, Manion & Morrison, 2011). The context of this study, including typical teaching and learning styles, the culture of thinking and learning, the policies and the education system, have been presented and this provides detailed information on the background to this study (see Chapter Two and Chapter Three). It is envisaged that the findings of this study will be applicable to other Chinese public primary schools. It is also important to enable readers to understand the phenomenon under investigation as it could help them to compare the context with their own which would enable them to relate to the situations they have seen emerge in this research (Shenton, 2004).

4.10.3 Dependability

In order to address the dependability of qualitative research, thick and rich description is needed. Rather than repeating the research process to see if it produces similar results, dependability here stresses the transparency of methods (Denscombe, 2007). The processes within a study need to be presented in detail, and this enables future investigators to repeat the work if needed. The design of the research and its implementation, as presented in this chapter, should allow readers and future researchers to develop a thorough understanding of the methods and their effectiveness with regard to this study (Shenton, 2004). This study also includes a detailed, rich and thick description of the multiple voices generated by the teachers, which serves to enable readers to examine these closely and compare their situation with the research situation (Merriam, 1998).

4.10.4 Confirmability

The concept of confirmability in qualitative research is a comparable concern to objectivity in quantitative research. Nevertheless, the philosophical assumption underpinning this study is the embracing of the personal values behind the sociocultural factors. In this case study, it is impossible to be value-free and remain unbiased since personal views are intertwined and teacher cognition of thinking skills is investigated within the interpretivist paradigm. Therefore, Shenton (2004, p.72) suggests that “[research] steps must be taken to help ensure as far as possible that the work’s findings are the result of experiences and ideas of the informants, rather than the characteristics and preferences of the researcher”. What helped to reduce the effect of investigator’s bias in this study was the use of triangulation (see section 4.10.1); multiple data collection and data analysis methods are adopted in this study, which generated a thick and rich description of the subject being researched. Furthermore, the beliefs underpinning this study were clarified (Gibbs, 2007; Shenton, 2004) by informing the reader about how the theoretical approach, the interpretation of the data and the values and comments are shaped (see, for example, Chapter Two and section 4.3). Last but not least, Holliday (2010) suggests that the claims made by the researcher need to be supported by sufficient evidence. This suggests that the researcher should be reflective and consider other alternative interpretations of the phenomenon under investigation.

4.10.5 Reflexivity

Reflexivity refers to an acknowledgement of the great influence of the investigator on the study, and how the self is inextricably interwoven into the research study (Lichtman, 2007). In relation to confirmability, as discussed above, it is impossible for the qualitative researcher to strive to be objective in order to reduce bias; rather, the qualitative researcher needs to embrace the subjective nature of their role (Litchman, 2007). Therefore, the effects caused by the researcher during the research process needed to be taken into account. Firstly, one needs to admit that the researcher plays a critical role in all aspects of the research process and there is, therefore, a need for a researcher to examine their thoughts and assumptions in order to clarify their beliefs. For this reason, a reflective journal

was written for this research study which recorded changes in my beliefs during the research process as a way to remind me of what had happened in the research field.

By acknowledging the role of the researcher in qualitative research, the researcher might be able to reflect how they would affect various aspects of the research when interpreting the meaning of the targeted situation. The reflexivity of the researcher relates to the dynamic relationships in this research field. For example, in order to set up a friendly relationship with the children, I needed to play the meddler role during the breaks (see section 4.10.1), while in the introduction session (see section 4.8.1) I placed more emphasis on the role of 'student from the UK' than on that of investigator, in order to stress the similarity between the children and me.

In relation to the teacher participants, reflexivity has been associated with feminism. Feminist research advocates the integrity of the self and research participants in research. It also emphasises the recognition of personal and emotional involvements and embraces these as they are the conditions under which people come to know each other and to admit others into their lives (Oakley, 1993). Feminist research uncovers the great importance of subjectivity in the mapping of social experience; it requires openness, engagement and the development of a potentially long-lasting relationships (Reinharz, 1992). Therefore, the interactions between the teachers and me were more concerned with sharing self and exposing beliefs and feelings in a desire for non-hierarchical practice (Lichtment, 2007). Therefore, from a feminist perspective, in critical ethical moments (when memories and emotions surfaced), I did not avoid the questions out of a fear of causing bias. Rather, I engaged fully with the situation as the interviewees revealed more about their feelings and experiences. Women appear to be powerful and willing to uncover their personal issues in a cooperative situation (Baxter, 2002). Thus, their emotional voice should be heard as it derives from their subjective life experience. In this way, more authentic data can emerge. The self in this study is not one that strives for objectivity; rather, it embraces and uses the influence of self to understand the participants. As an early researcher in this field I am aware that my role would influence every step

of the process and regard myself as a researcher as a “situated actor[s]” (Lichtman, 2007).

Chapter 5 Results

5.1 Introduction

This chapter presents the findings that relate to the research questions (see section 4.2); a summary of the results will be presented at the end of each section in order to provide a clearer view of the qualitative data. Teachers' conceptions of thinking skills will be presented first, followed by an account of their beliefs regarding the development of thinking skills in EFL classrooms; this will include an account of their attitudes, the practices they reported, and their opinions of the ECS. Opportunities including instances when the development of students' thinking skills was achieved, including opportunities when there was potential for such development will be demonstrated. Finally, the challenges and obstacles to teaching thinking (which teachers identified and encountered in their teaching practice) will be illustrated. The data presented in this chapter are the transcripts from interviews and classroom video recordings. Themes which emerged from the interviews are as follows:

- Teachers' conceptions of thinking skills:
 - General understanding of thinking skills
 - Conceptions of creative thinking
 - Conceptions of critical thinking
 - Conceptions of summarising
 - Conceptions of memorisation

- Teachers' beliefs regarding the development of thinking skills:
 - Positive attitudes to the development of thinking skills
 - Factors influencing their beliefs about the development of thinking skills:
 - Student factors - age, performance, heterogeneity of class
 - Teacher factors - past learning experience, teaching beliefs in language learning, teacher knowledge of thinking skills
 - Context factors - opinions of the ECS, exam-oriented education system

- Memorising as the thinking skill most worth developing in the EFL class
- Strategies for developing thinking skills (opportunities in practice):
 - Classroom interaction
 - Learning from peers
 - Teacher questioning
 - Teacher feedback
 - Creative teaching methods
- Challenges to developing thinking skills:
 - Insufficient content knowledge of thinking skills
 - Insufficient pedagogical knowledge of thinking skills;
 - Student performance on thinking tasks
 - Classroom management
 - Limited teaching time
 - Heavy work load
 - Different teaching beliefs among teachers
 - The exam-oriented education system

Some of the themes overlap; for example, the contextual factors in 'teacher's beliefs' overlap with the exam-oriented education system in 'challenges in promoting thinking skills. These overlapping themes are not a matter of repetition, but demonstrate the consistency and inconsistency in teachers' beliefs, which were influenced by the challenges they perceived and actually encountered in their teaching. The main themes generated ('teachers' conceptions of thinking skills'; 'teachers' beliefs about the development of thinking skills'; and 'challenges in promoting thinking skills') address RQ1, RQ2 and RQ4 respectively. As mentioned in section 4.8.2, these themes were used to examine teachers' practices; for instance, the strategies they used to promote thinking skills, were used as the basis for a coding scheme with which to analyse the raw data from the video recordings (Jewitt, 2012). This strategies theme was thematised also as opportunities for promoting thinking skills, in response to RQ3.

5.2 Teachers' conceptions of thinking skills

This section examines the data gathered on the knowledge teachers have of thinking skills and will refer to both interview and classroom data. The subsections are organised according to the codes identified in the data that were grouped through the iterative process of thematic analysis, along with the moments observed in the classrooms when thinking skills were promoted.

5.2.1 Teacher's general understanding of thinking skills

Teachers held various perspectives on thinking skills. Firstly, teachers had a broad definition of thinking skills; thinking skills are life skills which prepare students to face future challenges. Secondly, they related thinking skills with different disciplines, such as Maths and English, indicating the subject-specific nature of thinking skills development. Finally, teachers also recognised the complexity of thinking skills and reported that it was difficult to define the term.

Lei and Wei considered thinking skills as life skills for the children's futures, seeing them as related to lifelong learning:

Thinking skills is a loaded term and has a great impact on the children's future development. For instance, problem-solving skills; I think these are more important than rote learning and rote memorising in EFL classes.

(Lei)

Thinking skills are life skills, and they are influential in children's futures. I think we should not examine how much knowledge the children have stored, but their thinking. This is more important in education. When they face challenges in their future life, they might need to use different thinking skills to solve the problems. I think these take priority over subject knowledge in terms of problem-solving.

(Wei)

This profound understanding of thinking skills revealed a necessary form of teaching and learning; Education is not only about knowledge accumulation, it is about facilitating children to think effectively and fostering their ability to solve

problems. In these two teachers' comments, problem-solving skills were perceived as essential. As Claxton (2014) says, problem-solving is a type of thinking skill that enables children to intelligently engage with the world when uncertainties appear.

One teacher also related her conceptions of thinking skills to the subject of learning. Lei defined thinking skills as more relevant to Maths than English:

There is no evaluation of thinking skills in the English exams. Thinking skills such as logical thinking are more likely related to learning Maths, which is tested in exams.

This understanding of logical thinking relates to the test items in the examinations, as some of these require children to write a step-by-step process of solving an equation. This requires an explicit thinking process which shows the students' reasoning skills and their capacity to think logically. Their thinking process is marked. However, in English tests, there is no requirement for students to demonstrate their thinking process, although HOTS skills might be used implicitly. Nevertheless, this finding indicates how examinations have the power to influence teachers' conceptions of thinking skills.

An alternative notion of "English thinking" was brought up during the interviews. "English thinking" is defined as a thinking skill related to English. There are two dimensions of this concept, according to the teachers. Firstly, Mei and Wei defined "English thinking" as thinking in English which relates to the skill of application. For example, Wei pointed out that:

Students need to think from a linguistic perspective and they should use English as the language to construct thoughts in their minds.

Her definition of thinking skills suggested she placed importance on the application of language, as students were expected to build their ideas in English. Application is also one of the cognitive skills that students need to use and work with the patterns and rules in order to organise their ideas in English (see section 3.2.1). The second dimension of "English thinking" is related to the Western culture of thinking and learning (see section 3.2). Wei suggested that native

speakers of English think in an English way which could promote the development of students' thinking:

I think one of the best ways of learning English is being taught by native English-speaking teachers. First and foremost, they have the English ways of thinking. They use a communicative approach and interact with the children in English. Secondly, students can feel and experience the language shaped by these English ways of thinking.

Wei regarded thinking skills as being integrated with Western culture, and believed that native speakers of English would have English ways of thinking. This could be interpreted as her viewing the notion of "English thinking" as being Western culture-laden and her believing that students could develop this type of thinking through interacting with native English-speaking teachers. However, English is an international language which is used not only among native English speakers but also among non-native English speakers. This calls into question whether the Western culture inherent in the English taught to English native speaker learners should be developed in EFL classed. This will be discussed in 6.2.1.

Thinking skills have also been defined as a tool to facilitate EFL learning. As Mei explained:

I think thinking skills means allowing students to have different ideas. They need to expand on their thoughts. For example, when I say 'animal', they come up with different things, such as dogs, cats and fish. It's like different ways of using the language.

Mei considered thinking skills as a tool to generate thoughts; she saw them as being helpful in expanding students' thoughts and elaborating them in English. She reported the above example where students needed to recall something and presented it in English.

Thinking skills were also seen as a strategy for learning language. In defining thinking skills, Han believes that persistence in learning English through implementing effective strategies, such as thinking skills, can speed up learners' foreign language development:

Each thinking skill is connected and related to EFL learning. For example, imagination, memorisation, making judgements, summarising - all these skills facilitate students' learning and enhance their language development. They become a learning strategy as well as a part of the integrated skills needed in language application.

Her statement is consistent with the ECS, which proposes the fostering of students' thinking skills as a learning strategy to improve their EFL learning. According to her, every thinking skill is connected to each other, which indicates that different thinking skills overlap. The examples she provided demonstrate the complexity of thinking skills.

Similar to Han, Lei's conception of thinking skills was complex:

It is an ability which involves a variety of skills, such as summarising, memorisation, logical thinking, and reasoning, observing, and drawing conclusions, and so on.

Both Han and Lei illustrated some of the features of thinking skills and their interpretations implied that there are overlaps and interconnections among the thinking skills. The complexity of the definitions of thinking skills confused the teachers' understanding in this area. This was confirmed in the remainder of the interviews; none of the participants was confident in defining thinking skills, as they believed that their knowledge of them was limited.

For example, Han claimed that:

It is hard for me to implement thinking skills in class, because I really don't know what thinking skills are.

Lei, on the other hand, said:

This is a vague area, and I didn't teach thinking skills explicitly, but I found out that I had already taught them unconsciously. I have no idea what kind of thinking skills I have taught but I know I have.

Furthermore, a number of descriptions related to thinking skills were identified in the interviews, including analysing, individual thought, flexibility, being creative, criticality, problem-solving, memorising, raising questions, being reasonable,

seeking alternatives, and so on. These are features included in different definitions of thinking skills identified in the literature (e.g. Dewey, 1933; McGregor, 2007; Moore, 2013. See section 3.2.1 for discussions of these). It could be the complexity and multiplicity of the features of thinking skills that creates difficulties in defining thinking skills in general (Moore, 2013; Salmon, 2002).

Although participants experienced difficulties in defining the terminologies, their descriptions of the features of thinking skills explicitly revealed their conceptions of the following thinking skills: creative thinking, critical thinking, summarising and memorising. Therefore, their definitions of the above thinking skills were categorised according to these features in the data analysis.

5.2.2 Summarising with analysis

Based on the teachers' conceptions of thinking skills, summarising belongs to HOT skills. Three teachers highlighted that summarising is a learning strategy in language learning. For instance, Lei said:

I often ask students to summarise the materials in order to discover grammar rules by themselves.

Wei, on the other hand, believed that:

Students need to analyse the materials then to summarise their analysis in order to solve problems.

Teachers' conceptions of summarising were different from those in Western literature, which categorises it as a lower-order thinking skill. Summarising was discovered to be embedded in more in-depth learning and thinking. When students were given the opportunity to summarise, they needed to combine the facts and ideas together to solve problems; this is a HOT process in which analysing and reasoning skills are utilized. Moreover, this could involve the Chinese reflective thinking, when one needs to reflect on old knowledge already held, or other material provided, in order to generate new thoughts (see section 3.3.2). Therefore, summarising was not just limited to presenting facts in one's own words, but also connected with analysis of the materials and ideas. For

example, in Lei's Year 3 class, she revealed in her instructions how she perceived summarising with analysis (see extract 6).

5.2.3 Memorising

A large number of research studies claim that Chinese learners are passive and learn mainly through memorising and reproducing knowledge. In the interviews, the teachers emphasised that memorising was an essential thinking skill in foreign language learning. Lei stated that she would devote time to allow students to memorise things in her class, while Mei described memorising as a fundamental element for beginner learners of English.

Mei commented that memorising is an effective way to enhance students' foreign language learning through deepening their understanding:

There is not a fast track in learning a foreign language; you just need to listen more, read more, and remember more.

The above statement suggested repetition of the target language – listening and reading more in order to memorise the information. The use of the term 'remember' refers to reciting and recording things in the mind. In the Chinese language, remember- "ji" (记) refers to knowing and knowledge (Au & Entwistle, 2001). "Ji" implies that remembering entails being able to understand. Therefore, Mei's interpretation of remembering could be referring to memorisation coupled with understanding. Her understanding of memorising was that it was a strategy in learning English. She supported her view by providing an example of teaching practice in one of her classes:

In the activity of 'Mocky's friend', students have to use memorisation. They need to provide answers which are based on prior language knowledge that they have learned, such as vocabulary. Otherwise, they could not participate.

In Mei's teaching activity, students needed to recall relevant vocabulary, and this showed their understanding of the meaning of the vocabulary. The way they remember - "ji" - implies that they memorise things with understanding. Learners developed their knowledge of the language through memorising it, and, applying

their understandings of this knowledge to Mei's activity enabled them to deepen their knowledge. Mei considered that her activity provided students with opportunities to deepen their learning by applying memorised information, and in return, helped them to engage, to understand, to remember and to articulate new knowledge. When new knowledge was generated, students' foreign language proficiency improved. This also reveals that memorisation is part of the process of generating new knowledge as it bridges prior knowledge and new understandings.

In addition, memorising and understanding happen at the same time:

When students start to memorise things [grammar rules, vocabulary], their foreign language proficiency will improve. In fact, in the process of memorisation, students need to apply various features of other thinking skills [summarising, drawing inferences, and so on]. If they master these thinking skills, they are able to memorise information faster.

(Lei)

Lei's statement indicates that memorising is a complex process which requires students to apply other thinking skills in they are to remember things efficiently. In other words, during the process of learning the target language, memorising is no longer just about recalling facts or prior knowledge; it is related to understanding, which requires other cognitive skills to digest the new information.

Memorising is mostly connected with language use, and is useful in constructing new knowledge. Lei explained that:

During the process of memorising new grammar rules, students might need to analyse the memorised information and might then spontaneously discover the patterns that relate to the newly learned grammar rules. In this way, students might be able to summarise their inferences internally and use the language correctly.

This statement implies that memorising new grammar rules means understanding the rules through a process of extracting meanings to reach a thorough understanding (Au & Entwistle, 2001). The role of memorisation in

teachers' understanding is interlocked with understanding. It can also lead to discovering new knowledge when one is reflecting on prior knowledge and relating it to new information. Based on the above evidence, teachers' conceptions of memorising contradicts the surface approach to rote memorisation. It entails generating in-depth understandings, especially in the foreign language learning class. The role of memorisation, as defined by the teachers, corresponds to the Chinese style of thinking and learning (see section 3.3.4). It is regarded as a way of accumulating knowledge and understanding. New information is accumulated along with an increase in knowledge (Dahlin & Watkins, 2000).

5.2.4 Definitions of critical thinking

All teachers proposed that critical thinking involves drawing on inferences, evaluating, reasoning, analysing, and problem-solving. There were some suggestions that these skills were supportive for students in improving their academic performance. Teachers considered healthy scepticism to be a characteristic of critical thinking, and they encouraged students to develop this through their EFL learning. For example, Wei indicated that critical thinking was essential to completing the reading comprehension tasks:

In reading comprehension tasks, students need to apply critical thinking as a way to look for the right answer through reasoning and evaluation.

Wei emphasised that critical thinking is used to evaluate one's own answers before completing the reading comprehension tasks. Reading comprehension is an area that is tested in the exams, and passing exams is a symbol of success (Kirkpatrick & Zang, 2011). Therefore, the above statement reveals the teacher's belief that developing thinking skills contributes to students' academic achievements, which are essential for their future development. However, this statement also revealed the teacher's understanding that critical thinking is related to metacognition, as she stated that students needed to monitor their thinking process and evaluate their answers consciously, which corresponds with the definition of metacognition. This also indicates that the definition of thinking

skills is complex, but that critical thinking is a type of effective thinking that Wei believed to be supportive of students' language learning.

In addition, critical thinking also involves the characteristic of healthy scepticism (Lipman, 2003), as two of the teachers argued:

Critical thinking is important in discussion. Students should not accept things blindly but have their own thoughts and be brave enough to express them.

(Wei)

In a brainstorming activity, students are often active in presenting their ideas; some of the students present opposite ideas and argue their points. This is a healthy way of questioning other people's views, as in this way, they learn from each other.

(Mei)

Teachers in this study believed that students who engaged in critical thinking would be sceptical in their approaches (Atkinson, 1997; Moore, 2013) and would be willing to present different ideas. To think critically about one issue is to consider it from various perspectives; being open to different possible options is required. With different options, one needs to examine, challenge and evaluate the possible assumptions that underlie the issue, and seek the possible alternatives. Regarding Mei's statement, being critical and questioning other people's views were tools for learning. This could parallel Chinese reflective thinking (see section 3.2.2), in which one reflects on his or her own learning through learning from others.

There were also features which overlapped in the definitions of creative thinking. Mei and Wei welcomed different ideas; they embraced all possibilities and novel ideas from their students, which created an ethos in which new ideas were related to learning. Individual ideas, supported by the teachers, have the potential to be creative and possibly lead to solutions to daily challenges (see section 3.6) (Craft, Jeffery & Leibling, 2001).

5.2.5 Definitions of creative thinking

According to the participants', there were a number of ways of defining creative thinking. It was viewed as consisting of a set of features: being flexible, searching for alternatives, reinterpretation of knowledge, and divergent views towards a topic.

Han suggested that being creative was an ability that could be developed and was about flexibility:

When a student masters sentence structure, he can bring in other words that he has learned to make it a new sentence. This is a way to foster creativity. It also entails flexibility.

Han's statement seems to suggest that there is a generative process in creative thinking (Craft, 2005; McGregor, 2007), as she believed that students generated new ideas through the process of reconstructing existing knowledge. However, based on the practice she reported, using different words flexibly within a particular sentence structure could be considered a way of practising or as a repetition drill.

Likewise, Lei also considered that creative thinking is related to the reinterpretation of knowledge. Although she did not define creative thinking directly, she provided an example of how to develop creative thinking, which revealed how she understood this concept:

If students learned the word 'book', they would recognise 'cook' and know how to pronounce it. Therefore, they would have learned new vocabulary. I would also ask them to think of words which have the same pronunciation and present their ideas in class. In this way, they could develop creative thinking.

In her statement, she perceives students' proposals of different vocabulary with the same pronunciation as being creative. In other words, she understood creative thinking as being the reinterpretation of old knowledge; it is related to the reconstruction of knowledge. Han and Lei's understanding of creative thinking involved drawing inferences from previous knowledge to precede thinking and

generate an individual's own thoughts. Their conceptions of creative thinking might also be considered as a reproduction process in which knowledge is reconstructed. This is different from most definitions from the literature as creative thinking involves a process of generating new and original ideas.

Alternatively, Mei and Wei defined creative thinking in relation to possibility thinking. Mei reported that she often asked students for alternative answers. She explained with an example from one of her lessons when she asked the students to provide solutions if the character in a story were on the wrong bus: The bus isn't going to the beach; what can they do? I would give the students instructions and tell them that there is more than one answer to this question. They need to have different ideas and these ideas are related to the same topic.

Her practice revealed that she was open to students' ideas and expected diverse thoughts. She also stated that she would encourage students to present their different ideas individually. Her understanding of creative thinking is related to possibility thinking in terms of its "what if" nature - and possibility thinking is the core of creative thinking (see section 3.6.3). The features of imagination and problem-solving might also be developed in class as she believed the children needed to imagine a situation and produce solutions to the problem. Her statement also indicates she valued creative thoughts and that these thoughts should be relevant to the topic rather than randomised ideas.

Based on the teachers' responses, creative thinking also shares some characteristics of critical thinking. Similarly to Mei, Wei expected different ideas from students, and indicated that creative thinking embraced alternatives and kept options open:

I think creative thinking is about presenting different personal views. I would like my students to present new ideas about an issue, rather than stick to one answer. As long as they can justify their thinking and be reasonable, I will accept the answers.

Wei's interview revealed the overlapping features between creative thinking and critical thinking which suggests that different thinking skills are interrelated. She

proposed that creative thinking should be justifiable and reasonable, which also features of critical are thinking (see section 3.5.2). Craft (2005) suggests that creative thinking and critical thinking share some similarities, such as questioning, challenging, problem-solving and exploring ideas (Craft, 2005).

Below is an explication of one of Wei's teaching practices which demonstrated her conception of creative thinking. The aim of this lesson was to teach students the past tense. Prior to this interaction, two pictures were shown to the students, one with a clean earth image symbolising the unpolluted world in the past, and the other one the polluted earth image which reflected the current status of the environment. Students were required to compare and describe these two pictures by using present and past tenses in English.

Extract 1 (Wei, Year 6)

1. T: How about these picture. Before, and now. It is our earth, OK. Talk about with
2. your partner.
3. Ss: ((Discussion))(33.9)
4. T: NAME
5. S1: The earth. Was clean before, but it's dirty now.
6. T: Good idea. Clean before, dirty now, and who else, who else. NAME
7. S2: The earth was healthy before, but it's unhealthy now.
8. T: Very good idea. The earth is healthy before, but it's unhealthy now. You
9. know that, we talked about the pollution, right. What else, what else, NAME,
10. would you try
11. S3: The earth, the earth was happy before, but it is crying now.
12. T: Yes, but it is sad now. Right. The earth was happy before, but it's sad now.
13. It is crying. OK, nice idea, what else. You try ((Invite S4))
14. S4: The earth was beautiful before, but it's ugly now.
15. T: Yes, it was beautiful before, but it's ugly now. NAME
16. S5: The ((/ðə/)) earth is
17. T: The ((/ði/)) earth
18. S5: The((/ði/)) earth is::
19. Ss: was/was/was ((noise))
20. S5 :(9.2) The earth was strong before, it weak now.
21. T: Nice idea, I like it. Yes, strong and:: weak 现在很虚弱很脆弱 ((it's very weak now)). OK.
22. Strong and weak. ((Unclear))The earth one two go
23. Ss: The earth was strong before, but it is weak now.

24. T: Anymore, 刚才的同学讲得非常好 ((very good answers)). Imagination OK.
25. 想象力((Chinese translation)), how about, other students in class 6 said the
26. earth was young before but [it is old now, yes
27. Ss: [Old/old/old now
28. T: and the earth was energetic before, 精力充沛的 ((Chinese translation)),
29. and it is tired now. OK.I think so, nice ideas.

First, this extract showed that Wei perceived the use of metaphor as a way of developing imagination, as the teacher provided a feedback on all the responses students generated in their imagination (lines 24-25). The expressions students proposed were generated through their imaginations, which is one of the key features of creativity. Reflecting on her understanding of creativity in her interview, she defined creative thinking as thinking that embraces variety and she expected students to provide a variety of answers that were also reasonable. In this teaching moment, she embraced different ideas by inviting different students to contribute their imaginative responses and encouraged other students' willingness to contribute (lines 5-20). She related her understanding of creative thinking with the teaching practice and welcomed the range of students' imaginative descriptions of the pictures she had shown them. This extract also demonstrates opportunities for promoting HOT skills, which will be discussed in section 5.4.

Overall, the above results show that creative thinking is a developmental ability which can be fostered through foreign language learning. Students were encouraged to generate personal responses in order to develop their creative thinking in their EFL class. Overlaps were identified in the meaning of creative thinking and critical thinking, as the teacher required students' creative answers to be reasonable and justifiable. Hence, according to the teachers' definitions of creative thinking, critical thinking plays a role in fostering valuable creative responses.

5.2.6 Summary

In the interviews with teachers, their conceptions of thinking skills, memorising, summarising with analysis, critical thinking and creative thinking were provided.

They also revealed their insufficient understanding of the terminology around thinking skills. Below is a summary of their overall understanding of thinking skills (see Table 5.1).

Table 5. 1 Teacher’s general understanding of thinking skills

Definition of thinking skills	Examples	Participants
Life skills	Be ready to encounter unexpected problems in the future	Lei and Wei
Subject-specific concept	Logical thinking in Maths	Lei and Han
	It is essential in foreign language learning; “English thinking”	Han, Wei and Mei
Culture-oriented	“English thinking”: thinking in English and “English thoughts”	Wei
Learning strategies or a tool for EFL learning	Different skills embedded in thinking which can be used to expand students’ thoughts and then to produce them in English.	Mei and Han
Hard to define	Insufficient knowledge/complex idea to give a general definition of	All participants

It can be seen from table 5.1 that there are different perceptions of thinking skills although teachers had difficulties in defining the term. One possible reason is that, similar to the current literature, there is no general consensus regarding the definition of thinking skills due to their complexity (e.g. Sternberg & Lubart, 1999). It is proposed that thinking is an ability which involves a set of skills, and it could be because of the overlaps and interconnections among the different types of thinking that teachers were somewhat confused about their understanding of this area. The other reason is limited knowledge of the concept of thinking skills. Apart from this, teachers perceived thinking skills as life skills which prepared students to face future challenges. Additionally, they defined thinking as being closely related to subjects such as Mathematics, in the area of logical thinking skills. They also viewed thinking skills as being essential to foreign language learning. As language and thought are closely related, teachers believed that thinking skills can be a tool that helps students to expand their minds and, accordingly, generate

different responses in English. Teachers' reflections also reveal that their conceptions of thinking skills were influenced by the exam-oriented system. Lei provided a reason for thinking skills being subject-specific, referring to the fact that Maths tests examine students' problem-solving processes, this being an explicit demonstration of their thinking process. The term "English thinking" was mentioned; this can be understood in two ways. In one way, it could be understood as language application relating to the subject of English. It was explained that, before students express their ideas, they need to have constructed their thoughts in English on their own. In another way, it can be interpreted as "English thoughts" - that thinking skills are culture-oriented. Teachers perceived 'English thinking' as a type of thinking skill which can be best developed by native English-speaking teachers, as the language of English carries the cultural values that they are aware of.

Additionally, participants emphasised summarising and memorising as significant for EFL learning (see Table 5.2).

Table 5. 2 Definitions of summarising and memorisation

Thinking skills	Teachers' conceptions	Examples	Participants
Summarising	Discovering and exploring	Discovering grammar rules (see extract 6).	Lei
	Analysing	Students need to analyse and summarise their thoughts to solve problems	Wei and Lei
	Comparing and contrasting	See extract 6	Lei
Memorisation	Rote memorising	Reciting and remembering vocabulary	Lei
	Develop knowledge through memorising	Use what has been memorised to articulate new ideas	Mei
	Use memorising to deepen understanding	By applying memorised information, students can engage in activities to understand knowledge	Mei
	Memorising with understanding	Memorising is a complex process. Memorising and understanding happen at the same time	Lei
	Drawing inferences; summarising	Memorising grammar rules	Lei

Summarising and memorising were considered to be related to the development of linguistic knowledge. Regarding summarising, this does not entail simply reinterpreting accumulated knowledge; rather, it is related to students' knowledge development. It is about discovering new knowledge through exploring existing materials and generating learners' own understandings. During this process, in order to analyse existing knowledge, students might need to compare and contrast (see extract 6). In terms of memorising, reciting is one of the key features in foreign language learning, for instance, the recitation of the spelling of words. Additionally, understanding of the language is a factor that is married with memorising. For one thing, students need to incorporate what they have

memorised into new activities so that they can gain an in-depth understanding or articulate new knowledge. Therefore, memorising is fundamental to accumulating linguistic knowledge in order to learn a foreign language. For another, in order to memorise, students might need to apply a complex process of understanding, drawing inferences and summarising what they have found.

Teachers' conceptions of thinking skills were influenced by the exam-driven system, critical thinking has been regarded as a useful tool for passing the exams. It can be seen below (see Table 5.3) that there were only two participants who identified features which relate to critical thinking.

Table 5. 3 Definitions of critical thinking skills

Teachers' conceptions	Examples	Participants
Reasoning; evaluating; problem solving	To improve academic attainment.	Wei
Healthy scepticism	Being critical of different answers and arguing one's own views; opposing ideas.	Wei and Mei
Searching for alternatives	Not accepting responses blindly.	Mei
Creative thinking	Considering different possible perspectives. Brainstorming activities.	Mei

Critical thinking was identified as a useful tool in reading comprehension, which requires reasoning and evaluation skills. Healthy scepticism was another characteristic identified by the teachers; one should be critical of different perspectives and be able to raise and argue one's own point of view. Searching for alternatives is another feature which was proposed by the teachers in terms of critical thinking skills; this corresponds with the definition of creative thinking provided in the wider literature.

In terms of creative thinking, teachers perceived it as a generative and constructive process which involved critical thinking to validate the creative thoughts. Overall, the teachers defined creative thinking in relation to a focus on everyday creativity: little-c and mini-c creativity (Beghetto & Kaufman, 2010) (see Table 5.4).

Table 5. 4 Definition of creative thinking skills

Teachers' conceptions	Examples	Participants
Being flexible	Make a new sentence using the same structure	Han
Generative process	New ideas can be generated from the process of reconstructing knowledge	Han and Lei
Reinterpretation; reconstruction of knowledge	Learning vocabulary through phonetics Reinterpretation and reconstruction of old knowledge Reproduction process	Lei
Possibility thinking	A reported practice: What could they do if they missed the bus?	Mei
Problem-solving	Mei's reported practice	Mei
Imagination	Mei's reported practice; Using metaphor to compare the earth (before/after) (Extract 1)	Mei and Wei
Emphasis on different, individual ideas; Embracing alternatives	Teachers expect students to present their own ideas instead of focusing on one answer	Mei and Wei
Critical thinking, being reasonable and justifying one's point of view	New ideas need to be justifiable and reasonable	Wei

The practices that were reported and the definitions provided by the teachers concerned ordinary creativity, which individuals can adopt to solve daily problems (Craft, 2002). On the other hand, Mei and Wei's definitions emphasised personal interpretation, searching for alternatives (Craft, 2005), and the process of constructing personal knowledge, sights and actions (Kaufman & Beghetto, 2009). They placed their emphasis on the creative thinking process that is centred in the construction of knowledge and individual ideas.

With regards to the characteristics of creative thinking, Han and Lei included flexibility, reconstruction and reinterpretation of knowledge. Imagination was regarded as one of the key characteristics in creative thinking (see section 3.6.3). In line with this, Wei explicitly demonstrated her understanding of imagination by asking students to compare of past and present images of earth, which also

created an opportunity for students to develop their creative thinking skills as well as their linguistic knowledge. Furthermore, Mei's reported practice was aimed at seeking different possible answers, searching for the 'what might be' solutions. Although teachers did not state that this kind of activity is relevant to possibility thinking, the questions asked are 'as if' and 'what if' questions (Craft, 2011). In this sense, students are shown to need to use their imagination to generate different possible ideas. The reported practice described by Mei also suggests that she regarded problem-solving skills as an element of creative thinking, as the task required students to think creatively in order to solve a hypothetical situation. Critical thinking was another feature included in the definition of creative thinking skills. As Wei pointed out, she expected the creative responses to be justified and reasonable.

The above definitions show the overlapping features between creative thinking and critical thinking; being critical about an issue also requires individuals to propose different possible perspectives through exploring creative ideas. It was interesting to find that, although teachers experienced challenges in defining the terms, they identified similarities among these thinking skills. They believed that these thinking skills were different but connected to each other.

5.3 Teachers' beliefs on the implementation of thinking skills

As teachers' beliefs regarding the teaching of thinking skills are likely to have significant impacts on their teaching practice, it is important to explore what their opinions are with regard to developing them in EFL classrooms.

5.3.1 Thinking skills are important for language learning.

All the teachers agreed on the importance of developing students' thinking skills in EFL classes; they believed that students' foreign language development could be improved by integrating different thinking skills. For example, Lei stressed that learning and thinking were two integrated processes which were influential for her students' foreign language development. Han agreed, and highlighted the view that:

Students have to apply different thinking skills to facilitate learning so as to achieve a satisfactory learning outcome. In this way, learners will be capable of using the target language.

Her statement emphasised the view that being capable of using the target language is a satisfactory learning outcome. Applying thinking skills in language learning is important as this application supports students' learning. Wei held a similar point of view:

Different thinking skills develop through learning. Students can integrate thinking skills with language learning. Developing different thinking skills helps students to solve problems, including the challenges they come across in language learning.

Her statement revealed that foreign language learning also supports the development of thinking skills. She related thinking skills to problem-solving. When students solve the problems they come across, their EFL proficiency might be improved as well as their thinking skills. This is a similar viewpoint to Han's, who defined thinking skills as a learning tool for language learning (see section 5.2.1).

Mei was excited at the prospect of implementing thinking skills in her EFL class, and expressed her opinions about thinking skills being integrated in the learning process:

Once you've promoted students' thinking skills, they start to think. In their thinking process, they begin to explore and use the target language. Gradually, their language competence will improve, and so will their learning outcomes.

Mei advocated that teaching thinking skills improved students' target language development. She expressed the view that promoting thinking skills meant assisting students to use English to think. This is a similar concept to the notion of "English thinking" (see section 5.2.1).

Later in some informal conversation, Mei argued that developing thinking skills could improve students' overall academic achievement. She proposed that

thinking skills could be implemented in all subjects, such as, for example, in Chinese literature, not just in EFL classes. She explained that one of the classes she was teaching ranked the first in overall academic achievement because of the impact of thinking skills development. She compared this particular class with others and commented that the students in her class were more open-minded and willing to think actively. Students developed their thinking skills in EFL classrooms and applied them to other subjects of learning. As a result, they were more eager to learn and absorbed knowledge more quickly, which led to them being more competitive than others. Her comments reveal that she perceived thinking skills as essential to students' overall learning. It also suggested that thinking skills are not subject-specific, which was different from what Lei suggested (see section 5.2.1).

5.3.2 Factors influencing teachers' beliefs about the development of thinking skills in class

Although all teachers expressed a willingness to develop thinking skills in class, there were teachers who suggested that they would not include thinking skills' practice in their lessons, and expressed the concerns they had about doing so.

5.3.2.1 *Student differences*

Wei was concerned that developing thinking skills could lead to negative results in learners' performances. She argued that one should not be overly optimistic about developing thinking skills because of the differences between students. She questioned the glamorous positive impact of teaching thinking skills in class, and clearly pointed out that this could demotivate children from learning the foreign language and decrease their willingness to think actively:

It is enjoyable for those students who already have some knowledge of a certain topic to express their views and develop thinking skills. However, this might discourage other low-attaining students from developing thinking skills and hinder their learning as they would not be able to participate in the discussion since they would not have sufficient language knowledge or information about the topic.

Wei further emphasised that higher-achieving students would have the ability to think actively. She stressed that:

Students who are more competent have the capacity to think actively. For example, they have the awareness to ask questions, and this is a way of thinking, and are brave enough to express personal thoughts. Being critical and open-minded are also very important.

Hence, from her standpoint, there was an assumption that students who were more competent in English were more likely to be involved in active learning: to have the willingness to think, to have the disposition of open-mindedness and to have the eagerness to ask questions and express their personal thoughts in class. Thus, Wei regarded the 'heterogeneous class' (Ur, 2010, p.273) as problematic since she would not be able to involve all the students in the class. The problems causing the differences among learners, such as age or maturity, language knowledge, previous learning experience and motivation, could vary (Ur, 2010). It seems that, for her, it would be difficult to teach thinking skills effectively to all levels of students. Her opinion raised a realistic issue in developing thinking skills in class, and it would be helpful for teachers to design their tasks and group students based on this concern.

In contrast, Mei took another approach and exploited the gap between the higher-achievers and the lower-achievers. She believed that the under-achieving students could learn from the more competent students; although they might not be capable of performing as well as the higher-achieving students, they would still engage in the activities through observing, listening and learning from others. She recognised the advantage of heterogeneity; as Ur explains, the heterogeneous class "provide[s] greater opportunity for creativity, innovation and general professional development" (2010, p.305).

5.3.2.2 Age as a factor in promoting thinking skills

Mei and Wei indicated that HOT skills could be effectively promoted in higher year groups (Years 5-6, with students aged 10 to 12). For one thing, they were concerned about students' English proficiency since younger children might not be able to express their thoughts in English if the thinking-skills-related tasks were

too demanding, which might eventually decrease their language output. For another, Mei considered that young learners might not be able to generate HOT due to their cognitive development. She said that the teaching of thinking skills should start in higher-year groups as the children are more cognitively developed and more advanced in English proficiency than the early year groups. Mei also advocated that HOT and LOT skills should be taught according to year groups:

Higher-order thinking skills, such as creative thinking and critical thinking, were more suitable for higher year-group students due to their more advanced English competence.

Mei regarded creative thinking skills and critical thinking skills as being mostly worth promoting in higher year groups as the students had already accumulated a large amount of linguistic knowledge, which provided them with a foundation from which to express their ideas. Perhaps it is because of the age factor that she placed limits on children's ability to learn thinking skills. As a result, there was little evidence in her teaching practice that she was attempting to develop students' HOT skills as she was teaching Year 2 students.

Wei's opinions indicated the intention to promote critical thinking in higher year groups:

Critical thinking is important in higher year groups. I hope they do not take everything for granted, but that they are sceptical and willing to present their own views to others. This could be in the form of an argument or a query.

In alignment with her conception of critical thinking, she further stressed that critical thinking is dispositional, and students should have their own ideas and apply critical thinking as a way to analyse things before accepting information. She indicated that students could engage in argument to discuss their views, and that, in her class, using English to discuss things enabled students to develop their language competence as well as their critical thinking skills. This would make students feel more confident of applying critical thinking and using English to exchange different ideas in real situations. This relates to Piaget's stage of learning theory (see section 3.9.1), which posits that children who are in the formal operation stage are able to consider hypothetical situations that include

inductive reasoning or can identify general principles through observation (Woolfolk, Hughes & Walkup, 2008).

Nonetheless, the age factor was not been apparent in the other two teachers' opinions; they defined thinking skills as being intertwined and argued that it would be challenging for them to promote one specific thinking skill in a particular year group without implementing other types of thinking. For instance, Han, who was responsible for Year 4 students, suggested that:

All thinking skills are worth promoting in my class, and I think that all of them could be promoted at the same time as they are interconnected.

Relating to her conceptions of thinking skills, Han defined thinking skills as a learning strategy to facilitate language learning. She felt that there were overlaps among different thinking skills and that it would therefore be challenging for her to develop a single thinking skill in class. Likewise, Lei did not identify any thinking skills that were worth promoting according to children's ages. Regarding her conception of thinking skills (see section 5.2.3), she believed in the essential role of memorisation, which involves complex thinking process with various skills embedded. Therefore, her conception and belief revealed that there were no clear boundaries among the different types of thinking skills.

5.3.2.3 Teacher's past language learning experience

It was identified in the interview data that teachers' teaching practices were influenced by their previous learning experience. For example, Mei believed that increasing students' learning interests or motivation was her teaching belief, especially for the younger children. This belief was constructed through her previous learning experience with her father in her childhood. Mei explained that she would motivate students to learn by "making the dull learning process more fun through using different activities such as playing games and singing songs in class". She also believed that foreign language learning should be fun, proposing that a relaxed and carefree learning environment was important for language learning and thinking:

I would like to inspire students' thinking as a way to develop their interests in learning; this is more fun than copying sentence structures as they could create their own ending for a story, for example.

She highlighted that she would make every effort to develop students' thinking skills as this could increase their motivation to learn. In addition to this, she viewed the students' autonomy as another important aspect of foreign language learning. She emphasised that she learned English herself by reviewing knowledge at home and memorising it after class. She identified this to be the best way of learning English, aside from the teachers' inputs.

Han agreed with Mei's teaching beliefs as she also believed that developing students' learning interests was essential; she further advocated that learning should be goal-directed according to different stages of learning. However, she argued that the learning objectives given by the teachers as external motivation were not as efficient as the internal motivation felt by the students themselves. This could lead to the development of students' learning autonomy as well as to the development of Chinese reflective thinking, as children would need to think and reflect on their learning process in order to establish their learning goals as motivation for the next step of learning.

Apart from this, Han pointed out that, based on her past EFL learning experience, perseverance was another feature of successful language learning. She would emphasise this in class as encouragement for students to improve their English language learning:

Perseverance allows students to look for different ways of learning so as to improve their language development. Praising them for their perseverance and hard work will encourage them to do the same in the next stage of learning.

Encouraging students to look for different ways of learning also suggests the essential role of Chinese reflective thinking in language learning, as mentioned above. Han's previous learning experience did not explicitly establish her teaching practices and beliefs in developing thinking skills in class. Nevertheless, her statement implicitly reflected the influence of her past experience on her

choice of teaching instruction as she believed that “memorising vocabulary and grammar rules were the most effective way of learning English”. This statement resonates with Mei’s teaching beliefs as to persevere with reviewing knowledge and studying hard could be seen as internal attributes in successful learning in relation to students’ learning autonomy (Peacock, 1997). As memorising vocabulary and grammar rules requires repetition, it also demands that students persevere in devoting time to memorising and understanding the knowledge.

Lei regarded herself as a traditional teacher who stressed the essential method of learning English through grammar. She indicated that she understood that communicative competence was important but said that passing exams was the top priority at this stage of learning. Therefore, her suggestion regarding the best way of learning English was memorising grammar rules and developing language and linguistic knowledge. Hence, in Mei and Lei’s past learning experience, memorising seemed to be closely related to foreign language learning. This was influential in their teaching practice as in a later section they reported that they would like to integrate memorising skills in EFL classes, and their previous learning experience could be the reason for this.

In contrast, Wei emphasised the communicative aspect of learning a language and advocated learning through classroom interaction based on an authentic topic:

The ideal way of learning a foreign language is through classroom interaction. It is important to maintain equal relations between teachers and students as learners can then perform naturally in the tasks and develop their English proficiency.

Wei explained that this decision was made due to her past learning experience 30 years ago, when she was taught and learned English in a traditional way. She explained that the traditional way of teaching and learning English was less effective nowadays and that she therefore insisted on her students learning in a communicative and open environment. Above all, it seems that all the teachers had experienced traditional ways of learning English, and only Wei reflected that her past learning experience informed her current teaching beliefs, in the sense

that she wanted her teaching methods to be different from the ones she had experienced as a learner in the past.

5.3.2.4 Teachers' opinions of the English Curriculum Standards

As stated in Chapter Two, all teachers had been given the English Curriculum Standards (MOE, 2011) as guidelines. It is believed that the policy is one of the contextual factors which influenced teachers' beliefs in the development of thinking skills in the EFL classroom. In this study, two teachers indicated that they seldom implemented thinking skills in class due to the heavy teaching objectives laid out in the curriculum standards (see section 2.7). The other two teachers indicated that they emphasised the teaching of thinking skills in their EFL classes.

Lei stressed that she used the English Curriculum Standards as guideline for her teaching. Specifically, she focused more on developing language skills and linguistic knowledge compared to the other aspects in the ECS (see section 2.7), according to her teaching beliefs (section 5.3.2.3) and would therefore plan her lessons according to the linguistic and language skills requirements laid out in the political document:

My teaching plans were designed according to this guideline. For example, in Year 3, we require students to memorise vocabulary, so I plan my teaching activities in response to this aim.

She explained that she was aware of other curriculum objectives but seldom integrated them into her teaching. Therefore, when it came to the question of developing thinking skills, Lei claimed that she rarely implemented thinking activity in her teaching:

I know the curriculum asks for thinking skills to be developed, but I don't think they have explained in detail how to promote them. When I teach children English, I find I neglect these aspects most of the time and move on to stress linguistic development.

Besides this, Lei perceived that delivering lesson plans and managing the class were her priorities in language classes, and completing exercises and practising the language were the best methods to improve students' academic

achievements. Therefore, following the requirements of the English curriculum guidelines in terms of developing students' language knowledge was useful in achieving her teaching beliefs, and, for her, knowledge of the language took priority over developing students' thinking skills.

Based on the above perspectives, it can be seen that Lei regarded herself as the authority in the class and described her classes as teacher-centred. She expected students to behave well, to be silent and to work hard on the given tasks. This allowed her to control the class but restricted the amount of thinking space and time students had. Her perception of the teacher's role was based on her past learning experience and the learning objectives from the ECS (2011). Lei stressed discipline and her role as authority in her classes, which reflected a traditional way of teaching and learning that might not be supportive of the development of students' thinking skills. However, as Lei explained (see section 5.3.4), thinking skills could be promoted implicitly and teaching the language might somehow also promote students' thinking skills' development. To exemplify this, one of her lessons on grammar revealed that she promoted students' thinking skills without explicitly asking them to adopt a particular thinking skill to solve problems (see extract 6).

Han agreed with Lei, emphasising that she would follow the English Curriculum Standards as a way of taking responsibility for students' academic achievements:

I would spend more time on teaching linguistic and language knowledge than any other aspects as these would be tested in exams, not the other aspects.

She pointed out that exams were the priority in teaching and, therefore, following the guidelines in the ECS was essential if students were to be equipped with the knowledge necessary to succeed in the exams. Thus, she regarded herself as a knowledge transmitter who was supportive in improving student academic achievements and consequently designed her teaching plans in alignment with the learning objectives for linguistic knowledge. Hence, the exam-oriented system became another contextual factor which influenced teachers' decision over whether to develop thinking skills in EFL classes. Based on the findings from Han's and Lei's interviews, the political document was regarded as a guide to

teach English in class. There are requirements for promoting students' thinking skills in EFL classes in the ECS (see section 2.7) but these two teachers did not regard these as compulsory. There are three possible underlining reasons for this: firstly, as they reported, the exams would not test students' thinking skills; secondly, as illustrated in Chapter Two, there is no clear guidance concerning methods for developing thinking skills in class; and thirdly, teaching thinking skills is a new element in the curriculum and teachers' beliefs might be adapted to the traditional model of teaching - they had not been trained in this area of teaching and consequently, may have avoided it for this reason.

In contrast, Wei viewed the ECS as having moved beyond the traditional approach to teaching, and as being influential for her as it advocated the teaching of thinking skills in class:

The ECS overturns the traditional values of learning and teaching English. Learning language is no longer just rote learning or read-out-loud. Learning English includes intercultural communicative competence and individual thinking. Students need to develop critical thinking through learning English.

She argues that the ECS emphasised the significance of individual thought and communicative competence in EFL learning. She also indicated that her lesson designs were based on principles from the ECS, in which improving students' thinking was one of the components of teaching English,

I know my students well, so I design the thinking tasks according to their English competence, and I hope that they express their critical thoughts or any other alternative ideas in English.

In contrast to Han and Lei, Wei believed that her lessons would achieve the goal of the ECS (see section 2.7). She regarded herself as an organiser and a facilitator. She managed the class and organised activities. As a facilitator, she assisted students' language learning and thinking development. She also regarded delivering lesson plans to be one of her priorities in teaching. Nevertheless, she believed that language is for communication, and that in communicating, students' thinking would develop:

I expect students to have different thoughts and to develop their personal character in class. We can share different ideas together in class, and I believe that the collision of different thinking indicates that students are thinking and enjoying using the language to communicate.

She was of the view that developing thinking skills would improve students' English competence and was willing to design her lessons so that thinking skills were developed.

Surprisingly, Mei reported that she seldom related her teaching to the ECS. It seems that the curriculum had no influence on her. Mei said she enjoyed teaching English through developing students' thinking, although she claimed that she was not aware of anything related to students' thinking skills' development in the ECS:

I teach thinking skills based on my students' ability. It is my interest to teach English through developing thinking skills.

Mei highlighted that she would make every effort to develop students' thinking skills even if the ECS did not require this. She also stressed that it was her past language learning experience with her father that had influenced her teaching beliefs most, rather than the ECS (see section 5.3.2.3). Mei pointed out that she played different roles with the different year groups. As a Year 2 (aged 7-8) EFL teacher, Mei held similar teaching beliefs to Lei, as she believed that 'practice makes perfect' in language learning. She regarded helping students by making English fun to practice as her priority, especially for young children, and thus she regarded herself as an observer who measured students' learning. Mei perceived that engaging students in various activities could stimulate their interest in learning the foreign language, and in this way, students' thinking skills developed, as well as their foreign language competence.

Although teachers indicated that they were all willing to implement thinking skills in language class, their teaching beliefs might be influenced and even changed by different factors. The evidence provided above indicates teachers' conflicting beliefs in promoting thinking skills in class.

5.3.3 Memorising is the thinking skill most worth promoting in class

Although Han and Lei indicated that thinking skills could be promoted at the same time, together with other teachers, they perceived memorising as essential in EFL learning, especially for young learners. This is the stage where learners need to accumulate linguistic knowledge in order to move on to the next level of learning. Mei suggested that:

Memorising should be promoted in the early stage of primary education, as we emphasise learning new vocabulary a lot. Students need to have sufficient vocabulary to present their thoughts in a complete sentence in English.

Mei believed that memorising helped students develop a strong vocabulary. By understanding the meaning of the vocabulary, students were enabled to play with the words and construct sentences in English. Therefore, her statement indicates that memorising is one of the thinking skills which enhanced students' capacity to apply the language.

Lei reflected that she emphasised the crucial role of memorisation in class. She believed students would deepen their understanding of linguistic knowledge through the process of memorisation, and could then discover a new meaning or understanding of this knowledge,

Students associate what they have learned to produce a new understanding in class. For example, I often ask my students to memorise the vocabulary in class as their task. They sometimes discover similarities between different words or the patterns of grammatical rules when they recall their stored knowledge and associate all the information.

From Lei's point of view, memorising is prevalent in learning English. She suggested that learners might undergo a process of analysing and connecting the information in order to understand and make sense of new knowledge. Therefore, if the children understood the meaning of the language they were learning, they would memorise it. Learners need to accumulate and expand their linguistic knowledge in order to proceed to the next stage of learning and HOT. This is similar to Bloom's taxonomy that one needs to memorise in order to move on to the HOT process (see section 3.2.1). Students use their stored knowledge

to generate new ideas and improve their English proficiency. Thus, memorising is crucial for Chinese learners. In order to memorise aspects of the language, students need to understand and internalise it. This is different from rote memorisation and memorising with understanding was the thinking skill which teachers believed to be essential in foreign language learning. This echoed with teachers' definition of memorising (see section 5.2.3).

5.3.4 Ways to develop thinking skills

This section describes the methods teachers used to develop thinking skills in class. Strategies and techniques for developing students' thinking were suggested by the teachers in the interviews.

Overall, all the teachers agreed that the development of students' thinking skills takes place implicitly during classroom interaction, as Wei highlighted:

It is important to encourage students to interact with each other; this is an opportunity for them to learn from the peers and develop thinking skills.

There are different forms of classroom interaction, such as activities, playing games and group discussion, which are considered useful in EFL learning; certain moments in the different forms of learning provide space and opportunities for students to develop their thinking skills. Han commented that:

Thinking skills can be developed in different ways: listening, imitating, and learning from others. For instance, if one student demonstrates an idea in front of the class, the others could observe, listen and learn from him/her. Therefore, other students' thinking skills can be developed as they observe and understand the ways in which their peers think.

Han proposed that the development of thinking skills was reflected in every detail of teaching and learning. It is an implicit process which happens during classroom interaction. She believed that activities were useful for developing students' imagination, as learners needed to transform their thoughts and understandings of the target language into spoken language in activities. Mei also said that she would use brainstorming as a way to promote students' thinking. Wei indicated that learning through games was helpful for thinking skills development.

Lei agreed that promoting thinking skills can be infused into EFL teaching and learning. She considered herself to have a lack of content knowledge in teaching thinking skills, but she believed that she promoted students' thinking, nevertheless:

The development of thinking skills happened unconsciously, and students apply thinking skills in their learning process. For example, when I asked them to summarise the language rules, their thinking skills were trained.

Lei's statement was demonstrated in extract 4, when she asked the students to summarise a grammar rule. As she had said earlier that she had insufficient knowledge in this field, she considered that the textbook-bound activities would be effective in developing students' thinking skills:

I think teachers can develop students' thinking skills through activities. Teachers could look for such activities in the books then implement them in class.

Based on the teachers' interpretations, thinking was a process that took place in a social context and thinking skills could be developed in the context of social activities. The teachers suggested that students' thinking would be developed in relationship with others. This indicates that teachers expected students' thinking to be situational and correlative to others, which indicates that learning from peers is one of the features in Confucius-heritage learning. It also suggests that knowledge can be constructed through collaborative learning. The classroom-based interactive learning environment benefits peer-peer interactions in which children could learn from each other.

5.3.4.1 Learning from peers

As indicated previously, Han and Wei suggested that students learned from other students through interactions with them, including during activities. Mei agreed with Han's explanation as they both perceived that students could learn from their peers:

The low-attaining students might not have the opportunity to express their thoughts, but they can listen and learn from those who are more competent. I think this is a way of developing thinking skills.

Her explanation indicates that these were not simple actions, but, rather, a silent way of learning through students' thinking processes and inner reflection (see section 3.3.3). Students receive information from their peers, and then process that information by applying diverse ways of thinking, such as relating what has been said back to prior knowledge, analysing, reasoning, generating new ideas, and constructing new meaning to understand. She emphasised that learners' differences created a space for thinking skills development. According to Mei, (see section 5.3.2), who recognised the advantages of a heterogeneous class, learning from peers and working cooperatively helped students to maintain engagement with the language as well as providing them with opportunities to share ideas and exchange different perspectives on the given topic. The learner differences offered students opportunities to learn from each other and listening to each other as a way of gathering information and processing knowledge. This is related to Chinese reflective thinking, where children reflect inwardly on multiple voices and extract necessary information and then internalise this knowledge (see section 3.3.2). It is not a passive way of learning; rather, it represents students' active, though silent, ways of learning (Li, 2015). The teachers encourage students to practise reflective thinking, because they can learn from each other. Reflective thinking is more like putting oneself in a position to reflect in relation to the environment and other members.

Likewise, Wei believed student-student interactions inspired thinking. She considered learning from peers as crucial in thinking skills development as she believed that students can learn from each other and advocated that teachers should create opportunities for students to interact. Wei explained that students' thinking skills were developed through interactions in which they shared their own thoughts, and that learners were attracted to such interactions:

Some students shared what they have seen or experienced in other places, and this created an environment which allowed students to communicate. They used English to interact and they would express their thoughts. Sometimes students would learn new vocabulary and generate new ideas for a topic.

Based on the teachers' reflections, it is possible to see that they created a platform for the students on which they were able to engage in reflective thinking. Children interacted in groups and communicated with other people considered as in relation with others and would sacrifice the benefit of oneself for the sake of the group work to reach an agreement. In the recorded teaching practices, teachers encouraged students to work in groups or pairs to solve problems and increase the amount of interaction they engaged in. However, it was difficult to identify the reflective thinking moments as the focus of this investigation is on teacher-learners' interactions rather than on collaborative learning in groups.

5.3.4.2 Teaching creatively

Teachers in this study reported that if students were taught in creative ways, their creativity would develop, in turn. Thus, they designed different tasks to promote students' creative thinking. For example, Mei reported that she often planned her lessons to include games, songs and interesting topics, in order to create an interesting environment in which the children could develop thinking skills:

I will ask them to imagine follow-up stories on a topic as a way to inspire them to think.

Mei defined the practice reported above as creative teaching (see also section 5.2.5). This follow-up-story activity allowed students to develop their creative thinking skills and opened up a space for them to challenge and develop each other's ideas.

Wei proposed that using games in language learning is creative teaching, and leads to the development of thinking skills:

I think that playing games, such as guessing games, is a way of organising creative teaching. Thinking skills are embedded in creative teaching.

Regarding Han, she would use games such as 'Simon says' in class as creative teaching. Creative teaching and teaching for creativity are two different concepts. However, both the statements above pointed to the component of playfulness in the development of creative thinking in the field of language learning. However, creative activities would not necessarily develop children's HOT skills.

Classroom interaction is dynamic, and the widely-recognised IRF pattern has been used to examine classroom-based talk (see section 3.9.3). Teachers in this study pointed to the importance of their questions in initiating the development of students' thinking, as well as drawing attention to how their feedback encouraged children's HOT thinking. Their suggestions regarding the use of questions and feedback to promote thinking skills will be presented together with their teaching practices in the next section; the extracts will provide a more detailed picture of their beliefs with regard to teaching thinking.

5.3.5 Summary

The teachers all agreed that it was important to promote thinking skills in EFL classrooms. They posited that there was an interconnection between thinking, learning, and the use of language. However, conflicting beliefs were found. Han and Lei stated their unwillingness to implement the teaching of thinking skills in class even though they were aware of their importance. They argued that it would reduce the amount of teaching time devoted to knowledge transmission, which might lead to unsatisfactory exam results. Wei explained that promoting thinking skills might discourage students' learning, especially the lower-achieving learners since they might not have enough knowledge to participate in tasks requiring thinking. Mei, on the other hand, perceived students' differences and their individual development as opportunities for the more competent learners to guide the lower-achieving ones to develop their thinking and learning, like with scaffolding (Vygotsky, 1978).

Age was another factor affecting teachers' decisions about what and how to teach. Wei and Mei believed that students from Years five and six would be more proficient in English as well as being more cognitively developed, than the younger age groups (that is, the Year 1 and Year 2 students). Therefore, they believed that promoting HOT skills in higher year groups would be more effective and useful in foreign language learning. Nonetheless, the other two teachers regarded thinking skills as overlapping, making it possible to develop different thinking skills at the same time, and therefore making it challenging for them to define which specific thinking skills were worth promoting in class. It was found that all teachers' teaching beliefs were influenced by their past EFL learning

experience and the learning objectives in the ECS. All teachers also stressed that memorisation was essential in language learning, especially for beginners, as they need to memorise the spelling and meaning of the vocabulary and grammar rules in order to proceed to the next stage of learning, using the language in conversation.

The teachers also suggested strategies and techniques to foster students' thinking, such as classroom tasks involving games and activities which fostered interaction. Learning from peers was also considered a way to promote learning and the development of thinking, and indicated that teachers were encouraging students to develop reflective thinking. Creative teaching was another suggestion made by the teachers for promoting thinking skills; they believed that creative teaching could lead to the development of creative thinking skills.

5.4 Opportunities for promoting higher-order thinking skills in class

As discussed in the literature review, thinking skills are complex and scholars have not yet agreed on one definition, but HOT skills are recognisable. Generally speaking, these involve the good thinking skills which are worth developing in class (see section 3.8). This good thinking was defined as summarising, memorising, critical thinking and creative thinking by the EFL teachers in this study (see section 5.2). This section focuses on how teachers promoted students' thinking skills during classroom interactions. The moments when thinking skills were being taught and learnt were documented in video recordings and transcribed. Opportunities for developing thinking skills in the EFL classes will be presented.

5.4.1 With a focus on creative thinking

Below is an extract from Wei's Year 6 class, which was also discussed in terms of her conception of creative thinking skills (see section 5.2.5). She was teaching past and present tenses. The task for the students was to compare two pictures of the earth: *before and now*. This extract shows some moments that led to the development of students' creative thinking skills.

Extract 1 (Wei, Year 6)

1. T: How about these picture. Before, and now. It is our earth, OK. Talk about with
2. your partner.
3. Ss: ((Discussion))(33.9)
4. T: NAME
5. S1: The earth. Was clean before, but it's dirty now.
6. T: Good idea. Clean before, dirty now, and who else, who else. NAME
7. S2: The earth was healthy before, but it's unhealthy now.
8. T: Very good idea. The earth is healthy before, but it's unhealthy now. You
9. know that, we talked about the pollution, right. What else, what else, NAME,
10. would you try
11. S3: The earth, the earth was happy before, but it is crying now.
12. T: Yes, but it is sad now. Right. The earth was happy before, but it's sad now.
13. It is crying. OK, nice idea, what else. You try ((Invite S4))
14. S4: The earth was beautiful before, but it's ugly now.
15. T: Yes, it was beautiful before, but it's ugly now. NAME
16. S5: The ((/ðə/)) earth is
17. T: The ((/ði/)) earth
18. S5: The((/ði/)) earth is::
19. Ss: was/was/was ((noise))
20. S5 :(9.2) The earth was strong before, it weak now.
21. T: Nice idea, I like it. Yes, strong and:: weak 现在很虚弱很脆弱 ((it's very weak now)). OK.
22. Strong and weak. ((Unclear))The earth one two go
23. Ss: The earth was strong before, but it is weak now.
24. T: Anymore, 刚才的同学讲得非常好 ((very good answers)). Imagination OK.
25. 想象力((Chinese translation)), how about, other students in class 6 said the
26. earth was young before but [it is old now, yes
27. Ss: [Old/old/old now
28. T: and the earth was energetic before, 精力充沛的 ((Chinese translation)),
29. and it is tired now. OK.I think so, nice ideas.

In this episode, the teacher created a space in which to develop students' creative thinking, and in particular, those skills connected to comparing and contrasting, using imagination and reasoning. The students first discussed the focus as a collaborative group, with the teacher providing them with the space and time to discuss with their partners the different appearances of the earth in the two

pictures (lines 1 and 2). They used a number of antonyms such as clean and dirty (line 5), healthy and unhealthy (line 7) and crying and happy (line 11), to describe the pictures, and to indicate the differences between them. Their responses clearly demonstrated their comparing and contrasting skills. In terms of creative thinking, the learners' responses suggested that they had developed imaginative skills, demonstrated particularly in their use of metaphors such as crying, ugly and weak (lines 11, 15 and 21) to describe the earth; this entailed them relating the abstract concept of the status of the earth to their everyday experience. Metaphor is not just about words, it is about thoughts; and language serves as evidence of what our thoughts are like (Lakoff & Johnson, 1980). In other words, learners used English as a tool to describe an abstract situation by referring to their own concrete experiences, including human emotions. These imaginative thoughts were reasonable as they had been generated through in-depth thinking, through contrasting and comparing, and through making association with previous experiences. The language the students produced was creative and appropriate for this task.

The notion of mini-c is applicable here as the thoughts they expressed were personal insights (Beghetto & Kaufman, 2010). The creative expression that they shared in class or in their groups could be their own imagination. The concept of little-c is also applicable here as this type of creativity is shared by all students. This was a generative process in which students constructed meaning by connecting what they knew (the adjectives and the tenses) to produce new and imaginative ideas, and the meaning of co-construction could be taking place during discussion.

Although students were actively engaged and provided imaginative responses, there were still some moments when Wei could potentially have provided effective feedback to further develop students' reasoning skills and language learning. Based on the IRF pattern, the F moves decide the opportunity to extend the student's response (Smith & Higgins, 2006). However, the feedback Wei provided was repetition of the students' responses (lines 6,8,14 and 21). She could have expanded upon students' responses by searching for reasons as a way to develop their thinking skills. For example, in lines 8-10, Wei could have

searched for possible reasons by asking the student why he/she thought that the earth was unhealthy currently, instead of repeating the student's responses (line 8) and providing her own explanation (line 9). In line 11, S3 proposed an idea using past and present continuous tenses. The idea involved a comparison, was imaginative, and was expressed in a grammatically correct sentence. However, in the feedback, the teacher replaced the word 'crying' with 'sad' (line 12), indicating her prioritising of linguistic knowledge over imaginative responses. This could lead to limited space for students to develop their HOT skills, as children would receive the message that it was important to produce accurate language linguistic knowledge. It was obvious that Wei welcomed more than one answer, which did encourage students to develop their imagination and linguistic knowledge. However, without effective feedback, the quality of the active participation in an interactive environment cannot be guaranteed (Smith & Higgins, 2006). This could result in preventing opportunities for developing students' thinking skills and limiting their learning potential.

Below is an extract from Han's teaching which demonstrated opportunities for developing students' imagination. The teaching aim of this lesson was to practise the third person singular form of the verb. It was taught in a structured way, with the children repeating a particular sentence structure: *A has one leg, B has long ears*. It was a form of drilling in which students reproduced the language whilst substituting animals and adjectives (long/short or small/big) in order to remember the sentence structure. The following extract shows that the children not only memorised the sentence structure but also understood the grammar. Meanwhile, there were moments when the children generated creative thoughts within this traditional way of learning.

Extract 2 (Han, Year 4)

1. T: A rabbit has two very **long::** ears. ((UNCLEAR))
2. S25: Octopus has no ears.
3. T: Octopus has **no** ears. ((unclear))A fish has no ears↑
4. T: Does fish has ears?
5. Ss: Yes/no/yes/no
6. T:I don't know.NAME
7. S26: A cat has a...triangle air
8. T: Triangle ears.((Draw triangle in the air) OK.Tri.It looks like
9. Triangles, yes, cats' ears looks like triangles. Very good. So
10. just now we talked about ears. Do you want to say anything?
11. S27:um...Mummy has
12. T: Mommy has↑ My mom has...
13. S27: 不是那种 ((Not this kind of)) mommy.
14. T: OK. Which mommy? Oh ((laughing)). Mummies has no ears, right?
15. T: A dog has four legs, an octopus has:: eight legs. What about
16. a snake (3.7)
17. S: Snake no legs
18. T: No legs, yes, a snake has no legs.
19. T: What about a table ((drawing a square
20. in air with two hands)) a table, [吃饭的桌子((a dining table))
21. S: [Four legs
22. S:Four four four
23. T: A table has=
24. S:=four legs
25. T:Four legs
26. Ss: Four legs
27. S: Mushroom has one leg.
28. T: OK, a mushroom has::one::leg. Very good.

This extract reveals how the teacher created a space which allowed students to develop their creative thinking, specifically, their imagination and playfulness. Line 1- 3 provides an example of the third person singular sentence structure they were practising. In line 7, S26 described a cat's ear as a triangle. The description of ears moved beyond them being long or small ears or having or not having ears (line 1-6). This student compared a cat's ears to a triangle, which was a novel

thought in the current learning activity; the student was playing with the vocabulary, meanings, language rules and related the ears to a shape, creating a unique imaginary description. She formed her imaginary response by connecting to a shape that she knew. This was also evident in line 27 where a mushroom stalk was described as a leg. Such descriptions echo with extract 1 where students used metaphors to describe the earth. This shows that students were using their imagination to connect the different parts of the objects to their personal knowledge and experience.

In relation to the Confucian approach to creativity, students were continuously revisiting and practising the linguistic structure of the third person singular through repetition. They memorised the sentence structure and understood the grammar. They also made connections with objects from their everyday life to generate new ideas and express them in English. Allowing for playfulness with the language is a way of promoting students' creativity, which is useful in improving their English proficiency. For example, in line 17, the student's response is clearly not grammatically correct; however, the teacher provided positive feedback by recognising this student's idea then reformulating it correctly (line 18) rather than correcting the grammatical mistake immediately. This shows that the teacher had created the space for students to contribute their personal ideas and had provided them with opportunities to try out the language.

Additionally, there was a moment that could have been further developed into 'reciprocal engagement' (Smith & Higgins, 2006). The teacher took a non-authoritative stance and responded that she did not know the answer (lines 3-6). This contrasts with Han's beliefs that a teacher is a knowledge transmitter (see section 5.3.6) and could lead to an environment being created in which students have more power to express their own views instead of seeking that of the teachers, which, in turn, would develop their thinking skills. It might also demonstrate to students that their opinions matter and are worth proposing in class. However, this moment needed to be further expanded to make it more of a reciprocal conversation in which children and teacher could relate their experiences to their turns during interaction.

5.4.2 With a focus on critical thinking

In this extract from Wei's class, the students watched a video entitled *In the park*. Tony and Gogo went to a dirty park and picked up the rubbish, but Gogo accidentally pushed the bin and the rubbish went everywhere again. The task was aimed at students retrieving information and the teacher having the opportunity to check students' understanding of the language.

Extract 3 (Wei, Year 6)

1. T: Now tell me some true or false. True or false. Number one, Tony cleaned the park but Gogo
2. didn't.
3. Ss: True/false/false/false/true
4. T: True? NAME thinks that is true, why
5. S1: 因为他后来 [那个垃圾那个垃圾全都倒出来了 ((the rubbish fell out at last))
6. Ss: [后来啊/后来啊 ((it was at last))
7. T: Please try to say in English OK. Try to... But he did clean the park, he did clean the park, so we
8. can see. Tony and Gogo cleaned the park together, right?
9. Ss: Yes.

This extract addresses the development of students' reasoning skills and their disposition to think critically. In line 3, students present two contrasting views to Wei's statement in lines 1-2 and the teacher invited one student to explain why it was true (line 4). Being asked to validate their responses helped students to develop their reasoning, which, in turn, has the potential to develop their critical thinking.

In addition, by enthusiastically arguing their own opinions, students showed their disposition to seek the truth. For example, S1 expressed his view in Chinese (line 5) and other students who held an opposing view interrupted his turn, and presented the reasons behind their view (line 6). The teacher suggested students respond in English and explained the reason why it was false (line 7). However, Wei did not expand on their responses even though the students were very keen to argue their cases. The feedback Wei provided was ineffective in terms of promoting students' critical thinking skills. For one thing, she did not acknowledge the students' responses. She reminded the students to speak in English and explained the reason herself (line 7-8). This suggests that Wei was focusing on

her teaching plan as she was trying to check if the students had understood the content or not. It also indicates that she was focused on linguistic knowledge as she told the students to answer the question in English (line 7). However, it could have been due to the level of the students' language (see section 5.3.2.1); they might have been finding it difficult to present their views in English in such a short time and thus used their L1 to present their different standpoints.

Wei, in her interview, mentioned that developing students' critical thinking skills would improve their reading comprehension. Below is an extract from her teaching when she checked the answers to a reading task with the students.

Extract 4 (Wei, Year 6)

1. T: ((The teacher is asking the students to identify Xiaoming's position in the picture in line 3)) OK
2. children, more questions for you, think about it. Is Xiaoming in this picture?



- 3.
4. Ss: No!
5. T: No, where is Xiaoming
6. Ss: Behind the camera/behind ((loud answers))
7. T: Where's Xiaoming
8. SS: Behind the camera
9. T: So tell me, A OR B? Behind the camera? ((asking student to identify Xiaoming's position in
10. the picture in line 11).



11. ((Picture A is on the left and picture B is on the right))
12. Ss: A.
13. T: The man=
14. S: =B
15. Ss: A/B/A/B/A/B((different loud answers))
16. T: A or B? A put up your hands?
17. Ss: B/A/A
18. T: B put up your hands. Of course, it is A.
19. Ss: A /B /B ((insisting B))

20. T:这句话有隐形的意思 , behind the camera 就是说给他们[拍照]. 而不是说在 camera 后
21. 边 ((This means that he is taking a picture for them not standing behind the camera)).
22. Ss: [拍照]((taking pictures))
23. S :((unclear but still arguing about B))
24. T: He was taking a picture with a: [camera], take a picture of, he is not in the picture.
25. Understand?
26. Ss: [camera]
27. Ss: Yes.
28. T: I take a picture of you, I'm not in the picture. OK?
29. Ss: Yes.

This extract addresses the development of students' reasoning skills and their disposition to think critically. In line 3, students present two contrasting views to Wei's statement in lines 1-2 and the teacher invited one student to explain why it was true (line 4). Being asked to validate their responses helped students to develop their reasoning, which, in turn, has the potential to develop their critical thinking.

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Extract 5 (Wei, Year 6)

1. T: Let's see, let's share ideas, why, NAME
2. S1: Because the tree can make tissues and paper.
3. T: The trees↑ ((typing))
4. S1: The trees can make pa=
5. T: =Tissues= ((typing))
6. S1:=Tissues and paper
7. T: And paper ((typing)) nice idea. You try ((invite S2))
8. S2: Because planting trees good for health.
9. T: Because planting trees↑ [is good for us]
10. Ss: [is good for health]
11. Ss: Us/us
12. T: Why, why it is good for us (4.4) what can you do that is good for us.
13. S: °呼吸新鲜空气° ((breath with the fresh air))
14. T: OK, be specific,具体点 ((Chinese translation)).NAME
15. S3: We can... make... our country...green and beautiful.
16. T: make...just our country?
17. S: No
18. T: Just our country?
19. S3: our...world
20. T: I think not just our country maybe the world
21. Ss: World/World
22. T: OK? 不单单是我们国家还有别的什么呀 ((not only our country, but also))
23. make the world green and beautiful ((typing))What else? Make the world
24. green and beautiful, nice.

This extract demonstrates the development of students' critical thinking especially with regard to reasoning skills. In line 1, the teacher asked the students to share the ideas which had been discussed. This suggests that learners might have been involved in critical thinking development as they needed to compare each other's ideas and evaluate the outcomes before presenting these in class. These reasons were presented orally (lines 2, 8, 13 and 15) by the students,

which demonstrated that students had developed their reasoning skills as well as their language.

However, in line 9, S2's response (line 8) was interpreted differently by the teacher. Other students repeated the answer again in line 10 which overlapped with the teacher's turn (line 9). However, the students then abandoned their answer and changed it to match that of the teacher's (line 11). In line 12, the teacher encouraged the learners to provide further explanations of *why it is good for us to plant trees*, which facilitated the development of their reasoning skills. In line 13, one student proposed a reason in a soft voice. The teacher could have invited this student to share their answer in front of the class. However, she responded with *be specific*. This could have been a moment that the teacher could have used to further develop this student's thinking and reasoning skills. It could have been an opportunity to reinforce useful suggestions and clarify one's ideas. The teacher invited another student to present another idea (line 14). S3 provided another idea (line 15) but it was corrected by the teacher through a rhetorical question (line 16). Thus, in line 17, one student answered *no* to meet the teacher's expectation. The teacher sought further agreement by emphasising *just our country* again in line 18. This indicates that the teacher was exerting her authority over students' responses and was trying to elicit the "correct answer" from them. In line 19, S3 revised his idea according to the teacher's expectation (line 20). The teacher explained her own idea in lines 22-24. This also demonstrated the teacher's position as the authority of the class. Although there were moments when Wei provided the space for the children to develop their critical thinking skills, and the learners also demonstrated their ability to recognise the environmental problems (and were able to gather information from their personal experiences, evaluate different ideas and present their reasoned answers) the feedback she provided invalidated the intention of developing critical thinking skills.

5.4.3 With a focus on summarising with analysis

Below is an example from one of Lei's teaching sessions, during which she asked students to work out the conjugations of the verb *to be*. Students were asked to complete an exercise first and then reflect on it. The exercise focused on the use

of the correct forms of *to be*. Here is the exercise which was adapted from Lei's PowerPoint slides. The underline parts show the correct forms of *to be* which were written by the students.

Exercise 1 (Lei, Year 3)

1. It is a book.
2. You are my friend.
3. I am John.
4. He is my father.
5. She is my sister.

Extract 6 (Lei, Year 3)

1. T: 总结一下通过这个问题你发现了什么(3.5) ((Summarise it, what have you discovered in this exercise))
2. you discovered in this exercise))
3. S1:((Raise hand))
4. T: NAME 想到了 ((Think of...))
5. S1: 平常读的都是缩写 ((What we often read is in contractions))
6. T: Em, 平常读的都是缩写, 对吧? ((What we often read is in contractions, right?))
7. contractions, right?))
8. T: 你有没有发现 is, am, are 还发现了哪些怎么用. 什么时候用 is 什么时候用 are 什么时候用 are,你总结一下 (3.4) 四人小组讨论一下.ok.((Have you found out the pattern of using is, am and are? Try to summarise it and discuss in groups of four))
11. to summarise it and discuss in groups of four))
12. Ss: ((student discussion))(40.2)
13. T: 有没有同学能想到前面是什么情况用 is 什么情况下是用 am 什么情况下是 are 有没有总结得到, 想到一点也可以 (4.7) ((Can anyone tell me what you can think of according to the previous task, when we should use is, am, and are, even if it is only one point would count)).
16. should use is, am, and are, even if it is only one point would count)).
17. S2: ((Raise hand))
18. T: 你来试一下 ((Invite S17)) ((You try))
19. S2: 用他的时候用 is, 然后能用 I 的时候用 am ((we use is when the sentence start with he or she, then If used I we should use am))
20. sentence start with he or she, then If used I we should use am))
21. T: 能够这样吗, I 的时候就是用个...((Can we say this, When we use I we need to use...))
22. need to use...))
23. Ss: [am]

24. T: [am]... you 的时候就是用个 ((When is you we use))
25. Ss: [are]
26. T: [are]... it he he she 的时候用个 ((when it is he and she we use))
27. Ss: [is]
28. T: [is] 其实很好总结 ((Actually it is easy to summarise)).

This extract demonstrates the role of reflection in learning and the nature of collaborative learning. In the Confucian approach, thinking is the core of learning and learning without thinking is a vain effort (Li & Wegerif, 2014). The children were encouraged to reflect on the materials and to try to work out the patterns (line 1). S1's response could be seen as an indicator of active inner reflection and dialogue, as he/she used the pause to think on his/her own and remained silent. In order to discover the new knowledge, S1 needed to systematically reflect on knowledge he/she had previously integrated, and then connect it with the current focus. This pupil might also have engaged in a dynamic dialogue (Li & Wegerif, 2014) in which he/she might have needed to question her own knowledge, think of the interests of others and understand the knowledge as a whole (Li, 2015). Although this response was not exactly what the teacher expected, the teacher did not discourage the student's idea (line 6) as she repeated S1's response and sought agreement from the rest of the class. This implies that the teacher was willing to create space for the development of students' thinking skills and willing to respect students' responses.

It is worth pointing out that the teacher's conception of summarising included the process of analysing the pattern and organising ideas. This is different from the categorisation of summarising as a LOT skill, which emphasises comprehension through, for example, repeating the facts in one's own words. The teachers' understandings of summarising were presented in their interviews and summarising was perceived as an aspect of HOT (see section 5.2.2). It is also evidenced here that summarising was considered an aspect of reflecting, and drawing inferences and correlations. From the students' responses, it can be seen that they had gone through different stages of thinking in order to summarise this grammar rule. First, as illustrated above, S1 used the pause to think about the task, which indicates more in-depth learning. Second, it can be seen that the

students generalised the pattern and explained their ideas through comparing and contrasting their knowledge and the exercise. They analysed the given material by breaking down the components of these sentences and distinguishing the inferences. The answers which they produced were in Chinese due to their level of English. Yet, they used their L1 to assist them in learning English grammar. Lastly, they summarised the rules of the conjugations of the verb *to be*. Drawing on this evidence, it can be seen that summarising could be regarded as a skill which includes understanding, applying, and analysing information; it could be considered as a HOT skill rather than restricted to being a LOT skill.

During the discussion, the students' ideas were also explored, explained, refined and evaluated. Allowing students to have time to discuss and express themselves without interference by the teacher is a way of developing thinking skills. In lines 8-11, Lei asked the students to work cooperatively in groups of four to work out the correct forms of the verb *to be* according to what they had learned. During the discussion, students needed to use different thinking skills, such as critical thinking, in order to agree on the same grammar rule; they needed to reason, to analyse the material, and to evaluate each other's ideas. In case this was a challenging task for them, the teacher stated (lines 13-16) that even a small idea would work, as a way to encourage students to contribute. This was another factor supporting the development of the students' thinking and active learning, as the teacher acted as a mediator who encouraged students to develop their thoughts and created a space in which students could share different ideas. As a result, S2 expressed his/her thoughts on the use of *to be* (line 19). Lei explicitly encouraged peer-peer feedback as she invited students to review each other's work by asking (line 21) if they agreed – *Can we say this?*; the remaining students confirmed S2's contribution. Hence students were aware that their utterances were equally as important as the teacher's (Smith & Higgins, 2006), which could lead to self-evaluation and to the capacity to develop a shared understanding of information (Smith & Higgins, 2006). Lines 14-20 clearly show that the teacher allowed students to provide answers instead of summarising the grammar rules herself. This could be considered as a way of co-constructing thinking. However, this activity could have been improved by seeking another student's explanations

in this problem-solving task. The teacher could have invited another student to elaborate his/her thoughts on the use of “are”.

5.4.4 Overlaps of higher order thinking

In order to develop students’ environmental awareness, Wei asked the student to suggest some ideas on saving the earth.

Extract 7 (Wei, Year 6)

1. T: The earth today is unhealthy, ill, sad, ugly, dirty, messy. What should we
2. do, what should we do (3.8) NAME
3. S1: We [should
4. T: [we should
5. S1: We should plant trees.
6. T: We should plant trees. You try ((invite S2))
7. S2: We should self water
8. T: Save [water, save water. You try ((invite S3))
9. S2: [Save water
10. S3: We should save old books.
11. T: We should save:: old books. Right, OK books. That means paper. You try
12. ((invite S4))
13. S4: We should eh...((soft tone))
14. T: We should↓ ((louder gesture))
15. S4: We should clean the river.
16. T: Em. We should clean the river. Make it, make it cleaned. Yes, what else,
17. what else, you try ((invite S5))
18. S5: We should clean up...trash.
19. T: Em, clean up trash, and how about you, NAME
20. S3: We, we should (1.8) save paper
21. T: Em, save paper. That’s good. That's good. NAME
22. S6: We should not use paper cards.
23. T: Em, we shouldn't... shouldn't use paper cards, nice idea. NAME
24. S7: We should thru, through the trash in the bin
25. T: Yes↑ Don't throw the trash everywhere, right? Through the trash in the
26. bin, very good. What else, one more, one more, some new one. NAME
27. S8: We can take the shopping bag.
28. T: Em, when we go shopping, we can take a...[shopping bag]. So we can do
29. many many little things to save the earth, to make the earth better. Yes?

The nature of this task provided students with the opportunity to develop their problem-solving skills. Suggestions were made by the students as to what they would do to save the environment (lines 5,7,10, 15, 18, 20, 22, 24 and 27). On one hand, problem-solving skills require a critical thinking process as one needs to evaluate and validate one's own ideas. On the other hand, as the question in line 2 required students to seek multiple solutions for one problem, Wei did not hold any fixed answers. Hence, this task also entailed the promotion of students' creative thinking skills as they needed to look for more than one possible solution from different angles. Furthermore, problem-solving includes both critical thinking and creative thinking (see section 3.6.3). This extract shows an overlap between these two thinking skills, and this is a teaching practice that confirmed Wei's understanding of thinking skills in the interview. Nevertheless, in line 11, the teacher could have asked the student (S3, line 10) to explain rather than giving her own interpretations on saving old books. Saving old books does not necessarily mean saving paper (line 11). Maybe S3 meant that they could recycle the old books or pass them on to each other.

Below is another extract in which environmental problems addressed. This extract follows on from extract 5. The teacher asked the students to discuss the importance of planting trees and typed students' ideas on the screen after discussion. In Wei's interview, she proposed that creative responses needed to be reasonable. Being reasonable requires that students are able to evaluate and this is one of the skills required in critical thinking development.

Extract 8 (Wei, Year 6)

1. T: So, do you think it is important to plant trees?
2. Ss: Yes
3. T: Why (1.2), why, why it is important to plant trees (1.5)I'll let you to think
4. about this(2.4)((preparing to type)), why(9.4)Why(3.6)it is important
5. (4.1)to plant trees ((typing the question))(2.1)Why(2.1)any ideas
6. (2.4)Maybe first you talk about it with your partners.
7. Ss: ((Student discussion))(48.3)
8. T: How about NAME

9. S5: Trees can be became a good habitat for animal
10. T: Trees can ↑((typing))
11. S5: Become a good habitat for animal
12. T: For animals, right? ((typing))
13. S5: Yes.
14. T: Trees can be the home for some animals. For example, what animals.
15. Ss: Giraffe/ birds/蚂蚁 ((ants))
16. T: [birds live in the trees
17. Ss: [Giraffe/Giraffe/Monkeys
18. T: Monkeys?
19. Ss: Giraffe/giraffe/giraffe/giraffe
20. T: Giraffe don't live in the trees, but they eat the [leaves] from the::[trees]
21. Ss: [leaves] [trees]
22. T: Good idea. Anymore, anymore
23. Ss: Panda/Squirrels/Lions/cats/snakes
24. T: So very good ideas. Anymore? NAME
25. S6: The::tree can meet the::sky clare
26. T: Clear
27. S: Clear

This is another extract which involved moments of developing students' creative thinking and critical thinking, and which also could have potentially fostered reflective thinking. First, Wei asked the same open question *why* six times in lines 3-5. This repetition was in order to emphasise that she would welcome reasonable suggestions and ideas about planting trees from the students. Open questions potentially led to extended responses from the students, which also expanded the space for students to contribute different ideas about the benefits of planting trees. This allowed students to develop their creative thinking skills as this topic related to their daily life, they needed to connect with the knowledge they already held about protecting the environment, and to generate their own, original ideas. Her pauses during the 'questioning time' allowed students to think on their own and evaluate their original thoughts.

From lines 3-6, the teacher paused several times with sufficient wait time for silent engagement, which allowed students to think on their own actively and to engage in inner dialogue (Li, 2015). This process reflects the Confucian tradition that one

must engage in deep thinking before speaking (see section 3.3.3) and could therefore be considered to be the development of Chinese reflective thinking. The teacher asked the students to engage in group work after the period of silent engagement (line 6) and this collaborative group work had the power to further encourage the development of reflective thinking. Students were situated in a learning community where their thoughts would be further developed in relation to other members within the same group. Students might learn from other group members and examine their own ideas and even sacrifice their opinion to reach unity (agreed answers from the group) since Chinese reflective thinking is situational and correlational (see section 3.3). After their discussion, one of the members of their group presented their agreed ideas (line 9).

Additionally, students' critical thinking could have been promoted during group work as they might have needed to evaluate each other's responses and justify their answers with reasoning skills. This could be perceived as students constructing knowledge together. In this case, students' creative thinking can be improved as they produce new meanings and original ideas from the discussion. Regarding the development of reasoning skills, Wei allowed the students to share their reasons for the importance of planting trees (line 9), and typed S5's reason on the screen as her feedback to the student. This action indicates a positive feedback on S5's response in that Wei acknowledged S5's contribution and regarded it as a good example of reasoning for this question. With the sample sentence on screen, other students had the opportunity to engage in peer learning.

The response provided by S5 included a new vocabulary item - *habitat*. The teacher typed up this response and explained this word (line 12) to the rest of the class as *home*. This is another example showing that peer-peer feedback took place, and the essential role of the teacher's feedback. Wei could have allowed S5 to explain what *habitat* meant or sought other possible interpretation from other students. It could have been a chance for students to further develop their language learning and thinking skills. For one thing, they would have had to relate to the knowledge they had which was relevant to the word *habitat* and have expressed this in English. For another, this would have required students to draw

inferences on the meaning of the sentence in order to present their understanding of the new vocabulary item. Besides this, allowing students, including S5, to explain the new word would suggest that the students were equally responsible as the teacher during the interaction, which generally serves to create a better, more interactive learning environment (Smith & Higgins, 2006). This leads to a more effective ethos with regard to the development of students' language learning and the development of their thinking skills. Furthermore, the teacher expanded on S5's response by asking *what animals?* in line 14. Other students actively engaged by providing various answers. Teacher could have used this opportunity to further develop students' reasoning skills by asking them why it was a good habitat for birds or giraffes, rather than interpreting it herself (lines 16 and 20). Students could have further elaborated their thoughts to develop their language.

5.4.2 Strategies and techniques to promote thinking skills

The dialogues which were practised in classroom interaction involved teacher talk, including questions and feedback, and also consisted of the IRF (initiation, response and feedback) pattern. The following extracts show how the practice of the dialogues created the interactive process, which provided the space for students to voice their feelings and thoughts.

5.3.4.1 Teacher questioning

Teacher questioning has been identified as a pedagogical strategy to promote the development of students' thinking skills. Mei believed that the teacher's demonstration was influential on students' thinking. She also implied that asking open questions inspired students' thinking. Wei shared this point of view, and pointed out that questioning was one of the techniques that she applied in developing students' thinking skills:

I often ask open questions in class. Open questions such as, *why? Why do you think so? How do you know? What do you think about this?* These types of questions allow students to express themselves and use English. I also think that students' thinking develops through asking questions.

Wei believed that asking effective questions could stimulate students' thinking and allow them to elaborate their thoughts in English. She also stated that students' questioning indicated development of their thinking skills. In many of her teaching episodes, she applied teacher questioning as a technique to facilitate students' language learning and develop their thinking.

In extract 3, Wei used referential questions to invite students to elaborate on their thoughts (line 4). This facilitated students' reasoning skills and encouraged the learners to present their own views in class (lines 5-6). Although students presented their thoughts in their L1, the reasons which they provided showed their disposition to think critically. This was inspired by the teacher's questions as these provided students with the opportunity to present their own standpoints. Likewise, in extract 7, Wei used referential questions to encourage students to present their suggestions about how to save the earth, which developed their problem-solving skills and possibility thinking. In extract 8, Wei invited the learners to present their explanations for why planting trees was important to them (line 3-5) by repeating the same open questions. In this way, students were challenged to think of reasons for planting trees.

Han also considered that teachers' questioning facilitated students' thinking. She suggested that questions elicited responses from students, generated by their individual thinking:

There are countless responses to the question, 'how are you?'. Students start to explore different ideas to answer this question. When one student answered one way, others would come up with different ways. Students' thinking is promoted in this process.

Han's statement indicates that she expected diverse responses from the students, and implied that these responses were products generated through the process of thinking. During this process, students explored the contents of their minds for proper expressions and took their peers' responses into consideration.

In relation to Han's example question, *how are you?* the extracts from the classroom recordings showed that most of the teaching practices began with practising the greeting dialogue. This has been considered a way to warm up the

class. Greetings form one of the dialogues in the text books and teachers would apply it in class as a way to provide students with a real-life experience in using the language (see section 2.7). However, as the dialogue has been frequently used in class, it has become superficial and meaningless in most of the recording data. Nevertheless, the greeting dialogue below, from Wei's Year 6 EFL class, provides insights into how teachers use questions as a way to develop students' language learning. It was a greeting activity which related to the students' autumn trip, about which they were enthusiastic.

Extract 9 (Wei, Year 6)

1. T: How are you today?
2. Ss: I'm fine, thanks, and you.
3. T: Just fine?
4. Ss: I'm very happy/I'm very good ((loud answers))
5. T: Why are you so happy?
6. Ss: 秋游 /Tomorrow we will/秋游/Tomorrow we will go to 秋游 ((An autumn trip)) ...
7. T: Tomorrow you have an:: outing OK. Outing. Say it with me,
8. outing.
9. Ss: Outing.
10. T: Outing
11. Ss: Outing

Wei allowed the students to elaborate on their feelings and thoughts in this dialogue, which created a space in which they could develop their thinking and language. Wei started the conversation in a natural way (line 1), and in line 2, the students provided a typical answer as a response. Instead of closing her turn with *I'm fine, thank you*, Wei looked for alternative answers (line 3). As a result, students were excited about sharing their feelings as they all answered loudly (line 4). There is a similarity with Han's point of view, here, that a simple greeting question can elicit diverse responses and that students would engage in a thinking process. Furthermore, the teacher used referential questions as a type of feedback, which allowed the students to elaborate on why they were happy (line 5). This provided students with an opportunity to develop their reasoning skills. Therefore, using effective feedback can enhance an interactive learning

environment, facilitate students' learning and develop their thinking skills (Smith & Higgins, 2006). Applying open questions at the beginning might trigger students' thinking processes, yet without effective feedback the purpose of promoting thinking skills and language development becomes less successful. In line 6, students provided their reasons, but due to their limited English level, they used L1 (Chinese) to support their expressions and completed their responses in both English and Chinese. It is evident that students were involved in the dialogue and actively using the L2 (English) to express their thoughts. Finally, the teacher seized this opportunity to introduce the students to a new vocabulary item – *outing* (line 8). The teacher invited students to repeat *outing* after her in lines 8–12. Repetition, here, is a way of learning which strengthens students' pronunciation of the word, deepens their understanding of it and which could be a way of their capacity to memorise. This extract showed that the teacher used the greeting dialogue to have a natural interaction with the students, and that the teacher encouraged the students to express their individual feelings in class. The teacher also demonstrated the use of referential questions that were not only used to develop an interactive learning space, but also to provide feedback as a way to expand the students' learning space, which would support the development of their reasoning skills.

5.3.4.2 Teacher's feedback

Mei and Wei argued that teachers' affirmative and enthusiastic feedback was supportive of the development of students' language and thinking skills. Mei suggested that positive feedback inspired students' thinking and created a light-hearted atmosphere to learn within. She emphasised that teacher-student interaction was not limited to spoken language: a smile could be encouraging feedback to learners. Students would perceive a smile as a signal for them to carry on presenting their individual ideas without any interruptions. Feedback provides students with comments on how well they are doing, provides reinforcement of correct answers, and promotes students' positive image of language learners (Ur, 2010).

In the extracts presented above, there were numerous moments where teachers evaluated students' responses with positive feedback to encourage their learning. For instance, Wei praised the students for their creative answers (see extract 1); in line 8, for example, she gave positive feedback regarding a student's creative response by saying *very good idea*. This encourages other students' willingness to contribute, and is consistent with what she said in her interview. It also implies that she perceived metaphor as a way of developing imagination, which is one of the key characteristics of creativity.

Tolerance of inaccurate answers was one of the techniques teachers perceived to be a way to develop both learners' thinking and their learning of a foreign language. Han expressed the view that she often showed appreciation in class for students' contributions even when the answers were incorrect. She thought that learners' contributions demonstrated their efforts to learn and their willingness to think.

Wei advocated that teachers should not struggle with accuracy, but, rather, be tolerant of all types of responses. She considered a teacher's encouragement to be a method to promote thinking:

It is a way to allow students to show their personality in class, which makes them feel that the teacher appreciates their ideas, and that their efforts are being valued in this way; thinking skills would be developed. Otherwise, they would stop participating because they would assume that the teacher would be angry at them if they replied with incorrect answers.

Wei expected different viewpoints from the learners as she said she wanted to see children express their own personality in class. This indicates that she placed importance on students' personal development. She embraced different answers and felt that even some incorrect responses might provide insights into learners' understandings, as well as providing more possible answers to the question. Learners would be more motivated, inspired and challenged if they were allowed to play with the language. Especially when learning English, learners use their creativity and imagination to transform their thoughts into spoken language, and children learn from making mistakes. Nevertheless, in extract 1, Wei corrected

S3's response as it was not strictly relevant to the linguistic knowledge she was teaching (see section 5.4.1). Interestingly, in line 18, S5 made an error during his/her turn, but the teacher did not interrupt or correct the error, but, instead, let the other students propose their answers, in line 19. In line 20, 9.2 seconds of wait time was provided. This allowed S5 to listen to other students' ideas and develop knowledge of past tenses. The teacher did not rush and offered this learner the space to generate the answer, which the child successfully did, in the right form. In line 21, the teacher praised S5 with *nice idea* and placed emphasis on the metaphors which had been used. This indicates that Wei emphasised students' creative ideas rather than the linguistic features of their contributions. She showed her appreciation of this student's creative thinking, which encouraged other students to play with and use the language as well as to develop their creative thinking. Hence, in this extract language is seen as a tool rather than a subject (Li, 2010).

On the other hand, Wei's feedback in extract 5 echoed the claims made by Mei that feedback could be given in a non-verbal way to improve students' learning, although Wei's feedback might have been more effective (see section 5.4.2). Wei encouraged the development of students' thinking skills by acknowledging their contributions and typing them onto the PowerPoint slides to show the class. Students' reasons for planting trees were shown on the PowerPoint slides in front of the class by Wei (lines 3, 5, 7 and 23). Spending time in class typing up the students' different thoughts implies that Wei valued their contributions. This is more substantial feedback than simply saying 'good' or 'bad' and could be perceived as a moment which facilitated and encouraged students to generate their reasoning around an issue. Besides this, by projecting the students' responses, other learners might have learnt the structure of the sentences more effectively and their presentation, which could be viewed as learning from peers (see section 5.3.4.1). Similar moments were identified in extract 8, where the teacher respected students' ideas and typed them onto PowerPoint slides (lines 10 and 12). In line 9, S5 introduced a new vocabulary item, 'habitat', and the teacher typed it onto the slide as a way to clarify the meaning and show this knowledge to the class. This learning process could have implicitly happened in

those students who did not orally participate yet who could have been engaged in thinking on their own and learning from their peers.

The above evidence shows that teachers' feedback, in terms of evaluating learners' performances and encouraging oral interaction, serves to develop students' thinking skills. Apart from this, one teacher used feedback as a way to share her own opinion, which has the potential to develop the interaction into one that involves reciprocal engagement (Smith & Higgins, 2006). Han asked students if fish have ears (extract 2, lines 4-6) and admitted that she did not know the answer instead of presenting the 'absolute' truth in the class even though she regarded herself as a knowledge transmitter (see extracts from her interview in section 5.3.2.4) . Her response *I don't know* (line 6) suggested that she was willing to forgo the power of being the authority in class and was willing to accept ideas from the students. This statement also contradicted the literature and research studies (see section 2.3) that perceive Chinese classrooms as always being teacher-centred, with the teachers maintaining their role as the authority. Instead of providing the "correct answer", Han's feedback provided the space for students to elaborate on their responses by visualising their thoughts in different ways, that is, by using their imagination. At the same time, students were also given opportunities to play with the language.

Lei, similarly, considered herself to be the authority in her class, in contrast to her teaching practice. Her teaching served to motivate students to express their thoughts. In extract 6, she acted as a mediator to assist students' learning and develop their HOT skills in a learner-centred learning environment. In lines 13-16, she encouraged the students to elaborate on their thoughts by stating that even one point would be worth trying. In line 18, she also used the word *try* to encourage students to contribute. As her EFL learners were beginners, her instruction could have been a useful way to motivate students to play and think and to enjoy learning the language, thus laying the foundations for increased interest and motivation in learning a foreign language. To conclude, in this extract Lei encouraged students to think independently and actively participate in group work; they all engaged in a complex thinking process and developed higher-order thinking skills, and as a result, learned the grammar.

5.4.2.3 Collaborative learning

In this section, a number of extracts will be presented to show that students' thinking is promoted through collaborative learning. Collaborative learning is considered to be one of the effective teaching techniques in promoting students' thinking skills (McGregor, 2007). It involves interaction and emphasises the significance of social interaction in students' intellectual development. The talk generated during collaborative learning allows students' thinking to be made explicit. Collaborative learning empowers children to value and build on their prior knowledge, and to share their ideas confidently with others. It is learner-centred as students dominate most of the talk and their thinking is explored, discussed and shaped through interaction with teachers and other students. In the interviews teachers stated that learning from peers is a way for students to develop their thinking. Collaborative learning provides them with a chance to learn from their peers as well as the teacher. As will be seen, collaborative learning is illustrated in group work or pair discussion. However, as the aim of this research is focus on teacher cognitions of the development of thinking skills, the talk between students in group work or pair discussions was not recorded. However, there were a number of instances of collaborative learning identified during the analysis of the discourse, which will be presented in the extracts below. At times when collaborative learning was taking place, the teacher acted as a mediator or scaffolded the pupils' learning.

As Chinese classes consist of large numbers of students, using group work is a common way of teaching EFL classes, as it 'decentralises' classroom communication, which is normally dominated by the teacher, and encourages more students to engage in classroom discourse. There were a number of group activities identified in the classroom data. The following extract concerns one of the tasks in Wei's class.

Extract 10 (Wei, Year 6)

1. T: From the lists here, I would like you to find out what is
2. healthy habits, and what is unhealthy habits, OK?
3. Ss: OK.
4. T: Try to discuss with your partner, what is healthy habits.
5. For example, number A. eats a lot of junk food, healthy or
6. unhealthy
7. Ss: Unhealthy.
8. T: So I write A here, unhealthy habit. Is that OK
9. Ss: Yes
10. T: Do it with your partner
11. Ss: ((Discussion))(43.3)
12. T: Let's compare this time, compare, so, who is more healthy, more healthy.
13. Who has more healthy habits, Tammy or Hanna?
14. Ss: Tammy
15. T: Why, why
16. .Ss :((Loud answers))
17. T: He has, he has [**Two** healthy habits, and **two** unhealthy habits].
18. Ss: [Two healthy habits, and two unhealthy habits]
19. T: But Hanna
20. S: One healthy
21. Ss: One healthy habit
22. T: Hanna only has [**one** healthy habit] so maybe we say Tammy is **more**::healthy,
23. Yes
24. Ss: [one healthy habit]

In this extract, the teacher's instruction for the task stated that the students needed to identify healthy and unhealthy habits (line 1-2). The nature of the task suggests that students needed to analyse the lists in order to solve the problem, and, therefore, that students had a chance to develop their thinking, particularly their problem-solving skills, reasoning skills and comparing and contrasting skills. The teacher also asked the students to discuss the task with their partners (lines 4 and 10), which gave them the opportunity to work together and to achieve the purpose of the task collaboratively. To do this, students might also have needed to apply reasoning skills as a way to inform their partner about their thoughts. During the discussion, learners might have developed their linguistic knowledge

and thinking skills, such as reasoning, comparing and contrasting skills, analytical skills and problem-solving skills, and they needed to use English as a tool to justify their ideas through discussion with their partners. This is evident in line 12 where the teacher stated that she wanted the students to compare, and required them to present their reasons by asking an open question (line 15). This shows that the teacher created a space in which students could share and elaborate on their thinking. Students were given an opportunity to reason their arguments which allowed them, potentially, to develop their critical thinking skills. However, the teacher closed down this space by answering the question herself (lines 17 and 22), even though the students were actively engaged in this question and eager to elaborate on their thinking (line 16).

Collaborative group work was found to be a common way of learning in EFL classrooms in this study. In extract 1 and extract 8, Wei also used collaborative group work or pair work to allow students the space and time to construct their ideas before sharing and presenting them in class. Learners were given enough time to generate the necessary language and to revise their responses before presenting them in class, which provided students with opportunities to develop their thinking skills when learning with their classmates. Similarly, in extract 6, Lei encouraged students to co-construct the knowledge through collaborative group work. She provided them with the time and space to engage in deep thinking and expected reasonable and appropriate answers to be generated from the group work. The analysis of these extracts confirmed that students were given opportunities to develop their thinking skills through collaborative learning.

5.4.2.4 Creative teaching methods

The English Curriculum Standards require teachers to develop students' creativity and the teachers in this research demonstrated different ways of creative teaching. The interview data illustrated that teachers would design different tasks to develop students' creativity, and that they believed that if students were taught in creative ways, their own creativity would develop.

In the following extract, students were participating in an activity designed by Han: make a fruit man. In a similar activity, a teacher asked the students to make a

stationery man (see extract 18). These two tasks aimed to facilitate students' ability to practise the language by using their existing knowledge of fruit and stationery.

Extract 11 (Han, Year 4)

1. T:OK, now children, can you...make a picture with this (2.1) Make a fruit man (1.8)
2. S: OK. I try.
3. T: OK. What can be his body, a watermelon?
4. S: Watermelon yes!
5. T: A watermelon can be the body.
6. T: and, what can be the eyes(1.5)
7. Ss: °Apple°/Cherry/cherry/Cherries!
8. T :((Raised her hands)) NAME.
9. S6:Cherries
10. T: Cherries can be his eyes.
11. T:((points to ears))
12. Ss: Oranges ((loud noise))
13. T: Ears, ears. ((Invite S7))
14. S7: A pear.
15. T: Pears can be his ears.
16. Ss: Teacher! Watermelon/Banana! ((loud noise))
17. T: and bananas yes. ((loud noise))
18. T: NAME 请你来((NAME please, discipline))(3.5)What can be put into the
19. Picture (7.8). Think about it. Sit down please. Watch carefully and see the fruit::
20. man. ((Show her fruit man)
21. Ss: wow.

Han believed that by inviting students to imagine and relate types of fruit to body parts, she was helping to develop students' creative thinking. For example, in line 6, the teacher asked the students to think about what could form the eye of the fruit man. The children suggested different types of fruit (lines 7 and 9). The teacher then used gesture to ask what the ears could be (line 11), and various imaginative responses were given (lines 12, 14, and 17). To answer these questions, students needed to relate their knowledge of the fruits with current information given by the teacher. They needed to relate the shapes of the fruits to the different body parts of the fruit man. However, these moments could have

been further developed. For instance, the teacher could have asked the students to describe the fruit man by themselves instead of asking them which fruit could be a specific body part of the fruit man. At the end of the activity, the teacher invited another student to imagine what could be used to create a fruit man (lines 18-19); however, the teacher showed her own fruit man and did not receive any responses from the students. In addition, there were potential moments when the students were carrying out this task which could have been used to develop students' HOT skills; these are analysed in section 5.5.1.

Alternatively, Wei promoted students' creativity through art. She was teaching the students about Halloween and asked them to design Halloween masks as their homework. She spent 10 minutes at the end of her lesson inviting students to share their creative work in front of the class. The pictures below are screenshots taken from the video. The teacher also took a picture of all the students holding their masks; however, due to ethical considerations, it is not possible to show this picture as the children's faces can be seen.



Fig.5. 1 Screenshots from Wei's video recordings

This creative art homework could be perceived as a way of developing students' creative thinking. Although it was not directly related to language development or to linguistic knowledge, and was in fact more relevant to Western culture than Chinese culture, it could be seen as another way of creative teaching. This could be seen as another example of the achievement of one of the learning objectives in the ECS (2011) (see section 2.7). However, this homework provided students with the opportunity to develop their imagination; the art work was original and students would enjoy playing with their ideas when they drew. This was not the

same as practising linguistic knowledge. The teacher provided the students with the opportunity to experience this Halloween tradition and the masks they made demonstrated their creativity. This suggests that the teacher made a potentially dull learning experience more fun by asking students to draw according to their own imagination. The time which was provided at the end of the class for learners to share their work indicates that she respected students' contributions, which encouraged a creative learning atmosphere in class.

5.4.2.5 Using real-life topics

The English Curriculum Standards emphasise the importance of experiencing and understanding the authentic use of English in context. EFL teachers are encouraged to link their teaching practices with students' real-life experiences as a way to create an environment in which the students can learn to apply the target language in the real world. In the interviews, the teachers agreed that their teaching aims were to help students to use English in an authentic situation. Therefore, teachers liked to use topics closely linked with the students' life experiences. The following extracts show how teachers used real-life topics to promote students' language and thinking skills.

Extract 12 (Wei, Year 6)

1. T: Among these holidays and festivals, what festivals do you like, why=
2. S: =Halloween.
3. T: What festivals do you like, why.NAME?
4. S1: I like children's day=
5. T: =Why
6. S1: Because I can play i-pad.
7. T: Because you can play games on i-pad. OK. How about you ((invite S2))
8. S2: I like
9. T: Louder
10. S2: I like Halloween=
11. T: =Why
12. S2: Because I can eh ((unclear))
13. Ss: °Trick/treats°
14. T: You can play trick or treats, and you can get candies, right? Good. Anymore,
15. what do you like, NAME?

16. S3: I like Spring Festival
17. T: Why
18. S3: Because I can play the...鞭炮怎么说((how to say fire crackers in
19. English))
20. T: Firecrackers, [OK you can set firecrackers
21. S3: [Firecrackers
22. T: OK. That is exciting, right? NAME
23. S4: I like National day
24. T: National day, why
25. S4: Because I can play computer very late
26. T: You can play computer games?
27. Ss :((laughing))
28. T: Because on the, in the National holiday, long breaks right? Seven::days
29. holidays, and you can play computer games every day. Oh my god. You try
30. ((Invite S5)).
31. S5: I like Spring festival
32. T: Why
33. S5: Because I can the red bag.
34. T: You can get red bag, and what's in the red bag.
35. Ss: Money! /money ((exciting))
36. T: Luck moneys in the red bag, and you get rich right? How about NAME
37. S6: I like National Day.
38. T: Why
39. S6: Because it's a holiday.
40. T: Because it's a long::[holiday] I like it too. One more ((invite S7))
41. Ss: [holiday]
42. S7: I like Halloween.
43. T: Why
44. S7: Because I can eat candy and trees.
45. T: You can eat candies and个
46. S7: Trees
47. T: Cheese or treats?
48. S7: 奶酪 ((cheese))
49. T: 奶酪 that is cheese, not trees. OK? That's good.

This extract shows that the teacher related her teaching to students' everyday experience as a way to promote their reasoning skills. In line 1, the teacher asked

students to illustrate their favourite festivals. The teacher did not hold any expectations about the students' responses. In line 2, one student provided his/her answer, but it was ignored by the teacher. This could be because the teacher preferred to invite those students who had raised their hands (see, for example, lines 3, 7 and 15), as encouragement of politeness and good behaviour. It was also a signal for the students to know that they needed to think before they spoke. Wei used open questions to encourage students to expand on their answers (lines 5, 11, 17, 24, 32, 38 and 43). These could be seen as opportunities to develop students' reasoning skills as well as a way of giving them space to develop their English through elaborating on their thinking.

In line 7, the teacher further explained S1's response (line 6), she could have asked what he/she would do with the i-pad, to further develop their language and promote possibility thinking (Craft, 2015). Similarly, the teacher finished S2's turn by answering with another student's ideas (line 14). The teacher could have waited longer to allow the student to develop and express his/her idea. In line 18, S3 clarified his/her reason with the assistance of L1. This shows that S3 actively sought help from the teacher, and the teacher assisted by demonstrating the right expression (line 20). This indicates that the learning environment in this class allowed students to pursue knowledge actively and freely. From line 25 to line 30, the interaction between children and the teacher was in harmony, as the way the teacher expressed her feelings about playing computer games made students laugh. However, this interaction could have been further exploited by asking for more justifications, rather than with the teacher completing the response according to her thinking (line 28-30). Similarly, in line 36, the teacher could have further developed students' possibility thinking by asking them what they would like to do if they had the red bag, rather than finish the sentence herself. By developing students' reasoning skills, there would have been the potential to also develop their critical thinking skills.

5.4.2.6 Repetition

The teacher was teaching sentence structure in this lesson. This extract indicates that the teacher encouraged students to think, and that repetition is one way of learning language.

Extract 13 (Lei, Year 3)

1. T: Now, let's think, let's think. 想一下((Chinese translation)), 在刚刚的问题中,为什么有的
2. 我说 who's she, 有的我又问 who's he (3.2) NAME. (Why I used who's she in some
3. questions but used who's he in some other questions previously?)
4. S1:He 是男的, she 是女的 ((he refers male, she refers to female))
5. T: Ah, 男女不同, 我用的也不用 ((I used differently according to the gender)). OK. Now let's
6. see. Please remember, he 是用在 [男他男他 ((he is used to describe man))
7. Ss: [男性 ((male))
8. T: She 是用在 [女她中 ((she is used to described women))
9. Ss: [女性 ((female))
10. T: 所以如果说她是谁 ((so when I ask who is she)) [you should say
11. Ss: [who's she/who's she/she
12. T: Who's ↑=
13. Ss: =she
14. T: Yes, who's she, follow me who's she. ((Write who's she on board))
15. Ss: Who's she
16. T: Who's she
17. Ss: Who's she
18. T: Who's she ((point at who's she on the blackboard))
19. Ss: Who's she
20. T: Who's she
21. Ss: Who's she
22. T: OK, 如果我问他是谁呢 ((What if I asked who is he))
23. Ss: Who's...who's he/who's he
24. T: Yes, who's he
25. Ss: Who's he
26. T: Who's he
27. Ss: Who's he
28. T: Who's he
29. Ss: Who's he
30. T: Who's she ((point at PowerPoint slide))
31. Ss: Who's she
32. T: Who's he ((point at PowerPoint slide))
33. Ss: Who's he

In line 1, Lei asked the students to think, which could be interpreted as asking students to think on their own. This indicates that Lei encouraged students to develop their thinking and independent learning so that they could discover the rules by themselves, instead of passively receiving knowledge from the teacher. This echoes Chinese reflective thinking (see section 3.3) in which children engage in silence and reflect on previous knowledge to discover new thoughts. Although Lei regarded herself as a traditional teacher who dominated the class (see section 5.3.2.4), at this moment, she was perceiving the students as independent learners and was developing their thinking and linguistic knowledge. In lines 2-3, she guided the students by asking them why she had used the personal pronoun differently, and provided students with the time to think this through on their own (line 2). This was an opportunity for students to engage in a complex thinking process, by comparing and contrasting the given information and analysing the differences. S1 presented an accurate explanation (line 4) and the teacher confirmed S1's response by rephrasing the student's explanation. This showed that S1 understood this grammar rule.

After S1 and Lei's explanation, the teacher stressed that the children needed to remember this grammar rule (line 6). Thus, it is suggested that remembering is not just factual memorisation, but memorising with understanding, as the teacher asked the students to think first (line 1) and checked students' understandings (line 4) before requiring them to remember the rule. From line 5 to 13, the teacher engaged all the students in clarifying this linguistic knowledge. The children demonstrated their understanding by providing answers, which overlapped with the teacher's talk (lines 6 and 7; lines 8 and 9; lines 10 and 11). This suggested that students were confident in their understanding, and were thus willing to express their answers together with the teacher's clarification.

In alignment with the teachers' interviews, where memorisation was perceived as an essential thinking skill in learning a foreign language, Lei also reported that she would devote teaching time to assisting students to memorise language knowledge. This is a typical extract in which a teacher used repetition to focus on linguistic skills. It entails an instance of structured practice, where the teacher emphasised that memory is the key to learning language. In line 14, the teacher

invited students to repeat sentences after her. From lines 14 to 33, the students repeated and practised the sentences. This was a way to strengthen and deepen students' understanding of this grammar rule. In line 22, the teacher asked the students again to check their understanding, and they showed that they had understood it so were able to produce it. This teaching practice is in line with the teacher's belief that practising is the best way of learning English.

5.4.2.7 Wait time

An increase in wait time has been shown to be a technique that develops students' thinking skills as well as their language. There are a number of extracts which show that teachers used wait time to promote students' learning and thinking. Below are two examples, which are taken from the extracts presented above in order to provide a clearer focus on the interaction patterns and for the convenience of the readers.

There were two functions identified in the use of wait time. First, it was used as time for the learners to adjust and engage in further thinking during the interaction. For example, in Extract 5, Wei asked students to further explain their given response as a way to stimulate their thinking (line 12). She allowed the students 4.4 seconds before one student responded with a reason in Chinese (line 13). This suggested that students had engaged in further thinking. By extension, if provided with more time, there might have been more students who would have presented their own ideas in English. Below is an example from Extract 1 which reveals that the student managed to rephrase his response with the support of the increase in wait time.

Example 1 (from Extract 1, Wei, Year 6).

1. T: The (/ði/) earth
2. S5: The (/ði/) earth is::
3. Ss: was/was/was ((noise))
4. S5 :(9.2) The earth was strong before, it weak now.

In Wei's teaching practice, S5 was trying to express his ideas in English. A grammatical error was pointed to by the other students (line 2), but Wei did not

provide direct corrective repair; instead, she allowed peer-repair correction (line 3). The teacher did not interrupt and take a turn; instead she waited for 9.2 seconds and the turn then returned to S5. This could be categorised as wait time type II – “pauses following a student finishing speaking and then continuing their turn” according to Ingram and Elliot’s (2016, p.42) categorisation (see section 3.9.3). They suggested that type II wait time is normally longer than type I wait time as the teacher needs to wait for the students to decide if they want to continue the turn. S5 continued his turn after consideration of the peer feedback and presented his ideas using the correct form (line 4). Thus, the increase in wait time provided by Wei facilitated the development of the student’s language and thinking skills, as indicated by S5 providing a logical and imaginative response which demonstrated HOT skills.

Secondly, it has also been identified that the use of wait time allows for time to think before students engage in group work or present their initial responses. Two teachers provided time for the students to think individually before collaborative group work, which might develop students’ reflective thinking (see section 3.3.2). For example, in extract 8 (lines 3-5), Wei provided several pauses with sufficient wait time for the students to think individually, which implies that students might have been engaging in ‘inner dialogues’ in which they were developing their reflective thinking (Li, 2015; see section 3.3.3). Likewise, in extract 13, Lei allowed 3.2 seconds of quiet time for the students to think and explore the reason why she would use ‘he or she’ differently in the question (lines 1-3). The learners used this pause to analyse the teacher’s expression so as to understand this grammar rule. This wait time provided students with an opportunity to engage in ‘inner dialogue’ and to use different thinking skills to understand the teaching content; what they produced was correct and they demonstrated that they had understood this information.

Example 2 (from Extract 6, Lei, Year 3).

1. 总结一下通过这个问题你发现了什么(3.5) ((Summarise it, what have
2. you discovered in this exercise))
3. S1:((Raise hand))
4. T: NAME 想到了 ((Think of...))
5. S1: 平常读的都是缩写 ((What we often read is in contractions))
6. T: Em, 平常读的都是缩写, 对吧? ((What we often read is in
7. contractions, right?))
8. T: 你有没有发现 is, am, are 还发现了哪些怎么用. 什么时候用 is 什么
9. 时候用 are 什么时候用 are ,你总结一下 (3.4) 四人小组讨论一
10. 下.ok.((Have you found out the pattern of using is, am and are (3.4)? Try
11. to summarise it and discuss in groups of four))
12. Ss: ((student discussion))(40.2)
13. T: 有没有同学能想到前面是什么情况用 is 什么情况下是用 am 什么情
14. 况下是 are 有没有总结得到, 想到一点也可以 (4.7) ((Can anyone tell
15. me what you can think of according to the previous task, when we
16. should use is, am, and are, even if it is only one point would count (4.7))).
17. S2: ((Raise hand))

The first pause took place when Lei asked the students to uncover grammar rules in the exercise and waited for 3.5 seconds (line 1), before S1 raised his/her hand to express his/her initial thoughts (line 3). This use of wait time by Lei allowed students to engage in deep thinking. The length of the pause would have to be decided by the students, as one of them would raise their hand as an indication of a contribution. Therefore, this wait time fits into wait time type I (i) – “pauses following a teacher finishing speaking and a student starting to speak” (Ingram & Elliot, 2016, p.42). Ingram and Elliot (2016) suggest that an extended wait time that is longer than three seconds is likely to increase the respondent rate, as the students might feel obliged to speak. In this example, the increase in wait time also functioned as an indication of reflective thinking (see section 3.3.2), allowing students to engage in thinking before answering the questions.

The second wait time, in which Lei waited for S1 to explain the grammar rule (line 9,) was 3.4 seconds long. S1 failed to explain the grammar rule, and Lei took the

next turn which consisted of instructing the students to work in groups. This is a type I (ii) wait time, in that the teacher paused and then took the next turn (Ingram & Elliot, 2016). Although the increase in wait time did not increase the respondent rate in this instance, it gave the teacher an indication of the student's learning process, and Lei demonstrated flexibility in their interaction through initiating group work to help develop students' thinking and learning of the grammar rules.

The third wait time, of 4.7 seconds, was given by Lei when she started a new turn by engaging students in the interaction again (line 14). Lei also encouraged the students to contribute by saying that *only one point would count*. This wait time is also a type I (i) in that the student took the turn when the teacher had finishing speaking. With Lei's encouragement, students were willing to present their responses as their answers would not be treated as problematic in the interaction (Ingram & Elliot, 2016). The responses were in Chinese yet involved a complex thinking process. Students could be seen to have developed their English linguistic knowledge through engaging in thinking actively during the wait time.

5.4.3 Summary

There were opportunities identified in the video recordings in which students' thinking skills were developed. The thinking skills overlap but each of them has their unique features, and therefore I have categorised the HOT skills according to their usefulness in language learning (See Table 5.5).

Table 5. 5 Higher order thinking skills promoted in class

Thinking skills	Features/skills	Participants			
		Han	Mei	Lei	Wei
<i>Creative thinking skills</i>	Imagination	✓			✓
	Comparing and contrasting				✓
	Playfulness	✓			
	Possibility thinking				✓
<i>Critical thinking skills</i>	Reasoning				✓
	Disposition				✓
	Sceptical views				✓
	Reflective thinking				✓

	Evaluating				✓
Summarising	Comparing and Contrasting			✓	
	A role of reflection			✓	
	Analysing			✓	
	Drawing inferences			✓	
	Understanding			✓	

It can be seen from the table above that teachers developed different types of HOT in relation to various skills. However, Mei did not promote HOT skills in class. This could be due to the age group that she was working with (year two, aged 7-8), as she believed that HOT skills would be more suitable for the more cognitively developed students (for example, those in Years 5 and 6) (see section 5.3.2.2). Wei, who agreed with Mei and who was responsible for Year 6 students' learning, had a number of episodes in which she developed learners' creative thinking and critical thinking skills. This suggests that Mei's and Wei's teaching beliefs affected their teaching practices. Nonetheless, although Han and Lei stated that they would emphasise the development of students' knowledge of the language rather than their thinking skills (see section 5.3.2.4), their teaching practices revealed that they both promoted students' HOT skills. This shows that there is a discrepancy between teacher's beliefs and their teaching practices. HOT skills were promoted in Lei's Year 3 class, for example, but this contradicts the claim made by Wei and Mei that 'the older the student the better' with regard to the development of students' HOT skills. Additionally, summarising is identified differently from the literature in this study. It is a complex thinking process in which one needs to use different skills in order to summarise their thinking to produce a reasonable response.

Besides the above, overlaps among thinking skills were identified in extract 7 and extract 8. It was discovered that in order to solve the environmental problem, students needed to expand their minds and seek a possible solution. Problem-solving skills are involved in both creative thinking and critical thinking. For one thing, learners need to look for multiple possible solutions in order to solve the problem, which requires them to expand their minds with creative thinking. For

another, the ideas provided by the learners were justified and reasonable. There was a possibility that students were involved in reflective thinking (extract 8) in which they needed to engage deeply. Therefore, the responses provided by the learners were a mixture of creative thinking and critical thinking skills. The characteristics shared by creative thinking and critical thinking were also defined by Wei, based on her conception of thinking skills.

Teachers used a number of pedagogical strategies and methods to develop students' thinking (see Table 5.6).

Table 5. 6 Strategies in promoting students' thinking skills

Teaching practice	Creative thinking	Critical thinking	Summarising with analysis	Memorisation with understanding
Collaborative learning	Wei		Lei	
Teacher questioning		Wei		
Teacher's feedback	Han and Wei	Wei		
Teacher's instructions			Lei	
Increase of wait time		Wei	Lei	
Creative teaching	Han and Wei			
Using real-life topics		Wei		
Repetition (memorising with understanding)				Lei and Mei (see section 5.6.5, extract 21)

It can be seen from the table above that teachers had different ways of developing thinking skills. Collaborative learning facilitated students in the development of HOT skills such as creative thinking and summarising with analysis. They co-constructed knowledge and their responses, presented in class, were productive.

Similar to their reported practice, teachers' questioning and feedback created the space and opportunities for students to develop their thinking skills. Non-verbal feedback was found to be useful (see extract 5), as it fostered an atmosphere in the class in which students' voices mattered, which in turn served to develop students' thinking skills. Besides this, Han acknowledged at one time, as feedback, that she did not know the answer to a question, which suggested that she was not the knowledge holder that she and expected ideas from the students (see extract 2).

Wait time was found to be significant in improving students' thinking skills. Learners used the pauses to engage in inner dialogue, which entailed complex thinking processes using various skills such as comparing, contrasting, analysing, drawing inferences, and being reflective and critical (see extracts 1 and 5).

Echoing what the teachers had said about their practice, creative teaching methods were used, in alignment with the requirements of the English Curriculum Standards, as a way to facilitate students' language learning and to promote their HOT skills. The result showed that teachers used cross-disciplinary topics (for example, science and the arts) to trigger students' creative thinking skills, including using metaphors to describe their thoughts in English, creative problem-solving skills for environmental problems and using their imagination to create Halloween masks. Designing Halloween masks was considered to be a way of experiencing Western culture and a way to develop their creativity. The teacher spent 10 minutes (1/4 of the teaching time) in class asking students to share their creative works with others. This implies that the teacher was willing to spend time developing students' creative thinking.

Furthermore, teachers used real-life topics to increase students' learning interests. The use of real-life topics is required in the ECS, as it is expected that students are able to use English outside the school. The findings show that students were willing to participate and that they had used critical thinking skills to solve a real-life problem. This echoed the teacher's conception of thinking skills, as the teacher stated that thinking skills are life skills which are useful for students to face future challenges and solve problems. Therefore, real-life topics

would be useful for students to develop thinking skills and prepare them to enter the unforeseen future.

As memorising is an essential thinking skill for EFL learners, Lei demonstrated the use of repetition to help students to memorise knowledge of the language. However, this was not just rote memorisation since the teacher had asked the students to analyse the grammar rules before employing repetition in class (see extract 13). Therefore, the students had understood the knowledge before memorising it. Hence, the function of memorising is to strengthen and deepen understanding. A similar moment was identified in extract 9. Repetition drilling was also used in Mei's teaching practices, which correspond with her previous learning experience. Her teaching practices will be presented in the next section.

5.5 Potential opportunities to develop thinking skills

There were opportunities with the potential to develop thinking skills uncovered in the recordings. These moments are considered to be the instances which could have led to developing students' thinking skills.

5.5.1 Potential moment to promote higher-order thinking skills

Below is an extract from Wei's class. It includes moment in which there was the potential to develop students' creative thinking, yet, the teacher failed to grasp this opportunity.

Extract 14 (Wei, Year 6)

1. T: But when you go to a dirty park, what:: will you do(1.8) Go away?
2. Ss: Yes
3. T: Bye bye go home?
4. Ss: Yes.
5. T: Maybe yes. What will you do, what you what will you do (1) think about it (2)
6. You try ((invite S1))
7. S1: I will clean it.
8. T: You will clean it. You will pick up the trash, maybe, em huh. Good boy. Very
9. good boy. What will you do=
10. S: =Me too
11. T: You too? hahaha
12. Ss :((Laughing)).

13. T: I'm I'm happy to hear that. You too. That's good, and so do you, that's good.

The nature of the task implied potential opportunities for students to develop their creative thinking and critical thinking in relation to problem-solving skills. For example, in line 1, the teacher created a scene for the students, and asked them what they would do if they were at a dirty park. This provided students with an opportunity to develop their imagination and possibility thinking since they needed to assume they were in that situation. However, the teacher "missed" this opportunity as she proposed *go away* (line 1) and *bye bye, go home* (line 3) as the options. Thus, students' thinking was restricted and they only produced short answers (line 4). In line 5, the teacher re-opened this opportunity and asked the students to think. This is a moment which clearly demonstrated the teacher's intention to promote students' thinking.

Wei also provided 2 seconds of wait time before inviting S1 to answer. S1 imagined that he/she would clean the park (line 7). The response S1 provided indicated that, provided with sufficient wait time, children can produce meaningful and accurate language. However, Wei did not expand on S1's response, though, for instance, asking further questions (for example, *what would you do to clean up the park?*). Wei briefly explained the student's meaning, which restricted the opportunity for other students to develop their imagination and consider the possibilities with regard to what they would do to clean the park. Wei could have used this opportunity to further develop their thinking skills. She tried to invite another student to answer, but the student provided an answer immediately. As this student agreed with S1's response, Wei could have used this opportunity to seek the reasons behind this or could have developed this response further. In the end, the teacher closed down the opportunity by stating that she was happy that students would clean up the park.

Additionally, the nature of the task is problem-solving; in this case, there was also a potential opportunity for the teacher to develop critical thinking as she required students to evaluate and provide reasonable solutions to the problem. This teaching practice confirms the teacher's perception of thinking skills as a set of abilities to develop. Overall, the teacher created an opportunity to develop

students' higher-order thinking yet failed to take it during the classroom interaction. This could be explained by the contextual factors which influenced the teacher's pedagogical choice, as she mentioned that limited teaching time made it difficult for her to promote students' thinking as she had to cover subject knowledge in this exam-driven education system.

The following extract is from Han's class, and was analysed in section 5.4.2.4. It was found that this teacher tried to teach creatively in class.

Extract 11 (Han, Year 4)

1. T: OK, now children, can you...make a picture with this (2.1) Make a fruit man (1.8)
2. S: OK. I try.
3. T: OK. What can be his body, a watermelon?
4. S: Watermelon yes!
5. T: A watermelon can be the body.
6. T: and, what can be the eyes(1.5)
7. Ss: °Apple°/Cherry/cherry/Cherries!
8. T:((Raised her hands)) NAME.
9. S6:Cherries
10. T: Cherries can be his eyes.
11. T:((points to ears))
12. Ss: Oranges ((loud noise))
13. T: Ears, ears. ((Invite S7))
14. S7: A pear.
15. T: Pears can be his ears.
16. Ss: Teacher! Watermelon/Banana! ((loud noise))
17. T: and bananas yes. ((loud noise))
18. T: NAME 请你来((NAME please, discipline))(3.5)What can be put into the
19. picture (7.8) Think about it. Sit down please. Watch carefully and see the fruit::
20. man. ((Show her fruit man)
21. Ss: wow.

The focus here is that there are potential opportunities for teachers to further develop students' creative thinking in relation to imagination. In line 2, one student proposed that he/she would like to try to make a fruit man. This could have been an opportunity for the student to use their imagination and express their ideas. It also indicated that the child was trying to engage and actively participate in this

activity. However, this was ignored by the teacher. Han closed down the opportunity for students to elaborate on their thoughts in English, and instead proposed her own idea (lines 3 and 5). She applied closed questions with her ideas, which are a way to check students' understanding rather than to elicit students' thoughts, which is done through open questions. Without effective feedback or expansion of students' responses, this type of closed question hindered the students from developing their creative thinking.

In the meantime, this obstructed any space the students had to develop their language. In line 5, Han finished the sentence in her own words. She did not offer students the chance to play with the language. This was further evidenced in lines 6 and 10. In line 6, the teacher asked *what can be the eyes*, and students provided short answers; in line 10, the teacher provided feedback with a complete sentence – *cherries can be his eyes*. This clearly shows that the teacher was restricting students' thinking skills as well as their language development. It was identified in 5.4.2.4 that students' responses could be imaginative as they needed to relate the fruit in their mind to the current situation which required them to engage in deep thinking. However, it could also be interpreted as a way of retrieving information, as students were proposing different kinds of fruit rather than contributing their ideas in full sentences.

What is more, it could be seen as a guessing game, meaning that students were guessing the answers they thought the teacher might be wanting. For example, in line 11, the teacher used gesture to encourage students to propose a fruit which could be the ears, and in line 12, the given response, *oranges*, seemed to be the wrong answer as the teacher emphasised ears verbally in line 13. This was in contrast to the beliefs she had expressed about expecting diverse responses from students. Therefore, S7 guessed *pear* in line 14, and the teacher confirmed this answer by completing the whole sentence in line 15. Han did not correct S7's language directly but reformulated the sentence with the plural form of pears. Thus, it is suggested that the teacher had her own answers, and the students seemed to be required to guess the right fruit to match the fruit man. As a result, this creatively designed activity turned into a guessing game, which was not helpful in developing students' HOT skills.

From lines 18 to 20, the teacher re-opened the opportunity for the children to express their thoughts in English, which could have been another opportunity for the children to develop creative thinking skills. Han invited students to think and create the fruit man. In lines 18 and 19, she provided wait time for one student to produce an idea; however, this student was unable to produce anything. This could be due to the fact that this student was called before he/she had any ideas, and it could also be because not enough time was given for this student to generate his/her thoughts in front of the class in English. However, the pause was also given to the rest of the class and the teacher could have invited another student to share before she showed her fruit man (lines 19 and 20).

5.5.2 With a focus on real-life topic tasks

The intention of the following extract was to ask what food the students would like to bring for an outing, which had the potential to develop students' imagination and possibility thinking. It was a real-life topic which the teacher initiated at the beginning of her class. The extract below was a continuation of extract 9 in which where they had enthusiastically discussed the field trip that was going to take place.

Extract 15 (Wei, Year 6)

1. T: I think so. Every outing day, you prepare junk food. I know that. 都是准备
2. 垃圾食品((Chinese translation))
3. S: Too much junk food.
4. T: Such as candy↑
5. Ss: No/No/No
6. T: Chocolate↑
7. Ss: Yes/No
8. S: Potato
9. T: Potato [is not junk food OK.
10. S: [Chips/chips/chips
11. T: Chips, yes.
12. Ss: Chips/chips
13. T: Chips, fried chicken maybe.
14. S: Chicken
15. T: And then what else.

16. S: Pizza
17. T: Pizza I like pizza. What else?
18. Ss: Sandwich/cola
19. T: Maybe K.F.C.
20. Ss: Hamburger/Cake ((loud answers))
21. T: Are you going to [... are you going to take some
22. Ss: [loud answers
23. T: Are you going to take some noodles?
24. Ss: Yes/No
25. T: Dumplings
26. Ss: No.
27. T: Maybe fried rice, 炒饭 ((Chinese translation)) right
28. Ss: Yes/No
29. T: and...are you going to eat some ice cream
30. Ss: Yes/no/no/no
31. T: Don't eat too much ice-cream
32. S: I don't like ice-cream
33. T: and how much money would you like to take.
34. S: Three hundred.
35. T: Three hundred!?
36. Ss: Five thousand/No ((loud answers))
37. T: Only twenty yuan.
38. Ss: Twenty yuan/one thousand/one thousand.

The topic of junk food did not engage the students much. For example, in lines 4, 6, 19, 23, 25, 27, and 29, the teacher could have invited children to use their imagination to propose what junk food they would like to bring. However, she closed down such opportunities by proposing a selection of food for students to choose from. In the meantime, students' language outputs were limited to yes or no answers (lines 5, 7, 24, 26, 28 and 30). What is more, instead of asking students why potato was a junk food, she proposed that potato was not junk (line 9). This showed that the teacher limited the space for them to develop the reasoning skills. Although in lines 15 and 17, the teacher asked for students' ideas, she closed down the opportunity again in line 21. She also ignored students' contributions and closed the turn in lines 20 and 22 when the learners

were presenting their ideas. Later, in line 33, she changed the topic and asked for students' opinions on how much money they would like to take. This time, the teacher re-opened the opportunity for students to develop their possibility thinking, and students played with the language and imagined the amount of money they would like to bring. This topic could have been further developed by allowing students to explain and imagine how they would like to spend the money. The whole development here showed that the teacher dominated the class by proposing her own thoughts. Many times, the teacher could have asked students questions such as *why do you think so?* and *what else could you think of?* so that the student could elaborate on their thoughts in English. This could have been a way of improving their English competence as well as of developing their thinking skills.

The following extract is from Han's class. It was related to the students' life at the weekends. The following extract is from Han's class. It was related to the students' life at the weekends. This dialogue could have led to thinking by providing opportunities to students for further participation and elaboration.

Extract 16 (Han, Year 4)

1. T: What do you do on Saturday, can you tell me (1.5)
2. T: On Monday we go to school, on Tuesday we go to school, what do you
3. do on Saturday? NAME
4. S1: eh...I go to English class.
5. T: You go to English class. You go to learn English, yes. Ok, let's see,
6. NAME.
7. S2: I go to dance.
8. T: You go dancing ↑ OK. What about you?
9. S3: I go to the math.
10. T: You go to the math class. ((Invite S4))
11. S4: I go to draw.
12. T: You go to the art class. What about you ((Invite S5))
13. S5: We...I (0.9)
14. T: You study En[glish, you study Math]?
15. S5: [I...I...I...I] I can play with the dog.
16. T: OK, you play with the dog ↑ that's fun ((Invite S6))
17. S6: I go to the dancing.

18. T: You go to the dance class. NAME.
19. S7: I...eh...I play the piano, and singing on Saturday.
20. T: OK. You sing and play the piano on Saturday. NAME. Do you go to the
21. English class?
22. S8: Yes.
23. T: Yes
24. S8: I go to English class.
25. T:OK. ((Invite S9))
26. S9: I play World craft.
27. T: Oh, he plays with computer games ((Smile and point at S9)).

The interaction between the teacher and the students was around an authentic topic, and the questions proposed by the teacher could have promoted students' everyday creative thinking, especially possibility thinking, and could have developed their imagination. For instance, the teacher could have asked, *what would you like to do?* instead of *what do you do?* during the classroom interaction (line 1). In this episode, the students reported the things that they do on weekends, which entailed retrieving information rather than developing HOT skills. In terms of language development, the teacher could have asked follow-up questions such as *why?* or enquired into their feelings about the activities they do at the weekends instead of repeating their responses (as in lines 5, 10, and 12). It is important for the teacher to provide space and opportunities for students to elaborate on and expand their thoughts in English.

For example, the teacher could have increased the wait time to allow S5 to deliver his response, however, she waited for 0.9 second and interrupted him by proposing her own thought (line 13- 14 In line 15, S5 successfully demonstrated his /her ability to express their thinking in English, and this was evidence that increasing wait time could help students to form their ideas and express the fully in the foreign language. In line 16, the teacher could have asked about S5's feelings about playing with the dog instead of concluding with *that's fun*. In lines 20 to 21, the teacher invited S8 to respond to the closed question – *Do you go to English class?* but S8 was left with no choice and responded with a short answer (line 22), completing the turn in a full sentence (line 24). In fact, there could be other activities that S8 would like to do on Saturdays. The sentence

presented by S8 (line 24) could be seen as evidence that the students were practising the sentences rather than describing and sharing things that they would normally do at weekends.

However, similar to the previous extract, the teacher's pedagogical choices could have been influenced by the performative framework of the Chinese education system in which the pedagogical aim of this lesson was to practice a dialogue in English (in a way that is similar to drilling) rather than the aim being based on a thinking-led pedagogy. Although the questions teachers asked could have been more thought-provoking in order to create a "what if" scenario to develop possibility thinking, the teacher chose instead to strengthen the subject knowledge seen as being essential for exams before introducing a thinking-based activity which was also mentioned in her interview (see section 5.6.10).

5.5.3 Summary

The four extracts discussed above show that the teachers had potential opportunities to develop students' thinking skills; the teachers did create the space for students to develop their HOT skills. However, perhaps restricted by contextual factors such as limited teaching time and the exam-driven pedagogy, or perhaps because of their fragmented understanding of thinking skills, the teachers did not exploit these opportunities to develop HOT.

For example, Wei did not provide space for the students to elaborate their thoughts in English in the problem-solving task; instead, she dominated the talk and provided her own assumption of students' response (extract 14). It limited the space for students to develop creative thinking and critical thinking skills, such as reasoning, evaluating and possibility thinking. Other examples (extracts 11 and 15) also demonstrated that teachers offered limited space for the students, which led to a situation where students only produced short answers such as yes/no or a single word which was not useful for them to develop their thinking skills and foreign language. Wei and Han could have modified their questions into an open-ended form allowing them to present their individual perspectives, as well as provide effective feedback. These two extracts revealed that students

were not required to engage in complex thinking as they needed to either agree with teacher or guess the expected answers.

As shown above, a real-life topic could be used to promote students' thinking skills. In extract 16, there were moments which the teacher could have asked *what would you like to do* as an opportunity for students to imagine what they would like to do on Saturday instead of retrieving the information and report what they do. Provided that the aim of the task was to practise sentence structure, there were interruptions which discouraged students from presenting their thoughts. Similar to other potential extracts as presented above, the teacher dominated the talk and interpreted students' responses according to her own perspective; this would obstruct students' thinking development. The interruption closed down the opportunity for students to present their own thoughts and discourage students from practising the sentence structure.

5.6 Tensions and dilemmas in promoting thinking skills

This section considers the dilemmas teachers face and the tensions they experience with regard to teaching thinking skills in class. They all expressed a willingness to teach such skills and put forward their views on developing thinking skills in the previous sections. However, when situated in their actual teaching context, two teachers admitted that they regarded students' academic achievements as their primary aim and that enhancing students' language skills and knowledge were their major concerns. Hence, the factors which stopped them from promoting thinking skills will be presented in this section.

5.6.1 Insufficient knowledge in defining thinking skills

The findings from section 5.2 revealed that the participants experienced difficulty in defining thinking skills. Lei's view, particularly, implied that she believed creative thinking referred to a reproduction process. Below is an example from her teaching practice, an extract which focused on students' practice of sentence structure.

Extract 17 (Lei, Year 3)

1. T: How about me, you can also say what ↑ about me, what about me. OK.
2. Follow me. What about me
3. Ss: What about me
4. T: How about me
5. Ss: How about me
6. T: What about me
7. Ss: What about me
8. T: OK. 那是我呢那你呢((it is about me, how about you)) [你呢
9. Ss: [you/you/you/you
10. T: Who can say, wow, 谁会创新一下 ((Who can be creative)), NAME.
11. S16: What about
12. T: How about, what about me
13. Ss: You/you/you/you
14. S16 :((Unclear))
15. T: How about you. Very good. How about you 或者是 ((or)) ↑:: [what about
16. you]
17. Ss: [How/What
18. about you]
19. T: OK.

This extract reveals Lei's understanding of creativity in practice: she regarded drilling practice (lines 1-7) as a way of being creative (line 10). In fact, the students were repeating structural pattern orally and imitating the teacher's model (line 2). Thus, the main focus was on accuracy rather than on promoting creative thinking skills. It can be seen above that the children were provided with intensive practice of this sentence structure. This could be a way of deepening their memorisation of the structure. Lei applied substitution drills to elicit another sentence in which one word had changed during the drill (line 8 and line 15). She identified such responses as creative (line 10). However, drilling is a key feature of the audio-lingual approach, which emphasises mastery of the target language. In this extract, the students were asked to replace *me* with *you*, and *how* with *what* and is therefore, an activity which assists with students' memorisation of this linguistic knowledge. Nonetheless, Lei understood being creative to mean producing a new

sentence through applying new words in the same sentence structure. However, the students' responses did not constitute something new but simply reproduced knowledge. This shows that Lei might not have sufficient knowledge of teaching creative thinking in class, which echoes her claims in the interview, as discussed in the following section.

Mei pointed to her concerns regarding insufficient understanding of thinking skills throughout the interview and our informal conversations. She maintained that the fundamental question to ask was *what are thinking skills?*

We need to understand what thinking skills are in order to promote them in class; and to develop appropriate teaching activities or lesson plans regarding this area.

Mei reflected that teachers needed sufficient background knowledge if they were to develop students' thinking skills in class. She considered herself to be lacking in this professional knowledge and was eager to develop this. A lack of professional knowledge of the concepts of thinking and of approaches to teaching thinking could be the reasons why she was not positive about teaching thinking skills to young children.

Wei concluded that insufficient knowledge of how to develop thinking skills created tension for teachers. She argued that where teachers lacked sufficient knowledge in this area, they needed to study on their own. It seems the teachers puzzled over the design of relevant and effective tasks and struggled with the preparation time. They were likely to either give up teaching thinking skills - as they would not be evaluated in the exams - or would stay up late to prepare their classes.

5.6.2 Insufficient pedagogical knowledge for teaching thinking.

Teachers reported that they did not have sufficient pedagogical knowledge to teach thinking skills. Lei explained that little content and pedagogical knowledge were barriers to them teaching thinking skills,

I have little knowledge of the concepts of thinking, and I have no idea how to develop them. This is because I have limited knowledge in this area.

Lei also argued that it was risk-taking for her to promote students' thinking skills, due to her insufficient understanding of this knowledge. She was afraid that she might mislead the students. Her concern was reflected in her teaching which was analysed in the above section (see extract 17).

Han shared the same concern,

I know little about teaching thinking skills and the theory, and I have no idea if I have implemented thinking skills' development in class or not. I wonder what other ways I can apply such a focus in teaching. I think my teaching would be better if I knew more about thinking.

The following extract is from Han's lesson; she believed that teaching creatively could facilitate the development of students' creativity. This task was similar to the task of making a fruit man (extract 11). Students were asked to create a stationery man from the given stationery. However, the teacher dominated the class and did not provide space and opportunities for the students to develop their creative thinking.

Extract 18 (Han, Year 4)

1. T: Children, we can make a fruit man and we also can make a stationery
2. man. Mr. Stationery. OK.
3. T: Stationeries, can you make a (5.4)
4. Ss:((Whispering))
5. T: What can be the head?
6. S:Pencil
7. T: Pencil can be the head?
8. S:Yes/Yes
9. T: OK. Body, body. The book can be the body. OK.
10. Ss: Ruler/ruler
11. T: OK. I have a Mrs. Stationery.
12. Ss:Wow...
13. T: See? What is this one? The book is his body. OK. and the ruler↑::are
14. his [legs
15. Ss: [legs
16. T:The erasers are his::[feet
17. Ss: [Feet/foot/feet
18. T:Feet

19. T: OK. The paper is his head. OK. 不是全部用到, 选择合适的就可以, 有一
20. 些创意 ((You don't have to use all the stationery, pick the those
21. that are suitable and have some creativity)) . OK. YOU can use the
22. rulers the reading glass. OK. If you have time, make a stationery
23. man like this.

It was clearly stated (lines 19-20) that this task was aimed at facilitating the development of students' creativity. However, there is little evidence in this extract that students had developed creative thinking. First, Han expressed her own ideas instead of asking for students' ideas. In line 3, the teacher waited for 5.4 seconds but she did not invite any children to express their ideas, although they were whispering about the task (line 4). In line 5, Han asked the children a closed question, and one student guessed *pencil*. The same happened later (line 7), when Han used a display question which did not elicit students' creative ideas and did not allow them to elaborate more. In line 9, the teacher expressed her own idea again and ignored other students' contributions (line 10). Instead of promoting students' creative thinking, the task placed more emphasis on vocabulary and sentence structure. For example, from lines 13 to 14, the teacher was trying to check students' understanding of the vocabulary by demonstrating the whole sentence herself. The students did not have the space to develop their language as they did not produce the sentence themselves. Although the teacher made it clear to the class that this task had the potential to develop students' creative thinking skills (line 19-23), the teaching practice did not reflect her purpose. This extract indicates that the teacher might have thought that the students had developed their creativity since she designed this creative task and aimed it at developing their creativity. There is also an indication that Han might have misunderstood that teaching creativity is the same as teaching for creativity and necessarily leads to creativity development. In fact, the task had the potential to develop students' creativity, but insufficient pedagogical understanding hindered Han's teaching.

In the following extract, Lei asked students to brainstorm different vocabulary items according to the alphabet and pronunciations. In her interview, she

presented this teaching practice as an example of promoting students' creative thinking. However, this task was about phonetics and how they work.

Extract 19 (Lei, Year 3)

1. T: OK now, J ↑ /dʒ/ /dʒ/ juice
2. Ss: J ↑ /dʒ//dʒ/ juice
3. T: Now who can say, J ↑ /dʒ//dʒ/ 还有什么 ((what else)), you please ((invite
4. S1))
5. S1: J ↑ /dʒ//dʒ/ jump
6. T: J ↑ /dʒ//dʒ/: [jump]
7. Ss: [jump]
8. T: Jump, OK. You ((Invite S2))
9. S2: J ↑ /dʒ//dʒ/ Jenny
10. T: J ↑ /dʒ//dʒ/ Jenny. Our friend Jenny. And you ((Invite S3))
11. S3: J ↑ /dʒ//dʒ/ Jeep
12. T: J ↑ /dʒ//dʒ/ Jeep ((driving)) Jeep. Yes, and you
13. S4: J ↑ /dʒ//dʒ/ (1.4) Zero
14. T: Nah, zero z /z//z/ zero.
15. T: Now, let's see J ↑ /dʒ//dʒ/ [Jam ((show then a picture))
16. Ss: [Jam
17. T: OK. 果酱 ((jam)) Jam. Follow me J ↑ /dʒ//dʒ/a [/æ//dʒ//dʒ/jam]
18. Ss: [/æ//dʒ//dʒ/jam]
19. T: OK. K /k/ /k/ you
20. S5: Kite
21. T: K /k/ /k/, Kite, anymore
22. S6: /k/ /k/ cake
23. T: Cake, it's c /k/ /k/ cake, OK. 蛋糕 ((cake)), and you
24. S7: K /k/ /k/ king
25. T: K /k/ /k/ king 王 ((king)) King. OK.

According to Lei's definition of creative thinking (see section 5.2.5), the vocabulary proposed by the students was evidence of the development of creative thinking. In line 1, the teacher provided *juice* as an example, and the students repeated this without the teacher instructing them to (line 2). The children would repeat the phonetics twice (lines 5, 9, 11, 13, 15, 22 and 24) then propose a new word. It was clear that this was an accepted and familiar way for

them to present and practise phonetics. In line 20, S5 did not repeat the phonetics. The teacher repeated the phonetics twice before confirming the pronunciation *kite*. The repetition of the phonetics was a way of practising their pronunciation in order to make it accurate. The teacher's repetition showed that it was a structured practice in which she modelled the practice again to allow others to follow. Thus, S6 followed the teacher's instruction and presented her idea according to the agreed rule. It is clear, therefore, that repetition was a way of learning in this extract. This was not a task which developed creative thinking; rather, the students practised and learned pronunciation through repetition.

In line 13, S4 gave a wrong answer, and the teacher corrected it by explaining and demonstrating that /z/ was the right phonetic for *zero*. This shows that the teacher was also checking the students' understanding of the phonetics in this task. Likewise, from line 5 to line 18 and lines 19 to 25, the children were practising phonetics and recalling vocabulary; here, the children were proposing vocabulary according to different phonetics rather than creating new knowledge. For one thing, the teacher checked students' understanding of the phonetics, and their pronunciation; they were engaged in repetition drilling, with a focus on practice so that students could become more familiar with the vocabulary and the phonetics, and therefore emphasised the accuracy of linguistic knowledge. For another thing, the children developed their learning through repetition in order to achieve memorisation along with understanding (see section 3.3.4). This is similar to in extract 17, where Lei perceived replacing one word with another in the same sentence structure as being creative. Therefore, in this extract, Lei might also regard proposing different vocabulary with the same phonetics as being creative. Nevertheless, as analysed above there was no indication that Lei helped students to develop their creative thinking.

5.6.3 Ignorance of playfulness

Playfulness is considered to be an aspect of creative thinking, and language use is a creative act. However, sometimes teachers would ignore playfulness and, in fact, regarded it as naughty behaviour.

Extract 20 (Wei, Year 6)

1. T: Do you know this man?
2. Ss: Yao Ming
3. T: What do you know about him ((raise her hand)) What do you know about
4. him, NAME
5. S1: He's very tall
6. T: I think so, anymore, he's very very tall, what else. What else, what can he
7. do ((invite S2)) you try=
8. S2:=He can play... the basketball
9. T: Yes, he can play basketball:: very [well
10. Ss: [Well
11. T: He's good at playing [basketball
12. Ss: [basketball
13. T: Very good, what else do you know (2) NAME, what do you know about Yao
14. Ming
15. S3 :(6.3)
16. T: You try ((Invite S4))
17. S4: He is a man
18. Ss: ((Laughing))
19. T: Say something meaningful OK, 讲一些有意义的东西 ((Chinese translation)),
20. NAME, do you know.
21. S5: He play the basketball
22. T: Yes, he can play basketball very:: [well] and what else do you know about
23. him.
24. Ss: [Well]
25. Ss : ((noise)) he is a Chinese
26. T: He is a Chinese man, and he is a good man, he's very kind and friendly. OK.
27. He is very kind ((write on the board)) and friendly, 非常的什么呀, 友善
28. ((very friendly)) OK. Very kind and friendly, thank you. So this is Yao ming,
29. and how about this?
30. Ss: Deng Yaping /Deng Yaping /Deng Xiaoping
31. T: What do you know about her ((raise her hand))
32. Ss :((Loud noise)) (2.3)
33. T: Her name is ↑
34. Ss: Deng Yaping
35. T: Yes, what else? (1.9) what else (1.4) you try ((invite S5))
36. S5: Her name is Deng Yaping

37. T: Her name is Deng yaping, yes. ((Raise hand))What else (1.4) What else,
 38. NAME, what do you know (4.7)
 39. S6: She can play ping pong
 40. T: Yes, she can ping pong... [Very well]
 41. Ss: [very well]
 42. T: She's good at playing [ping pong], and what else, what else (4.3) I know she is
 43. very, she is hard working, and her English is very very good. OK. Yes. Deng
 44. Yaping 退役之后进入大学学习英语非常好...So Yaoming and
 45. Deng Yaping =
 46. S: =China
 47. T: They are
 48. Ss: China/Chinese
 49. T: They are from:: [China
 50. Ss: [China
 51. T: and they are both very:: healthy ((write on the board)) OK.
 52. Ss: Healthy/健康 ((Chinese translation))

Wei used real-life topics to motivate students' learning. The teacher used two famous athletes to elicit the topic of health and asked students to present their knowledge regarding the athletes. Instead of asking students' opinions of these two athletes, she designed this task more as an activity in recalling the facts about the two players (lines 2, 5, 8 and 17). Thus, the teacher was requiring the students to retrieve information. In line 17, S4 proposed *He is a man*, which was a fact that everyone knew, and was an on-task response. Thus, this student was playing with the language. However, the teacher dismissed the student's idea and criticised the student by replying *say something meaningful* (line 19). This feedback was negative as it might discourage students' willingness to play with language and hinder their thinking development. Exploiting what the teacher had concluded about Yao Ming as *a friendly and kind person* (line 26-28), she could have extended S4's response (line 17) and asked the student *what kind of man Yao Ming is or what he/she thinks of Yao Ming*. It seems that the teacher did not really perceive playfulness as meaningful and treated it as irrelevant or was perhaps irritated by the student's response. She might have considered it as off-task.

Similarly, in line 30, one student was playing with the language. In Chinese, the pronunciation of *Deng Yaping* and *Deng Xiaoping* is very similar; they are two different people but both of them are very famous. The teacher might have heard this answer (lines 33-34) as she tried to confirm who that was, and everyone agreed it was *Deng Yaping*. The student had some fun by connecting the similar pronunciations together and stated *Deng Xiaoping* in class. This was not encouraged by the teacher. Besides this, students' knowledge of this topic was limited, as they could not provide further information about *Deng Yaping*, and therefore it is suggested that when teachers design thinking tasks, learners' performance and knowledge needed to be taken into consideration. Additionally, the teacher's ignorance of playfulness might be due to three reasons: insufficient knowledge of thinking skills, the need for classroom management to achieve teaching aims, and the lack of teaching time.

5.6.4 Student's reaction to thinking skills tasks

Students' performance in thinking skills tasks is a challenging issue for Wei. Wei believed that thinking skills development would not necessarily be supportive for teaching (see section 5.3.2.1). Besides, extract 20 shows that students need to have sufficient background knowledge of the task before participating in thinking skills' development. For Wei, lower-attaining students might not be willing to participate in the tasks as they regard such activities as too challenging for them, and as a result, their interest in learning English might decrease.

Mei argued that heterogeneity class was a factor which influenced her decision to develop thinking skills in class:

I'm teaching class A and class B now, and students from class B learn faster than students in class A. This is because they are much more focused on the task than the children in class A. So, I bring in more teaching activities as they are able to interact with each other after my class. Whereas in class A, children are more [physically] active and concentrate less in class, so they need to spend more time learning language.

In her opinion, she believed that 'concentration' contributed to effective learning. Later in her teaching practice, she demonstrated a structured way of teaching

where she emphasised discipline and required students to focus on her and the repetition-based task. She perceived 'active' as being opposed to 'concentrating' as she regarded active students as naughty ones who could not concentrate and stay on-task. However, children are always active, and being active can sometimes relate to active learning and active thinking. Children might get excited about expressing their ideas if they are presented with a familiar or interesting topic. However, according to Mei's statement, being active could be interpreted as misbehaving while concentrating could be defined as passively receiving knowledge. Mei believed that the 'concentrating' students could more effectively finish the textbook-based task so that she could implement thinking tasks in the class, and this influenced her teaching.

Han viewed students' different reactions to thinking tasks not as a barrier but as a dilemma. She worried that students had low motivation in the tasks or acted in a different way than she expected:

If they performed well in one thinking task, I might think this method is useful in developing students' thinking. However, if students were not interested in the thinking task, then I would stop teaching it. It is not a barrier for me in terms of their different reactions to the task, it is just that I'm not sure which method is the right one to attract their attention and develop their thinking at the same time, as they might behave so differently.

Therefore, unexpected student performance can have an impact on teachers' confidence in developing thinking skills in class, especially as they were lacking in experience of how to do this.

5.6.5 Classroom management

In her interview, Mei suggested that children learn more in a relaxed context (see section 5.3.2.4), and that she would therefore normally plan her lessons to include different activities, including videos, songs and conducive topics. In this extract, Mei related her teaching to famous characters which the students were familiar with. She showed students images of these characters on PowerPoint slides. The aim of this activity was to strengthen students' knowledge and the use of these two sentence structure in the tasks. 1. *This is...*; 2. *He/She is from...*

Extract 21 (Mei, Year 2)

1. T: OK children, I have some new friends for you. Who's this= ((raise her hand))
2. S: =This is
3. T: This is...
4. Ss: 超人 ((Superman))
5. T: Superman
6. Ss: Superman/超人
7. T: ((Point to the next sentence and raise her hand to ask student to say the next sentence))
8. (16.8) ((discipline)) ((point to the first sentence)) This is Superman ((point to second
9. sentence again then raise her hand)) (5.5)NAME
10. S3: He's from the U.S.A
11. T: Thank you, I have another friend. ((Show another picture))
12. Ss: 吓? ((What?))
13. T: ((raise her hand and discipline)) (12.1) NAME. One 第一个句子你来 ((you say the first
14. sentence))
15. S4 :(7.8)
16. T: Sit down ((raise her hand)) (3) 你来((your turn))
17. S5: This is 孙中山 ((Sun Yat-sen))
18. T: Right. 我们的城市就是以他的名字来命名 ((Our city is named after him)).This is 孙中山
19. ((Sun Yat-sen)). Sit down. Number two ((raise her hand)) 第二句话 ((the second sentence))
20. (6.5)
21. Ss: °China°
22. T: NAME 后面 ((at the back)), the girl
23. S5: He's from China
24. T: He's from China. Right?
25. Ss: Yes
26. T: Thank you, last one. ((Show the last picture)). Wow
27. Ss: ((loud noise))
28. T: [This is
29. Ss: (((loud noise))
30. T: 天线宝宝 ((Teletubby)) we say Teletubby
31. Ss: Teletubby

This was a typical lesson of Mei's. It was a large class with young children aged 7 to 8; they became easily excited and made a lot of noise constantly, especially when they saw the cartoon characters on the PowerPoint slides. Therefore, the

teacher had to stop from time to time to manage the class, which was time-consuming and annoyed her. However, Mei argued that interesting lessons increased students' motivation to learn and served to develop their thinking (see section 5.3.2.4). It was clear from the extract that the children were excited and she could have used these opportunities to develop students' thinking. Nevertheless, Mei needed to manage the discipline and, therefore, in lines 7-8, the teacher had to stop for 16.8 seconds to manage the class and had to stop for another 5.5 seconds (line 9) to wait for the students to raise their hands to answer the questions. In line 13, she stopped for 12.1 seconds, again to manage the class. In line 15, she waited for 7.4 seconds for answers and in line 20, she waited another 6.5 seconds for answers. This activity required more time compared to other classroom interactions in other teachers' teaching practices. Relating to the teachers' interviews, where they mentioned that their limited teaching time restricted them from developing thinking skills, this extract is an example of this. Mei emphasised the importance of 'concentration' and believed that concentrating lay at the centre of effective learning.

For Mei, completing the task was one way of demonstrating effective teaching. Therefore, Mei ignored students' excitement and did not exploit opportunities for students to develop their thinking skills and language through expressing their feelings and thoughts. She tried to direct students back to the structured way of learning -repetition of the sentence structure (lines 8, 9, 11, 13, 16, 17, 23, 30 and 31), as an effective way of learning English – through memorising. In line 15, S4 was silent for 7.8 seconds; however, the teacher did not assist this student but invited another child to complete the task. Perhaps it was because Mei needed to stop and spend time on discipline that she was rushed in completing the tasks. This could be the reason why the teacher did not open up a dialogue for the children but chose to focus on the structured way of teaching. It was easier for her to control, and therefore, it was difficult to develop thinking skills since she needed to manage the class.

5.6.6 Lack of teaching time

Lack of teaching time is a significant barrier to teachers developing thinking skills. Each EFL lesson lasts for only 40 minutes, and for Year 1 and Year 2 classes,

for only 20 minutes. The tight and overloaded syllabus and objectives dominated most of the teaching time; it would be challenging for teachers to allocate extra time to the development of thinking skills in class. With inadequate teaching time, teachers found that it was hard to try out thinking skills activities. Lei said that

It was a waste of time doing something that was not a hundred percent productive.

Without enough time devoted to teaching practices, teachers would not be able to see the impact of thinking skills development and adjust their teaching plans accordingly. Furthermore, all the teachers reported that managing class discipline had taken up some of the teaching time, especially with the younger learners, who could easily get excited. This was evident in Mei's recording. Most of her lessons were formed of three parts: repetition of sentence structures or vocabulary, songs, and classroom management. She had limited time for actual teaching so she often repeated the content in order to deepen students' learning. Most of the lessons were finished in a rush with an emphasis on discipline and the proper behaviour expected of the children. She requested that the recording was turned off when she was managing the class at the end of each lesson.

Another problem was student involvement. Wei reported that with limited teaching time, students would not have enough time to think, especially those who were under-achievers, who needed more time and support than other students. Without adequate time, students might gradually lose interest in activities involving thinking skills. Additionally, Wei complained that the teaching time was too short to cover the subject knowledge as well as the development of thinking skills, and it was challenging for her to involve all students in discussions.

5.6.7 Heavy workload

The participants explained that they were under pressure due to their heavy workload. Heavy workloads resulted from their engagement in a number of areas: lesson planning, school tasks, parents, the expectations of the school headmistress, and their daily life.

Because of their insufficient understanding of thinking skills, it was time-consuming to prepare to teach them. For example, Han used her own time to search for teaching materials on thinking but finally gave up:

I don't have time to search for materials for each lesson, as I have no idea what material is suitable for teaching.

She reported that designing thinking tasks added to her workload and put pressure on her.

Another example was from Mei's interview:

It is time-consuming for me to plan a lesson to involve teaching thinking skills. I need to spend extra time searching for materials from books or the internet, and I also need to develop my own knowledge of this area. Sometimes I need to revise the content of the textbook to make it suitable for children to develop their language as well as to promote their thinking skills. I would often need to stay up late if I wanted to implement thinking tasks in a particular lesson.

Mei's statement indicated that lesson planning dominated most of her time and that teaching thinking skills increased her workload. She also reported that the heavy workloads resulted from new textbooks and explained that she needed to spend time studying them and developing thinking tasks since there was nothing related to thinking skills development in the new teaching material. She complained that she was exhausted because of this heavy workload. As illustrated in Chapter Two, there are five teaching objectives in the English Curriculum Standards (language skills, language knowledge, emotions and attitude, learning strategies, and cultural awareness), and teachers were under pressure to cover all these five aspects in their teaching in order to achieve these teaching objectives. Han and Lei emphasised that teaching linguistic and language knowledge dominated most of their teaching and the teaching tasks for these two aspects were already fully loaded. Teachers stated that they lacked the time to prepare to teach thinking skills. Mei and Wei implemented thinking skills development activities in class, yet they confirmed that heavy teaching loads challenged their practice in this area.

Apart from the teaching tasks, schoolwork also took up teachers' time and energy. Mei and Lei reflected that they had no energy left to deal with the development of students' thinking skills. Lei was pregnant and felt tired easily. She needed to rest at home after her teaching rather than increasing her workload by preparing to teach thinking skills. Han and Mei, meanwhile, being head teachers of their classes, were responsible for different administrative tasks (see section 4.5.3), such as communicating with other teachers of other subjects, students' overall academic achievements, moral education, and various other school activities such as sports meetings. Mei complained:

I'm under tremendous pressure as I'm not only an English teacher but am also the head teacher of this class. I think the tension for me is to balance these tasks well; it adds to my workload to teach thinking skills as I don't have that much energy and time.

Similarly, Han complained about the workload at school. However, she is also a mother and a wife. Therefore, apart from the responsibilities she had at the school and for her students, she also needed to take care of her own child and to do the housework. After working at school, she found it difficult to deal with any schoolwork at home as she needed to spend time with her family. Therefore, she stated that it would be demanding for her to design thinking tasks for her classes. Furthermore, Wei stated that she sometimes faced a dilemma in developing students' thinking skills because the heavy workload prevented her from looking for teaching materials. As the director of the English department of this school, she was responsible for students' English academic achievements. She also needed to arrange other EFL teachers' teaching schedules and organise extra-curricular activities that related to foreign language learning (see section 4.5.3).

Above all, teachers complained that they were stressed as a result of the demands of their teaching and of the school workloads. It was not easy for them to teach thinking skills in class as they were not familiar with this area, an area which required time and energy to learn on their own. They were challenged pedagogically as they struggled to allocate sufficient preparation time to both subject content and to teaching thinking skills.

5.6.8 Different teaching beliefs on promoting thinking skills.

A number of dilemmas were identified during the interviews with the teachers. Lei was puzzled about the value of developing thinking skills alongside teaching the English language. She acknowledged that developing thinking skills facilitated students' language learning; however, to her, knowledge transmission seemed to be the most effective way to help students to pass exams. It was also noted that a lack of knowledge, time and energy decreased teachers' willingness to implement activities to develop thinking skills in class. For these reasons, Han and Lei did not regard the development of thinking skills to be as important as the development of other language skills (such as, for example, reading and writing), and their teaching approach did not include thinking skills development.

Wei also emphasised teachers' beliefs as one of the factors that influenced the teaching of thinking skills:

Teachers' beliefs are a primary aspect in teaching. The majority of teaching nowadays still focuses on knowledge transmission; children still learn through repetition. Therefore, teacher's beliefs should be changed if they are to implement thinking tasks in class.

Wei further explained why it is hard to change teachers' beliefs regarding the teaching of thinking skills:

People would not be able to tell how well they had developed their thinking because exam results don't show that.

Her statement indicates that the exam-oriented system influenced the teachers' beliefs regarding the development of thinking skills.

Mei perceived that teaching beliefs were a fundamental condition for the teaching of thinking skills in class. However, the dilemma for her was that the EFL teachers would be reallocated to different classes twice a year, different teaching beliefs would therefore be reflected in students' capacity to exploit thinking skills:

Students' learning habits develop according to teachers' beliefs and their teaching practices. If their first EFL teacher never taught thinking skills, it would be hard for the next teacher to carry out thinking skills activities.

The above view proposes that inconsistency in teaching thinking creates challenges for subsequent teachers to apply thinking skills development activities in class. As a result, it would be challenging for the teachers to decide which and what thinking skills to be promoted as they would not know if the children had been exposed to any of these thinking activities in their previous years of study. This dilemma might lead to teachers giving up promoting thinking skills in EFL classes.

During the informal interview, Lei said she was aware that there are a large number of packages for the teaching of thinking skills in Western countries. In her understanding, the idea of promoting thinking skills was imported from the Western educational system. She believed, however, that class sizes were different between China and the West, and that Western teachers were not as stressed as Chinese teachers. Thus, she doubted that the pedagogy of teaching thinking skills would be workable in the Chinese context. The very different educational system and learning styles to her meant that it might not be suitable for China to adopt the Western system of teaching thinking skills. She pointed out in particular, that managing the large class was a concern for her when teaching children English, and, therefore, that unclear would take up too much teaching time. This created a dilemma for her; if she were to be provided with different strategies or approaches to developing thinking, she would be worried about the effectiveness of the methods in a large class.

5.6.9 Insufficient support and training

Teachers stressed that they needed support - including teaching materials and in-service training - for them to develop their professional knowledge of thinking skills. It was demanding for teachers to develop thinking skills activities because they needed to carry out research and develop teaching tasks on their own,

I think my teaching lacks theoretical support, and I need to spend my free time learning the professional knowledge of thinking skills development.

(Mei)

Mei reported that teachers would promote thinking skills even though they were not confident about teaching thinking. However, her statement could also be

related to the heavy workload that challenges teachers to implement thinking skills in class. Lei expressed the view that teaching thinking skills should be aligned closely to the teaching content, yet that there were limited choices of thinking skills activities, which hindered the implementation of thinking skills in class if teachers did not seek material on their own.

Wei pointed out that the current teaching material was not good enough as its design was not based on the perspectives of thinking skills development. She further explained that the teachers' choice of materials was limited:

The city's education department coordinates EFL teaching, including the selection of teaching materials. Teachers are restricted from selecting other materials to teach.

Wei considered that it was ideal to say use the text book flexibly. In reality, teachers would not have that much time and energy to modify the textbook, since there were other school tasks to complete. Among the four teachers, only Mei insisted on developing tasks on her own, but said that it was time-consuming and energy-taking. However, in the classroom, little evidence was found that her teaching promoted thinking skills.

Similar to Wei, Han reported that she found nothing in the textbook related to thinking skills development and claimed that the editors of the textbook did not take the development of thinking skills into consideration. She also discussed her difficulty in developing her professional understanding of the field:

There are no sources and materials for me to develop my knowledge in the field of thinking skills. It was challenging for me to develop my own professional knowledge in this area.

This statement reveals the need for professional development and suggests that relevant guidelines and resources should be provided for teachers in order for them to develop their knowledge.

In addition, Han criticised the current teaching material as not being designed according to the MOE's requirements. The inconsistency between the teaching materials and the ECS hindered the teaching of thinking skills. Han highlighted

her confusion with regard to in evaluating how students' thinking had developed, and argued that both the ECS document and teaching materials were designed from the perspectives of outsiders, not from the students' standpoint:

Developing thinking has become one of the learning objectives in the English Curriculum Standards, but there isn't any support from the teaching materials or extra teaching time. They [the experts] recognise the importance of developing thinking skills but have left us with a puzzle to solve.

She explained that there were no criteria for thinking skills development. The inconsistency between the ECS and the teaching materials increased teachers' workloads and confused teachers with regard to practice. Surprisingly, faced with the various challenges and dilemmas, Mei still enjoyed teaching English through developing students' thinking skills. She agreed with Han and noted that she seldom related her teaching to the document as it was not practical:

The MOE sets rules and goals for teaching English. However, I think that goals should be set according to the students' competence not based on the experts' assumptions, and each teacher interprets the teaching material differently. So I would not apply this in my teaching; rather, I would teach thinking skills based on my students' ability. I'm also interested in teaching English through developing thinking skills.

However, as revealed in her teaching practice, there was little evidence that she did develop students' HOT skills. This could be explained by her belief that thinking skills' development was more suitable for more mature children and the children she taught were younger.

Additionally, all the teachers commented that they lacked training in teaching thinking skills. This was considered to be the reason for all participants' insufficient understanding of how to develop thinking skills. Han stressed this lack of training:

There was no training in this area and because of this lack of training, I don't have sufficient knowledge of the teaching of thinking skills; as a result, it is challenging for me to teach thinking.

Teachers also expressed their willingness to participate in teacher training in this field.

Wei stated that she had not received any training related to the development of students' thinking skills when she was a student teacher. She said that the training that she received was mostly related to teaching methods, such as the task-based learning approach. Similar to Wei, Han and Mei also proposed that they had not received training when they were student teachers. Lei, however, pointed out that she had received training from Wei when she was an intern in this school:

She presented a lecture about developing students' thinking skills when I was new to this school. She emphasised the importance of developing students' thinking skills and shared some techniques and strategies for doing this. However, I have never been systematically trained in terms of developing students' thinking skills.

Lei pointed to the need for systematic training in this field and proposed that one should know the theoretical framework for teaching thinking and appropriate methods for teaching thinking in the EFL environment. A single lecture from Wei would be far from enough.

In relation to training, Wei was grateful that the school was supportive of thinking skills development. She reflected that the school headmistress invited external experts for teacher training and curriculum development, and also allowed teachers to study and participate in research seminars and open classes. She perceived that this school provided great support in this aspect:

I think our school holds a positive attitude towards developing students' thinking skills. Regarding our department, although teachers might not teach a lot about thinking, they still have the awareness and willingness to promote thinking skills in class. Especially when they plan their lessons, they would consider integrating thinking in their teaching.

Unfortunately, the opportunities were not shared by all teachers and the training was far from enough. Among these teachers, only Wei, as the Head of the English department, would have had the chance to participate in external seminars and

training. Therefore, she seems to be 'the expert' who needed to take responsibility for teachers' professional training.

In addition, Mei suggested teachers' discussions about developing thinking skills were beneficial, as she always discussed things with Wei and they learned from each other to improve their implementation of thinking skills in class. However, due to their heavy workload, other teachers seldom spent time discussing the development of thinking skills. Mei also advocated that systematic training in this area was necessary. It would be helpful for curriculum development and syllabus design. She indicated that in-service teacher training would help. Further to this, with the support from students, parents, schools and government, Han would be willing to design classroom activities and improve her teaching.

However, Lei believed that the schools and the government were not supportive enough. She worried that the activities introduced by the experts were not practical or suitable for Chinese classes. For one thing, there was not enough teaching time to implement the activities as there was too much knowledge and information to cover:

I have participated in a workshop before, which focused on using different methods to develop thinking skills. However, it is too time-consuming to apply in practice.

Lei indicated that it would be helpful if the government and schools were to reduce their emphasis on exam results. Also, she lacked experience in developing thinking skills. Therefore, she agreed with other teachers that systematic training in this area would be helpful. With sufficient training and practice, teachers would become more confident and experienced in teaching thinking skills.

During several informal conversations, teachers were curious about the definitions of thinking skills as well as the approaches to developing them. They approached me from time to time and asked for articles about teaching thinking skills. In these informal conversations, their willingness and eagerness to develop thinking skills were obvious. This also revealed that they felt helpless about looking for support in developing their knowledge in this area.

5.6.10 The exam-oriented educational system

It has been demonstrated (see section 2.4.3) that examinations play a significant role in the Chinese educational system. The higher a student's achievement, the brighter the future s/he can have. Therefore, for some teachers, transmitting knowledge is an effective way to foster competitive exam-takers. However, there are no criteria for assessing the development of students' thinking skills. Thus, the dilemma they faced was between transmitting knowledge and facilitating the development of students' thinking skills. Han perceived herself to be a knowledge transmitter, as she believed that under her guidance, students would absorb the information they needed and perform at their best in the exams. Lei shared this view and indicated she was under pressure to facilitate exam success for her students.

In contrast, Wei and Mei stated that their teaching was learner-centred. However, they both indicated their concerns about students' exam marks, as the marks were influential in the students' future development. Mei talked about exams and the purpose of learning English:

The ideal way to learn English is to abolish exams. Students are forced to learn English to pass exams, which is not good as they eventually lose their interest in learning. The main reason for learning English should be to communicate with each other and share personal thoughts.

Her view implies that exams are a major barrier to students developing their thinking skills. Their thoughts were not valued and neither were their thinking skills developed within the restrictions of exam-oriented education.

This educational system also had a great impact on teachers' career development. Teachers' reputation and professionalism were judged and evaluated by the headmistress and by parents based on their students' exam results. Evaluations of teachers were regarded as important as they were influential in teachers' future careers. Therefore, Lei proposed that,

Thinking skills could be implemented in class only if satisfactory exam results were ensured.

This indicates that she regarded thinking skills development as something extra which could be omitted from her teaching, as it was not tested in the exams and irrelevant to evaluation.

Wei also believed that students' exam results affected teachers' careers:

The headmistress of the school would come to you if the students' exam results were not good enough. She would not care about the learning process or what other things you had developed in class; only the exam results matter. Given this situation, most teachers would just give up teaching other soft skills such as culture and thinking, and focus on teaching what is tested in the exams - language. This is more effective than other ways of teaching.

Parents' expectations were another aspect that needed to be taken into account. Wei indicated that parents always placed a great deal of pressure on them and Lei talked about the role parents could play:

Thinking skills are teachable only if parents show an understanding of them and place less emphasis on exam results.

Parents expected teachers to facilitate exam success for their children and to develop subject knowledge and prepare them for the university entrance examinations. They judged effective teaching according to children's examination results. Their comments and feedback were valued in the school, which had an impact on teachers' career development.

5.6.11 Summary

The challenges teachers faced with regard to the development of thinking skills have been demonstrated; teachers proposed several factors which prevented them from teaching thinking skills. The obstacles which teachers encountered and reported are summarised below.

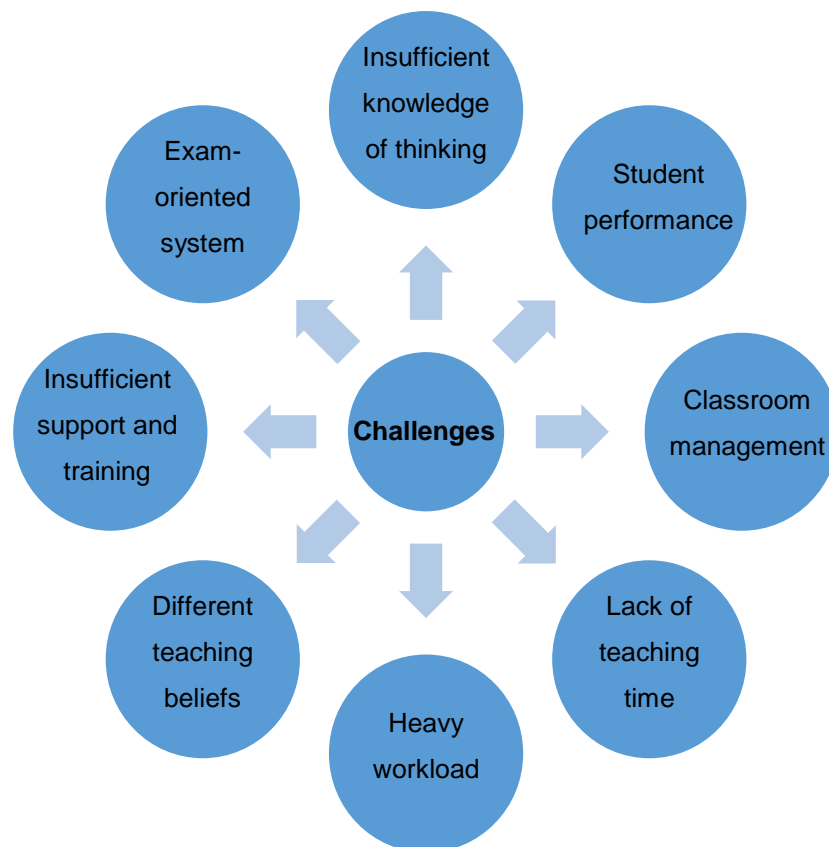


Fig.5. 2 Tensions and dilemmas in promoting thinking skills

First, teachers reported on their lack of knowledge about thinking skills. Their insufficient knowledge led to their insufficient pedagogical knowledge of how to develop thinking skills. As shown in section 5.2.5, Lei defined creative thinking as a way of reproducing knowledge; this echoed with her teaching of creative thinking, which was demonstrated in section 5.6.1. Her teaching practice reflected her insufficient knowledge of thinking (see extract 17). Similarly, Wei perceived playfulness as naughty behaviour and did not exploit the opportunity to promote students' thinking skills and language (see extract 20). She regarded students' responses as a disruption. Han might have misunderstood that creative teaching leads to teaching for creativity (see extract 18).

Student performance was another concern for the teachers. Wei commented that lower-attaining students might not actively engage in class as they might lack the necessary information and language ability to participate (see extract 20). Mei also believed that students 'being active' in class about the topic and feeling

excited at expressing their thoughts could be misbehaving, since such behaviour could make the class chaotic because of noise levels. Unexpected students' reactions would be a dilemma for Han due to the fact that she was unsure which method would work in class in terms of developing thinking skills.

Classroom management was found to be another obstacle to teachers developing thinking skills. Mei had to stop several times to manage her class, when students interrupted her teaching (see extract 21). This also prevented the development of students' thinking skills as there would not be enough time and space for learners to engage in deep thinking and express it. Classroom management also relates to limited teaching time (20 minutes of teaching for the Year 2 EFL class). For instance, it was challenging for Mei to develop students' thinking skills as the curriculum was full; hence, her class was formal and hierarchical since she was able to save time by managing the class in this way. Other EFL teachers also complained about the insufficient time available for developing an 'integrated competence of language application' in students, as required by the ECS. Lei expressed the view that it would be a waste of time to teach thinking skills since they would not be tested in the exams. Teachers also reported that they had heavy workloads; on the one hand, they were EFL teachers and needed to prepare their lessons plans before each session. On the other hand, they were also responsible for different administrative work such as organising extra-curricular activities, contacting parents and being responsible for students' overall academic achievements. Apart from the school work, their domestic roles also required them to take care of their families. They complained that they were under stress and it would add an extra burden if they needed to explore and design tasks and activities for developing students' thinking skills.

Different teaching beliefs among the teachers created another dilemma for teachers with regard to developing thinking skills. The EFL teachers would be reallocated according to the different stages of learning students were at, which would create inconsistency in the development of their thinking skills. Mei perceived this as a dilemma for her as she would not know if the former teacher had ever taught students about thinking skills. Lei questioned the effectiveness of teaching thinking skills in class, as she regarded that the pedagogy of

developing students' thinking skills was largely imported from the West and might therefore not be suitable for Chinese students.

Insufficient support and training was another factor which hindered teachers' efforts to develop students' thinking skills. They stressed that there was not enough pre-service and in-service teacher training in this field. The school only offered Wei, who was the director of the programme, the opportunity to participate in seminars and workshops for further development. Neither did the government provide enough support for the teachers. On one hand, the ECS stresses the importance of developing thinking skills, but there were no criteria made available and no framework for evaluation so that teachers could assess students' development in this area. On the other hand, teaching material, such as textbooks distributed by the government, was reported as lacking tasks that would serve to develop thinking skills. This inconsistency between the teaching material and the English Curriculum Standards created a barrier to thinking skills being developed.

Furthermore, the exam-oriented system was a major tension for the teachers. Han and Lei regarded this as the fundamental reason why more emphasis was put on teaching linguistic knowledge than on developing thinking skills. Teachers were expected to foster competitive exam-takers so that they could gain entry to better secondary schools as a step towards acquiring a place at a good university. The results of the exams were not only influential on students' futures, but also on teachers' career development. Teachers' reputations and professionalism were evaluated according to exam results. Parents also expected teachers to facilitate exam success and judged the teachers' ability based on this.

In summary, opportunities for and obstacles to developing thinking skills were found in data gained from the observed lessons as well as from the interviews; these revealed the moments which promoted or obstructed students' thinking. In the next chapter, I will discuss the key findings, comparing these with the wider literature and current research studies.

Chapter 6 Discussion

6.1 Introduction

In this chapter, the key findings with regard to the four research questions will be compared and discussed with reference to the relevant literature. Below is a summary of the key findings for each question:

Research question one:

- A concept of “English thinking” has been introduced; it is subject-specific.
- Generic understanding of HOT skills has been identified.

Research question two:

- There are conflicting teaching beliefs regarding the teaching of thinking skills.
- Memorisation has been identified as the essential thinking skill in language learning.

Research question three:

- Opportunities - teachers used opportunities to promote thinking skills explicitly and implicitly through the use of teachers’ questioning and feedback, collaborative learning, the increase of wait time, real-life topics and teaching creatively.

Research question four:

- Challenges found to prevent the teaching of thinking skills included teachers’ insufficient content and pedagogical knowledge of teaching thinking skills on the part of the teachers, and contextual factors such as the exam-oriented educational system and limited teaching time.

This chapter is structured around what was found in response to the research questions. Teachers’ conflicting beliefs regarding the promotion of thinking skills were identified. They recognised the significance of thinking skills; however, some of them were unwilling to promote them in class due to a number of factors, including their subject and pedagogical knowledge and contextual factors. Opportunities for promoting students’ thinking skills were identified from the video

recordings. The results showed that teachers used different strategies to promote students' thinking, such as collaborative group work, the use of teacher questioning, increased wait time and the use of real-life topics. Additionally, potential opportunities were discovered, which could have been adjusted into different pedagogical strategies to facilitate students' HOT development. Tensions and dilemmas, such as insufficient knowledge of thinking skills and the exam-oriented system, challenged teachers' willingness to promote thinking skills, as well as obstructing the development of students' thinking.

6.2 Discussion of teacher's conceptions of thinking skills

Although teachers reported that they had insufficient understanding of thinking skills, they have demonstrated their sophisticated thinking in defining them, and their conceptions of thinking skills can be categorised into the notions of "English thinking", creative thinking skills, critical thinking skills, summarising with analysing, and memorising. In the following section, I will discuss the teachers' understanding of "English thinking", and the teachers' understanding of HOT skills, including creative thinking, critical thinking and summarising with analysis. The connections between these thinking skills have been identified and will be further discussed in section 6.3.

In terms of the nature of thinking skills, teachers perceived them as life skills which prepare students to face future challenges. Although teachers did not mention the P21 framework, in which higher-order thinking is one of the core skills or competencies to develop, their understanding of thinking skills is shown to correspond with it. Across the different international P21 frameworks, the promotion of students' thinking is one of the categories that is focused on. For example, the US P21 framework focuses on cultivating creativity and entrepreneurship, while the EU's framework aims to facilitate and promote lifelong learning (Shi et al., 2016). In mainland China and other Asian countries such as Singapore, creativity and problem-solving, critical thinking, communication and collaboration were identified as competencies to be emphasised. This shows that teachers perceive thinking skills as essential for

children’s future development, and they are aware of the significance of promoting these skills in class.

6.2.1 Discussion of the definition of “English thinking”

The teachers believed that thinking skills actually translated as “English thinking”. As discussed previously, most of the literature and research studies focused on promoting students’ HOTS, such as creative thinking skills and critical thinking skills, to facilitate students’ learning (see section 3.2.1, section 3.9 and section 3.11). Thus, the notion of “English thinking” seems to be inconsistent with the current literature.

Although the notion of “English thinking” might appear fragmented, the features of teachers’ conceptions of it are subject-specific. For one thing, the priority for the EFL teachers is to teach the English language as a subject, and therefore, their cognition of thinking skills is subject-specific. For another, the aim of teaching English is to foster the integration of the students’ competencies with regard to language application. The ability to use language in real-life is essential for EFL learners; therefore, as language, thinking and culture are inseparable, teachers might perceive learning English means thinking in the target language way. In other words, thinking from the perspective of the target language culture.

Hence, the notion of “English thinking” involves a number of different aspects in language teaching and learning (see figure 6.1). I will discuss these aspects in relation to relevant Chinese political documents and literature in the field.

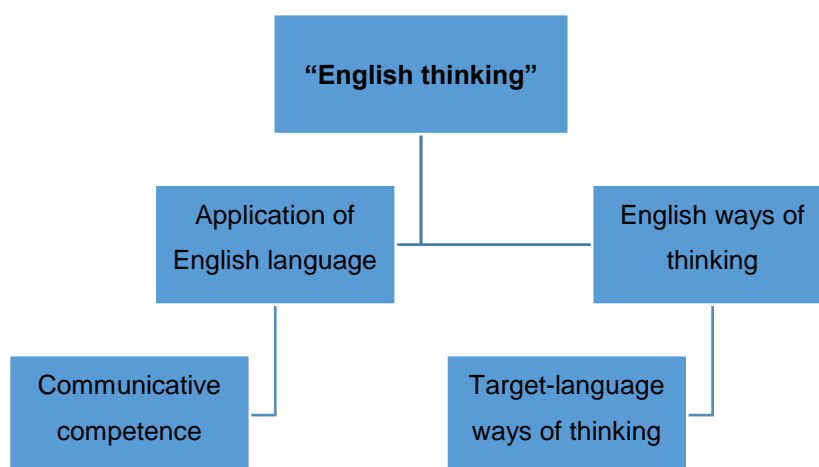


Fig 6. 1 The conception of “English thinking”

6.2.1.1 The Application of English language

One of the explanations for “English thinking” is the application of English; in other words, being able to construct ideas in English in their minds before producing them in practice. This term has neither been mentioned nor defined in ECS (2011). However, the English Curriculum Standards Committee (ECSC) (2015, p.51) has published a report that provides a definition of “English thinking”:

For example, primary school students use English in greetings. This activity happens only after a process of thinking in English. In other words, it means to use English to do things. This is important in real-life settings... The use of English is not limited to speaking tasks, completing the exercises after reading or listening to English could be also considered as ‘use English to do things’...Although students might not produce accurate English during the tasks, it is important to cultivate students’ ability to ‘use English to do things’.

This definition of “English thinking” is similar to the teachers’ conception of thinking skills: constructing one’s own thoughts in English. Therefore, “English thinking” could be interpreted as an ability to use the language of English. Thus, appropriateness is one component that defines the application of language. The ECS and its report place a great emphasis on the authentic use of language and stress the importance of applying the language in real-life situations. As the report (ECSC, 2015, p.51) points out,

One needs to use the language appropriately according to different communicators and situation. For example, formal and informal language use. There are differences of language use in Chinese and English. If one translated Chinese ways of expression directly into English, it might cause inappropriateness although it could be an appropriate use of language in Chinese.

The statement above indicates the importance of using the language appropriately according to the language and the social setting. In order to further illustrate the concept of “English thinking”, the report provides an example which is considered to be an appropriate use of authentic language in a real-life

situation: students need to say ‘thank you’ if the teacher answers the questions they ask. In this example, the linguistic form of ‘thank you’ is accurate, and it is an effective way to communicate, so, therefore, the language use in this situation is appropriate. It is superficial to conclude that the given example represents well-developed knowledge and skills in language use, yet it is clear that it demonstrates students’ ability to use ‘thank you’ appropriately in a situational context of communication. Therefore, using English appropriately no longer focuses solely on linguistic competence, but on a broader and more realistic notion of effective communicative competence.

However, there are various definitions and models of communicative competence. For example, Brown (2002) stresses that developing students’ communicative competence is the goal of language teaching. It is achieved by paying attention to language use, fluency, and authentic use of the language, students’ needs and contextual information. Among the various definitions of communicative competence (e.g. Bagaric & Djigunovic, 2007; Byram, 1997; Holmes & Dervin, 2016), the key message is to use the language appropriately, this involving language competence (that is, linguistic knowledge), sociolinguistic competence, pragmatic competence, and strategic competence in different social settings (Bagaric & Djigunovic, 2007). One needs to synthesise these competencies to achieve a meaningful unity in terms of cohesion and coherence in a situational context (Bagaric & Djigunovic, 2007). In order to synthesise these competencies to achieve a more effective use of the language, thinking skills are important, as one needs to have the ability to identify and analyse the norms and conventions which need to be conformed with in a particular situation (Risager, 2016). To this end, language application requires not only using thinking skills in order to develop linguistic knowledge but also to develop an ability to use the language appropriately in real-life situations, similar to the life skills defined by the teachers (see section 5.2.1). Thus, the application of language and thinking processes are closely related.

6.2.1.2 English ways of thinking

“English ways of thinking” is another aspect of “English thinking”; the teachers expected students to think like native-English speakers when they use English.

Brown (2002) states that when teachers teach a language, they would teach “a complex system of cultural customs, values and ways of thinking, feelings and acting” (p.13). The ECSC (2015, p.48) report also clearly recognises the intertwining relationships among thinking, language, knowledge, and culture:

Language is a carrier of knowledge, culture and thoughts. It is fundamental for students to fully understand the content, similarities and differences of different cultures, so that they can truly experience the meaning of the language expression, appreciate the enchantment of it, experience the similarities and differences of English language compared to the Chinese language and their ways of thinking, and gradually develop intercultural awareness and competence.

The above statement points to students needing to experience the differences between “English ways of thinking” and Chinese ways of thinking, which leads to the implication that the English language is essentially an embodiment of the English culture, and that “English ways of thinking” are shaped by English culture. This perspective is reflected in Risager’s (2016) comments that in the discipline of language teaching, language and culture are seen as intertwined. Sybing (2001) also claims that the native culture has already left its imprint in both the linguistic forms and communicative practices of the target language. This sheds lights on language teaching approaches being associated with a “nationally defined culture” (Baker, 2016, p.72); the popular Western cultures for ELT (English Language Teaching) are normally the UK, the US and Australia (Hamer, 2003). In the Chinese ECS, learners are required to develop their knowledge of the UK and US cultures (MOE, 2011), which implies that “English ways of thinking” might particularly refer to these two places. This implies that both British and American cultures, norms and ways of thinking represent the “English ways of thinking”, and that students need to develop these ways of thinking when using English as they both belong to the Western world.

However, I would argue that the “English ways of thinking” defined by the ECSC are challenging to achieve. For one thing, the concept of “English thinking” is a blanket term; there are other countries such as Australia, Canada and New Zealand that have English as their native language. These native-English

speaking countries are culturally and historically different. It is problematic to use nationality as an indication of “cultural membership” (Ng, 2003). Besides, Baker (2016) suggests that it is equally important for the majority of native-English speakers to adapt strategies in communicative practices with their interlocutors in order to achieve effective communication as it is for non-native English speakers. Thus, the potential for developing “English ways of thinking” in a homogenous community of native-English speakers is of little relevance and not necessarily useful in reality.

Furthermore, the definition of culture has moved beyond English-speaking countries to global settings (Spencer-Oatey & Franklin, 2009). “English ways of thinking” embedded in the English language are shared not only between native-English-speaking countries but as a lingua franca among other non-native-English speaking countries (Jenkins, 2007). For instance, some Eastern countries such as Malaysia and Singapore also use English as an official language. In this case, the “English ways of thinking” might include Malaysian and Singaporean ways of thinking. Therefore, EFL learners should not only conform to the native-speakers’ norms of English (Timmis, 2002), as English speakers can represent numerous cultural heritages and values (Alptekin, 1993) since it is a lingua franca. This suggests that different cultural norms might collide with each other during interactions. This could lead to misunderstandings or lead to the development of a hybrid culture (Canagarajah, 2006). Therefore, being able to interpret other members’ meaning within a social group leads to an ability to use English as a tool for appropriate communication. Hence, applying thinking skills could offer individuals an alternative approach to understanding and analysing the cultural meaning of the language used in the social group (Byram, 1989). Using analysis, interpretation, comparative thinking skills, critical thinking skills and flexibility would help individuals to communicate effectively and appropriately with others from different language backgrounds (Deardroff, 2006).

Additionally, it would be challenging for students to acquire “English ways of thinking” when they use the target language. This assumption is similar to Krashen’s monitor model in second language learning theory (Mitchell & Myles, 2004). He suggests that students could acquire the second language in much the

same way as the first language. However, the acquisition system is a process which happens unconsciously, whereas learning is a conscious process which acts as an editor or monitor concerned with relevant rules to make minor changes, with such changes and editing being filtered through learners' emotions, needs, beliefs and feelings. (Lightbrown & Spanda, 2006). Hence, given the fact that children are consciously learning English in China, their beliefs and needs are filtered through the Chinese learning environment, and it would be difficult for them to acquire the target language culture of thinking unconsciously since these filters or editors are value-laden.

In addition, the ambiguous meaning of “English ways of thinking” in the Chinese government papers might be the reason why the teachers' conception of “English ways of thinking” is confused. The Chinese Educational Reform and Development Compendium (2010-2020) (MOE, 2010), their English curriculum standards (MOE, 2011) and the ECSC (2015) require students to develop their knowledge and understanding of the foreign culture in order to develop intercultural communicative competence (ICC) through comparing differences in the ways of thinking. Therefore, the term ‘foreign culture’ defined within the field of intercultural competence is no longer just limited to British and American cultures. However, the learning objectives in ECS (2011) clearly include the development of students' knowledge about the UK and US cultures. Therefore, ‘foreign culture’, ‘British and American culture’ and the cultures of ‘target-language-speaking countries’ become muddled terms as they have been used interchangeably without any specific definitions or explanations.

The “English thinking” defined by the teachers confirmed that they view language as a “complex adaptive system” and a “dynamic set of patterns emerging from use” (Larsen-Freeman, 2011, p.49). Their understanding of thinking skills in relation to language learning posits that “languages are integrated in the mind, dynamic and constructed through social interaction” (Meier, 2016, p.4). This is a new understanding of thinking skills which could be subject-specific. It appears that “English thinking” is a complex term which covers a variety of concepts and areas of studies. To emphasise this, Risager (2016, p.40) concludes that “language and culture do not form a single universe, instead, language could be

disconnected from one cultural context and reconnected into a new one”. Although the dimension of “English ways of thinking” is fragmented, it underpins the differences between various cultures. This indicates that “English thinking” might develop students’ ability to interpret others’ meaning appropriately and foster open-mindedness and tolerance for uncertainty in order that they can use English as a lingua franca which enables them to fit into the social group.

Although “English ways of thinking” might appear to be fragmented and general, teachers could introduce some typical Western ways of thinking by providing authentic examples to the students as a way of learning English (see figure 3.2). To this end, students could learn and notice how different people speak and this would be beneficial for them in developing communicative strategies to avoid misunderstandings when using English to communicate. Meier (2016), on the other hand, advocates a multilingual turn in foreign language learning; she regards learners as multilingual practitioners. Thus, instead of promoting a set of “English ways of thinking”, she suggests a multilingual turn in language education which embraces the diversity of languages in class as a way of “recognising that learners have dynamic and complex identities that they invest in their future through using and developing their language repertoires” (p.19). Through embracing the diversity of languages in class, students could gradually develop their open-mindedness with regard to accepting and understanding differences among individuals in the world, these skills and attitudes also being essential in the development of HOT skills.

6.2.3 Discussion of teachers’ conceptions of higher-order thinking skills

In the following sections, I will discuss teachers’ conceptions of HOT skills with reference to the current literature.

6.2.3.1 *With a focus on creative thinking*

Similar to the majority of literature (e.g. Bloom, 1956), teachers perceive creative thinking as being HOT and therefore as necessary to promote in the EFL class. This reveals a different point of view to that of Kamyliis, Berki and Saariluoma’s (2009) study, which posits that foreign languages are not considered to facilitate

creativity. The finding also contradicts Li's (2016) research carried out in China which found that creative thinking skills were ranked as the least important skills by EFL teachers. Creative thinking defined by the EFL teachers could be categorised as 'little c' creativity or 'mini c' creativity, as all the teachers focus on everyday creativity rather than the high creativity which leads to individuals contributing a remarkable break away from traditions (Kaufman & Beghetto, 2009). There are some matches and mismatches between teachers' conceptions and the current literature which I will discuss below.

- Different understanding of generative processes

It has been found that teachers define students' creative thoughts as being regenerative - leading to the reconstruction of existing knowledge, such as when students replace different vocabularies within the same sentence structure (see section 5.2.5). This was defined differently from the literature as a creative process of knowledge generation and the initiation of new possibilities (Craft, 2005); it is the active use of creative imagination (McGregor, 2007). Sternberg & Lubart (1999) state that the creative product generated from the process should be original, and fitting with regard to needs. Compared to the findings of this research, the creative process defined by some teachers entails only the reproduction of knowledge. The characteristics of originality or newness were missing. Regarding the Eastern perspective on creative thinking, Craft (2005) emphasises that creativity entails the reinterpretation of traditional ideas, which contrasts with the western perspective. However, during the generative process, one is required to discover or develop new points of view through combining old ones in new ways. By reviewing and reinterpreting their accumulated knowledge, learners could discover new knowledge (Li & Wegerif, 2014). Both Eastern and Western approaches to defining creative thinking emphasise the production of newness. However, in this research study, the findings showed that some teachers' conceptions of creative thinking were related to the process of reproducing knowledge (see extract 19). In some language classes, creative thinking skills have been seen as the practice and reproduction of linguistic knowledge rather than the generation of new ideas. Thus, one aspect of the teachers' conception of creative thinking skills in terms of the generative process was revealed to be different from the literature.

- Flexibility

On the face of it, teachers identified the feature of flexibility as an aspect of creative thinking skills, which accords with most of the literature: the ability to think flexibly has been seen as a generative process of producing new knowledge. However, the teachers' understanding of flexibility was not in line with the widely accepted definition. According to the results, flexibility is understood as a way of replacing or proposing different vocabularies within the same sentence structure or phonetics (see section 5.2.5). This was reflected in their teaching practices as teachers defined the practice of drilling as being creative (see extract 18) although it was more relevant to knowledge reproduction. However, being flexible in creative thinking processes aims at initiating new possibilities, novel ideas, and making connections with what is already known in order to construct new embodiments of knowledge (Knight, 2002). As discussed previously, the Eastern concept of creativity entails finding new perspectives through reinterpretation (Craft, 2005). This relates to the findings of this research study in that the feature of reinterpretation was identified but not as a way of generating something of original and new. This does not resonate with the definition of creative thinking in which the emphasis is placed on the features of originality, novelty and new meanings. In this study, teachers perceived flexibility as more related to the reproduction of the English language, rather than producing creative responses which contained original and imaginative thoughts on the topic (Richards, 2015).

- Originality

In this study, the teachers seldom mentioned originality, but did, however, propose that they expected new ideas and different viewpoints from the students (see section 5.2.5). This suggests that they expected original ideas from students although they did not explicitly define creative thinking in terms of originality. According to the literature, the character of originality could be divided into two domains, one of which is related to big C, which emphasises astonishing ideas (Fisher, 2014), or something that is remarkably new. However, in this study, originality fits into the category of everyday creativity. For example, the responses provided by the students were original thoughts (see extract 1) which were meaningful to their living world and focused on daily life problems. Being original,

as far as the people in this study were concerned, does not mean creating a breakthrough from traditions or making a huge contribution to the world. Teachers defined creative thinking in relation to students' individual ideas being something new and different from others' ideas. This definition is similar to that in the current literature.

- Imagination

Teachers' understanding of imagination shows similarities with the literature. This feature was identified in a teaching practice in which the teacher viewed imagination as an aspect of creative thinking (see extract 1). The imaginative responses were constructed in metaphors. This is in alignment with Lakoff and Johnson's (1980, p.454) illustration:

Our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature. The concepts that govern our thought are not just matters of the intellect. They also govern our everyday functioning, down to the most mundane details. Our concepts structure what we perceive, how we get around in the world, and how we relate to other people. Our conceptual system thus plays a central role in defining our everyday realities.

Students' imagination was structured through them making connections with everyday realities such as human beings' emotions and feelings. Since each individual's experience and perceptions of realities are different, the imaginative thoughts which learners produced were both original and of value (NACCCE, 1999). Although the imaginative response does not correspond to reality, it is a component in creative activity which covers all aspects of our life (Vygotsky, 1967/2004) as that imagination entails creating new combinations of things taken from reality and individual's experiences. Imagination in this research study has been revealed as a creative activity in which learners demonstrate their ability to use metaphors to express their own understanding of reality.

- Possibility thinking

There was no explicit definition for teachers' conceptions of possibility thinking. However, there were some features which could be seen to represent the concept

of possibility thinking. According to the practice reported by one teacher, the question 'what can they do?' was demonstrated in terms of how they honed and solved problems (Chappell, Craft, Burnard, and Cremin, 2008). This type of question could be identified as a feature of possibility thinking as it has a similar function to 'what if' questions. The question proposed by the teacher seeks for multiple perspectives, which also shifts the questions of 'what is this and what does it do?' to 'as if' or 'what can I do with this?' (Craft, Cremin, Burnard, Dragovic & Chappell, 2013). Therefore, it offers a space of possibility in relation to problem solving (Jeffrey & Craft, 2004). The students could take this opportunity and respond with imagination. This reported practice shows the teacher's intention to foster an enabling environment (Burnard et al, 2006) for students to immerse themselves in and in which they could develop their possibility thinking, which echoes with previous studies (Burnard, et al., 2006).

- Open-mindedness

Seeking alternativeness is considered to be an aspect of creative thinking skills, according to the teachers' definition. Open-mindedness enables students to view a situation from more than one perspective (McGregor, 2007). Craft, Dugal, Dyer, Jeffery and Lyons (1997) identify curiosity and a sustained openness to integrating thinking with experience as being key to being a successful creator. This is a similar perception to that of the teacher, who identified creative thinking as embracing alternatives as it allows students to open their minds to new perspectives.

- Criticality

According to Craft (2005) and McGregor (2007), a critical stance enables learners to examine and assess the viability of new ideas, innovation and the assumptions that one may hold. This has been evidenced in this study with teachers requiring that creative thoughts be justifiable and reasonable (see section 5.2.5). This aspect of understanding creative thinking has also been found in those teaching practices in which the teachers promoted students' creative thinking skills within using a critical approach (see extract 7). The overlapping among HOT skills will be discussed in section 6.3.

- Individual approach to creativity

The findings of this study demonstrate a similar perception of individualism to that of Craft (2005, p. 87): “creativity is called for in the context of liberal individualism”. This differs from the traditional mores of a collectivist society where harmony and conformity to the social norm are the focus (Niu, 2003). As discussed in Chapters Two and Three, the Confucian societies of the East emphasise obedience, acceptance and social order, and deemphasise independence and creativity (Niu, 2003; 2006). Chinese culture is regarded as less supportive of creative development than Western culture. Empirical evidence in cross-cultural studies (for example, Wong & Niu, 2012) have shown that Chinese students are less creative than their Western counterparts. The reasons behind this unsatisfactory result is attributed to the influence of culture on creativity. Niu (2006) reveals that Westerners define creativity in terms of individual characteristics whereas the Chinese focus more on the social influence of a creative individual and their contribution to society. However, in this study, teachers’ conceptions of creative thinking stress individualism by promoting students’ personal voices and respecting their individual perspectives. More particularly, teachers were supportive in developing students’ individual characters through promoting thinking skills in class. On one hand, this could be explained by the rapid growth of the global economy and the associated increase in cultural exchanges, which could have had an impact on the change in teachers’ perceptions of creativity (Niu, 2006). It has been posited that the East’s contemporary conception of creativity possesses the features of both Western and Eastern understandings (Niu & Sternberg, 2006). On the other hand, Tan (2016) explains that Confucian philosophy provides the theoretical foundation for fostering creativity. Indeed, Confucius expected students to ask questions, to study for their own sake, and to develop open mindedness by selecting positive values (such as, for example, good moral behaviour) to follow (Li, 2015; Tan, 2016) (also see section 3.3.2). Hence, the Confucian heritage of learning resonates with the teachers’ conception of creative thinking with regard to individualism. This was evident in this study, as the teachers expected students to develop personally. The teachers’ definition of thinking skills as life skills enabling students to face future challenges implies they regard learners as independent individuals. For instance, one teacher would demonstrate students’ ideas on a power point slide or invite

students to share their creative art work in class. These actions were an acknowledgement of the individual voice and fostered a climate of respecting the individual's contributions.

6.2.3.2 With a focus on critical thinking

Similar to most of the literature, teachers defined critical thinking as a set of skills, including reasoning skills (Yang & Gamble, 2013; Fisher, 2011), analysing, evaluating (Fahim & Hashtroodi, 2012), and being sceptical (Moore, 2013) -e and as a form of problem-solving (Moore, 2013; Ng, 2003) (see table 3.5.3). Teachers also defined critical thinking in relation to dispositions as they expected students to be brave and express different possible ideas and have a healthy sceptical view of things. Their claim was similar to Facione's (2002), who defined a critical disposition as an internal motivation to respond to different circumstances. Similar to the previous section, teachers laid emphasis on learner's personal opinions rather than requiring them conform to others' (Niu, 2006). As the teachers stressed healthy scepticism, they suggested students argue their own points. This clearly shows that the teachers respected and valued their students' different opinions as a way to promote their critical thinking skills. Regarding the Confucius approach to learning, critical thinking is identified as a way of raising questions or views which contradict others. It is said that deep learning will be fostered if one is engaged in critical thinking. In this study, the teachers defined critical thinking as learners using different skills, such as reasoning and analysing, to solve problems; this resonates with the Confucian approach to critical thinking as the teachers' definition implies deep learning. However, being reflective and engaging in decision-making are also considered to be aspects of critical thinking (see section 3.5), and the teachers' definitions of critical thinking skills did not reveal these points.

6.2.3.3 Summarising with analysis as an aspect of higher-order thinking skills.

This research study has found the ability to summarise to be an aspect of HOT. However, Krathwohl (2002) identified summarising as a lower-order thinking skill which is involved in the category of understanding, that means "determining the meaning of instructional messages, including oral, written, and graphic

communication, including interpreting, exemplifying, summarising inferring comparing and explaining” (p.215). According to Hidi and Anderson (1986), summarising reflects the individual’s ability to comprehend so as to condense information into short statements. Therefore, summarising requires learners to understand the context, extract material, identify important concepts and interpret them (Hwang & Kuo, 2011; Jones, 2012).

Likewise, in language teaching and learning, summarising a reading text is a common practice which requires individuals to fully understand the text in order to organise the content and present it (Yu, 2008). According to Johnson (1983, as cited in Yu, 2008, p.522), “whatever a person’s interest in studying a foreign language, there seems to be no escape from the acquisition and development of summarising skills”. In EFL research studies (e.g. Garner, 1982; Hill, 1991; Passig & Maidel-Kravetsky, 2016; Rivard, 2001; Selinger, 1995; Susar & Akkaya, 2009; Yu, 2007, 2008), summarising has been regarded as a way of showing an individual’s comprehension of the language, especially through writing and reading tasks. Yu (2008) argues that even in reading tasks, summarisation has been used as a measure for writing instead of reading abilities.

In terms of the Chinese context, the key English competence framework categorises summarising into the input-base of learning and understanding, which is equivalent to the lower-order thinking skills domain and similar to Bloom’s framework taxonomy (Wang, Luo, Ma, Qian & Sun, 2016). Nevertheless, according to Luo’s (2016) elaboration of the framework, summarising has been identified as more than the ability to extract information. When applying this framework to promoting students’ HOT skills in EFL classrooms, summarising indicates the ability to develop a conceptual framework of a topic through synthesising and reasoning. This is in contrast to Luo and her colleagues’ framework (2016). This suggests that further investigation is needed to identify how teachers, researchers or policy makers in China perceive summarising in language classrooms, rather than classifying it into an ambiguous category.

Based on the above discussion, summarising could be classed as a more complex cognitive process than lower-order thinking. The findings of this study support the view that summarising is a skill involved in higher-order thinking

processes which support learning. Although Susar and Akkaya (2009) regard summarising as a means to develop students' reading and writing skills, they point out that summarising is a metacognitive strategy which leads to the greater effectiveness of mental skills such as remembering and understanding, and is a way to comprehend and transfer knowledge. As in this study, the students might have been involved in a cognitive process which required a great deal of creativity and imagination (Marzano, 1993), since the learners (extract 6) needed to exclusively decode the information, make the connection between the blank-filling exercise and their previous learning experiences with regard to sentence structure, and seek a possible grammatical pattern. Marzano (1993) defines this as HOT as it relates to metacognition with encoding techniques.

To go further, students in this study were required to discover the grammar rules by themselves (see extract 6). This could be the highly inductive act of inferring rules, as learner were required to identify the component parts of information and articulate the superordinate and subordinate relationships among these parts (Marzano, 1993). Therefore, in order to identify and discover the grammar rule, a variety of thinking skills were used (see section 5.4.3), which in essence is an analysing technique (Marzano, 1993).

Furthermore, the task given to the students could be seen as relevant to a problem-solving task in which students needed to summarise what they have learned first (see extract 6). This is similar to Hwang and Kuo's (2011) finding that summarising skills are a foundation for the development of students' problem-solving abilities. They indicated that in applying summarising skills, one needs to use HOT to evaluate the relevance of the sources provided and extract the information which is relevant to the problem.

Compared to summarising tasks in reading and writing, for which time is provided to extract the information, students in this case study had to use less time to generate their thoughts in a complex thinking process as they needed to react in an emergent situation. This is arguably more demanding than writing a summary of a reading text. Therefore, the responses given by the learners not only reflected that their language knowledge had developed, but also that their thinking skills had, since they provided reasons for their thoughts, synthesised

the information and summarised their understanding verbally in a group discussion and in a whole class discussion. However, since there are limited studies that have explored summarising in the EFL context, or, more particularly explored summarising skills in EFL classroom interaction, more research needs to be undertaken to further investigate this field.

6.3 The connections between higher-order thinking skills

This study has demonstrated that creative thinking and critical thinking are inseparable. First, both creative thinking and critical thinking are complex thinking processes, and it is difficult to agree on a consensus definition (see section 3.5 and section 3.6). By their nature, they are both developmental, not a static state of mind (Fisher, 2011). They are the thinking processes which involve different skills as a productive activity. As in this study, the teachers defined both creative thinking and critical thinking as a means of producing meaningful ideas, and teachers perceived that through language learning, students' thinking skills would be developed. With regard to critical thinking, Brookfield (1987) suggests that people never reach a state of complete critical development, and the findings of this research study indicate that critical thinking is a developmental process. For instance, children were involved in continual questioning of the assumptions made by the teacher and their peers (see extract 4) as they were sceptical of others' claims. In terms of creative thinking, this is a generative process. There could be a creative product but such a product needs to have been generated through the creative thinking process. For example, the Halloween masks could be seen as creative products which were developed through imagination. Through the process of creating something new and original, their creative thinking was probably developed. Children also related their emotions to the appearance of the earth to generate imaginative language output (see extract 1). This was a complex process as students needed to reflect on their previous experience of the given issue internally and manifest this directly and vividly in their external expression. Hence, both creative thinking and critical thinking are developmental processes which involve different skills. They are also a tool for students to learn English as well as to deal with any problems that occur in their life.

Secondly, according to the research findings, there are overlapping features between creative thinking and critical thinking. For example, both thinking skills have been defined as dispositional, linked to such dispositions as open-mindedness and willingness to explore alternatives flexibly (Bailin, 2002; Black, 2012; Craft, Dyer, Jeffery & Lyon, 1997; Facione, 1990; McGregor, 2007; Yang & Gamble, 2013). Drawing on teachers' conceptions of creative thinking and critical thinking, students were expected to be open-minded, to actively engage in the task and to propose different ideas (see sections 5.2.4 and section 5.2.5). This is similar to what Glassner and Schwarz's research (2007, p.13) claimed; that a way of expressing creativity is "the freedom from accepted frames accompanied with contingency to critical judgement".

As Ennis (2011) and Glassner and Schwarz (2007) point out, critical reasoning involves the skills and dispositions which search for and open up new possibilities; this research shows that students were willing to provide different perspectives on a given topic (see extract 8) and these reasons were new possibilities of explaining a situation or a solution to a problem given (see extract 7). In line with the ECS (2011), teachers opened up a space for children to engage in the task by relating the topic to their life experience. Students were willing to explore different possibilities and to be open-minded regarding the alternatives since they could relate the alternatives to their real-life situation. This is a situation that allows learners to generate creative and critical solutions (Fisher, 2011; McGregor, 2007).

The emphasis on individualism is also identified as an overlapping feature between creative thinking and critical thinking. For example, the teachers wanted students to develop their own points of view and defined this as a way of developing their individual characteristics. This is similar to the learner-centred approach from the individualist perspective which is celebrated in Western culture. As discussed in section 3.3, individualism in Eastern cultures could be identified in the Confucian approach, in which self-criticism, self-discovery and being reflective are emphasised. However, it has been pointed out that the individual concept of creativity is developed through in-depth interaction and experience with natural creativity. Nevertheless, not all the evidence indicates

that Eastern creativity is developed through connecting tradition and novelty in a way that maintains and honours tradition (Niu & Sternberg, 2006). Rather, it was revealed that teachers define creative thinking in relation to usefulness and originality. Likewise, in defining critical thinking, teachers related it to an individual's opinions, even if they broke away from tradition. For example, the teacher emphasised terms and phrases such as differences, opposite, questioning others and not accepting things blindly. These terms are indications of disagreement with tradition. This shares similarities with the Western tradition of defining creativity (Niu & Sternberg, 2006). However, this is not to argue that creative thinking or other higher-order thinking can only be developed individually. They can also be developed collaboratively. Although there was little evidence from the group discussion, it can still be assumed that students could have gone through different stages in assisting and facilitating each other to develop their thoughts during group work, which in a sense could improve the development of students' higher-order thinking since learning in groups may also make an effective contribution to the class (Sawyer, 2006).

Thirdly, it is the differences existing between creative thinking and critical thinking that drive individuals to interpret issues from multiple angles so as to prompt leaps forward in rational modes of thought, in perspectives and in creating meaningful and valuable products. For instance, critical thinking aims to evaluate and reflect on an existing situation (McGregor, 2007), whereas, creative thinking emphasises the generation of something which has not yet been identified, which does not yet exist (Craft, 2015; Craft, Jeffery & Leibling, 2001; Kaufman & Beghetto, 2009; McGregor, 2007). In my opinion, creative thinking and critical thinking are complementary and therefore intensify each other. The findings of this research study indicate that critical thinking could be reconsidered as a way to open up new possibilities rather than analysing existing links (Glassner & Schwarz, 2007). For instance, the learners had critically reflected on suggestions - they had searched for possible actions and modifications or decided on the regeneration of different solutions (McGregor, 2007) - to save the earth and protect the environment (see extract 1). Their responses were original in the creative sense and were evaluated through a critical thinking process. Therefore, the nature of critical thinking allows individuals to analyse a problem in a logical

way and to look for alternatives from different angles in a creative way, through “Imagining and exploring alternatives [which] leads to reflective scepticism” (Brookfield, 1987, p.9).

The teacher had also insisted that creative responses should be reasonable and that the learners should justify their ideas, which reflects the definition of creativity in the NACCCE (1999, p.32), as one of the features of creativity involves critical evaluation:

[Creativity] can permeate the process of generating ideas: it can involve standing back in quiet reflection. It can be individual or shared, involve instant judgements or long-term testing. In most creative work there are many shifts between these two modes of thought and focus of attention. The quality of creative achievement is related to both. Helping young people to understand and manage this interaction between generative and evaluative thinking is a pivotal task of creative education.

The underlying message is that a creative idea needs to be generated through the process of critical thinking. Individuals need to assess, evaluate and make judgements on their creative thinking in order to recognise the validity of the creative production (McGregor, 2007; NACCCE, 1999). This reveals the inextricable connection between critical and creative thinking, which leads to young people engaging in generative and evaluative thinking in learning. Creative thinking allows individuals to broaden their minds, and generate original and imaginative thoughts (Fisher, 2014). Such new perspectives, in turn, serve the development of critical thinking as the ideas need to be processed through analysis and evaluation from different angles. Both thinking skills are different but can happen at the same time throughout the process of higher-order thinking. The findings of this research resonate with this, as teachers defined creative thinking and critical thinking in this manner.

Creative thinking and critical thinking do not conflict with one another; neither is one superior to the other. This is different from Bloom’s taxonomy (see section 3.2.1), in which either creative thinking or critical thinking is superior and dominates the top of the pyramid. The hierarchy model was recognised by Wang

and her colleagues (2016); their framework for promoting Chinese students' thinking skills was based on Bloom's taxonomy. Nevertheless, both creative thinking and critical thinking can happen at the same time (see section 5.4.4). However, the distinctions between these two allow individuals to create a meaningful way through being aware of the diversity of values, identifying and challenging assumptions in the social structures and exploring and imagining alternatives in different forms.

6.4 Conflicting beliefs around promoting thinking skills in EFL classrooms

Teachers had conflicting beliefs regarding the promotion of thinking skills in the EFL class, which confirms Nespor's (1987) suggestion that beliefs can be inconsistent. Overall, however, the teachers realised the importance of integrating thinking skills in their teaching. This is consistent with most of the literature and research studies in different contexts (e.g. Aljughaiman & Mowrer-Reynolds, 2005; Asgharheidari & Tahriri, 2015; Li, 2016; Mullet et al 2016; Stapleton, 2011). In Asgharheidari and Tahriri's (2015) and Aljughaiman and Mowrer-Reynolds's (2005) studies, teachers had positive attitudes towards and perceptions of critical thinking and creativity respectively. Teachers in this study also held positive attitudes towards promoting HOT skills, and regarded this as essential for the student's future. Additionally, promoting thinking skills was perceived as being an interesting process that increases the fun element in class, which is similar to the findings in Aljughaiman and Mowrer-Reynolds's study (2005) on teachers' views on creativity.

Similar to Stapleton's (2011) research finding, the participants in this study believed that thinking skills can be taught and that they are essential for EFL learning. Stapleton's study showed that teachers related teaching critical thinking to a subject-specific experience. Mullet et al (2016) reported that in most of the studies they reviewed, teachers' perceptions of creativity were based on subject-specific experiences. Li's (2016) study also revealed that teachers perceived thinking skills as an essential tool in students' language learning. She explained that the possible reason could be that language learning has long been widely

accepted to be gaining linguistic knowledge, which requires students to memorise this knowledge, especially in the exam-oriented education system. The findings of this study also echo Li's findings, as memorisation is considered to be the most worthwhile and useful thinking skill to promote in the EFL class. In spite of the positive attitudes towards promoting HOT skills for personal development, not all the teachers were willing to integrate thinking skills in their teaching.

Firstly, their past learning experiences informed their teaching beliefs (Mak, 2011; Nesper, 1987; Pajare, 1992). Their previous language learning experience informed them that perseverance in memorising vocabularies and grammar were the keys to successful learning; therefore, their previous language learning experience overrode their beliefs in the importance of implementing HOT skills such as creative thinking and critical thinking in class. This was one of the inconsistencies found in the research as teachers said that they seldom promoted thinking skills in class, and their teaching priorities were on the traditional methods of language teaching and learning, such as grammar translation. In this respect, they perceive themselves as the authority in class, who transmits knowledge and who regards the development of thinking skills as less important than linguistic development.

Nevertheless, it is interesting to note that teachers were able to reflect on their prior language learning and teaching experience and improve their teaching practices. Similar to what Mak's (2011) found, one teacher who perceived herself as a traditional learner yet who rejected the traditional way of teaching and learning, transformed the traditional teaching model into a more interactive one. The teacher said she would help students accomplish tasks and develop their thinking and language. Although the teachers' previous learning experiences, such as rote learning, appear to be similar, their beliefs about teaching appeared to be influenced by a variety of factors. This suggests that through a process of reflecting on one's prior language learning experience, it is possible to transform teaching beliefs to more appropriately meet students' needs (Mak, 2011). The findings also indicate the complexity of teachers' beliefs and the dynamic connections between these and the sociocultural environment.

Secondly, the age of students was considered to be one of the factors that influenced teachers' willingness to integrate thinking skills in class. Two EFL teachers believed that the more cognitively developed students are more able to think creatively or critically. Their assumption relates to the capabilities of children at the formal operational stage proposed by Piaget; children at this stage of cognitive development are able to solve abstract problems in a logical fashion, such as, for example, through deductive and inductive reasoning (Woolfolk & Hughes & Walkup, 2013). Vygotsky (1967/2004) also suggests that a child might be less imaginative than adults because adults have richer experiences which they can make associations with than children. Nevertheless, "creative processes are already fully manifest in earliest childhood" and the development of creativity is significant to "the child's general development and maturation" (Vygotsky, 1967/2004, p.11). Learners might also achieve the next level of learning through HOT if provided with sufficient effective scaffolding. Therefore, promoting HOT could start at an early age. Although young learners might not be able to generate reasonable solutions for real-life problems in English, their HOT skills could be gradually developed through other tasks such as creating a fruit man (year 4, aged 8-9; see extract 11), and discovering grammar rules (year 3, aged 8-9; see extract 6). Children need imagination and creativity to play with the words, grammar and other elements during the process of language learning; in this way, they are allowed to try and take the risk of "testing" their language output.

Thirdly, the teachers' conflicting beliefs around implementing thinking skills were also influenced by other factors, namely, their content and pedagogical knowledge of thinking skills, and other contextual factors such as time and the exam-oriented system. These factors will be discussed in section 6.6.

6.5 Discussion on the opportunities for promoting thinking skills in the EFL class.

Opportunities for promoting students thinking skills were identified during the classroom interactions; techniques such as teacher questioning and feedback, collaborative learning, the use of wait time, real-life topics and creative teaching methods were used to promote students' learning and thinking. With regards to

the interviews, the teachers said that the methods for promoting thinking skills had been examined in their teaching practices. However, not all the methods they mentioned, such as creative teaching methods, were successfully implemented in class. . It is worth noting that some techniques and methods which teachers used in class, such as the use of wait time and real life topics, promoted students' thinking skills, x but that such techniques and methods were not mentioned by the teachers. In the following section, I will discuss the opportunities which teachers used to develop students' thinking skills, including the techniques and methods they used during the interactions.

6.5.1 Teacher questioning

Teacher questioning was identified in both interviews and teaching practices as the key technique used to develop students' thinking and learning. According to Bloom (1956), questions aimed at developing students' analysing, synthesizing or evaluating skills are termed as higher-order thinking questions. For instance, in extracts 3 and 8, teachers used open questions, which required students to reason, analyse and synthesise their responses and translate these into another language, to trigger students' complex thinking. Blosser argues (2000) that open questions permit students to demonstrate a wider range of possible responses than closed questions. Similar findings have been made in a number of empirical research studies (Ong, Hart & Chen, 2016; Yip, 2004); higher-order thinking questions and open questions foster deeper conceptual thinking in students. When teachers ask open questions, they also ask students to take cognitive risks: to think of their own ideas (Blosser, 2000). Additionally, research studies undertaken in the Chinese context (e.g. Tuan & Nhu, 2010; Tsui, 1995; Xu, 2010) also indicate a strong positive relationship between referential questions and the higher-order thinking, length and syntactic complexity of the learners' responses. This indicates that the way teachers structure a question influences the nature of thinking that is required in forming a response (McTighe & Lyman, 1988).

However, it would be superficial to draw a conclusion that the application of open questions directly leads to the development of higher-order thinking skills, as other types of questions could also serve the function of promoting students' HOT skills. Moreover, other factors also needed to be taken into account even when

referential or open questions are used. For instance, this study revealed that the use of open questions was not enough as teachers should recognise that they needed to provide effective feedback (e.g. Smith & Higgins, 2006) and sufficient wait time (Ingram & Elliott, 2016) for students to develop and elaborate their thoughts. For example, in extract 14, the teacher asked an open question to create a problem-solving situation; however, she did not provide sufficient space and time for students to elaborate their thoughts in a foreign language. Therefore, it can be a wasted opportunity if teachers ask open questions without much analysis as to why and how.

Besides this, as posited by one teacher, young children might not be cognitively mature enough to generate higher-order thinking; Berliner (1984) , Dillon (1982) and Dantonio and Beisenherz (2001) argue that there could be an incongruence between the cognitive levels of questions asked and the levels of thinking students are capable of. Hence, questions that generate higher-order thinking may not necessarily trigger the level of thinking appropriate for the students to generate and engage in (Ong, Hart & Chen, 2016). Furthermore, as proposed by one teacher, differences between students might be a factor which influences the implementation of thinking skills; some students may need extensive practice before they become skilful at higher-level thinking (Blosser, 2000). Given that not all higher-order thinking questions necessarily foster in-depth thinking processes, a closer examination of teacher-student interactions was made in terms of the discourse patterns (see extract 9) and the strategies that facilitated deeper thinking among students. Other elements in classroom-based talk (for example, feedback and the use of wait time) were also discovered to be aspects which were influential in students' HOT development.

6.5.2 Teacher's feedback

Similar to some literature (e.g. Reigel, 2005; and Ur, 2010) and research studies (e.g. Diaz-Ducca, 2014; and Sobhani & Tayebipour, 2014), the findings of this research study reveal that teachers believed positive feedback could introduce an affective element which reinforced and encouraged students' language output. They also suggested that tolerance of incorrect answers was one way of giving

students feedback that prevented discouragement. This was also evidenced in their teaching practices (see extract 1) when teachers used praise as positive feedback to recognise, evaluate and encourage students' contributions. Additionally, it was found in the classroom interaction when teachers encouraged peer-peer feedback which indirectly assisted the students' self-correction (see extract 1). These types of teacher feedback were aimed at creating a positive atmosphere and friendly environment for the students which allowed them to actively play with the language and use it in creative ways. According to the teachers, their feedback should be supportive of students' English language learning and should develop students' thinking skills. In addition to this, positive feedback was seen not just as praising how well the students have performed but also as including the linguistic component in personal responses as a way of communicating, which involves "the speaker and listener [being] manifested by affirmation" (Diaz-Ducca, 2014, p.333).

Nevertheless, the findings from this study showed an inconsistency between teachers' beliefs and teaching practices regarding the provision of feedback on EFL learning. It was found that teachers' feedback controlled students' responses by limiting the space and time they had to elaborate, even if they were having creative or critical thoughts (see extract 5). The underpinning reasons for this inconsistency might also be insufficient pedagogical knowledge of how to promote thinking. For instance, teachers successfully used open-ended questions to elicit students' HOT skills, yet they did not further expand students' responses and ended the turn by giving brief praise or acknowledgment of their answers, limiting the classroom interaction to a traditional IRF pattern (see extracts 1 and 5). Smith and Higgins (2006) proposed that the quality of feedback is essential to aid the flow of an interactive learning environment which facilitates students' use of talk for thinking and learning. They suggest that using conversational tactics in giving feedback allows students to work to understand the purpose of the question and to construct their new understanding of the learning in a more natural classroom talk-based setting. This is particularly important in Chinese EFL classrooms, as being able to use the language in real-life settings is one of the learning objectives.

In addition to oral feedback, non-verbal feedback was brought up by a teacher as a means of encouragement and confirmation of students' contributions. Lyster (1998, 2004) considers that oral feedback is less successful and can easily cause confusion. For example, other non-corrective feedback alongside the corrective response might cause learners to interpret recasts as another way of expressing the correct answer (Sobhani & Tayebipour, 2014). Li (2010), Lyster and Saito (2010) demonstrate that the effectiveness of oral feedback is constrained by contextual factors and individual learner differences. In this study, the teacher typed students' responses on a power point slide as a way of providing feedback on their contributions, and acknowledging, respecting and appreciating their thoughts. This was also a type of non-verbal feedback which may have acted as examples that could modify students' thinking and behaviour (Carless, 2006). Written feedback provided by the teacher during classroom interactions can encourage students' active thinking and have long-term effects on students' language development. It caters for all students since the teacher can, for instance, provide an indirect corrective repair in terms of linguistic knowledge, show an example to less successful learners, and acknowledge students' contributions of original ideas at the same time.

6.5.3 Collaborative learning

There is an enormous volume of research that has documented the benefits students derive from collaborating with others to complete a task or solve a problem (Gillies, 2016). The thinking behind this approach to teaching closely matches Vygotsky's sociocultural theory that collaborating children construct knowledge together while interacting with the more able student guiding the interaction. According to Mercer and Littleton (2007), language is a flexible, creative and meaning-making tool which connects students' reasonable arguments and creative thoughts. However, it has been widely argued that the Chinese educational system lacks a collaborative learning environment and the focus is placed on the teacher and, mainly, the knowledge transmission system (see section 2.2). This traditional one-way teaching approach limits students' learning opportunities and the development of their thinking skills. In contrast,

however, this research study revealed a number of opportunities that stressed the importance of collaborative classroom-based talk.

Some teachers, for instance, believed and suggested that increased classroom interaction was useful to develop students' thinking and learning from others, since the less-successful ones might not be able to participate orally yet are still able to listen and learn from the successful learners. Their beliefs correspond with the literature that argues that the HOTS of students who engage in peer-learning and assist in the co-construction of new understandings, is developed since they learn from engaging in cognitive elaboration (Gillies, 2016; Slavin, 2014; Webb, Franke, Wong, Fernandez, Shin & Turrou, 2014).

During classroom interaction, collaborative group work was used. Discussions in pairs and in groups were one of the teaching methods commonly used in the EFL classroom (see extracts 6 and 8). This contradicts the literature that states that in the Chinese context, learners seldom participate in group work. It also reveals that teachers were transforming the teacher-centred approach to a more learner-centred way of teaching. Nevertheless, the focus of this study is on teacher-student interactions; there is no evidence to show interaction patterns between students.

However, there were a number of opportunities in teacher-student interactions that promoted students' thinking. Teachers invited different students to demonstrate their thoughts in front of the whole class (see extracts 5, 7, and 11). These were the opportunities where teachers promoted collaborative learning as students were engaged in whole-class discussions with the teachers - learning and listening to what others had to say, and reconstructing, reformulating or modifying their thinking cognitively. This whole-class interaction could be related to scaffolding and ZPD as the more advanced students could demonstrate their thinking skills and ideas as a way of assisting the less competent students. It also relates to the Confucian culture of thinking and learning, in which children remain silent but actively engage in the interaction between other students and the teacher through "listening", in order to learn the effective aspects from their interaction and reflect on their own learning (Li, 2015; Tan, 2016) (also see sections 3.3.2 and 3.3.3).

Nevertheless, although many opportunities were identified in their teaching, there were a few opportunities which teachers could have used to lead to the development of students' thinking and the promotion of collaborative learning. For instance, in extracts 3 and 4, students were spontaneously divided into two opposing groups and given opportunities where they could, together, "contest opposing points of view, reconcile anomalous information, and work towards developing new understandings, [in this way], they become involved in shared thinking processes" (Gillies 2016, p.5). However, the teachers did not invite any of them to reason and argue their own point of view and interrupted their contributions. This pedagogical choice that the teachers made could be due to the restriction of the teaching time, and the performativity framework in the Chinese education system. In addition, this pedagogical choice might have decreased students' motivation to think actively and to willingly contribute contrasting ideas. According to Piaget's theory of cognitive growth, when students disagree with each other, HOTS skills are needed as they experience 'cognitive dissonance', which forces them to consider the perspectives of others, and, as a result, leads to a clearer understanding of the problems emerging. This can also be supportive of the development of new ways of understanding and thinking about specific problems and the ability to express their thoughts as well as co-construct meaning through language (Mercer, 2008). Therefore, it can form a meaning-based conversation among students and the teacher which promotes students' EFL development (Mackey, Abuhl & Gass, 2012).

Nevertheless, not all the communication among learners can be said to facilitate thinking and linguistic development through collaborative learning as learning depends on the specific interaction patterns that arise in any situation (Kaendler, Wiedmann, Rummel & Spada, 2015; Naughton, 2006). For instance, Nokes-Malach, Mead, and Morrow (2012) state that successful collaborative learning depends on the task complexity, and the individual's and group's competence to solve the task. If students are more capable of working on the task individually, it would be of little benefit to the students to work collaboratively in groups. Another problematic aspect would be the 'social loafing' issue, when some group members might be unwilling to engage in the task and rely on the others to complete it. Therefore, although it is commonly believed that learning

collaboratively is better than learning alone (Nokes-Malach, Richey & Gadgil, 2015), there needs to be a more in-depth consideration of the effectiveness of collaborative learning in Chinese EFL classrooms. Regarding the Chinese context, a moment of silence for individual learning would provide students with an opportunity to reflect and engage in deep thinking. This could also be an actual stage before they are able to contribute in class or to their group. Based on the complexity of collaborative learning, more attention is needed to analyse the effectiveness of students' talk in classroom interaction, especially during group work.

6.5.4 The use of wait time and the value of silence

Certain studies categorise the different types of wait time, and state that an increase in wait time is similar to an increase in 'think time', and that silence can be a form of wait time (Ingram & Elliott, 2016). In this research study, the value of silence is proven to be essential in enabling true dialogue, and the use of wait time produces opportunities that help students to use their thinking skills to develop and modify their individual thoughts and express them in English. Regarding the Confucian learning context, silence is a significant opportunity for individuals to reflect on previous knowledge, to relate the contextual factors and to thus engage in deep thinking (Li & Wegerif, 2014) (see section 3.3.3). For example, the teacher deliberately used 20 seconds as a space for students to remain in silence to think individually before participating in the group discussion (see extract 8). This clearly showed that a space was created for students so that they might engage in a complex thinking process as they might need to retrieve previous knowledge, connect what they knew about the environmental issues, use their HOT skills to generate the reasons for planting trees and generate their thoughts in English in order to discuss them in groups.

Furthermore, the wait time which teachers used could be fitted into category I (i) – “pauses following a teacher finishing speaking and a student start to speak”; category I (ii) – “pauses following a teacher finishing speaking and then taking the next turn”; and category II (ii) - “pauses following a student finishing speaking and then continuing their turn” (Ingram & Elliot, 2016, p.42) (also see section

3.9.3). The use of wait-time shows that teachers can influence the nature of a classroom discussion by manipulating silence (Elliott & Ingram, 2016). Learners were able to use the pauses to restructure their sentences and successfully deliver their ideas. This reflects Tobin's claim (1987) that the appropriate use of wait time is important to facilitate students' higher-cognitive level development; this study reveals that an increase in wait time gives students more time to think and leads to greater learning gains (Mercer & Dawes, 2008). To emphasise this point, the teacher deliberately used silence to stimulate students' thinking. This indicates that the teacher made a decision to extend the wait time based on their awareness of the benefit of silence in this particular moment.

However, this study also discovered that, during their interviews, none of the EFL teachers stated an increase in wait time as a technique for promoting HOT. This suggests that there is a need to develop teachers' knowledge of the use of wait time during classroom interactions. There were moments when teachers could have extended wait time or created a silent space to assist students in developing their thinking (see extract 4). This implies that teachers need to be flexible in their use of wait time in order to develop a high-quality learning and teaching context. Although there is research that calls attention to the use of wait time to develop in-depth learning (e.g. Mercer & Dawes, 2008), the negative outcomes of it need to be taken into consideration as well; Ingram and Elliot (2016) argue that "extended pauses can be interpreted as a signal of trouble, which can lead to participants self-selecting in order to initiate a repair" (p.50). Therefore, a closer examination is needed to analyse in what ways teachers can manipulate wait time or silence appropriately - in combination with other features in classroom discourse - to promote students' learning and thinking, especially in the EFL context.

6.5.5 The use of real-life topics

In this study, the use of real-life topics was popular as these help students to bridge the gap between classroom knowledge and their capacity to participate in real-life circumstances (Omid & Azam, 2016). Drawing from the ECS (2011), the motivation for using real-life topics to teach English is to facilitate students to

develop authentic language use, which prepares them to communicate with the world. This reflects the widely accepted definition of authenticity in language education: “authentic language is something which was produced in a context where the language was meant for a ‘real’ purpose, and ... this text or sample has not been modified in anyway in order to aid language instruction” (Pinner, 2016, p.64). Echoing the teachers’ conception of “English thinking”, language is a product of the native-English-speaking culture (see section 6.2), and this corresponds with the classic view that authentic language use is taught to bring learners closer to the target culture (Little, Devitt & Singleton, 1989, cited in Peacock, 1997). Gilmore (2007, p.98) identified 8 possible inter-related meanings emerging from the literature, among which, Kramsch’s definition - “[authenticity relates to] culture, and the ability to behave or think like a target language group in order to be recognised and validated by them” - outlines the concept of authenticity as situated in a socio-cultural situation for communicative purposes. In this study, the use of real-life topics was found to be related to the target-language culture. For instance, the topic of Halloween, the task of making Halloween masks, and the phrase children learned - trick or treat - are closely related to authentic language use in native-English-speaking countries.

However, English is a lingua franca that is not only embedded in one culture (see section 6.2.1.2). Therefore, numerous definitions of authenticity exist in the literature. Pinner (2016) has reconceptualised authenticity based on a review of a range of definitions and defines it as a sociocultural process in which individuals engage in dynamic meaning-making interaction through language use. Within this definition, culture is still the foundation of authentic use of language; however, it is not limited to the target-language culture but broadened to include the diverse cultures within the social group. This definition supports the language used in the EFL classrooms in this study, as the extracts showed how successful the use of language was during classroom interactions; this was authentic as both teachers and students used English to co-construct meaning in order to complete tasks through communication. This suggests that learners were likely to develop their communicative competence as they were engaging in communication in which they needed to negotiate with the teacher or their peers. Therefore, the EFL classroom setting can be part of the ‘reality’ that prepares students to develop

their communicative competence through the authentic use of the language, given that they are more likely to interact with non-native English speakers in the future (Illés & Akcan, 2016).

Besides this, using real-life topics was popular among the teachers in this study as they believed that it would increase students' language learning interests. Students could improve their communicative competence by relating to the situation and thereby developing their HOTS skills. This corresponds with Peacock's (1997) study, in which learners were more motivated when authentic materials were used. In this study, there were a number of real-life topics used, which related to the students' authentic social and school life, such as festivals (see extract 12). Similar to Sigel's (2014) findings, this type of topic was popular among students. Using the 'festival' topic, which was familiar to the students, boosted the learners' linguistic self-confidence (MacIntyre, Dörnyei, Clement, & Noels, 1998), since the learners were willing to think in-depth and produce reasons for their responses in English, which would prepare them better for real-life interactions (Sigel, 2014). Additionally, students were engaged and motivated in completing the task as they were able to actively propose their own ideas in diverse ways (Azri & Al-Rashidi, 2014). Therefore, this was an effective technique for promoting students' thinking as well as their foreign language development.

However, topic selection depends on a number of factors, including students' understanding of background knowledge, linguistic competence, age, experience, interest in the topic, and their cultural norms (Sigel, 2014; Omid & Azam, 2014). For instance, there was limited participation in one conversation since students had little knowledge about athletes (see extract 20); this is in contrast with participation in other real-life topics, such as animals (extract 2) and environmental issues (extract 6). Sigel (2014) indicates that the importance of topics has been articulated as leading to a 'willingness to communicate' (WTC). It is vital to use authentic topics which can strongly motivate and interest students in language learning, which, in turn, leads to improvements in their communicative competence. Therefore, a lack of familiarity with the topic might hinder their WTC. Therefore, topic selection in language classrooms is essential when promoting active interaction between students (Sigel, 2014).

It is important to note that even when provided with suitable authentic topics, other aspects of the interactions need to be taken into account, such as teacher talk and wait time, as these aspects will also influence the effectiveness of how students use the topics to communicate. An example of this is Extract 15, where teachers used a real-life topic to motivate students to learn the language by making them feel they were using 'real language' (Azri & Al-Rashidi, 2014), but, by dominating the interaction for achieving the pedagogical aims, teacher did not invite students to contribute their ideas as they might lack of teaching time to strengthen learner's subject knowledge.

6.5.6 Creative teaching

In this study, creative teaching has been identified as a means of developing students' HOT skills, but, meanwhile, fragmented understandings of creative teaching and teaching for creativity were discovered. The teachers believed that teaching creatively leads to the development of students' creativity. Part of their understanding seems to echo Cremin's (2009) suggestion that creative teaching is teacher-oriented and the NACCCE (1999) report that learners' creative abilities are likely to be developed in an environment where the teacher's creative abilities are engaged. According to NACCCE (1999), using an imaginative approach in order to make learning interesting and fun is part of effective creative teaching. For example, students enjoyed using their imagination to make Halloween masks. This task aimed to allow them to "experience" and learn about Western culture. This is a creative teaching approach for which the teacher focused on pedagogical relevance and designed the task in accordance with students' interests and ages. It provided opportunities for students to explore (Rinkevich, 2011), to relate, through imagination, with the topic and to take ownership of their experience to motivate learning (Jeffery & Craft, 2004). There is a similarity here with Jeffery and Craft's study, in which it was found that (2004), "the combination of relevance, ownership and control leads to innovation" (p.82).

In addition to this, one teacher designed a task which required students to revisit knowledge from a science class to seek multiple possibilities for solving environmental problems (see extract 7) and proposed these in English. This kind

of intervention supports children to build connections with their lives outside school through linking their learning with other subjects (Cremin, 2009). This was also the case with the children's art work, when they were asked to make Halloween masks with used recyclable materials and in this way, were encouraged to connect their scientific knowledge with their art design to generate their creative ideas. Above all, teaching creatively helped teachers to keep students' attention on task, and accomplish the same teaching objectives as planned, yet leaving space for the students to explore and generate unplanned and unpredictable learning outcomes (Rinkevich, 2011).

Teaching creatively can be interpreted as being related to teaching effectively, whereas teaching for creativity implies the empowerment of learners (Jeffery & Craft, 2004). Although teaching creatively is involved in teaching creativity (NACCCE, 1999), creative teaching behaviours do not necessarily influence students to be creative (Brinkman, 2010). For instance, the teacher exercised considerable creativity in developing and presenting the fruit man and stationary man tasks (see extract 18), but due to various factors such as a limited understanding of creative teaching and teaching for creativity, alongside the teacher's pedagogic techniques, the effectiveness of the creative teaching was limited. Thus, "creative teaching is not the same as teaching to develop creativity" (Starko, 2014, p.19-20).

It is not the focus of this study to investigate the relationship and distinctions between creative teaching and teaching for creativity. Based on the above discussion, fragmented conceptions of thinking skills and the discrepancies in teachers' beliefs and practices are clear. Hence, in the next section, the roadblocks to developing students' thinking skills will be discussed in an attempt to provide a fuller picture of teachers' understanding of thinking skills in EFL classrooms.

6.6 The tensions and dilemmas that challenged teachers' promotion of thinking skills

The teachers in this study reported a number of factors which challenged their integration of thinking skills into their practices. There were also some obstacles

identified in teacher-student interactions which obstructed the development of students' thinking skills. In this section, discussion of these tensions and dilemmas, namely, the teacher's knowledge of thinking skills and contextual factors, will be presented.

6.6.1 Teacher's knowledge of thinking skills

Insufficient knowledge of both content and the pedagogy of thinking skills was one of the obstacles which the teachers reported (see section 5.2.1) and discovered from their teaching practices (see sections 5.6.1 and 5.6.2). This is similar to the findings of certain empirical research studies (e.g. Aljughaiman & Mowrer-Reynolds, 2005; Li, 2016; Stapleton, 2010). Firstly, Stapleton's (2010) study revealed that teachers had some conceptions of critical thinking although these tended to be narrow. Li's (2016) research also illustrated that EFL teachers had a fragmented understanding of thinking skills. In this study, teachers were able to present some features of HOTS skills, yet their understanding of some of these was different from the literature; for example, teachers misunderstood being flexible in exchanging words in a given sentence structure as a creative behaviour (see section 5.2.5). Aljughaiman & Mowrer-Reynolds's (2005) study also showed that teachers perceived the students' creative behaviours differently from the experts. It was also found in this study that teachers might not appreciate creative behaviours such as playfulness (see section 5.6.3) and excitement about the topic (see extract 21).

Secondly, the teachers' fragmented understanding of thinking skills was directly reflected in their teaching practice, which hindered students' HOTS development. For example, being playful in conversation was considered a distraction from academic learning and therefore something that teachers ignored and discouraged (extract 20). However, playfulness is essential for developing creative thinking (Carter, 2004; Maley, 2015), and the Kangas study (2010) showed that a playful learning environment assists the fostering of creativity and imagination in students, as well as their academic achievement. Hence, restricting playfulness in the phonetics and language activity obstructed the development of a playful learning environment, which hindered students' foreign language development since they were not allowed to take risks and try out the

language on their own. Besides this, teachers' fragmented knowledge of thinking skills is one of the reasons for their conflicting beliefs regarding the promotion of thinking skills in EFL classrooms. This results in them abandoning the development of thinking skills as they do not have much knowledge of them. Despite this, the teachers were observed unconsciously promoting higher-order thinking skills in class (see extract 6) and this reveals the discrepancy between teachers' beliefs and their practices. It also infers that teachers might be lacking sufficient pedagogical awareness and skills in promoting thinking skills.

Thirdly, it was evident that insufficient pedagogical knowledge hindered students' HOT development (see extract 18) as one teacher expected creative teaching to lead to the development of students' creative thinking skills. Teaching creatively is mentioned in the ECS (2011); however, little guidance is given to teachers in how to do this. This indicates that teachers might perceive a lesson as "a series of plannable mini-episodes", and such methods "offers an illusion of certainties" (Pugliese, 2016, p.21) to them which might ease their uncertainties in teaching thinking skills. Without clear guidance from the ECS (2011), such methods could be "false oases of sorts" which might become another "obstacle to more experimentation, to more creative approaches to teaching" (Pugliese, 2016, p. 21).

To take this point further, a blind faith in methods might lead to ignorance of techniques which teachers could use in teaching thinking skills. For example, the lack of awareness of techniques such as wait time to promote thinking skills had prevented students' from developing their thinking skills. This indicates teachers' limited awareness of the factors which can hinder the development of students' thinking (Chien & Hui, 2010). Hence, the lack of sufficient conceptual knowledge of thinking skills and the pedagogical strategies for developing them negatively influenced teachers' attitudes with regard to promoting thinking skills, and also obstructed the development of students' HOT skills in class.

6.6.2 The contextual factors

The main barrier to develop students' HOT skills is the exam-oriented system, which was reported by the teachers as heavily influencing their attitudes to

promoting thinking skills (Li, 2016), and their pedagogical choices they made in class regardless of the endeavours that the National Curriculum made to emphasise the importance of promoting them in EFL classes. The excessive number of exams is an obstacle for teachers as they feel it is their responsibility to teach students linguistic knowledge in preparation for the exams (Pugliese, 2016). This explains why the teachers perceived linguistic knowledge as being their priority in teaching. This point is also related to textbook-bound teaching as the textbook content is knowledge needed for exams. Therefore, if teachers focused only on the textbook, they would implement fewer interactive activities, which, in turn, would limit the opportunities to develop students' HOT skills. Additionally, at the personal level are teachers' concerns about the quality of their teaching as this was reported as being strongly linked to student performances in the test. From a broader perspective, parents, schools and the local government expected students to achieve high scores in exams, which in turn pressurises the teachers. Therefore, the exam-oriented system was problematic for the teachers as it led to various other sociocultural aspects creating obstacles to implementing thinking skills in class (Craft, 2005; Li, 2016; Pugliese, 2016).

In addition, it might be that there is a discrepancy between the curriculum and assessment as the objective of developing thinking skills is not tested in the examinations, and thus there is a failure to determine how effectively students have mastered this objective (Brown, 1995). In turn, this influences teachers' willingness to develop thinking skills in class and creates a washback effect on EFL teaching and learning (Bailey, 1996; Messick, 1996). This is not to suggest that thinking skills should be examined; rather, it is to argue that test developers should be legitimated to design indirect measures of the construct in accordance with the curriculum objectives (Alvarez, & Munoz, 2010). For example, a writing task could assess both linguistic knowledge and thinking skills, focusing on both form and meaning.

Limited teaching time is another tension for the teachers. Teachers have to cover all aspects of the syllabus within 40 minutes of teaching in order to develop an integrated competence in language application, as required by the ECS (2011) (see section 2.7). As a result, opportunities to implement activities that promote

students' thinking skills were restricted due to the limited time frame (Li, 2016); the curriculum is already full of other aspects of language learning (Cheng, 2010).

Closely related to this area is classroom management. Teachers perceived that younger learners were difficult to manage and could easily get excited, leading to the potential for chaos when they were teaching thinking skills. This was evident in their ignorance of the benefits of playfulness; the teachers also perceived excitement as a distraction from learning. Provided that teachers reported limited teaching time as being another tension for them, they would be left with little choice but to abandon teaching thinking skills in class, since this could be time-consuming in terms of classroom management. It would also require teachers to have sufficient pedagogical knowledge to balance discipline and a playful and interactive environment.

6.7 Summary

To summarise, generic HOT was defined by the teachers as a set of good thinking skills to promote in EFL classrooms, accompanied by the essential role of memorisation and summarising. "English thinking" has been introduced as subject-specific thinking. Since culture and language are inseparable, teachers regard the application of English as including thinking from the target-culture perspective. Nevertheless, their conceptions of thinking skills are lack of conceptual clarity, yet showed their supplicated thinking in defining thinking skills. More investigation is needed to explore the concept of "English thinking" which is subject specific. Conflicting beliefs about whether and how to implement HOT skills were found. Overall, the teachers regarded thinking skills as essential for language development and had a positive attitude towards promoting them. Their previous learning experience had informed them that traditional language learning styles, such as rote-learning, were effective at increasing linguistic knowledge, and this influenced their current teaching beliefs about encouraging memorisation in class. However, constrained by their insufficient content knowledge and pedagogical knowledge of thinking skills, as well as other contextual factors such as the exam-oriented system, not all the teachers reported a willingness to implement thinking skills in class. Opportunities and obstacles were found in the potential opportunities for developing students'

thinking skills. The findings were similar to the literature, in that teacher questions, feedback, collaborative learning, an increase in wait time, the use of authentic topics and creative teaching were techniques that helped develop students' thinking. On the other hand, teachers' fragmented understanding of thinking skills influenced their teaching practices; they were unaware of certain opportunities for promoting thinking skills, and saw some creative behaviour, such as playfulness, as a distraction from academic learning.

Chapter 7 Conclusion

The aim of this study was to investigate Chinese EFL teacher cognition of thinking skills and to explore the opportunities and challenges the teachers faced in integrating thinking skills into their EFL classes. Synthesising the findings of the research questions, the knowledge, beliefs and practices of teachers with regard to thinking skills are intertwined. To bridge the gap between teachers' knowledge and beliefs and their actual teaching practices in this area, highlights the implications for policy makers, teacher education, local governments, and teachers. The contributions this study makes to knowledge will be presented after these implications have been discussed; this will be followed by a discussion of the limitations of the research. Last, but not least, recommendations for future research studies will be made.

7.1 Implications for policy makers

Policy makers need to transform the goal of promoting thinking skills into more specific learning objectives, since teachers reflected that they experienced challenges in integrating thinking skills in class because of the unclear guidelines. The policy makers could narrow the scope of the goal statement by analysing the learning objectives in their smallest units and stating specific goals as objectively and as precisely as possible in relation to the Chinese context, as this would be more useful as a guideline for teachers (Brown, 1995). A clear and reader-friendly interpretation, including a thorough explanation of the requirement for the development of thinking skills is needed. The policy makers need to state which thinking skills are required to be taught. This could be done by informing teachers of the framework for implementing thinking skills, and by providing practical suggestions on how to integrate these skills in class. For instance, in response to the findings of this study, the policy makers need to clarify their definitions of creativity and of thinking skills in the ECS (2011) (see section 2.7).

Additionally, the policy makers should consider a contextualised framework for developing thinking skills and articulate it in a way that is amenable to instruction (Swartz & McGuinness, 2014). For instance, it has been shown that summarising

is one of the higher-order thinking skills in this study, which is different from Bloom's taxonomy. "English thinking" was also identified as subject-specific thinking. Therefore, a more contextualised framework for teaching thinking skills would make this learning objective easier to achieve as it is designed based on the Chinese thinking and learning culture. The policy makers need to provide a clear and detailed description of good thinking skills in order to achieve the aims laid out in the ECS. Therefore, it is advocated here that the policy makers should establish a close link with the TPD unit in order for the teacher educator to create appropriate training to meet teachers' needs (Li, 2016). In return, the teacher development programme could also inform the policy makers about the needs of the teachers as well as any practical concerns or issues in the real teaching environment, in order to improve and update the curriculum for promoting thinking skills in EFL classrooms.

Besides this, one reason for the conflicting beliefs about teaching thinking lies in the discrepancy between curriculum and assessment. Teachers in this research withdrew their willingness to promote thinking skills, although they recognised the significance of integrating thinking skills in ELT. However, their beliefs were influenced by the exam-oriented system in which thinking skills are not assessed. Thus, importance should be given to the assessment of thinking development (Swartz & McGuinness, 2014). First, policy makers should deliver a message to the teachers and test developers that examining students' linguistic knowledge is not the only priority. Teachers need to be informed that thinking skills are "hidden" in each exam task. For instance, students need to use creative thinking skills and critical thinking skills for their writing tasks.

Secondly, the curriculum developers could inform teachers and test developers of the approach taken to evaluating the development of students' thinking. Swartz and McGuinness (2014) have identified that a psychometric approach and a curriculum approach are the two general approaches in the field of assessing thinking. Regarding the Chinese context, I suggest the latter approach would be more suitable. As the development of thinking skills is embedded in the ECS (2011) (see section 2.7), and is in terms of student performance, the assessment

itself could be aligned with the thinking-related objectives of the curriculum (Swartz & McGuinness, 2014).

Thirdly, general principles and marking criteria that support thinking assessment should be designed. For example, the development of a rubric is needed. However, the construction of such a rubric is a focus for further research. One suggestion that could be made is to adapt the frameworks which have already been developed and researched. Instead of giving marks, it is necessary to inform the teachers about the different standards or levels of proficiency of skilful thinking, with appropriate performance descriptors that distinguish the different levels (Swartz & McGuinness, 2014). To clarify this point, it is not to argue here that the development of students' thinking should be assessed, but to raise awareness that HOTS skills are embedded in the language learning process, including in the exams.

Fourthly, policy makers should also provide suggestions regarding the formative assessment of thinking skills. This could be done by providing positive and constructive feedback on students' responses in relation to HOTS skills, by deepening their understanding of their current knowledge (Diaz-Ducca, 2014; Ur, 2010), and by giving effective feedback by stating the thinking skills the students had used (see extract 1). Such formative assessment helps students identify their needs.

In terms of teaching materials, policy makers can request the textbook publishers to provide sample activities or exercises related to the development of thinking skills in course materials. This would bring coherence to the teaching content and to the aims of promoting thinking skills in the curriculum. It would also support teaching, especially for the teachers who have insufficient content and pedagogical knowledge of thinking skills. Therefore, the course book materials should include resource packs, guidance and suggestions for modifying the teaching content (McGrath, 2002). In relation to the ECS (2011), using a wide range of teaching resources creatively is what is required. Therefore, technological and other materials that teachers should use creatively require a more in-depth elaboration in order to eliminate unnecessary misunderstanding in this field, as confusion between teaching creatively and teaching for creativity has

been found in this study. Teachers need to have support in analysing students' needs in terms of thinking development. In this sense, they could adapt, adopt or develop appropriate materials to develop students' thinking skills.

7.2 Implications for teacher professional development

A call for teacher professional development (TPD) in this field, including teacher training for both pre-service teachers and in-service teachers, needs to be established. Because of the dynamic nature of TESOL education and the unclear approach and structure for thinking skills' development in the Chinese context, it is difficult to generate sustainable and well-structured teacher development programmes in detail in this thesis. However, there are some suggestions for TPD that can be derived from this study. This could be done by incorporating a combination of "the top-down nature transmission model" (Kumaravadivelu, 2012, p.9), with expert knowledge and skills directly taught to prospective teachers, and a bottom-up approach which recognises "the value of teachers' experiences and ways of knowing" (Crandall & Christion, p.5) into a teacher education programme.

7.2.1 A top-down approach for developing teacher's knowledge.

The findings suggest that teachers need to develop their content knowledge of thinking skills. Therefore, a systematic and clear explanation is needed that includes different definitions of thinking skills (for example, the philosophical approach to defining such skills). In order for teachers to have a broad picture of this field, bringing into TPD recent research studies into teachers' conceptions and beliefs about thinking skills would allow them to further develop their knowledge of this area as well as providing them with opportunities to relate their educational beliefs with these research studies and theories. For example, teachers need to have knowledge about what HOT skills are, and what effective thinking skills can be promoted in EFL classrooms (Li, 2016). To go further, teachers need to develop their understanding of students' thinking behaviours, such as playfulness and being curious, as indicators of HOT skills and creativity being developed (Craft, 1997). It is important for teachers to understand and recognise students' thinking behaviour in order for them to take actions to expand

their learning. With sufficient input regarding the theoretical framework and approaches to defining and developing thinking skills, teachers are likely to improve their overall teaching practices as this would enable them to reflect on what they think, what they know and how they act in practice. Workshops, lectures or seminars could be designed for pre-service and in-service teachers. By providing comparisons between the wider literature and a more contextualised understanding of thinking skills, it could be possible to raise teachers' awareness and knowledge of the multi-dimensional and complex nature of thinking skills, which is greatly affected by sociocultural factors.

In terms of the development of teachers' pedagogical knowledge regarding thinking skills, a "multilayer concept" of thinking skills needs to be brought forward for "pedagogical consideration" (Li, 2016, p.285) since teachers' pedagogical knowledge affects their teaching practices (Borg, 2006; Mok, 2009). Informed by the challenges which constrain the implementation of thinking skills in class (for example, limited teaching time), practical pedagogical suggestions for teaching thinking skills should be provided in TPD programmes. Regarding novice teachers, equipping them with this pedagogical knowledge could increase their confidence in their initial teaching experiences (Li, 2017), as it would support them in organising and planning the integration of thinking skills in class more flexibly. For the more experienced teachers, pedagogical knowledge would help them to bridge the gap between their teaching practices and the learning objectives in the English Curriculum. Similar to the suggestion for content knowledge development, relevant research findings could also be introduced to provide them with different insights into pedagogical awareness and to equip them with skills for teaching thinking. Pedagogical suggestions from the research findings, such as the use of questioning techniques (e.g. Tuan & Nhu, 2010), the increase of wait time (e.g. Ingram & Elliott, 2016) and creative teaching methods (e.g. Cremin, 2009), could be introduced to the teachers. However, an in-depth analysis of these techniques can be used to promote students' thinking needs to be shown to the teachers, instead of only providing them with general techniques that can be used in EFL classrooms.

To be specific, the teacher development unit needs to develop a set of principles for promoting thinking skills in class as a basis for the teachers to follow. For example, the principles proposed by Higgins, Baumfield and Leat's (2001) - "clear purpose, articulation, mediation, connecting language learning, evaluation and metacognition" - could be adapted (p.6-7). Firstly, a clear purpose allows both teachers and students to understand the specific targets that they need to achieve. It also enables teachers to follow the teaching objectives of a particular activity, to avoid confusion. This implicitly allows the children's understanding of language learning to shift from 'what they need to do' (for example, to learn grammar) to 'how and why they do' (for example, to negotiate negotiation).

Secondly, because the focus has shifted from linguistic knowledge to integrated competences in English, it would be beneficial to introduce spoken communication in the Chinese EFL classroom. Such communication would encourage students to express their thoughts regarding their work, which would foster an environment for developing students' thinking skills. When pupils articulate their thoughts, their linguistic knowledge, speaking skills and interactional competence can be promoted integrally as the children can practise and produce the language through, for example, giving reasons for their work, and this could enable them to make an immediate response in the light of another's feedback. This process also requires different thinking skills if a natural interaction with the other speaker is to develop. It also helps teachers to identify any pitfalls learners have in developing their HOT skills (Higgins, Baumfield & Leat, 2001).

Thirdly, from a sociocultural perspective, the teacher could act as a mediator in facilitating students' learning and thinking; this could be done by, for example, discussing things with the students in class and providing direct and indirect instruction to mediate the students' learning and thinking process.

Connecting learning emphasises the inseparable relationship between language, learning and thinking. It supports teachers and students in making connections between tasks and real-life activities (e.g. extract 9 and extract 12). Teachers' practices also connect the English subject to science subjects (see extract 7). In

line with the implications of assessing thinking skills, the principle of evaluation could be applied to formative assessment in class. Pupils will eventually evaluate their own performance: “Only once the purpose of learning is meaningfully understood, can pupils start to evaluate how successful they have been and then identify why they were successful or unsuccessful” (Higgins, Baumfield & Leat, 2001, p.7). In relation to metacognition, teachers could discuss the strategies that learners use in language learning with them and evaluate the learning process. Teachers would develop an understanding of learners’ learning style and this would, help them to plan their teaching more effectively to assist students’ learning and HOT development.

Although these principles originated in the Western context, the underpinning perspective, as illustrated above, shares a similarity with the teaching context in this study. It is recommended that in the teacher development unit, the teacher trainers need to contextualise and specify the principles in detail to provide a more practical pedagogical consideration for the teacher practitioners.

Apart from establishing a set of principles, visual recordings could also be a useful strategy to illustrate pedagogical practice (Li, 2016). For instance, by showing instances of classroom teaching from recorded videos, teachers could critically examine and identify the thinking moments which they could then use when developing students’ thinking skills. This would assist them in understanding how the above principles could be applied in the real teaching environment and how the techniques could be used appropriately to develop students’ language and thinking skills. Through critical examination of the teaching instances, teachers might discover new teaching strategies for promoting thinking skills and language integrally and so reflect on their own teaching practices.

7.2.2. A bottom-up approach for teacher professional development.

TPD is never concrete but is an ongoing learning process for learning how to teach (Scrivener, 2009). In a bottom-up approach, reflective teaching is a process in which teachers collect data from their practice, and use this to examine their own understanding, beliefs, and attitudes in the classroom (Crandall & Christion,

2016). This encourages teachers to construct and deepen their knowledge in an actively engaged way, by bringing in their teaching and learning experiences in language education and reflecting on how they understand thinking skills and their own beliefs regarding teaching thinking in their sociocultural and political context. This could be done in several ways.

Firstly, teachers could be provided with opportunities to consciously implement the teaching techniques developed from the top-down approach. This would help them to develop their awareness and pedagogical knowledge of thinking skills. As a one-off teaching practice would be far from enough, step-by-step micro-teaching or teaching practices should be provided throughout teacher education courses. Their teaching practices could be video-taped (Bailey, Curtis & Nunan, 2012) for critical analysis of the techniques they use to implement the strategies of teaching thinking skills in class (Li, 2016). This would also allow teachers to have vivid recall of their teaching process and discover aspects of their teaching which they wish to improve (Bailet, Curtis & Nunan, 2012).

Secondly, peer evaluation could be a useful method for providing useful feedback to their peers (Scrivener, 2009; Ur, 2010). This would enable teachers to set up a collaborative working environment which would allow them to discuss their teaching practices and construct their cognition of thinking skills in interactions (Li, 2017). Collaborative investigation allows teachers to discuss shared problems, successes, and different ways of working and to acquire innovative ideas for teaching. Informed by the findings of this research - that restrictions in teaching time and textbook content challenges teachers' implementation of thinking skills - in professional development sessions, teachers could work as a group collaboratively on lesson plans, designing activities for the integrity of thinking skills and language development. Issues such as the lack of teaching time, the exam-oriented system, classroom management (see section 5.6) and evaluation of materials could be discussed in groups and different solutions or suggestions generated to facilitate the development of thinking skills in EFL classrooms.

Thirdly, a reflective journal would be a useful tool for the teachers to keep track of their professional development. Teacher knowledge and beliefs are complex as they are built on previous and existing experiences as learners as well as teachers. Therefore, the reflective journal could well document changes in practices as well as in their beliefs prior to or after the professional development session (Li, 2012), and could include their theoretical understanding of thinking skills, their beliefs about developing thinking skills and their understanding of their current situation and how they could promote these skills within a certain context. For in-service teachers, a teaching portfolio would also be useful for them to present a rich array of information, techniques or ideas that would serve to strengthen their professional development. In this way, teachers could expand their views of teaching and learning. The development of multi-faceted knowledge in promoting thinking skills also could also lead to the professional and individual development of teachers (Crandall & Christion, 2016).

7.3 Implications for local government, schools and teachers

Because of the decentralised system in China (see section 2.4), local government, especially the Education department, has most control over the implementation of the ECS. The findings revealed that only the head of the English department had the opportunity for in-service teacher training, which prevented other teachers from developing their professional knowledge. Therefore, the local government could organise training courses, invite experts to run workshops and research seminars for all teachers to develop their knowledge of the development of thinking skills. The local education department should also be responsible for explaining the content of the ECS (2011) to the teachers as they decided to adopt this political document in ELT. The local government could investigate EFL teachers' understanding of this document and tailor it if any confusion is found regarding the ECS. Local teachers in this study showed insufficient understanding of this document, in particular, with regard to the development of thinking skills. A communicative approach should be taken, as there remains a gap between the learning objectives of thinking skills (that is, policy) and the teaching of them (that is, practice), and this should be reported to the MOE to inform the policy makers of the practicality of the ECS. Finally, the

local government should encourage collaboration among local schools. This would support the sustainable development of primary education in this city, as well as providing opportunities for teachers to exchange their ideas and teaching methods, and to create a community for knowledge co-construction.

For local schools, the administrative department needs to mandate professional development that is focused “principally on new knowledge and skills for teachers” (Crandall & Christion, 2016, p.17). Local schools could develop a community of practice (CoP) (Lave & Wenger, 1991). According to Crandall & Christion (2016), CoP promotes collaboration among teachers who shares common interests, including the expert and the novice. Individuals who might come from different areas, regions or social backgrounds work collaboratively and exchange their thoughts on developing students’ HOT skills in EFL classrooms. This could be done through building a sustainable community of inquiry online, including discussion groups, web-based learning and teaching programmes for reflection, as well as for the sharing of ideas and resources (Crandall & Christion, 2016; Shin, 2016). Online professional development, particularly if it entailed communication with others from diverse cultural backgrounds, could open up Chinese EFL teachers’ horizons in understanding the cultural elements that impact on thinking skills. This would be an effective way for them to develop a more thorough understanding of Western and Eastern cultures of learning and thinking.

For local EFL teachers, teacher collaboration would enable them to learn together through a “process of increasing participation in the practice of teaching” (Crandall & Christion, 2016, p.18). This is particularly useful for local teachers who do not have the opportunities to participate in the continuing professional development programme. The suggested teaching practices below are similar to the TPD programme at the teacher training institutes (e.g. Normal Universities). However, they are different in three ways. Firstly, the suggested local TPD aims at the in-service teachers who will work collaboratively with their colleagues to improve the effectiveness of their teaching without being assessed. Secondly, informed by Leat and Higgins’s (2002) study on TPD in teaching thinking by PGCE students, “powerful pedagogical strategies” (PPS) developed through a

human-scale approach were useful to extend their “repertoire of teaching approaches” (p.72). Although the PPS were used by PGCE students in the UK, the Chinese local TPD could borrow the concept and contextualise its features for in-service teachers. For instance, adaptation is a characteristic of PPS which encourages teachers to make changes to lessons, giving them more control over their teaching. This is in alignment with the decentralisation of the Chinese education system, which allows for the adaptation of current curricular and teaching materials, and local teachers would have more control over integrating thinking skills in ELT. The encouragement of talk is another characteristic of PPS, and one which facilitates teachers to work from a learner’s perspective as they need to explain, clarify, negotiate and discuss in order to jointly construct knowledge. This could help them to understand how they could use talk as a powerful strategy to enhance the development of students’ thinking.

According to the research findings, teachers have regular in-house staff meetings every week; thus, reflective activities could be organised to reflect on teachers’ prior learning experiences and to discuss their teaching practices with regard to thinking skills; in this way, teachers could be more able to modify their teaching and be more informed about decisions they need to make in their teaching (Mak, 2011). Gradually, they could generate their own powerful pedagogical strategies for teaching thinking in EFL classrooms. The local TPD can be arranged in collaborative use of different practices involving the following (Crandall & Christion, 2016; Scrivener, 2009; Ur, 2012):

- Peer observations. Colleagues observe each other’s’ teaching practice of thinking skills and give constructive feedback.
- Coaching. A member of staff (e.g. who has received training sessions) provides help to the less-experienced teachers in teaching thinking.
- Reflection. This involves thought-provoking experiences and problems teachers come across in teaching or learning thinking skills.
- Discussion. Teachers could bring up their individual thoughts on the issues which require action to be taken, such as seeking agreement in buying new materials for teaching thinking skills, innovation regarding creative teaching methods, and their perceptions of thinking skills and

policy documents.

- Lesson planning. This could reduce individual the workload in terms of collaboratively designing thinking skills-related activities of which they have insufficient knowledge.

The format or practices in TPD could be discovered and invented in various ways; the key message here is that such collaboration creates supportive learning communities for teachers that could motivate them to explore and investigate their own teaching of thinking skills.

7.4 Contributions to the knowledge.

This study has filled a gap in the research area of teacher cognition of thinking skills in EFL classrooms. There is a wealth of research studies focused on the implementation of thinking skills and their effectiveness in education (e.g. Yang, 2016; Jia et al., 2017). A growing number of studies focus on teaching creativity (see Xarri & Vassallo, 2016) and criticality (for example, Yang & Gamble, 2013) in EFL classrooms. There are studies that have investigated teachers' conceptions of thinking skills (for example, Newton & Beverton, 2012; Kamylyis, Berki & Saariluoma, 2009). However, there are limited studies that have explored the significance of teacher cognition of thinking skills. This study provides an in-depth picture of EFL teachers' perspectives on thinking skills in terms of their knowledge, beliefs and their teaching practices. The findings of this research study could provide recommendations and suggestions for the Chinese educators in relation to the development of thinking skills in EFL primary classrooms. The evidence shows that teachers need immediate training to develop both content and pedagogical knowledge of teaching thinking skills in EFL classrooms, taking into consideration the moments which have been used to promote thinking during classroom-based talk.

The findings concerning teachers' conceptions of thinking skills contribute to knowledge in the field of thinking skills. Summarising has been found to be more than a lower-order thinking skill, as it may require individuals to demonstrate the skills of analysing, comparing and contrasting, and understanding complex

issues. However, it is difficult to find empirical research studies focusing on summarising as a HOTS skill. Rather, it has been categorised within lower-order thinking skills or seen as a reading or writing task to check students' understanding. Therefore, a new understanding of summarising could be added to the existing literature in the field of TESOL. The study also questions the hierarchical order of thinking skills and argues for a more holistic view since there are overlaps among them. The concept of "English thinking" has also been illuminated by the teachers who isolated subject-specific thinking skills within the English curriculum. This informs the literature about the thinking skills required for foreign language learning; it also calls for policy makers' attention when developing a thinking skills' framework for EFL curricula.

At the methodological level, the use of a combination of interviews and video recordings provides a thorough and detailed landscape of teacher cognition. Instead of conducting experimental research into the effectiveness of implementing a framework in the Chinese context (as did, for example, Jia et al., 2017; and Wen, 2009), an interpretive case study has built up a rich picture of an entity, using different tools to collect data and gather the personal views, perceptions, and experiences of each individual participant (Hamilton, 2011). Teachers deliver knowledge and facilitate student learning via their personal perspectives, so their personal experience matters as they can influence the students' learning and future development. In response to this, this study offers an in-depth and rich understanding of teacher cognition of thinking skills through a close and detailed examination of their interaction with students. The use of Alexander's dialogic teaching framework and Mercer's work on exploratory talk bridged the gap in the studies of the Chinese context in this field, and in addition, could serve to raise Chinese educators' awareness of the value of using an interpretive approach to investigation. Another contribution is the development of a think-led methodological framework to analyse the complex notion of teacher cognition, which is developed from the sociocultural approach to discourse analysis (Mercer, 2014), dialogic teaching principles (Alexander, 2017) and incorporates teachers' conceptions and beliefs from the interviews. This could be adapted for future research studies in a similar context, especially for case

studies as it has a solid theoretical framework and includes the perspectives of local Chinese EFL teachers.

This study also contributes to the wider literature by demonstrating that Chinese students were active in terms of learning and thinking in both a silent and voiced way. It informs the field that learning within the Chinese culture is not necessarily focused on knowledge transmission and, furthermore, that the stereotyping of Chinese learners was biased; the children in this research study demonstrated their HOT skills and this serves to invalidate this bias. The study recognises the different conceptions of thinking skills which were influenced by sociocultural factors, yet it does not work on the polarised view of Western ways of thinking and Eastern ways of thinking. Rather, the conception of thinking skills is never an agreed one and could be defined in various ways using different approaches, by different individuals, and not just limited to nationality or region.

7.5 Limitations of this study.

There are a number of weaknesses of this study. First, as this is an in-depth qualitative research study and only four participants were involved, it might be informative to carry out a study using surveys to involve a wider population of teachers. For one thing, the study of factors such as age, which influence their beliefs concerning the development of thinking skills, could be further developed, and the correlation of such factors and teacher beliefs could be further identified. This could be done by using questionnaires as a data collection method. As there has not been a great number of research studies carried out in this field, surveys could make a greater contribution to the body of knowledge. Surveys gather standardised information and rely on large-scale data (Cohen, Manion & Morrison, 2011). They can also be a foundation for developing interview questions. I did not expect that the teachers would have limited knowledge about thinking skills, which created challenges in eliciting their perceptions of them. If provided with the findings from a questionnaire, a general understanding of their conceptions and beliefs of thinking skills could have been taken into consideration and served to improve my interview questions. Additionally, survey findings could be applied to the development of a conversation analysis framework for the

teaching situation. Triangulation could shed light on teacher cognition of thinking skills better than using purely qualitative methods. This by no means suggests that the weakness in interviews and video tape recordings would be compensated for by using questionnaires. Rather, triangulation would help to analyse the consistency of the findings generated by different methods and to map out the complexity of classroom interaction (Cohen, Manion & Morrison, 2000). By using mixed-methods, more in-depth and wide findings could be generated and a fuller picture of this phenomenon in the Chinese context could be produced.

Secondly, only four participants engaged in this research study, although the findings could be applied to a similar context. In terms of local schools, EFL teachers from different year groups and schools could have been invited to participate in this study. This would have enabled comparisons among different year groups to be made, since some teachers indicated that they tend to adopt different teaching approaches according to the students' ages. This would also have served to open up opportunities to the local teachers who would have liked to participate, which would have generated more fruitful research findings. Informed by the findings of this study, policy makers and local staff from the education departments could have been involved since they are the decision makers. In these ways, a more in-depth understanding of the curriculum could have been revealed and richer data on policy and practice produced.

A third limitation of the study is that follow-up interviews could have taken place. This would have allowed teachers to review and recall their teaching and explain any unclear information, such as the aim of a particular activity, in the recordings of their teaching practice; it would also have enabled further investigation of their understanding and pedagogical knowledge of the development of thinking skills. This could have provided a more in-depth and fuller understanding of their teaching, and generated a fuller picture of their cognition of thinking skills.

A fourth limitation is that, at the preparation level, pilot interviews and video-recordings were carried out. However, the data analysis, most particularly, the discursive analysis of teaching instances, could also have been piloted. This could have provided a picture of the dynamic classrooms and what it was necessary to be aware of when analysing the data. To illustrate this, if I had

analysed or transcribed a pilot video recording, the data collection process could have been more effectively organised. For example, with a certain understanding of and practice in analysing video recordings, the actual interviews could have been designed and applied based on the results of the discursive analysis. The actual interviews would then have broadened the findings and new insights into classroom teaching and learning could have been gained. Thus, it is suggested here that a small-scale pilot research study could take place in advance of a future similar study, as it could validate and encourage methodological rigour within a designed formal framework including research aims and questions. Reflecting on the research process of this study, practical issues of data collection methods as well as their applicability in the real-life situation, would have provided a way to pre-empt challenges ahead and to estimate the study parameters (Wray, 2015) for the full-scale research study in the future (Teijlingen & Hundley, 2001).

7.6 Recommendations for future research.

For future research, I recommend six areas for further investigation. The first one is that teacher cognition of thinking skills needs to be investigated in a wider population, including at different stages of schooling (e.g. pre-schools), and in different sectors of education (vocational education, private schools and international schools). At the policy level, research could inform the policy makers about the changes they need to make to improve the development of thinking skills. If provided with a detailed and contextualised policy, local schools and teaching practitioners could develop and choose appropriate materials to develop students' thinking skills in EFL classrooms. Future research findings could bridge the gap between policy and practice.

Secondly, at the knowledge level, further research studies on teacher cognition of thinking skills in the Chinese context would allow Chinese educators to develop their own framework of definitions and their own approaches to the teaching of thinking skills. Some research studies carried out in China (for example, Wang et al., 2016; Yang, 2016) focused on the implementation of thinking skills in class using an existing framework. It would be worthwhile to investigate and develop a more localised teaching approach in order to apply it in the Chinese EFL

classroom, as local EFL teachers interviewed raised the concept of “English thinking”, and perceived summarising and memorising differently to how they are perceived in the existing, widely used framework (e.g. Bloom, 1956). Critical examinations of the innovative approach could be another type of future research. These research studies would create another body of knowledge in understanding conceptions of thinking skills from a sociocultural perspective. It might also reveal new knowledge of thinking skills and establish new relationships to the world from the perspective of the Confucian-heritage learning culture.

A third area for future research concerns the obstacles to teaching thinking skills that became clear in this study. I suggest that more attention needs to be placed on materials development and resources investment. Evaluation of existing materials, such as textbooks, is needed, so as to ascertain the elements which contribute to thinking development and to inform teachers how the existing materials could be used to promote better learning (McGrath, 2002) through using thinking skills. Developing appropriate materials such as textbooks, teachers’ books, videos, flashcards and so on, could promote both language learning and thinking skills’ development. Investigations into resources such as mobile apps and social networks could also support TPD (Shin, 2016) and promote the development of students’ thinking skills (Wegerif, 2015).

Fourthly, as the participants reflected that they had little training and access to this field, I propose that research studies should be conducted into TPD programmes for thinking skills’ development, and that these should include teacher education for pre-service teachers, and continuing professional development for in-service teachers.

Fifthly, students’ perspectives also need to be taken into consideration. For example, research could be carried out into how students view the teaching of thinking in Chinese EFL classrooms. Understanding students’ perceptions of thinking skills could lead to new values in teaching thinking in classrooms being incorporated. Besides this, further investigation into collaborative group work is needed since the language used among students during interactions could be different from that used in teacher-students interactions. Such research could

also generate useful information on how student thinking skills develop through knowledge co-construction, discussion and collaborative talk.

Finally, a cross-disciplinary approach to thinking skills is worth conducting in future research, as the teachers in this research study showed that they promoted students' thinking skills through creative arts and scientific topics.

To summarise, this study has contributed to the understanding and richness of teachers' conceptions, beliefs and practices with regard to thinking skills in the EFL context. Teacher cognition of thinking skills in EFL classrooms is an under-researched area that deserves more attention. Developing students' thinking skills is significant in fostering 21st century competencies, and teacher cognition of thinking skills is the very first step in developing students' thinking. Without sufficient understanding of teacher cognition of thinking skills, there is less chance of the successful implementation of thinking skills in class as a means to educating children in the skills and knowledge that are needed to succeed in life and work in the 21st century.

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Appendices

Appendix 1 Interview questions

Interview Questions
<p>How do you think the teaching and learning should be like in Chinese EFL classrooms?</p> <p>Follow-up questions:</p> <p>How important is it to learn English for your students?</p> <p>What is the best way to learn English in China?</p> <p>What is the ideal approach to teach English?</p> <p>What elements can facilitate English learning?</p> <p>What is a good learning environment?</p> <p>What can teachers do to promote this kind of environment?</p>
<p>2. What are your teaching beliefs, why?</p> <p>Follow-up questions:</p> <p>What is your priority in your teaching?</p> <p>What roles do you perceive yourself in class?</p> <p>What are the goals in language teaching?</p> <p>According to your experience, what are the ways that can improve students' language development?</p>
<p>3. How well do you know about the government paper?</p> <p>To what extent do you think your teaching follows the teaching guidelines from the government paper?</p>

4. How do you understand thinking skills?

Follow-up questions:

What are the thinking skills?

What thinking skills that you think should be integrated into EFL teaching?

5. To your own understanding, what are the thinking skills that are worth promoting in your teaching?

Follow-up question:

Do you think promoting thinking skills in class can enhance students' language development, and why/why not?

6. In your opinion, how thinking skills should be promoted in EFL classrooms?

Follow-up question:

How do you understand the relationship among learning, thinking skills and the use of language?

7. How do you integrate teaching thinking skills in your teaching?

8. In what ways do you think in your own teaching have encourage the development of thinking skills?

9. What are the barriers/dilemmas in promoting thinking skills?

Follow-up questions:

How do you think that can be solved?

11. Have you ever been trained in teaching thinking skills?

Follow-up questions:

- **if YES,**

In what ways have you been trained in teaching thinking skills?

To what extent do you think such training were useful in your real teaching?

-**if NO**

What are the elements that you think is necessary adding into the training course, and why?

12. Are there any suggestions that you would like to make to improve the development of thinking skills in class?

Appendix 2 Sample for data analysis.

Teachers' definition of creative thinking skills

Themes	Codes translated into English	Example
Creative thinking skills	<p>Han: Integrate new ideas into sentence structure; creativity; flexibility; imagination.</p> <p>Lei: Imagination</p> <p>Wei: creative thinking, different perspectives, not the only answer, be reasonable, acceptance.</p> <p>Mei: creative thinking, problem-solving, imagination,</p>	<p>Han: 他掌握了这个基本的句型之后，他可以加进自己的新的东西，那么在这里呢，就可以培养学生一种创新，呃，一种，就是说灵活变通吧。想象，想象力</p> <p>Lei: 我觉得 thinking skills 是 Imagination</p> <p>Wei: 创造性思维呢，你说他对一个问题的看法，对一个问题的看法跟别人就不一样，但是你 accept，你接纳他，那你说、你说是不是算是一种创造性思维的培养呢？也算是，所以我是比较喜欢就是说，我不要这种唯一的答案，就让他们想，然后他们只要说到觉得 reasonable，那么我就觉得 accept。那就可能就是无所谓的这种创造性思维的一种培养吧。Mei: 那像刚刚讲到 the bus isn't going to the beach, what can they do?那这种就属于创造性思维吧</p>

Appendix 3 Sample for video data transcription

The screenshot displays the Transana Professional interface, which is used for video transcription and analysis. The interface is divided into several panels:

- Visualization:** Shows a red waveform representing the audio track of the video. Below the waveform is a timeline with markers at 0:05:00.0, 0:10:00.0, 0:15:00.0, 0:20:00.0, 0:25:00.0, and 0:30:00.0. The current time is 0:09:13.4.
- Transcript:** A text area containing the transcription of the video. The transcript is as follows:

```
Transcript - Miss Zhang > lesson four > episode three what should you do when you go to a dirty park  
episode three what should you do when you go to a dirty park  
1 T:But when you go to a dirty park, what:: will  
2 you do(1.8)Go away?  
3 Ss:Yes  
4 T:Bye bye go home?  
5 Ss:Yes.  
6 T:Maybe yes. What will you do, what you what  
7 will you do (1) think about it(2) You try  
8 ((invite S1))  
9 S1:I will clean it.  
10 T:You will clean it.You will pick up the  
11 trash,maybe, em huh. Good boy.Very good boy.What  
12 will you do=  
13 S:=Me too  
14 T:You too? hahaha  
15 Ss:(Laughing).  
16 T:I'm I'm happy to hear that. You too.That's  
17 good.and so do you. that's good.
```
- Video Media File:** A video player showing a classroom scene. A teacher is standing at the front of the room, pointing towards a whiteboard. Students are seated at desks, facing the teacher. The video player has a play button and a progress bar.
- Data:** A hierarchical tree view showing the structure of the transcription data. The tree is organized as follows:
 - Database
 - Episode Items
 - Selected Items
 - KeywordsThe tree shows a hierarchy of lesson and episode items. The selected item is "episode three what should you do when you go to a dirty park".

Appendix 4. Glossary of transcript symbols

(())	Contextual information
T	Teacher
S	Unidentified speaker
S1, S2, S3...	Identified speaker
Ss	Several speakers speak at the same time.
Name	Name of a student
↑	Rising tone
↓	Falling tone
Words in bold	Emphasis
[Overlapping
]	Overlapping utterance end.
=	No break or gap between the speech
(2.8)	Waiting time. The number indicate the length of the elapsed time in seconds.
...	Pause which is less than a second
G.	Gesture
::	Prolongation
oo	Whisper/softer sound than the surrounding talk.
<i>/italics/</i>	Phonetics
Music/music/yes/no	Simultaneous speech by more than one person

Appendix 5. Ethical form

MSc, PhD, EdD & DEdPsych theses.



Graduate School of Education

Certificate of ethical research approval

MSc, PhD, EdD & DEdPsych theses

To activate this certificate you need to first sign it yourself, and then have it signed by your supervisor and finally by the Chair of the School's Ethics Committee.

For further information on ethical educational research access the guidelines on the BERA web site: <http://www.bera.ac.uk/publications> and view the School's Policy online.

READ THIS FORM CAREFULLY AND THEN COMPLETE IT ON YOUR COMPUTER (the form will expand to contain the text you enter). **DO NOT COMPLETE BY HAND**

Your name: Xuying Fan

Your student no: 570031303

Return address for this certificate: Graduate School of Education, Heavitree Road, Exeter, Devon, UK. EX1 2LU

Degree/Programme of Study: PhD in Education

Project Supervisor(s): Li, Li; Esmaeel, Abdollahzadeh;

Your email address: xf208@ex.ac.uk

I hereby certify that I will abide by the details given overleaf and that I undertake in my thesis to respect the dignity and privacy of those participating in this research.

I confirm that if my research should change radically, I will complete a further form.

Signed:.....Xuying Fan.....date:.....06/03/2014.....

Chair of the School's Ethics Committee
updated: March 2013

Certificate of ethical research approval

TITLE OF YOUR PROJECT:

Teachers' Talk and Students' Thinking Skills in EFL Primary Classrooms

1. Brief description of your research project:

This research study will be carried out in Mainland China to investigate teachers' perceptions of teaching thinking skills in class, and to examine how teachers' talk impact and develop students' thinking in classroom interaction. This study will use the methods of semi-structured interviews and observation of classroom-recordings.

2. Give details of the participants in this research (giving ages of any children and/or young people involved):

Five Chinese EFL teachers working in a primary school will be involved in this study and they are all over 18.

160-200 children aged from 6-12 will be also involved.

The selected school is a public primary school. Children with special needs are not registered in the public schools, instead, they attend special education school run by the local government. Therefore, no students with special needs will be involved in this project.

Give details (with special reference to any children or those with special needs) regarding the ethical issues of:

3. **informed consent:** Where children in schools are involved this includes both headteachers and parents). Copy(ies) of your consent form(s) you will be using must accompany this document. a blank consent form can be downloaded from the GSE student access on-line documents: Each consent form **MUST** be personalised with your contact details.

The headteacher, teachers, children and their parents will be informed about the purpose of this study through a face-to-face meeting and detailed information pack. Information pack includes information about the project, confidentiality, right to withdraw and a consent form. Information pack is written in a user-friendly language to explain the research in the research participants' first language (Chinese in this case) to avoid any ambiguity and difficulty in understanding. As this research study involves children, permission to participate in the research will be sought from both parents and children. Consent will be sent to the children, their parents and teachers separately. Participants and all people concerned (including the headteacher and parents) will be informed how the research findings will be used. Children's performances in class as well as teachers' opinions and their teaching practices will not be judged or evaluated. The data collected will only be used for research purposes. Essentially, participants will be notified that informed consent is an ongoing process throughout the research and they always have the right to withdraw from the research at any time. Since the classroom recording will use the back-head shots, therefore, no children can be identified from the recording. Also both children and parents are informed that recording focus will be placed on the teacher. It is hoped that all parents and children will give their consent for classroom recording by providing sufficient information about the research, the usage of the recording and the method of recording. As the school encourages research, children and teachers are used to being interviewed and observed. Normally parents are very supportive too.

All of the participants and parents will be reassured that the researcher will respect for privacy and confidentiality, their every decision, including their participation or withdraw from the research. For teacher-participants, researchers will seek for volunteered teachers, and explain the nature of the research, and give ample time consider their consent, and provide endless opportunities for them to ask questions about this research. It is important to give detailed explanations of the nature of the research to the teacher. On one hand, they could provide advice to the researcher on explaining the nature of the research to the children in their language within a more understandable way. On the other hand, some of the parents might approach to the teachers and stress their doubts or concerns as teachers are always perceived as the "authority" in class. It is also very common in China that parents seek for information from the teachers as parents are more familiar with the teachers compared to the researcher who as a stranger to them. However, the researcher will make clear to the teachers that it is better to refer the parents back to the researcher, so that the research can provide a more detail explanation on the project, and also allows the researcher to demonstrate her trustworthiness and goodwill.

In terms of parent's informed consent, it is always a good idea to approach each parent and show the respects and goodwill to them one by one. Information sheets and consent forms will be given to the parents. A meeting will be held before any data collection started, and the researcher will show their respects to the parents who as the "gatekeepers" for the children. Researcher will also explain the nature of the research, methods of the data collection- videotaping, how the data will be used, and their rights of giving consents whether or not permits their children participate in or withdraw from the research. Researcher will also show understanding and respects parents' decision even they do not give permission. It is believed that such meeting could save time for both parents and researchers, and it also allows parents spaces to present their concerns in front of the researcher. Researcher also has an opportunity to develop harmonious relationships with the parents to increase the credibility and trustworthiness. Meanwhile, researcher will seek for help from the influential parents who support the study and help to convey other parents' support. However, there is no guarantee that all of the parents will attend the meeting as they are the busy individuals who have to work. In this case, researcher should show understanding and make ardent effort to talk to the parents who are unable to attend the meeting either through phones or meet them personally in an agreed place and time. Besides, any parents who have questions later on are welcome to contact the researcher with the detail provided at the end of the consent form. Parents need to return the consent forms to the researcher only if they reject their children's participation in the project.

Children are also one of the participants in this research, and the research has to seek consent from them. Age appropriate consent forms are designed and will be sent to the students before data collection started. Having children as participants requires sensitivity to their age and development, researcher should take every step carefully to avoid causing harms to the children. Researcher will be introduced to the class by the teacher as a senior "student" from an overseas university. For one thing, it is true that the researcher shared the same social category with the children so that it helps the children understand that what the researcher is doing is part of her study. For another, teacher's introduction might somehow create a harmonious atmosphere in class so that the researcher can start explaining the research. Similar procedure will take place in the introductory sessions with the children as in the parents' meeting, but the researcher will use children's language in order to make things clearer and understandable in children's perspective. In order to reduce the impact of the researchers' adult authority, children will be allowed to ask any questions in the introductory session, and researcher will also give children more time to "get used" to her and the things that have been explained. As both parents and teachers have been explained about this research, children might go for them if they come up with questions and concerns after the session. All in all, the researcher needs to act ethically to obtain children's active consent, and make sure they have real autonomy in making choices about participation.

If any parents have concerns regarding the recording, the researcher will provide more information about the confidentiality in using the data and guarantee that children in the video will not be identified. In this research, participants' (including parents') concerns will be fully addressed. In the case of receiving objections from parents / children regarding classroom recording and if further communication fails, then I will take the following actions depending on the situation:

- a) I will seek help from the School to select a new class, or alternatively
- b) I will seek help from the School and the participating teacher to make alternative arrangement for the children concerned

4. anonymity and confidentiality

Participant's name and school will be remained anonymous in the research paper. In writing up the thesis, the school and participants will be assigned with pseudonyms. Their information will not be disclosed to a third party under any circumstance.

5. Give details of the methods to be used for data collection and analysis and how you would ensure they do not cause any harm, detriment or unreasonable stress:

Interviews will be used as one of the methods for data collection, and a digital recorder will be used. Interview data will be fully transcribed and sent back to the interviewees to ensure that their opinions are accurately reflected. As this is an in-depth data collection method which might cause some unreasonable stress for the teacher when they mention about their teaching practices, the researcher should inform the interviewee that they have the right to refuse to answer any questions, or they can choose to stop participating in the project any time. The interview questions will not be related to any personal information and teachers will be reassured that there is no 'right' answer to the interview questions. Rather opinions and experience about teaching thinking skills count.

Classroom observation (recording) is another method for data collection. Video recorders will be applied in the classroom recordings will be made from the back of classroom. As this research involves children participation, both children and parents will be informed and their consent will be sought. They will be informed that there is no compulsion that their children participate in the project, and the children also have the right to choose whether or not to participate in this project and they may at any stage withdraw from participation. Children's information will be kept in an anonymised form and any information they provide will be kept confidential. Pilot observations will be applied for 2 weeks. Pilot observations provide teachers and students time to get use to the existence of the video recorder in order to avoid any unusual performances in the process of data collection. This two-week-time acts as buffers for the children and teachers.

In terms of data analysis, coding is the process of generating ideas and concepts from raw data in this qualitative research study. In this research, coding the transcripts of the interview is one of the methods of analysis, therefore, much work and attention will be put into the use of coding. There are four stages of the data interpretation process as: code the data, categorize these codes, identify themes and relationships among the codes and categories, and develop concepts and arrive at some generalized statements. These are then further differentiated or integrated so that they may be reworked into a smaller number of categories, relationships, and patterns so as to tell a story or communicate conclusions drawn from the data.

Discourse analysis is another way of analysing the observation transcripts. As discourse analysis shares the concerns of all qualitative approaches with the meaningfulness of social life, it can provide useful insights and generate hidden information from teacher-pupil conversations. In this

way, the impact of teacher talk on thinking can be revealed. In terms of data analysis, classroom recordings will be transcribed, and it will reveal the features and patterns in natural talk. The transcription which involves various segments will indicate potential impacts on students' thinking. The data will be analysed in relation to the features such as, turn-taking, interruptions, repetition, waiting time, etc. Through analysis, these features and functions will become more explicit. As a result, hidden rules which assist or hinder students' thinking can be more effectively explained.

6. Give details of any other ethical issues which may arise from this project - e.g. secure storage of videos/recorded interviews/photos/completed questionnaires, or

As the data will be recorded and transcribed, the electronic information will be stored only in researcher's personal laptop which is password protected. Any handwritten work should also be either transformed into electronic format and stored securely or destroyed when it is no longer required. As the participants and the school will be given pseudonyms, there should not be any possibility that individual participants will be identified through reading the transcription of the data.

7. Special arrangements made for participants with special needs etc.

There is no special educational needs student in this primary school and there is no need for any special arrangement in terms of this issue. However, considerations will be taken regarding the language.

As this research study takes place in China, not all the participants and parents are able to understand English. Therefore, parents' meeting, introductory sessions, informed consents and teacher's interviews are all in Chinese. On one hand, as has been explained, not all the Chinese could understand English. On the other hand, using Chinese creates a more comfortable and relaxing atmosphere between teachers and researchers, and teachers will be willing to present their opinions and feelings authentically.

No data collection should be taken place before parents, children and teachers agree.

8. Give details of any exceptional factors, which may raise ethical issues (e.g. potential political or ideological conflicts which may pose danger or harm to participants):

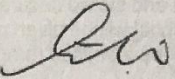
There is small possibility that questions in the interview might rekindle the participants' uncomfortable memories and experiences, and the classroom observation might create uncomfortable feelings for participants. Therefore, researcher would do her best to avoid any harms or uncomfortable feelings. Thus, pilot interview with colleagues and classroom observation will take place in advance. During the pilot interview, certain questions which might cause unpleasant feelings could be identified, and such interview questions could be modified into a better questioning style and form. Pilot classroom observation offers teachers and students extra time to get used to the recording system, therefore, allowing them time to perform as in the normal days.

It is impossible to predict all the exceptional factors which may raise ethical issues, however, the researcher will remind the participants of their right to withdraw from the research at any given time. Teachers and parents must be fully informed and be offered clear channels of communication to the research during the research.

This form should now be printed out, signed by you on the first page and sent to your supervisor to sign. Your supervisor will forward this document to the School's Research Support Office for the Chair of the School's Ethics Committee to countersign. A unique approval reference will be added and this certificate will be returned to you to be included at the back of your dissertation/thesis.

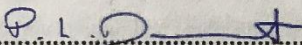
N.B. You should not start the fieldwork part of the project until you have the signature of your supervisor

This project has been approved for the period: 01/09/2014 until: 30/09/2016

By (above mentioned supervisor's signature):  **date:** 24/07/2014.....


N.B. To Supervisor: Please ensure that ethical issues are addressed annually in your report and if any changes in the research occur a further form is completed.

GSE unique approval reference:.....

Signed:  **date:** 19/09/14.....
Chair of the School's Ethics Committee

Appendix 6. Consent forms for teachers

Wei


GRADUATE SCHOOL OF EDUCATION

Title of Research Project: Teachers' Talk and Students' Thinking Skills in EFL Primary Classrooms.

CONSENT FORM

I have been fully informed about the aims and purposes of the project.

I understand that:

there is no compulsion for me to participate in this research project and, if I do choose to participate, I may at any stage withdraw my participation and may also request that my data be destroyed

I have the right to refuse permission for the publication of any information about me

any information which I give will be used solely for the purposes of this research project, which may include publications or academic conference or seminar presentations

if applicable, the information, which I give, may be shared between any of the other researcher(s) participating in this project in an anonymised form

all information I give will be treated as confidential

the researcher(s) will make every effort to preserve my anonymity

.....
(Signature of participant)

2014.11.01.....
(Date)

.....
(Printed name of participant)

One copy of this form will be kept by the participant; a second copy will be kept by the researcher(s)

Contact phone number of researcher(s):.....

If you have any concerns about the project that you would like to discuss, please contact:

...Xuying Fan, Graduate School of Education, University of Exeter, Heavitree Road, Exeter, Devon, UK. EX1 2LU.....
OR
...Li, Li. Graduate School of Education, University of Exeter, NC 118, St Luke's Campus, Heavitree Road Exeter.....

* when research takes place in a school, the right to withdraw from the research does NOT usually mean that pupils or students may withdraw from lessons in which the research takes place

Data Protection Act: The University of Exeter is a data collector and is registered with the Office of the Data Protection Commissioner as required to do under the Data Protection Act 1998. The information you provide will be used for research purposes and will be processed in accordance with the University's registration and current data protection legislation. Data will be confidential to the researcher(s) and will not be disclosed to any unauthorised third parties without further agreement by the participant. Reports based on the data will be in anonymised form.

同意书

课题：中国小学英语老师的课堂会话对学生思维能力的影响

我已经充分了解和确认关于课题所研究的目的与目标。

我明白：

我有权利选择是否参与此项研究，如果中途退出，所有关于我的研究数据将会一并销毁
我有权利拒绝在公共场合公布关于我的任何信息
关于我的任何信息将只用于课题研究，其中包括文章发表，学术会议以及演讲
如果需要与其他研究员分享关于我的任何信息，将会以匿名形式出现
所有关于我的资料将是机密文件
研究会尽力保障我的个人隐私

签名

2014.11.01
日期

签名（正楷）

此同意书一式两份 一份由老师保存 另一份研究员保存

研究员联系电话：+44 1392 266444

如果您有关于课题的任何问题请与以下联系人咨询：

范翔颖 Xuying Fan, Graduate School of Education, University of Exeter, Heavitree Road,
Exeter, Devon, UK. EX1 2LU

Li, Li. Graduate School of Education, University of Exeter, NC 118, St Luke's Campus,
Heavitree Road
Exeter.

*学生可以自愿选择是否参与课题研究，但不得以此理由违反学校规章制度



GRADUATE SCHOOL OF EDUCATION

Title of Research Project: Teachers' Talk and Students' Thinking Skills in EFL Primary Classrooms.

CONSENT FORM

I have been fully informed about the aims and purposes of the project.

I understand that:

there is no compulsion for me to participate in this research project and, if I do choose to participate, I may at any stage withdraw my participation and may also request that my data be destroyed

I have the right to refuse permission for the publication of any information about me

any information which I give will be used solely for the purposes of this research project, which may include publications or academic conference or seminar presentations

if applicable, the information, which I give, may be shared between any of the other researcher(s) participating in this project in an anonymised form

all information I give will be treated as confidential

the researcher(s) will make every effort to preserve my anonymity

[Redacted signature]

(Signature of participant)

November 1st 2014

(Date)

[Redacted name]

(Printed name of participant)

One copy of this form will be kept by the participant; a second copy will be kept by the researcher(s)

Contact phone number of researcher(s): [Redacted]

If you have any concerns about the project that you would like to discuss, please contact:

...Xuying Fan, Graduate School of Education, University of Exeter, Heavitree Road, Exeter, Devon, UK. EX1 2LU

OR ...Li, Li. Graduate School of Education, University of Exeter, NC 118, St Luke's Campus, Heavitree Road Exeter.

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同意书

课题：中国小学英语老师的课堂会话对学生思维能力的影响

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我明白：

我有权利选择是否参与此项研究，如果中途退出，所有关于我的研究数据将会一并销毁
我有权利拒绝在公共场合公布关于我的任何信息
关于我的任何信息将只用于课题研究，其中包括文章发表，学术会议以及演讲
如果需要与其他研究员分享关于我的任何信息，将会以匿名形式出现
所有关于我的资料将是机密文件
研究员会尽力保障我的个人隐私

.....
签名

2014.11.1
.....
日期

.....
签名（正楷）

此同意书一式两份 一份由老师保存 另一份研究员保存

研究员联系电话：.....

如果您有关于课题的任何问题请与以下联系人咨询：

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GRADUATE SCHOOL OF EDUCATION

Title of Research Project: Teachers' Talk and Students' Thinking Skills in EFL Primary Classrooms.

CONSENT FORM

I have been fully informed about the aims and purposes of the project.

I understand that:

there is no compulsion for me to participate in this research project and, if I do choose to participate, I may at any stage withdraw my participation and may also request that my data be destroyed

I have the right to refuse permission for the publication of any information about me

any information which I give will be used solely for the purposes of this research project, which may include publications or academic conference or seminar presentations

if applicable, the information, which I give, may be shared between any of the other researcher(s) participating in this project in an anonymised form

all information I give will be treated as confidential

the researcher(s) will make every effort to preserve my anonymity

[Redacted signature]

(Signature of participant)

Nov. 1, 2014
(Date)

[Redacted name]

(Printed name of participant)

One copy of this form will be kept by the participant; a second copy will be kept by the researcher(s)

Contact phone number of researcher(s): [Redacted]

If you have any concerns about the project that you would like to discuss, please contact:

...Xuying Fan, Graduate School of Education, University of Exeter, Heavitree Road, Exeter, Devon, UK. EX1 2LU.....

OR

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同意书

课题：中国小学英语老师的课堂会话对学生思维能力的影

我已经充分了解和确认关于课题所研究的目的与目标。

我明白：

我有权利选择是否参与此项研究，如果中途退出，所有关于我的研究数据将会一并销毁
我有权利拒绝在公共场合公布关于我的任何信息
关于我的任何信息将只用于课题研究，其中包括文章发表，学术会议以及演讲
如果需要与其他研究员分享关于我的任何信息，将会以匿名形式出现
所有关于我的资料将是机密文件
研究会尽力保障我的个人隐私

.....
签名

Nov. 1, 2014

.....
日期

.....
签名（正楷）

此同意书一式两份 一份由老师保存 另一份研究员保存

研究员联系电话.....

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Exeter, Devon, UK. EX1 2LU

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GRADUATE SCHOOL OF EDUCATION

Title of Research Project: Teachers' Talk and Students' Thinking Skills in EFL Primary Classrooms.

CONSENT FORM

I have been fully informed about the aims and purposes of the project.

I understand that:

there is no compulsion for me to participate in this research project and, if I do choose to participate, I may at any stage withdraw my participation and may also request that my data be destroyed

I have the right to refuse permission for the publication of any information about me

any information which I give will be used solely for the purposes of this research project, which may include publications or academic conference or seminar presentations

if applicable, the information, which I give, may be shared between any of the other researcher(s) participating in this project in an anonymised form

all information I give will be treated as confidential

the researcher(s) will make every effort to preserve my anonymity

[Redacted signature]
(Signature of participant)

Nov. 1, 2014
(Date)

[Redacted name]
(Printed name of participant)

One copy of this form will be kept by the participant; a second copy will be kept by the researcher(s)

Contact phone number of researcher(s): [Redacted]

If you have any concerns about the project that you would like to discuss, please contact:

...Xuying Fan, Graduate School of Education, University of Exeter, Heavitree Road, Exeter, Devon, UK. EX1 2LU

OR

...Li, Li. Graduate School of Education, University of Exeter, NC 118, St Luke's Campus, Heavitree Road Exeter

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同意书

课题：中国小学英语老师的课堂会话对学生思维能力的影晌

我已经充分了解和确认关于课题所研究的目的与目标。

我明白：

我有权利选择是否参与此项研究，如果中途退出，所有关于我的研究数据将会一并销毁

我有权利拒绝在公共场合公布关于我的任何信息

关于我的任何信息将只用于课题研究，其中包括文章发表，学术会议以及演讲

如果需要与其他研究员分享关于我的任何信息，将会以匿名形式出现

所有关于我的资料将是机密文件

研究会尽力保障我的个人隐私



签名


Nov. 1, 2014

日期



签名（正楷）

此同意书一式两份 一份由老师保存 另一份研究员保存

研究员联系电话：

如果您有关于课题的任何问题请与以下联系人咨询：

范翔颖 Xuying Fan, Graduate School of Education, University of Exeter, Heavitree Road,
Exeter, Devon, UK. EX1 2LU

Li, Li. Graduate School of Education, University of Exeter, NC 118, St Luke's Campus,
Heavitree Road
Exeter.

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Appendix 7 Consent forms for children



GRADUATE SCHOOL OF EDUCATION

Title of Research Project: **Teacher cognition of thinking skills in Chinese EFL primary classrooms.**



CONSENT FORM FOR CHILDREN

Please circle either tick or cross

I have been fully informed about the aims and purposes of the project. 我知道为什么这个姐姐来	<input checked="" type="checkbox"/>	<input type="checkbox"/>
It has been explained to me how the information I give will be used. 我知道这个录像是用来做什么的	<input checked="" type="checkbox"/>	<input type="checkbox"/>
I do not have to participate in the project. If I choose to participate, I can leave at any time. 我知道我可以不参加这个活动，如果我不喜欢我可以随时退出	<input checked="" type="checkbox"/>	<input type="checkbox"/>
I am happy for you to video- record what I will say in class. 我很乐意被你录我在课堂上说了些什么	<input checked="" type="checkbox"/>	<input type="checkbox"/>
I give permissions for my words to be used in a report but understand that my name will not be mentioned. 我知道我的真实名字不会出现在文章里	<input checked="" type="checkbox"/>	<input type="checkbox"/>
I understand all information I give will be private between you and me. 我知道我讲的所有东西都是我们之间的秘密	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Please return the form only if you do not want to participate
要是你不愿意参加就把这个表格交给姐姐

.....
(Please sign here) 签字

.....
(Date) 日期

.....
(Please put down your printed name) 正楷签字

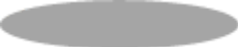


GRADUATE SCHOOL OF EDUCATION

One copy of this form will be kept by the participant; a second copy will be kept by the researcher.



If you have any questions about the project that you would like to discuss, please contact:

Researcher's number: 

Xuying Fan, Graduate School of Education, University of Exeter, Heavitree Road, Exeter, Devon, UK. EX1 2LU.

OR

Li, Li. Graduate School of Education, University of Exeter, NC 118, St Luke's Campus, Heavitree Road, Exeter.

* when research takes place in a school, the right to withdraw from the research does NOT usually mean that pupils or students may withdraw from lessons in which the research takes place

Data Protection Act: The University of Exeter is a data collector and is registered with the Office of the Data Protection Commissioner as required to do under the Data Protection Act 1998. The information you provide will be used for research purposes and will be processed in accordance with the University's registration and current data protection legislation. Data will be confidential to the researcher(s) and will not be disclosed to any unauthorised third parties without further agreement by the participant. Reports based on the data will be in anonymised form.

Revised March 2013

Appendix 8 Consent forms for parents



GRADUATE SCHOOL OF EDUCATION

Title of Research Project: Teachers' Talk and Students' Thinking Skills in EFL Primary Classrooms.

CONSENT FORM: participants' parents / guardians

I have been fully informed about the aims and purposes of the project.

I understand that:

there is no compulsion for my daughter / son to participate in this research project and, if s/he does choose to participate, s/he may at any stage withdraw their participation

I have the right to refuse permission for the publication of any information about my daughter / son any information which my daughter / son gives will be used solely for the purposes of this research project, which may include publications or academic conference or seminar presentations

if applicable, the information, which my daughter / son gives, may be shared between any of the other researcher(s) participating in this project in an anonymised form

all information my daughter / son gives will be treated as confidential

the researcher(s) will make every effort to preserve my daughter's / son's anonymity

Please return the form ONLY if you do not want your children participate in the project.

.....
(Signature of parent / guardian)

.....
(Date)

.....
(Printed name of parent / guardian)

.....
(Printed name of participant)

One copy of this form will be kept by the participants' parent or guardian; a second copy will be kept by the researcher(s)

Contact phone number of researcher(s):.....

If you have any concerns about the project that you would like to discuss, please contact:

Xuying Fan, Graduate School of Education, University of Exeter, Heavitree Road, Exeter, Devon, UK. EX1 2LU.

OR

Li, Li. Graduate School of Education, University of Exeter, NC 118, St Luke's Campus, Heavitree Road Exeter.....

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GRADUATE SCHOOL OF EDUCATION

University's registration and current data protection legislation. Data will be confidential to the researcher(s) and will not be disclosed to any unauthorised third parties without further agreement by the participant. Reports based on the data will be in anonymised form.

Revised March 2013

家长同意书

课题：中国小学英语老师的课堂会话对学生思维能力的影响

我已经充分了解和确认关于课题所研究的目的与目标。

我明白：

我的孩子有权利选择是否参与课题研究，也可以选择中途退出

我有权利拒绝在公共场合公布关于我孩子的任何信息

关于我孩子的任何信息将只用于课题研究，其中包括文章发表，学术会议以及演讲

如果需要与其他研究员分享关于我孩子的任何信息，他们将会以匿名形式出现

所有关于我孩子的资料将是机密文件

研究员会尽力保障我孩子的个人隐私

如**不同意**请签名交回班主任收取

.....
(家长签名) (日期)

.....
家长签名 (正楷) 学生名字 (正楷)

此同意书一式两份 一份由家长保存 另一份研究员保存

研究员联系电话：

如果您有关于课题的任何问题请与以下联系人咨询：

范栩颖 Xuying Fan, Graduate School of Education, University of Exeter, Heavitree Road, Exeter, Devon, UK. EX1 2LU

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